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SECTION XXIV
(7th EDITION)

Bacteriology *and*
Protozoology

BAIRD & TATLOCK (LONDON) LTD.

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IN compiling this New Edition of our Standard Catalogue in Sectional Form, our aim has been to make it as convenient as possible for our clients to find any article they want, in the minimum space of time. Below will be found an outline of the Contents of each Section:—

SECTION I.—Typical examples of Benches, Fume Cupboards, Taps and Sinks, and is meant as a guide to clients when designing their laboratories.

SECTION II.—Apparatus required for the permanent equipment of a laboratory such as Balances, Furnaces, Ovens, Pumps and Stills alphabetically arranged.

SECTION III.—Ordinary apparatus required for laboratory use, such as Glassware, Porcelain Ware, Filter Paper and Graduated Ware, etc. These are also arranged alphabetically.

SECTIONS IV and V.—Thermometers and Pyrometers and heat-recording apparatus for all purposes.

SECTION VI.—Special apparatus scientifically grouped and arranged for all branches of Physico-Chemical Work.

SECTION VII.—Refractometers, Spectroscopes and Polariscopes.

SECTION VIII to SECTION XIV.—Specialised apparatus of all descriptions such as is required for Scientific and Industrial Research Laboratories as detailed in the Section Summary.

SECTION XV.—Apparatus for all the branches of Meteorology, etc.

SECTION XX.—Models for Anatomical work; a fuller and complete catalogue is sent on application.

SECTION XXI.—Apparatus for Botany and Entomology.

SECTION XXII.—A full range of British and Foreign Microscopes, Epidiascopes, Episcopes, and Cameras for scientific purposes.

SECTION XXIII to SECTION XXVI.—Special apparatus for Bacteriology, Histology, Microscopy, Pathology and Biochemistry such as Microscope Slides, Cover Glasses, Microtomes, Incubators, Autoclaves, Embedding and Wassermann Baths, etc.

SECTION XXVII to SECTION XXVIII.—Special apparatus for Physiology, Pharmacology and Psychology.



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and Index complete the whole range of Apparatus and Catalogue Vol. I, II, III. Vol. IV is still

SECTION XXIV.

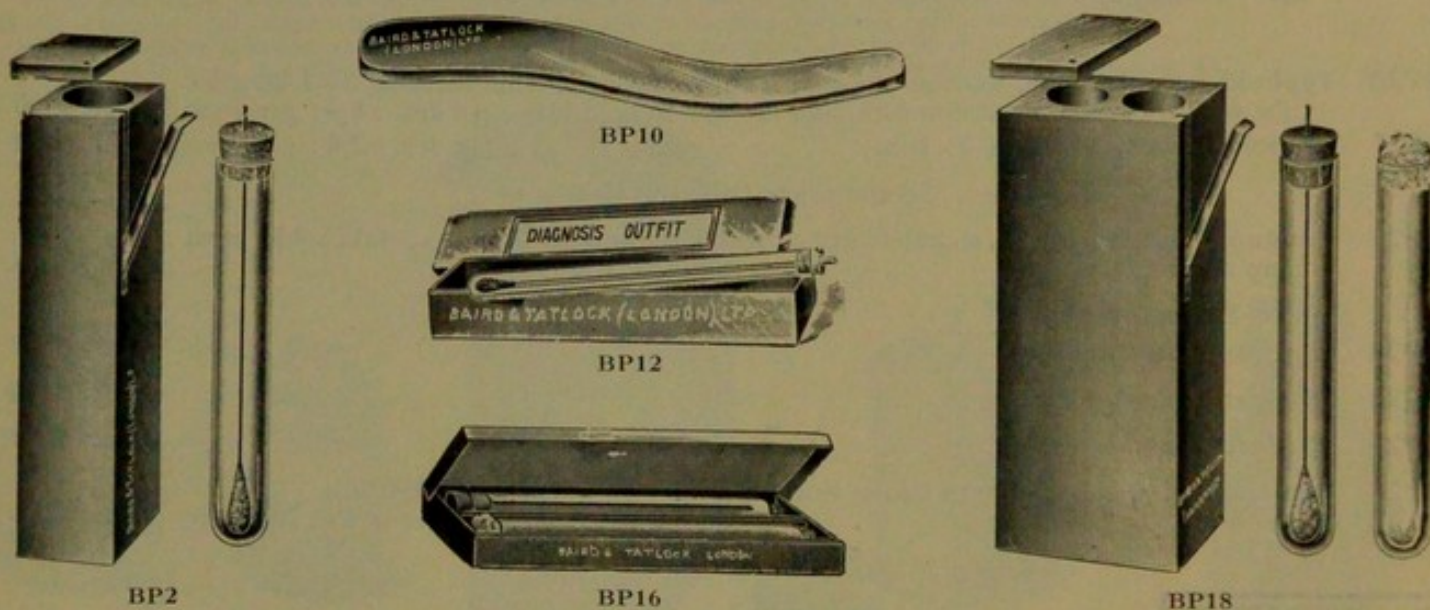


GLASS APPARATUS.

- (A) **General Glass Apparatus** common to both Bacteriology and Chemistry will be found most fully described and illustrated in Section III.
- (B) **Glass Apparatus** more particularly required for Bacteriological work is described in detail in the following pages. Special outfits quoted for upon receipt of particulars.

COLLECTION OF SPECIMENS.

DIAGNOSIS OUTFITS.



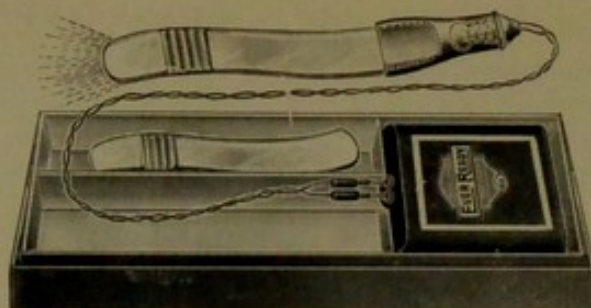
BP2	Diagnosis Outfits, in wood block cases for post	per doz. b 4/- ; per gross	b £2 7 6
BP4	Glass Tubes, $5 \times \frac{1}{2}$ in., heavy, for outfits BP2 and BP12-BP16	per doz. b 4/9 ; per gross	b £0 10 0
BP6	Nickel Probes, with cotton wool, for outfits BP2 and BP12-BP16	per doz. b 4/9 ; per gross	b £0 17 6
BP8	Wood Block Cases only, with cover, for BP2	per doz. b 4/9 ; per gross	b £1 4 0
BP9	Manila Envelopes for use when sending by post	per gross	b £0 10 0
BP10	Tongue Spatulas, of glass. See also BP22	each	b £0 1 3
BP12	Diagnosis Outfits, cases of tin, for one tube, $5 \times \frac{1}{2}$ in., with cover, complete with tube and nickel probe	per doz. b 4/9 ; per gross	b £2 12 0
BP14	Tin Cases only, for BP12	per doz. b 4/9 ; per gross	b £1 4 0
BP16	Diagnosis Outfits, consisting of tin case with division in centre, two glass tubes, one containing nickel probe and one plugged with cotton wool	per doz. b 8/- ; per gross	b £4 10 0
BP18	Diagnosis Outfits, as BP16, in wood block cases for post	per doz. b 8/- ; per gross	b £4 12 0
BP19	Wood Block Cases only for BP18, two hole, with cover	per doz. b 4/6 ; per gross	b £2 12 0

Special quotations given for large quantities of outfits.

Special outfits made to order.



BP20



BP22

- BP20 Typhoid Sample Case, wooden block with cover and metal clip, carrying 3 x 1 in. glass tube with tin spoon fitted into cork, and tin case to hold tube per doz. b 8/-; per gross b £4 4 0
- BP21 Typhoid Tubes, as above, 3 x 1/8 in. per doz. b 7/6; per gross b £3 18 0

Special prices for quantities.

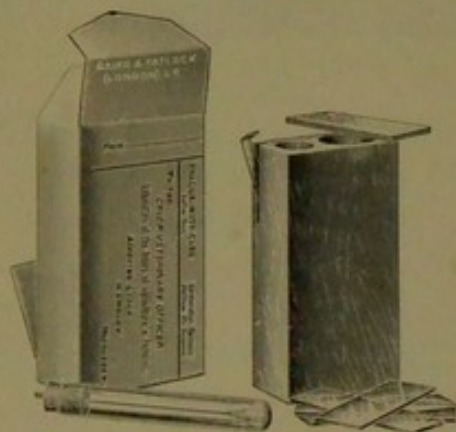
- BP22 Tongue Spatula, electric, complete in box with large and small glass spatula holder with lamp and battery b £0 13 6

Spare Parts for above :

- BP23 Spare battery each b £0 1 8
- BP24 Spare Spatula „ b £0 1 6
- BP25 Spare Lamp „ b £0 0 9

- BP26 Applicators, wood, for use in taking swabs in place of the usual nickel wire per box of 72 dozen b £0 4 0

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BP30

- BP30 Outfit for sending Anthrax Specimens by post, as approved by Ministry of Agriculture and Fisheries, also by Post Office Authorities, consisting of 2-holed wood block with cover, cardboard cover with printed address, sterilized tube with swab, 4 microscope slides per doz. b 10/-; per gross b £5 10 0

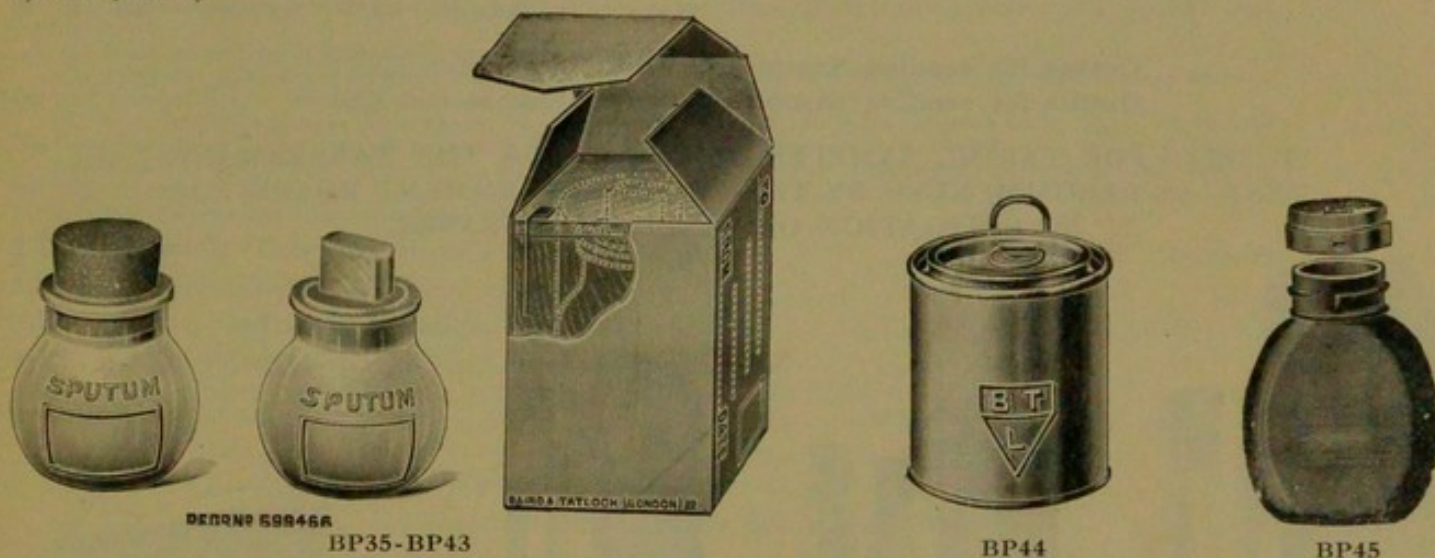
Instructions for use sent with Outfit.

- BP31 Platinum Wire Loop, in aluminium holder each b £0 6 6
- *BP32 Spirit Lamp, with brass wick-holder } for Outfit BP30 „ b £0 3 6
- BP33 Steel Forceps, 5 in. „ b £0 2 6

Instructions for Outfit for carrying Anthrax Specimens.

This Outfit is intended to be used in the following way;—

- (1) It is to be noted that the tubes containing the swabs have been sterilized, and that they should not be opened until immediately before use, that the blood should be collected quickly on the swab, and the latter returned immediately to the tube, which should be corked tightly. It is advisable not to lay the tube down on any object while it is open during the process of impregnating the swab, otherwise it may become grossly contaminated.
- (2) In the case of an animal which is suspected to have died of anthrax, the ear should be amputated or partially amputated close to the base, or a small incision should be made into one of the superficial and peripheral blood vessels.
- (3) The cork to which the rod containing the swab is attached should be quickly taken from the tube. The swab should be soaked in the blood which has collected at the site of the incision, and immediately returned to the tube.
- (4) In the case of a pig or horse it will be better to rub the swab on the cut surface of a superficial lymphatic gland, such as the submaxillary.
- (5) With blood from the incision or with material from the lymphatic gland, as the case may be, smears can be made on the glass slides for microscopical examination. For this purpose it is best to spread the material out with a looped platinum wire which can be immediately afterwards sterilized in a spirit flame, and used indefinitely. A smear, however, may also be made by dipping the end of a glass slide in the material, and drawing it firmly along the surface of the slide which is to be used for microscopical examination. It is advisable that the smears should not be thick.
- (6) The smears should be dried quickly by waving them about in the air or by holding them above a spirit flame at a temperature which the hand can bear.
- (7) When thoroughly dried the slides should be returned to the wooden box.
- (8) To meet the requirements of the Post Office Authorities the cork of the glass tube should be sealed round with wax, and a piece of twine should be tied round the wooden case for the purpose of more firmly securing the lid.
- (9) It is advisable of course, when possible, to carry out the manipulations with the aid of forceps.
- (10) It is to be noted that these specimens, in accordance with the Post Office Regulations, should be transmitted by letter post only.



- BP35 Sputum Diagnosis Outfit**, consisting of glass bottle specially designed for carrying the sample, wood block case with cover and clip, and manila cover with gummed flap, for sending sample through the post. (Registered No. 599466). Price complete with glass stoppered bottle per doz. *d* 11/- ; per gross *d* £6 8 0
- BP36 Sputum Outfits** as BP35 but with corked bottle (Registered No. 599466) per doz. *d* 9/- ; per gross *d* £5 6 0

Prices of Separate Fittings for Nos. BP35 and BP36.

- BP38 Sputum Outfits**, as BP35 (spare outfits), without envelope: stoppered per doz. *b* 9/6 ; per gross *b* £5 10 6
- BP39 Sputum Outfits**, as BP36 corked *b* 7/6 ; *b* £4 8 6
- BP40 Sputum Bottles**, stoppered *b* 6/- ; *b* £3 10 0
- BP41 Sputum Bottles**, corked *b* 4/- ; *b* £2 5 0
- BP42 Wood Block Cases** *b* 4/- ; *b* £2 5 0
- BP43 Manila Covers** *b* 1/6 ; *b* £0 17 6
- BP44 Tins**, with lever lids to hold sputum bottles. Both tin and lid are fitted with fold-down rings through which a string may be passed to guard against loss of the lid. Height of tin, 2½ in. Diameter of opening, 1¾ in. per doz. *b* 6/- ; per gross *b* £3 5 0
- BP45 Sputum Bottles** of dark blue glass, bayonet nickel-plated cap each *b* 1/4 ; per doz. *b* £0 14 0



BP46

BP46 Urine Sample Outfit, consisting of rubber-stoppered bottle, 2 oz., with wood block case
per doz. *b* 8/3 ; per gross *b* £4 10 0

Outfits for sending Samples of Milk. See Section XXVI.

Outfits for sending Samples of Water. See Section XXV.

OUTFITS FOR TAKING SAMPLES OF BLOOD FOR THE WASSERMANN
TEST, AS RECOMMENDED BY THE LOCAL GOVERNMENT BOARD FOR
INVESTIGATION OF VENEREAL DISEASES.



BP50



BP52



BP56



BP60

BP50 Outfit for taking sample of blood for Wassermann test in investigations of venereal diseases, as used by War Office, consisting of wood block case, needle in glass tube with cork, and centrifuge tube with rubber cork per doz. *b* 18/6 ; per gross *b* £10 10 0

Note.—State type of centrifuge tube used when ordering.

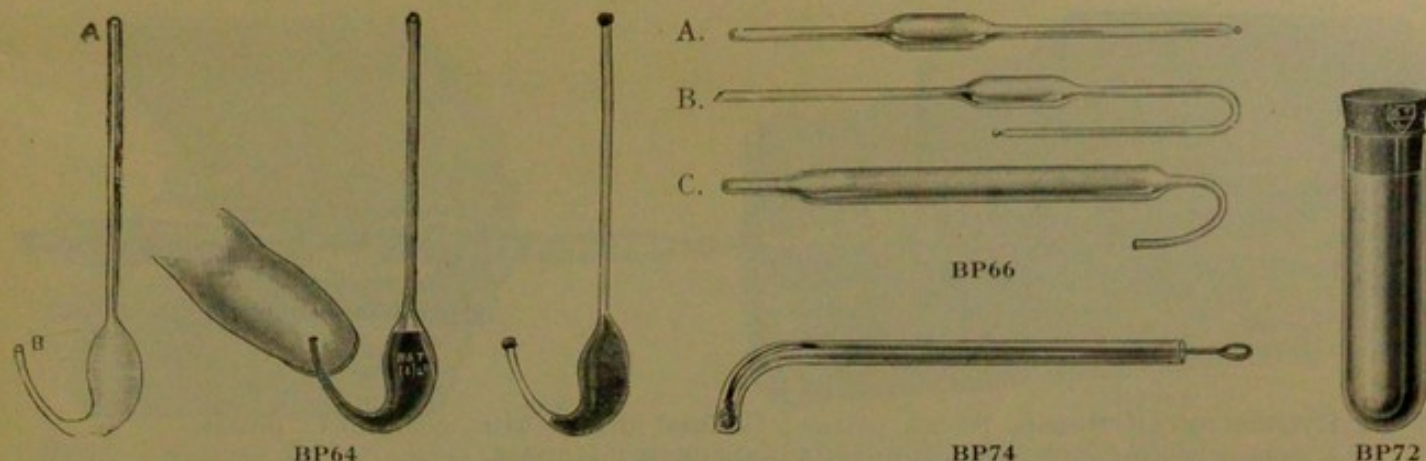
BP52 Set, consisting of test tube with india-rubber cork, test tube containing needle fitted with rubber tube, and 2-hole wood block case per doz. *b* 16/- ; per gross *b* £9 0 0

BP54 Manila Envelopes for above. Printed for forwarding by post per gross *b* £0 17 6

BP56 Set, consisting of glass pipette, 1 test tube with cork and needle, 2-hole wood block case, per doz. *b* 7/6 ; per gross *b* £4 4 0

BP58 Manila Envelopes for above. Printed for forwarding by post per gross *b* £0 17 0

BP60 Set, consisting of 2 slides 3 × 1 in., 2 capillary tubes, 1 wooden box to carry same, and manila envelope for forwarding by post per doz. *b* £0 6 0



DIRECTIONS FOR FILLING CAPSULES WITH BLOOD FOR SERUM DIAGNOSIS,
as arranged by Sir David Semple, late of the Pasteur Institute, Kasauli.

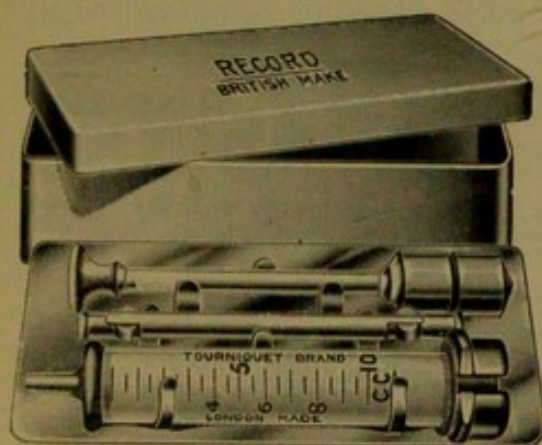
- (1) Sterilize the finger with carbolic lotion and dry.
- (2) Sterilize the pricker in the flame of a match or spirit lamp. The best improvised pricker is a "J" pen with one leg broken off.
- (3) Break off the tips of limbs (A) and (B) of the capsule.
- (4) Apply the point of the pricker to the pulp of the finger and drive in with a good sharp jerk: done in this way the pain is very trifling. The prick should be a bold one, so as to get a free flow of blood.
- (5) Apply the end (B) to the drop of blood, keeping the bulb of the capsule below the prick in the finger; the flow of blood can be encouraged by wrapping a handkerchief tightly round the finger from base to tip.
- (6) When the bulb of the capsule is full, pass the limb (A) two or three times lightly through a flame, seal (A) immediately; the blood will then be withdrawn from the end (B), and that end can be sealed. It is useless to try to seal the end (B) unless the blood has been withdrawn in the way mentioned.

BP64	Typhoid Tubes for Widal's blood test, bent form	.....	per doz. b 7d.; per gross b £0 6 6
BP66	Typhoid Tubes for Widal's blood test	.....	A. b 5/6 B. b 7/- C. b 15/- per gross
BP70	Blood Collecting Needles, Hagedorn, straight	.....	per packet of 6 b £0 2 0
BP72	Tube Phials, round bottom, fitted with cork.		
	Size	2 x 3/8 3 x 1/2 3 x 3/4 3 x 1 4 x 1/2 4 x 3/4 4 x 1 in.	
	Per gross	b 4/3 b 5/6 b 11/- b 16/- b 8/9 b 13/6 b 18/-	
	Size	5 x 1/2 5 x 3/4 5 x 1 6 x 5/8 6 x 3/4 6 x 1 in.	
	Per gross	b 9/6 b 15/- b 20/- b 13/4 b 16/- b 23/-	

Wood Block Cases for above, see Section III.

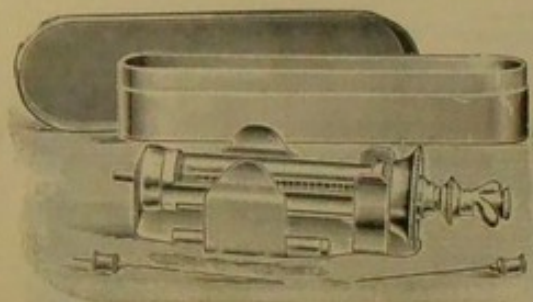
India-rubber Caps, see Nos. BP120-BP122.

BP74	West's Swabs, for taking samples for C.S.F. investigation	.....	per doz. b £0 16 0
	Blood Samples.	(See Section XXV, Pathology, Sub-section Hæmatology.)	
	Aspirators for pleurotic fluids.	(See Syringes. Special prices on application.)	
	Aspirators for peritoneal fluids.		

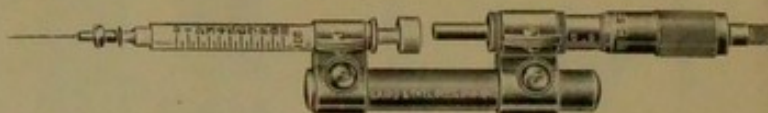


BP76-BP77

BP76	Hypodermic Syringes, "Record," with metal piston ground to fit, graduated glass barrel, and two steel needles in nickel-plated case.				
	Capacity	1	2	5	10 ml.
	Each	d 6/9	d 7/6	d 9/9	d 12/-
	Capacity	20	25	30 ml.	
	Each	d 14/-	d 19/-	d 22/6	
BP77	Extra needles for above.				
	Sizes 1-12, d 3/6; 14-20, d 3/- per doz.				
BP78	Extra needles for above, stainless steel.				
	Sizes 1-12, d 4/3; 14-20, d 4/- per doz.				
BP79	Extra platinum-iridium needles supplied if required (price variable).				



BP82



BP90

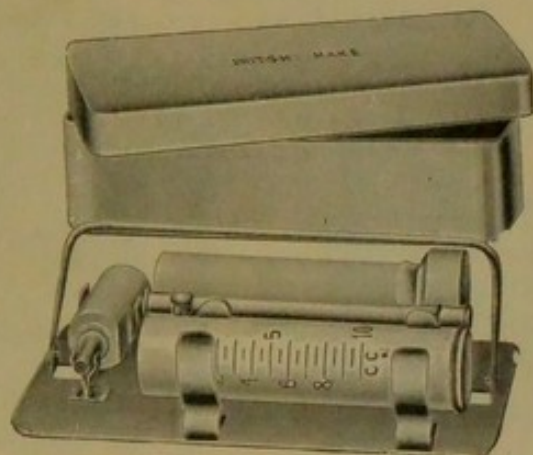
*BP82 Hypodermic Syringes, Roux's pattern, Collins' make, with india-rubber pistons, plunger graduated on stem, with two steel needles in metal cases.

Capacity	....	1	2	5	10	20 ml.
Price	....	d 8/6	d 9/-	d 13/6	d 15/6	d 19/- each.

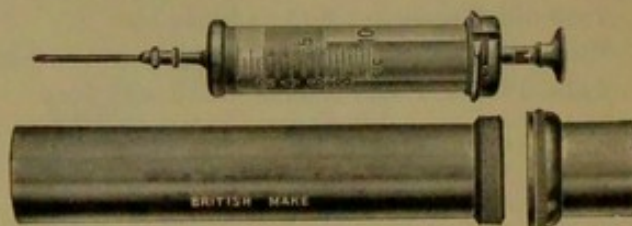
*BP88 Platinum-iridium Needles can be supplied to fit above syringes. Prices variable, according to the market fluctuations of the price of platinum.

BP90 Trevan's Apparatus for measuring small quantities of fluid. (See "Lancet," April 1922.) £4 4 0

BP91 Syringe Pipette for precise analytical work as described by A. Krogh and A. B. Keys in "Jour. Chem. Soc.," Sept. 1931, p. 2437 d £2 17 6



BP92



BP94



BP96

BP92 Syringes, all glass (3 pieces), with steel needles, in metal case.

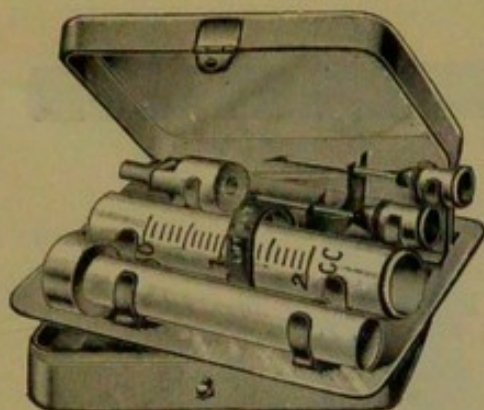
Capacity	....	1	2	5	10	20 ml.
Each	....	d 7/-	d 8/9	d 12/6	d 15/6	d 17/9

BP94 Syringes in Tubular Case, for carrying in sterilizing liquid.

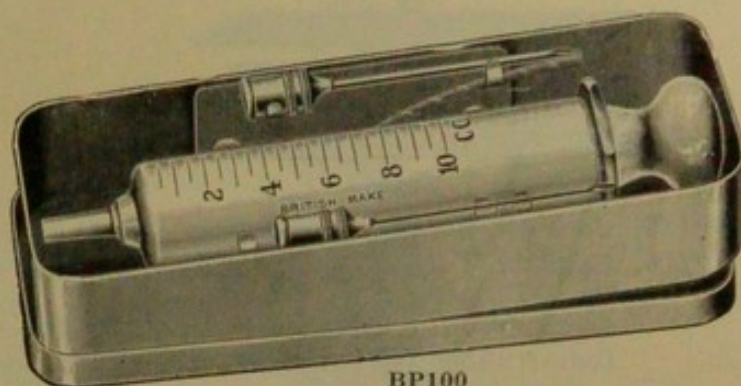
Capacity	....	1	2	5	10	20 ml.
Each	....	d 11/-	d 13/-	d 15/6	d 19/6	d 22/-

BP96 Syringe for Salvarsan Injection, with corrugated nozzle for india-rubber tubing.

Capacity	....	....	....	....	10	20 ml.
Each	....	....	....	....	d 7/-	d 8/6



BP98



BP100

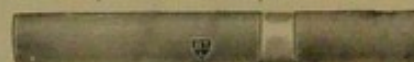
BP98 Syringe for Mercurial Cream, all glass, 2 ml., with 2 platinum-iridium needles in case d £1 1 0

BP100 Syringe, all glass, 2 pieces, with steel needles, in metal case.

Capacity	1	2	5	10	20	30 ml.
Each	d 4/6	d 5/3	d 8/9	d 10/6	d 13/-	d 19/6



BP101-BP102



BP104

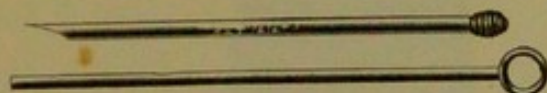
BP101 Injection Syringe, capacity 50 grammes, with three nozzles with taps, all nickel-plated d £1 10 0

BP102 Injection Syringe, " 100 " " " " " d £1 17 6

BP104 Syringes, glass, best English make " " " " each 1 oz. d 8d.; 2 oz. d £0 1 0

BP106 Syringes, glass, best English make, as above, but with cocus mounts and rubber bands.

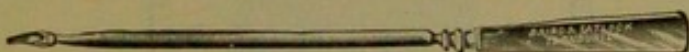
Size	1	2 oz.
Price	d 6d.	d 8d. each.



BP108



BP109



BP112



BP113

BP108 Cannulae, Robertson's, for drawing blood, $9 \times \frac{1}{4}$ in., all steel, nickel-plated " " b £0 10 6

BP109 Cannulae, for drawing blood, as used at Pasteur Institute, India, steel, nickel-plated.

Stem	100 x 4 mm.	100 x 5 mm.
Price	d 4/6	d 5/- each.

BP110 Needles, Lumbar Puncture, Barker's " " " " each b £0 5 6

BP111 Needles, Lumbar Puncture, White-Jeanselm. A.—With platinum needle " b £2 10 0

B.—With nickel needle " " b £0 9 0

BP112 Trocar and Cannulae, Dr. Turnbull's pattern, for veterinary work, etc., nickel-plated.

Length of trocar	$5\frac{1}{2}$	4 in.
Diameter of trocar	$\frac{3}{8}$	$\frac{1}{8}$ "
Price	d 30/-	d 25/- each.

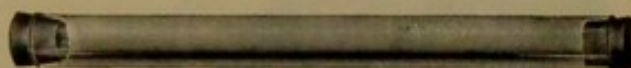
BP113 Grinding Wheel for hypodermic needles, etc., $1\frac{1}{4}$ in. diam., mounted on stand with water motor " " b £2 15 6

BP114 Grinding Wheel as above, mounted on wood base with electric motor and regulating rheostat " " b £4 7 6

BP115 Arkansas Stone, curved, for sharpening needles " " each d £0 1 9



BP116



BP118

BP116 Catheter Boxes, enamelled iron, $16 \times 3\frac{1}{8} \times 2$ in. b £0 9 0

BP118 Catheter Tubes, glass, 18 in. long, with I.R. corks.

Diameter	.....	$\frac{5}{8}$	$\frac{7}{8}$	1	$1\frac{1}{4}$ in.
Price	.....	b 1/3	b 1/6	b 1/9	b 3/- each.

India-rubber Corks. A full description and illustrations of all sizes and shapes are given in Section III.

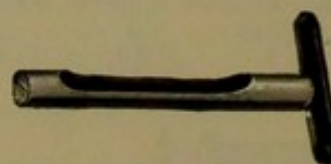
Rubber Tubing, for sterilizing, and to withstand boiling; any of the rubber tubing catalogued in Section III will be suitable.



BP120



BP122



BP124

BP120 India-rubber Caps, for tubes, flasks, etc., of best quality rubber, hand made.

Diameter	$\frac{1}{16}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	2 in.
Per dozen	b 1/6	b 1/6	b 1/7	b 1/9	b 1/11	b 2/-	b 2/-	b 2/6	b 3/-	b 3/9

BP122 India-rubber Caps, black, tall shape, for test tubes, etc. per doz. b 1/6; per gross b £0 17 0

India-rubber Caps for bottles, see Section III.

BP124 Potato Borer, for cutting sections of potatoes each b £0 3 6



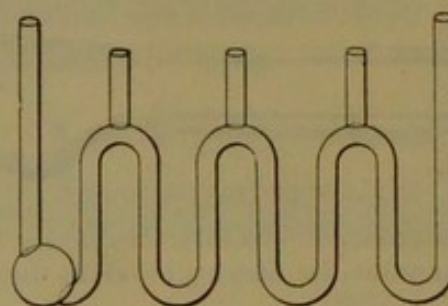
BP126-BP127



BP129



BP132



BP134

BP126 Roux's Potato Tubes, size above constriction, 7×1 in. per doz. d 6/6; per gross d £3 10 0

BP127 Roux's Potato Tubes, " " $6 \times \frac{7}{8}$ " " d 5/-; " d £2 17 6

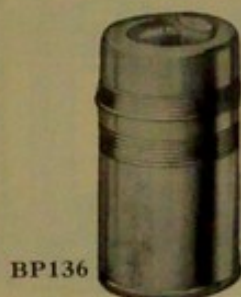
BP129 Buchner's Tubes, size above constriction, 8×1 in., without inside tubes or I.R. corks. per doz. b £0 8 6

BP130 Buchner's Tubes, size above constriction, $10 \times 1\frac{1}{8}$ in., without inside tubes or I.R. corks. each b 1/8; per doz. b £0 19 0

BP132 Bulloch's Tubes, total length, $8 \times \frac{3}{4}$ in., 6 in. below constriction, for sealing off permanent cultures in formalin each b 8d.; per doz. b £0 7 6

BP134 Serpent Tubes, as designed by Dr. T. A. Starkey, for the isolation of Typhoid and Colon Bacilli from drinking waters, etc. each b £0 5 0

(See "American Journal of the Medical Sciences," July, 1906.)



BP136



BP140

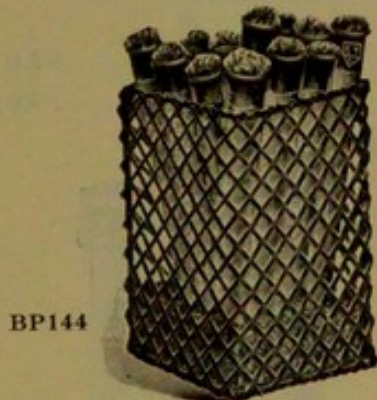
BP136 Vacuum Flasks for holding blood in transit.

Size	.....	$\frac{1}{2}$	1	2 pint.
Price	.....	d 8/6	d 11/6	d 14/- each.

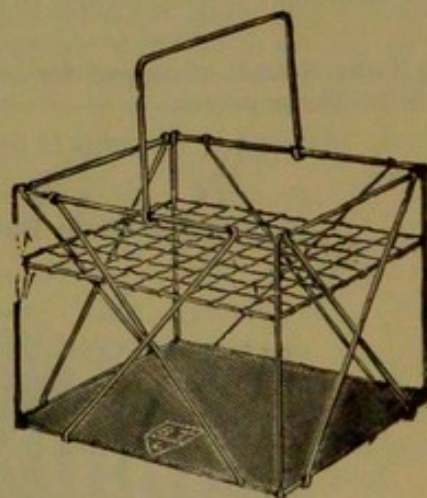
BP138 Wicker Baskets for carrying blood flasks d 3/6 d 4/- d 5/6 ..

BP140 Bottles for storing Media, with stoneware stopper, clip and rubber washer.

Capacity	.....	125	250	500	1000 ml.
Price	.....	b 4/6	b 5/-	b 6/-	b 8/6 per doz.
		b 50/-	b 56/-	b 66/-	b 84/- per gross.



BP144



BP147

BP144 Baskets, flat iron wire, $\frac{3}{8}$ in. square mesh, tinned, without joints at sides.

A.	$6\frac{1}{4} \times 4 \times 2\frac{3}{4}$ in. inside	.....	each b 2/4 ; per doz.	b £1 5 0
B.	$5\frac{1}{4} \times 3\frac{3}{4} \times 3\frac{3}{4}$ .. ..	.....	.. b 2/4 ; ..	b £1 5 0
C.	$6 \times 6 \times 6$ .. ..	.....	.. b 3/- ; ..	b £1 13 0

Any other size made to order.

BP146 Baskets of Tinned Copper wire (Fig. BP144), specially recommended for use with dangerous cultures, the baskets being thoroughly well made.

A.	Size $6\frac{1}{4} \times 4 \times 2\frac{3}{4}$ in. inside	.....	each b 4/- ; per doz.	b £2 5 0
B.	.. $5\frac{1}{4} \times 3\frac{3}{4} \times 3\frac{3}{4}$ .. ..	.....	.. b 4/- ; ..	b £2 5 0
C.	.. $6 \times 6 \times 6$ .. ..	.....	.. b 4/6 ; ..	b £2 10 6

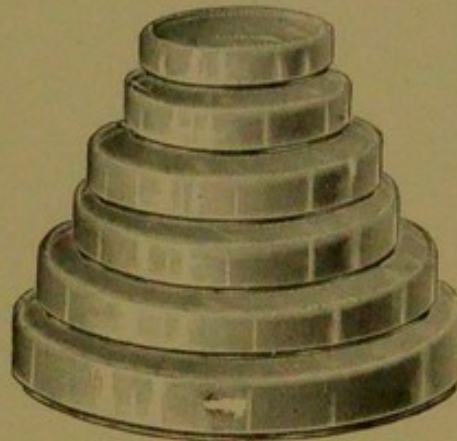
BP147 Baskets for test tubes, with handle to fold down, $\frac{7}{8}$ in. mesh.

For	.....	36	72	144 tubes.
A.	Galvanized iron	b 6/9	b 8/3	b 10/- each
B.	Copper	b 8/3	b 12/-	b 17/6 ..

B. T. L.

BAIRD & TATLOCK (LONDON) LTD., 14-17 CROSS ST., HATTON GARDEN, LONDON, ENG. 

PETRI DISHES

Petri Dishes

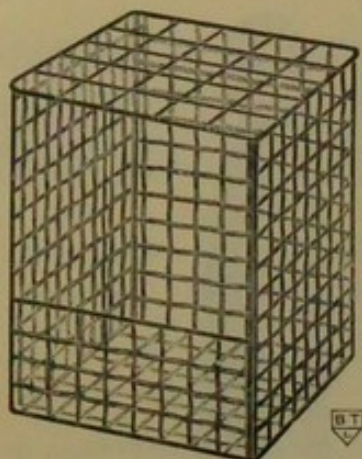
BP162

†*BP162 **Petri Dishes**, in pairs, for cultures, bottom dish 15 mm. deep, specially selected for freedom from striae and air bubbles and similar defects likely to interfere with accurate counting of colonies. Edges ground smooth and both top and bottom of dish flat and uniform in thickness. The dishes are well annealed and of good quality hard glass withstanding B.S.I. sterilization tests in autoclave and hot air sterilizer.

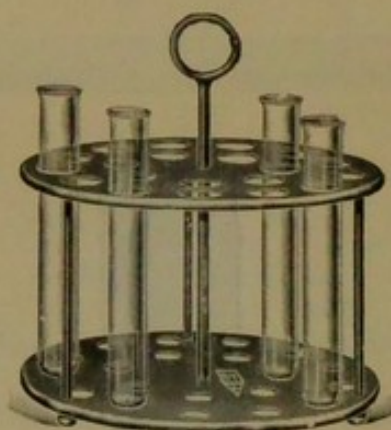
Diam. of bottom dish	2"	2½"	3"	3½"
	p 9/6	p 10/-	p 11/6	p 11/6 doz.
	p 11d.	p 1/-	p 1/1	p 1/1 each.
Diam. of bottom dish	4"	4½"	6"	9"
	p 12/-	p 16/6	p 22/6	p 50/- doz.
	p 1/2	p 1/6	p 2/-	p 4/6 each.

Discount of 10% allowed off gross lots.

†*BP165 **Petri Dishes**, pressed glass, in pairs, bottom dish 15 mm. deep, good quality, to withstand sterilizing. Diameter of top dish 4" s 8/- doz. s 90/- gross



BP148



BP150

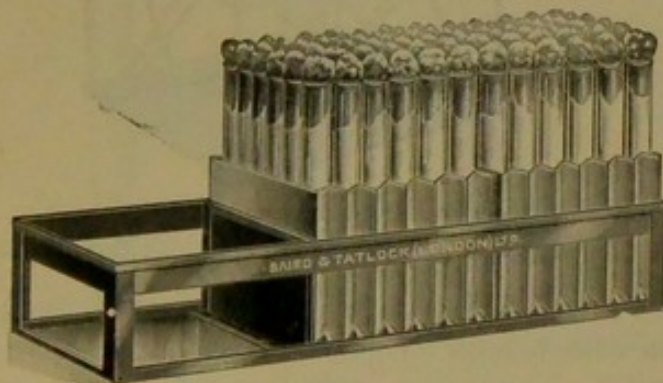
BP148 Basket, for test tubes, new and improved type, suggested by Professor J. R. Kay-Mouat, M.A., M.Sc., M.B., B.Ch., D.P.H., Professor of Physiology and Pharmacology, King Edward VII College of Medicine, Singapore; makes a strong appeal to the busy pathologist or bacteriologist, who has to make a large number of routine examinations, there being no need to mark each tube before placing in the incubator. Each basket has 25 partitions and when placed, as it always should be, with the open front facing the observer the top left-hand partition is No. 1 and the bottom right-hand one No. 25. In a short time any tube may be picked up at random and its number instantly known without the trouble of looking for a mark which may be partially obliterated. Size $5\frac{3}{4} \times 3\frac{3}{4} \times 3\frac{3}{4}$ in., with open front and top divided to take 25 tubes, in tinned steel wire, $\frac{3}{8}$ in. square mesh

each d £0 2 6

BP150 Test Tube Stand, of copper, for immersion in water bath, with holes numbered, and hole for thermometer.

A. Diameter 5 in., with 12 holes for $\frac{5}{8}$ in. tubes	....	....	....	....	b £0 6 0
B. " 7 $\frac{1}{2}$ " " 24 " " $\frac{3}{4}$ " "	....	....	....	....	b £0 7 6

For Water Bath, see Section II. No. SC1816.



BP152



BP154

BP152 Test Tube Containers and Rack, as used by Dr. Benians, Prince of Wales Hospital, Tottenham, copper stand, with 18 paper containers, each to hold 6 tubes d £0 10 6

Test Tube Racks for Wassermann baths. See page 1995, Section XXV.

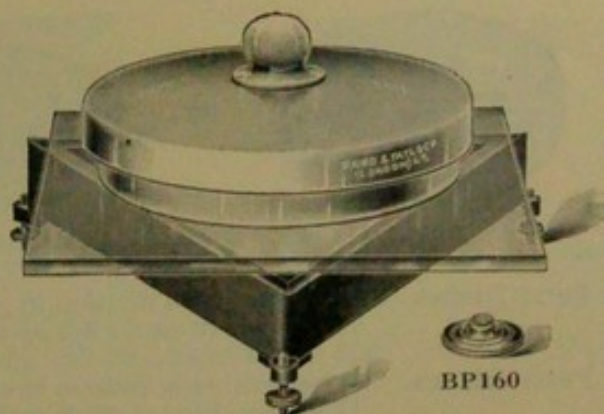
Test Tube Stands, Wooden. See Section III.

***BP154 Glass Jars** for storing tubes of media, etc., fitted with aluminium covers.

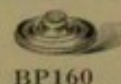
Size	....	$8 \times 4\frac{1}{2}$	$9 \times 5\frac{1}{2}$ in.
Price	....	b 2/9	b 3/6 each.



BP155

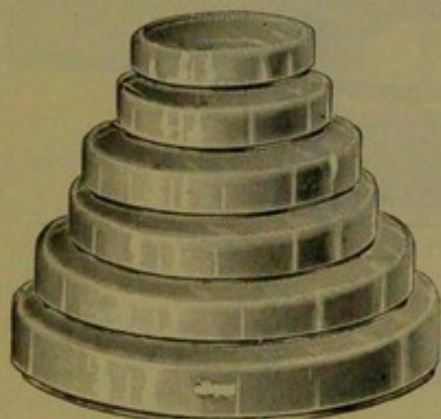


BP156

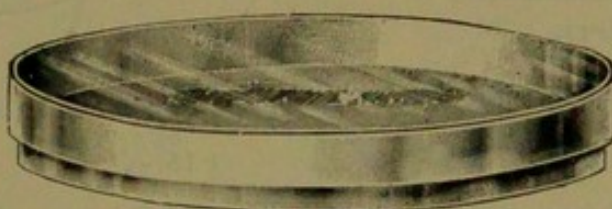


BP160

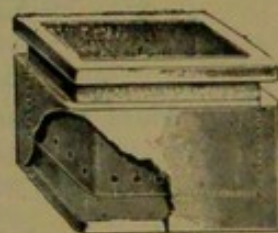
- *BP155 Glass Jar, $8 \times 5\frac{1}{2} \times 3$ in., with aluminium covers, for storing bandages, tubes, etc. each b £0 9 0
- BP156 Tripod Levelling Stand, of polished hard wood, with brass adjusting screws (glass plate, spirit-level and basin, as illustrated, extra). (See Nos. BP158-BP160.) each b £0 15 0
- BP158 Glass Plate, for tripod stand, $12 \times 12 \times \frac{3}{8}$ in., polished edges b £0 6 0
- BP160 Circular Level, for tripod stand, $\frac{3}{4}$ in. diameter (SC5594) d £0 2 6



BP162-166



BP168



BP170

- *BP162 Petri Dishes, in pairs, for cultures, bottom dish 15 mm. deep, of neutral glass to withstand sterilizing at 150° C.
- | | | | | | | | | |
|----------------------|--------|----------------|--------|----------------|--------|----------------|--------|--------|
| Diam. of bottom dish | 2 | $2\frac{1}{2}$ | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ | 6 | 9 in. |
| Per doz. pairs | b 10/- | b 10/- | b 12/- | b 14/- | b 16/- | b 18/- | b 25/- | b 60/- |
- *BP163 Petri Dishes, in pairs, as above, top dish polished.
- | | | | | | |
|----------------------|-------|-------|--------|----------------|--------|
| Diam. of bottom dish | ..... | ..... | 3 | $3\frac{1}{2}$ | 4 in. |
| Per doz. pairs | ..... | ..... | b 17/- | b 20/- | b 22/- |
- *BP164 Petri Dishes, in pairs, flat surface with sharp corners.
- | | | | | |
|----------------------|-------|-------|--------|--------|
| Diam. of bottom dish | ..... | ..... | 87 | 95 mm. |
| Per dozen pairs | ..... | ..... | b 8/3 | b 9/- |
| Per gross | ..... | ..... | b 80/- | b 96/- |
- BP166 Petri Dishes, in pairs, British resistance glass.
- | | | | | |
|----------------------|--------|----------------|--------|--------------------|
| Diam. of bottom dish | 3 | $3\frac{1}{2}$ | 4 | $4\frac{1}{2}$ in. |
| Per dozen pairs | a 10/- | a 11/- | a 12/- | a 14/- |
- BP167 Petri Dishes, of amber glass, at 25 per cent. advance on any of above prices, to order only.
- *BP168 Petri Dishes, large size, as used by the Pasteur Institute of India, etc., bottom dish 22 cm. diameter by 22 mm. deep per doz. pairs b £3 0 0
- BP170 Troughs of glazed fireclay for placing on Bacteriological Bench, as devised by Mr. Coram of the Clinical Research Association, size of outer trough $7 \times 5 \times 5$ in. per pair d £0 17 6

These troughs have been devised to hold cultures, which have to be destroyed in antiseptic solution; the outer trough contains the fluid, and the inner is perforated near the bottom and is provided with flange at top to rest on outer trough. There is a saving of fluid, as the inner trough can be lifted out of solution, contents destroyed, and then trough replaced in the same solution.



BP172



BP173

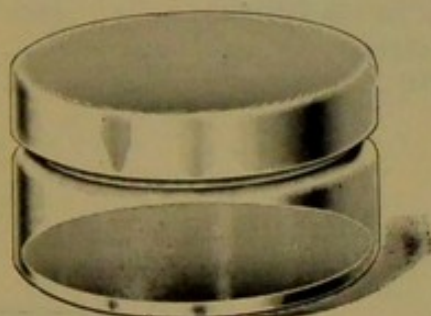


BP174

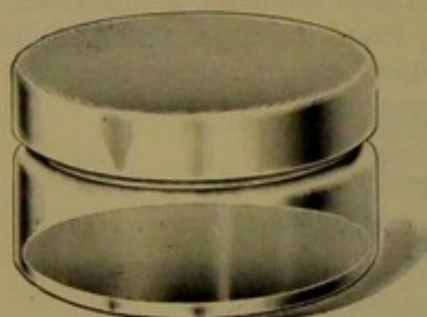
*BP172 Petri Dishes, new pattern with division in centre of bottom dish making 2 compartments.
Diameter, 10 cm., *b* 2/3 each. Diameter, 22 cm., *b* 9/6 each.

*BP173 Petri Dishes, new pattern with division in centre of bottom dish making 4 compartments.
Diameter, 12 cm., *b* 2/9 each. Diameter, 22 cm., *b* 10/6 each.

*BP174 Petri Dishes, new pattern with division in centre of bottom dish making 3 compartments.
Diameter, 12 cm., *b* 2/6 each.



BP176



BP178

*BP176 Glass Basins, strong, with drop-on covers.

Diameter, external	2	3½	4	4¾ in.
Price per doz.	<i>b</i> 11/6	<i>b</i> 15/-	<i>b</i> 17/-	<i>b</i> 24/-

*BP178 Glass Basins, strong, with covers ground to fit.

Diameter, external	.....	2	2¾	3½ in.
Price per doz. ....	.....	<i>b</i> 20/-	<i>b</i> 27/-	<i>b</i> 33/-



BP180



BP182



BP184

*BP180 Watch Glasses, Solid, Professor Minot's pattern, for staining cover glasses, etc., 2 in. diameter internal, 2½ in. external per doz. *b* £0 6 6

BP182 Glass Capsules or Pots, shallow, clear glass.

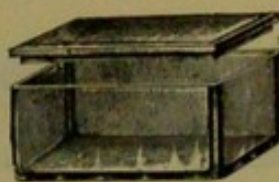
Diameter	.....	1½	2	2½	3	4	6 in.
Price per doz. ....	.....	<i>b</i> 4/6	<i>b</i> 5/-	<i>b</i> 5/3	<i>b</i> 5/6	<i>b</i> 8/-	<i>b</i> 16/-

*BP184 Glass Sporulating Dishes, flat, with grooved cover ground to fit.

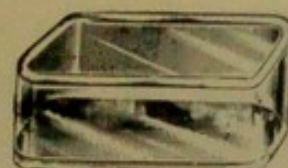
Diameter	.....	1	1½	2 in.
Depth	.....	¾	1	1¼ "
Price per doz. ....	.....	<i>b</i> 16/-	<i>b</i> 20/-	<i>b</i> 24/-



BP186



BP187

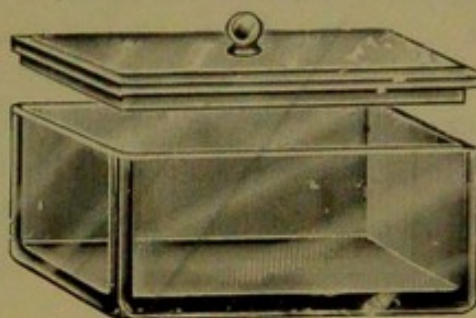


BP188

- *BP186 Glass Trough, $4 \times 2 \times 1\frac{3}{8}$ in. inside, with drop-on lid, for staining slides each b £0 8 0
- *BP187 Glass Boxes, rectangular, with glass cover, $5 \times 2 \times 2$ in. ,, b £0 6 0
- *BP188 Glass Basins, Oblong, for Eye Hospitals, $38 \times 65 \times 25$ mm. high each b 10d. ; per doz. b £0 9 0



BP190



BP192



BP194

- *BP190 Glass Troughs or Boxes, Rectangular, of stout glass.

Length	.....	15	25	32	30 cm.
Width	.....	10	15	16	20 "
Height	.....	6	15	12	15 "
Price	.....	b 3/6	b 8/6	b 9/6	b 13/6 each.

- *BP192 Glass Boxes, with cover provided with knob.

Length	16	16	22	25	32 cm.
Width	9	9	11	16	22 "
Depth	4	9	11	12	19 1/2 "
Price	b 8/6	b 9/6	b 17/6	b 27/6	b 32/6 each.

- *BP194 Glass Jars, with ground-on cover, $4 \times 3\frac{1}{2}$ in., for preserving ligatures, etc., in antiseptic solution each b 6/- ; per doz. b £3 9 0



BP196-BP198



BP200



BP202

- BP196 Porous Blocks for Sporulating, conical shape, as used by brewers, $1\frac{3}{16}$ in. top by $\frac{1}{2}$ in. deep per doz. b £0 2 6
- BP198 Porous Blocks for Sporulating, conical shape, as used by brewers, $1\frac{1}{8}$ in. top by $\frac{3}{4}$ in. deep per doz. b £0 3 0
- *BP200 Glass Basins, with bell covers with knob fitting outside.
- | | | | | |
|----|--|-------|----------|----------|
| A. | $6\frac{1}{2} \times 3$ in. size of inside basin | ..... | per pair | b £0 4 0 |
| B. | 9×2 in. ,, ,, ,, | ..... | ,, | b £0 6 0 |
| C. | 9×3 in. ,, ,, ,, | ..... | ,, | b £0 7 0 |

- *BP202 Glass Basins, with bell covers fitting inside, same sizes and prices as No. BP200.



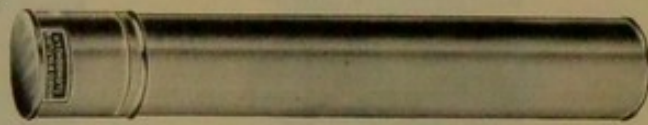
BP204



BP206



BP208



BP210

*BP204 Glass Basins, with bell covers (without knob), fitting outside, top covers polished.

A. $6\frac{1}{2} \times 2$ in. size of inside basin	....	....	....	per pair	b £0 5 0
B. $8\frac{1}{2} \times 2\frac{1}{2}$ in. " " "	....	....	....	"	b £0 6 6

*BP206 Glass Blocks, square, with excavation and covers.

A. $1\frac{1}{2} \times 1\frac{1}{2}$ in. ....	....	....	....	per doz.	b £0 8 0
B. $2\frac{3}{8} \times 2\frac{3}{8}$ in. ....	....	....	....	"	b £0 13 6

*BP208 Glass Blocks, black, $1\frac{1}{2} \times 1\frac{1}{2}$ in., with excavation and clear glass covers b £0 10 0

BP210 Boxes, Copper, for sterilizing pipettes. Size, A. $15 \times 2\frac{1}{4}$ in. diameter each b £0 6 6

BP211 Boxes, Copper, " " " " B. $18 \times 2\frac{1}{2}$ in. b £0 7 0



BP214-BP216

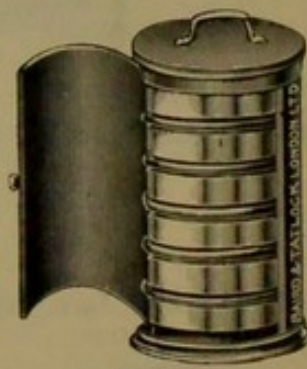


BP218



BP220

(Regd. design No. 663336).



BP222

BP214 Boxes for sterilizing pipettes, etc., $12 \times 3 \times 3$ in.

A. Iron	....	....	....	each	b £0 7 0
B. Copper	....	....	....	"	b £0 12 0

BP216 Boxes for holding glass plates.

Size of plates	....	$4\frac{1}{2} \times 3\frac{1}{4}$ in.	$6\frac{1}{2} \times 4\frac{3}{4}$ in.
A. Iron	....	each b 6/-	each b 7/-
B. Copper	....	" b 9/-	" b 11/-

BP218 Boxes, Copper, with lifter for sterilizing Petri dishes. Size, $10 \times 4\frac{1}{2}$ in. each b £0 11 0

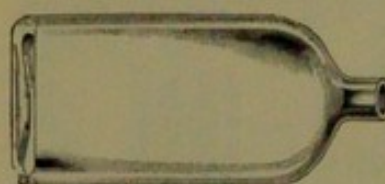
BP219 Boxes, Copper, with lifter, similar to Fig. BP218, for sterilizing glass capsules. Size, $7 \times 2\frac{1}{4}$ in. each b £0 9 0

BP220 Petri Dish Box, double jacketed for hot water, to carry $3\frac{1}{2}$ in. dishes, as used in the C.S.F. Laboratory, Millbank each b £1 15 0

BP222 Sterilizing Box, of copper, circular, with hinged doors and shelves for holding six Petri dishes b £1 7 6



BP223



BP226



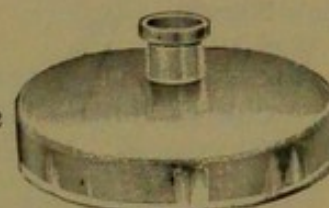
BP228-BP229

BP223	Sterilizing Box, of copper, square form	.....	.....	.....	.....	b £1 6 0
BP226	Culture Flasks, Roux's pattern, Pyrex resistance glass, 1000 ml. capacity	.....	per doz.	.....	.....	b £1 12 6
BP228	Culture Flasks, conical shape, with flat bottom, 1000 ml. capacity	.....	.....	.....	.....	b £1 16 0
BP229	Culture Flasks, as above, 500 ml. capacity	.....	.....	.....	.....	b £1 7 0

BP230



BP232



*BP230 Bottles, thin glass, for cultures.

Capacity	.....	.....	.....	.....	50	100 ml.
Price per dozen	.....	.....	.....	.....	b 8/6	b 9/6

*BP232 Flasks, with flat bottoms, for cultivation of bacteria in water.

Capacity about	.....	.....	.....	500	1000	1500 ml.
Diameter	.....	.....	.....	5½	6½	8 in.
Price per dozen	.....	.....	.....	b 20/-	b 30/-	b 35/-



BP234



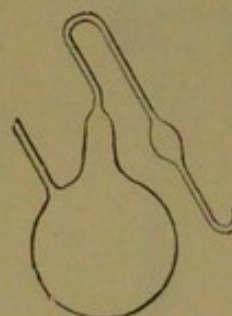
BP236



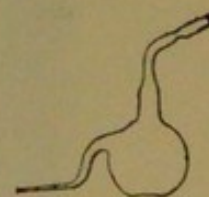
BP238



BP239



BP240



BP241

*BP234	Soyka's Flat Bottles, for cultivations, polished flat both sides, 6 cm. diameter	each	b £0 1 0
*BP236	Soyka's Flat Bottles, for cultivations, 7 cm. diam., with one side divided into sq. cm.	b £0 7 0	

BP238 Pasteur's Flasks, with ground cap.

Capacity	.....	.....	.....	.....	50	100 ml.
Price	.....	.....	.....	.....	b 1/6	b 1/9 each.

BP239 Pasteur's Flasks.

Capacity	.....	.....	.....	125	500 ml.	1 litre
Price	.....	.....	.....	b 1/2	b 2/6	b 3/6 each.

BP240 Pasteur's Flasks.

Capacity	.....	125	250	500 ml.	1	2 litre.
Price	.....	b 1/6	b 2/-	b 3/6	b 5/-	b 7/6 each.

BP241 Pasteur's Flasks.

Capacity	.....	.....	125	250	500 ml.	1 litre.
Price	.....	.....	b 1/6	b 2/-	b 3/6	b 5/- each.



BP242



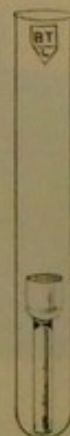
BP244



BP248



BP250



BP260

BP242 Pasteur's Test Tubes, $6 \times \frac{3}{4}$ in., with ground-on cap per doz. b £0 15 0

BP244 Lister's Flasks.

Capacity	.....	$\frac{1}{2}$	$\frac{3}{4}$	1	litre.
Each	.....	b 2/6	b 3/6	b 4/6	

*BP248 Novy's Culture Bottles, for bacteria.

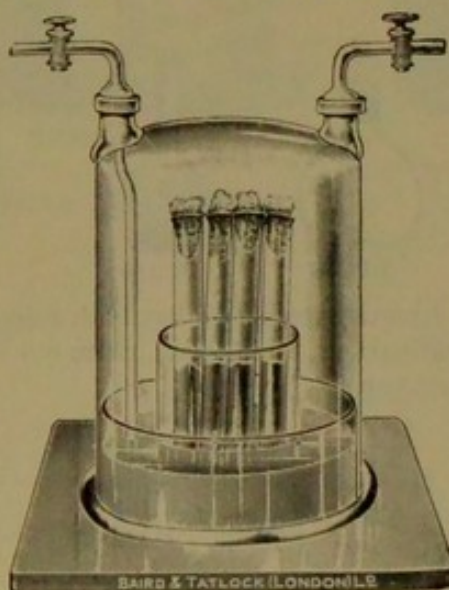
Height to neck	.....	15	20	centimetres.
Diameters	.....	8	10	"
Price	.....	b 17/6	b 21/-	each.

*BP250 Novy's Culture Apparatus, for anaerobic plate cultures, internal diam. 5 in. each b £1 15 0

BP257 Durham's Fermentation Tubes. Size, $2 \times \frac{3}{8}$ in. per gross b £0 4 11

BP260 Duke's Fermentation Tubes, designed so that carbohydrates may be separated from proteins during sterilization, preparatory to the treatment of the fermentation of carbohydrates by bacteria in the presence of peptone. (See "Proc. Roy. Soc. of Med.," 1923, Vol. XVI, pp. 13-16.) per gross b £1 0 0

ANAEROBIC APPARATUS.



BP264

*BP264 Dr. Bulloch's Apparatus for obtaining plate cultures or surface growths of obligate anaerobic bacteria each b £1 17 6

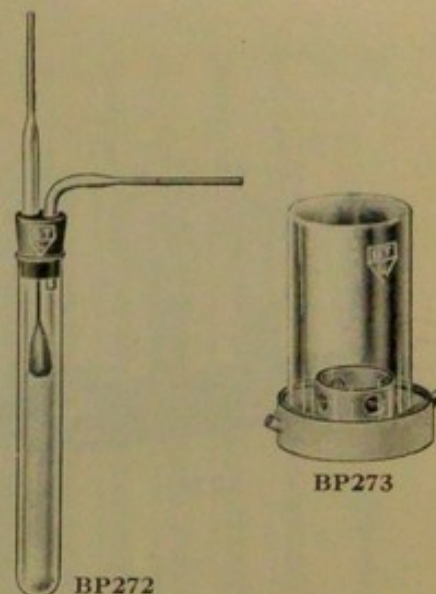
(See "Centralblatt für Bacteriologie," 1900, XXVII, p. 440.)



BP268



BP270



BP272



BP273

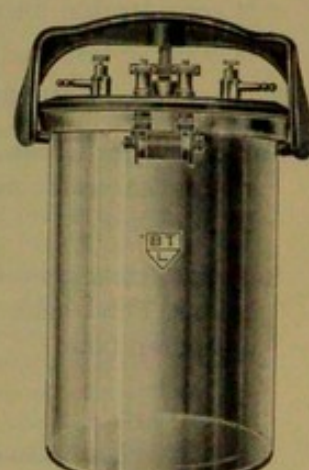
- BP268 McLeod's Anaerobic Apparatus, with porcelain dish with partition in centre and glass cover each b £0 10 6
- BP270 Dr. McGowan Anaerobic Apparatus, complete with glass cover „ b £0 10 9
- BP272 Anaerobic Apparatus, McIntosh and Fildes', for single test tubes (see "Medical Research Committee Report," No. 12), complete with palladium asbestos cage b £0 7 6
- BP273 Apparatus for obtaining plate cultures of anaerobes, as described by J. W. Wilson in "Jour. of Path. and Bact.," Vol. XXVIII, No. 4, 1925. Complete with glass cylinder b £3 7 6



BP274

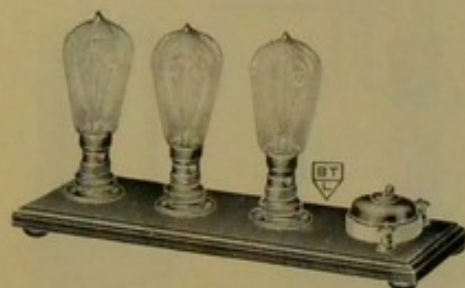


BP275



BP276

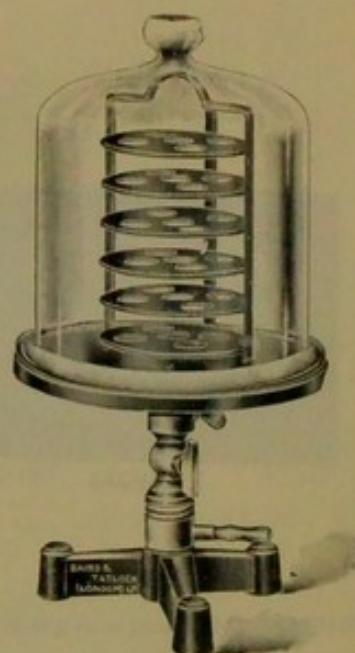
- BP274 McIntosh and Fildes' Anaerobic Apparatus, tinned iron each b £0 7 6
(See Medical Research Committee's Special Report Series, No. 12.)
- BP275 McIntosh and Fildes' Anaerobic Apparatus, with glass jar b £0 7 6
- BP276 McIntosh and Fildes' Improved Anaerobic Jar (see "Experimental Pathology," June, 1921.) The apparatus consists of a glass jar with metal cover and binding clamp, ensuring an absolutely tight joint, two valves, electric heater and palladium-asbestos of specified percentage; each apparatus is tested under actual working conditions in a pathological laboratory each a £3 15 0
- BP279 McIntosh and Fildes' Improved Anaerobic Jar, as above, but with aluminium jar in place of glass jar each a £4 5 0



BP280



BP284



BP286

- BP280** Resistance for McIntosh and Fildes' Anaerobic Apparatus BP276-BP279, complete with three suitable carbon filament lamps passing 100 watts, enabling the apparatus to be used on lighting circuit b £1 10 0

Please state voltage when ordering.

- BP281** Resistance, as above, but with additional sliding resistance for use in places where there is considerable fluctuation in the voltage, complete on wooden base with ammeter reading to 1 amp. b £5 15 0

- BP282** Resistance, as BP281, but without ammeter b £4 2 6

- *BP284** Jar of Brown Glass, Dr. Shattock's pattern, 8 in. high by $4\frac{1}{2}$ in., with lid ground on, for storing anaerobic cultures in Petri dishes; with tinned iron frame to hold six $3\frac{1}{2}$ -in. Petri dishes each b £1 2 6

- BP286** Bell Jar, clear glass, 9×6 in., with ground flange and knob, fitted with copper rack for holding Petri dishes, etc., for use on air pump plate, size, $8\frac{1}{2}$ in. Price with rack (without pump plate) each b £1 5 0

For Pump Plate, see Section II, No. SC2876.

STERILE CULTURE MEDIA.

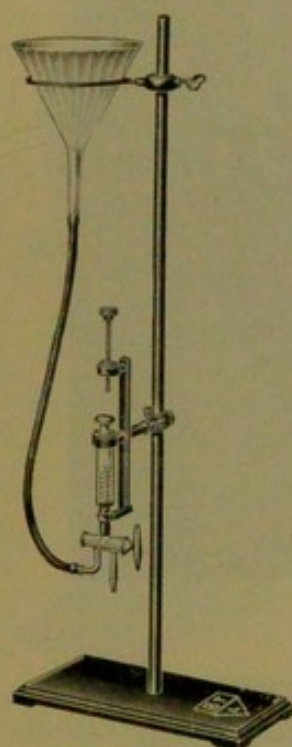
Special Media prepared to order.

Also for

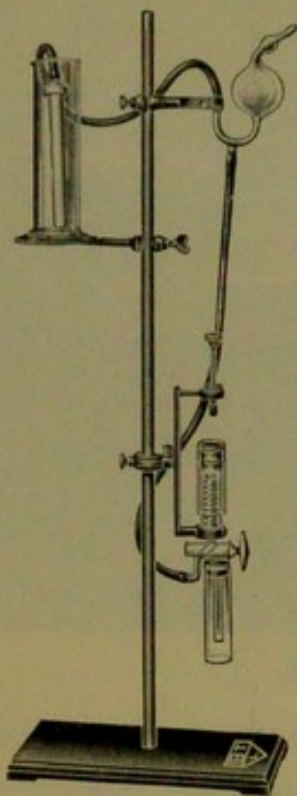
"Difco" Products. Test Papers. Sugars.

See Chemical Section, XXXI.

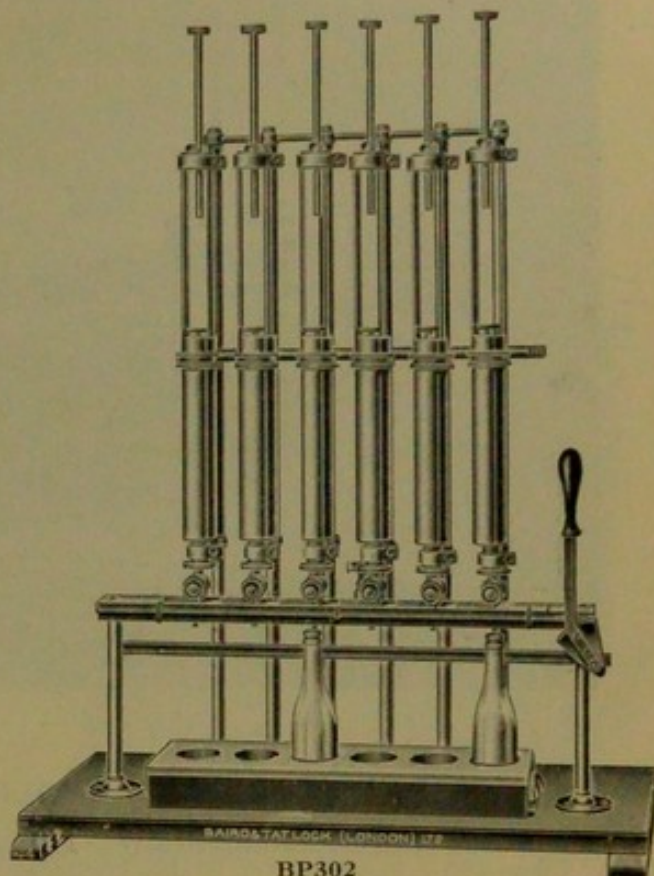
AUTOMATIC FILLING APPARATUS.



BP300



BP301

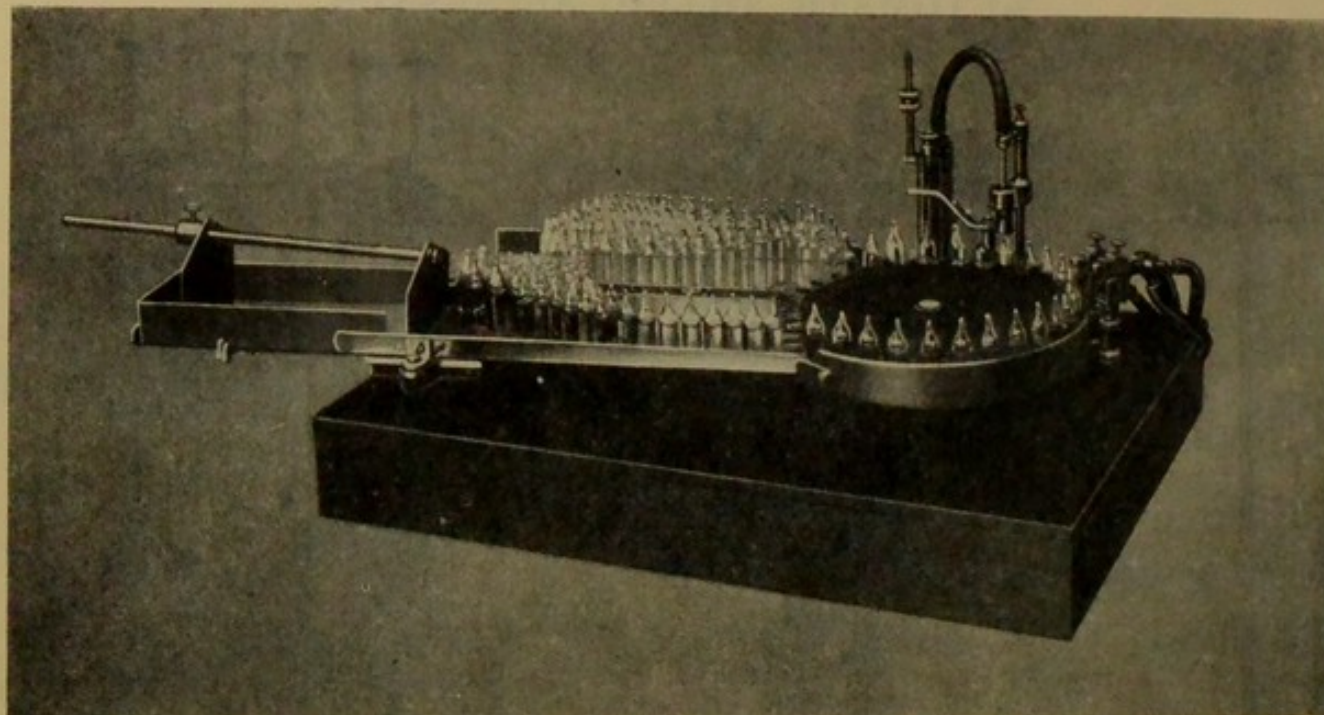


BP302

Ayling's Automatic Fillers, for measuring and delivering standard quantities of liquids.

The apparatus consists of a syringe into which fluid flows from an elevated reservoir and which empties itself under the weight of the falling plunger. Two forms of the apparatus are made: Fig. BP300 shows the simplest form, the one which is most generally useful, *e.g.* for filling media tubes, etc., and Fig. BP301 a form adapted for sterile work, *e.g.* where a fluid needs to be filtered. In this case the whole of the apparatus is dismantled from the stand, filter, Cobbett flask and filler all being connected up and autoclaved together. When the filtered liquid has passed into the Cobbett flask the filter is clamped off and then the suction tube is disconnected. The filler now comes into use. If air bubbles appear in the syringe, they are readily eliminated by first filling the filler and then turning it and its mount about the central swivel. This brings the nozzle of the syringe uppermost, and when the plunger is pressed home the air passes into the reservoir tube and away up through the filtrate. The double-hooded pipette is an advantage because the double hood protects the delivery nozzle from all contact with test tubes, and it ensures the fluids being cleanly delivered. A very thin film of liquid paraffin well rubbed into the surface of the plunger and barrel will make for smooth working. Melted agar and gelatine are readily tubed by its means, and provided that fresh hot supplies are available it will continue working indefinitely without clogging. The amount of fluid measured and delivered can be regulated by adjusting the screw on top of the holder. The stock size will deliver any quantity up to a maximum of 10 ml., but any other size can be made to order. (Reference, "The British Journal of Exper. Pathology," 1924, page 354.)

BP300	Ayling's Filling Apparatus, simple form, as figured, 10 ml. capacity	....	....	£2 17 6
BP301	Ditto, for sterile liquids	....	....	£4 17 6
BP302	Batteries of Fillers, worked on Ayling's principle, as described above, can be erected with any number of units each capable of delivering a measured quantity of fluid up to a maximum of 500 ml. The stopcocks are worked by rack and pinion and so arranged that they are turned synchronously by the movement of a single operating handle. The illustration shows a battery designed for the purpose of filling 250 or 300 ml. of serum into standard size bottles	....	....	£75 0 0



BP303

THE "AUTOROTA" AMPOULE FILLING AND SEALING MACHINE.

Works entirely automatically. Fills and seals 1200 "Trident" ampoules per hour.

Fills—1 or 2 ml., exact quantity—
dry necks.

Seals—cleanly—no cracks.

Self-contained.

Electrically Driven—A.C. or
D.C.

Simple in Working.

Skilled Operator Unnecessary.

Very Economical.

*BP303 The "Autorota" Ampoule Filling and Sealing Machine illustrated above is the latest type of ampoule filling and sealing machine.

The machine portrayed is built to deal with 1 and 2 ml. "Trident" ampoules (BP304).

The rate at which the machine works depends upon the preparation filled, the maximum efficient speed being 1200 ampoules per hour.

It is important to note that the machine can only be efficiently run used in connection with "Trident" ampoules, which are entirely machine made and therefore of a particularly uniform nature.

This machine is self-contained inasmuch as all that is required is the electric current, A.C. or D.C., 220 volts; and ordinary town gas for the burners. The machine is driven by a small electric motor and the speed is controlled by resistance. When running, the machine also operates a small compressor which supplies the necessary air for the burners.

It is economical to run and shows a definite advantage over the usual methods of hand filling.

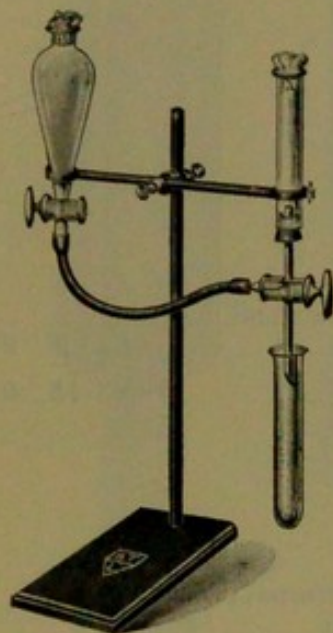
The actual running of the machine may be performed by unskilled labour—in fact two machines may comfortably be attended to by the same person, as once the machine is properly set there is very little to do except to feed in the empty and take away the filled and sealed ampoules.

The adjustments which are necessary to alter the machine from 1 to 2 ml. or vice versa are quite simple, but must naturally be carried out in a systematic and careful manner.

Price complete as detailed £156 10 0
Ex Works Price for Export only RM 1875

*BP304 "Trident" Ampoules, made of Jena neutral glass, machine made and therefore of a specially uniform nature, for use with above filling machine, packed in cartons of about 100 each.

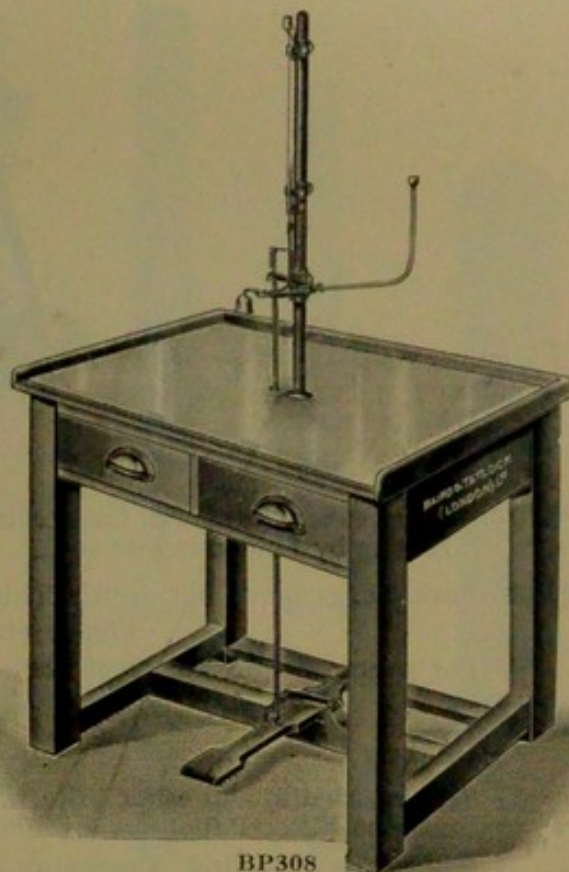
		1	2 ml.
A. White	.....	£ 3/9	£ 4/3 per gross.
B. Amber	.....	£ 4/6	£ 5/- "



BP305

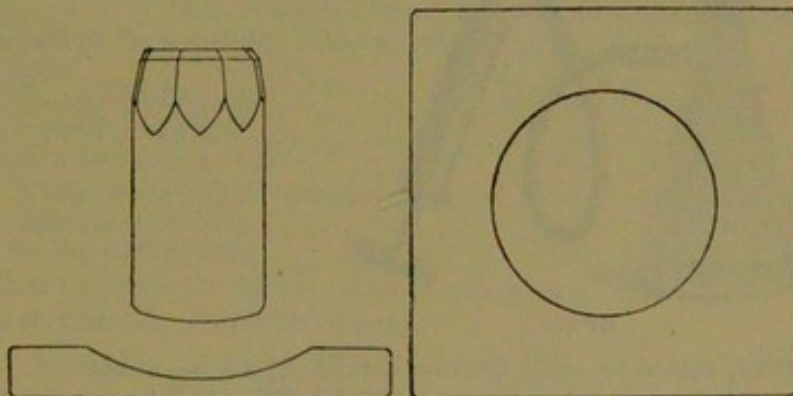


BP306



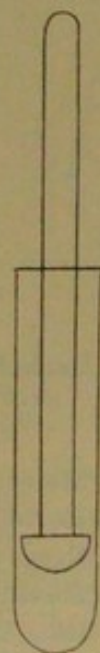
BP308

- BP305 Media Filling Apparatus** with reservoir, capacity 300 ml., graduated tube marked at 5, 10, 15, 20 and 25 ml. and three-way tap. Complete with stand *b* £1 5 0
- BP306 Tube Filler**, to prevent the medium contaminating the mouth of the test tube, complete with clip *b* £0 4 6
- BP308 Automatic Filler for filling Ampoules, Bottles, etc.**, as made by us for use in the Pathological Laboratory, Cambridge; the filler is capable of fine adjustment, so that doses within $\frac{1}{8}$ ml. can be easily measured and automatically filled *d* £18 18 0



BP310

- BP310 Hayden's Bacteriological Mortar.** The pestle is ground to the same curvature as the bowl of the mortar so perfectly that when clean, Newton's rings are visible *e* £1 5 0
- BP311 Griffiths Tube**, with pestle, for grinding bacterial emulsions; very suitable for breaking up tuberculous nodules. Bottom of tube and end of pestle are ground inside. Size of tube, $3 \times \frac{1}{8}$ in. each *d* £0 3 6



BP311



BP320

BP320 Small Furnace, tubular, for sterilizing, 7 x 1 in. or 8 x 1 in. filter candles, on stand, for heating by Bunsen burner d £2 5 0

BP322 Furnace, as above, but electrically heated. Consumption 400 watts d £3 15 0

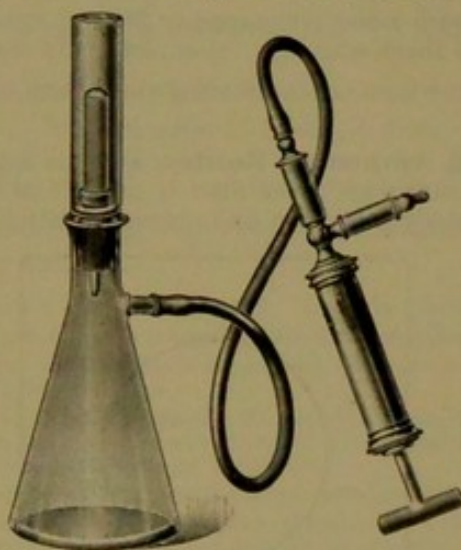
Please state voltage when ordering.

For other Muffle Furnaces for sterilizing candles, see Section II.

FILTERS.

Serum, Media, and other Filters, including Vacuum Filters, Geryk Pumps, etc., as also Filter Papers, will be found fully described in Sections II and III.

For Large Filtering Apparatus and High Pressure Filters, see Section II.

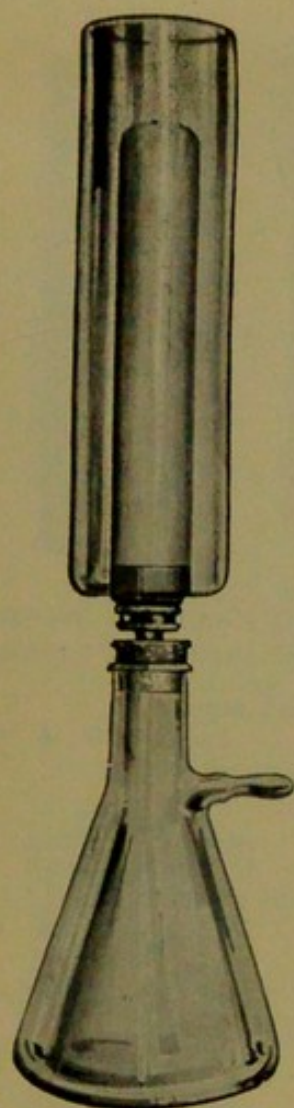


BP324

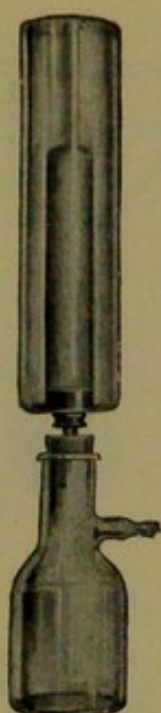
BP324 Berkefeld Filtering Apparatus, complete, with filtering candle, $2\frac{1}{4} \times \frac{5}{8}$ in., container, vacuum flask, and exhaust pump d £1 5 0

Prices of Separate Parts of BP324.

BP325 Metal Pump	.....	d £0 15 0
*BP326 Porous Filter	.....	d £0 3 6
BP327 Reservoir	.....	d £0 2 6
BP328 Flask with Side Tube (see SC4630)	.....	b £0 2 0
BP329 I.R. Tubing (see SC6526)	.....	b £0 1 0
BP330 I.R. Cork (see SC4150)	.....	b £0 0 7



BP332



BP333



BP334



BP335



BP336



BP337



BP338



BP339

GENUINE BERKEFELD FILTERS.

Supplied in three grades, viz. : Normal porosity (N) ; Fine porosity (W) ; Coarse porosity (V).
Only N grade is stocked ; W and V grades supplied to order.

*BP332 Berkefeld Laboratory Filters, original make.

Size	.....	.....	.....	La 1	La 2	La 2a	La 2b	La 3	La 3a
Capacity of Mantle	.....	.....	.....	2.4	0.8	0.5	0.2	0.06	0.03 litres.
Capacity of Flask	.....	.....	.....	2	1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Complete Apparatus	.....	d 23/3	d 16/3	d 12/6	d 9/6	d 8/9	d 7/9	each.	each.
A. Flask, with Rubber Stopper only	.....	d 6/6	d 4/-	d 3/-	d 3/-	d 3/-	d 3/-	d 3/-	..
B. Glass Mantle only	.....	d 6/9	d 4/9	d 3/9	d 3/-	d 2/-	d 1/6	..	..
C. *Filter Candle only	.....	d 10/-	d 7/6	d 5/9	d 3/6	d 3/9	d 3/3	..	..

*BP333 Filter Candle, 15 x 3 $\frac{3}{4}$ cm., with porcelain ring

*BP334 Filter Candle, with metal mount.

No.	10	10 $\frac{2}{3}$	10 $\frac{1}{3}$	10 $\frac{1}{6}$
Size	20 x 2 $\frac{1}{2}$	13 x 2 $\frac{1}{2}$	6 $\frac{1}{2}$ x 2 $\frac{1}{2}$	3 $\frac{1}{2}$ x 2 $\frac{1}{2}$ cm.
Price	d 7/6	d 5/9	d 4/-	d 3/6 each.

*BP335 Filter Candle, with porcelain mount and connection for tubing.

20 x 2 $\frac{1}{2}$	13 x 2 $\frac{1}{2}$	6 x 2 $\frac{1}{2}$	3 $\frac{1}{2}$ x 2 $\frac{1}{2}$ cm.
d 6/6	d 4/9	d 3/9	d 3/3 each.

*BP336 Filter Candle, with metal mount

6 x 1 $\frac{1}{2}$	3 x 1 $\frac{1}{2}$ cm.
d 3/9	d 3/3 each.

*BP337 Filter Candle, with glass mount, 6 x 1 $\frac{1}{2}$ cm.

each d £0 3 3

*BP338 Filter Candle, with porcelain ring, 6 x 1 $\frac{1}{2}$ cm.

.. d £0 3 3

*BP339 Filter Candle, with metal mount, 26 x 5 cm.

.. d £0 10 0

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Page 1893



BP348



BP350

- *BP344 Chamberland's Porous Filter Tubes, 8 x 1 in. with porcelain flange and nipple
each d £0 4 6

These filters are stocked with normal grain (porosity F) and with closer grain (porosity B)
but unless otherwise ordered porosity F will always be supplied.

- *BP346 Chamberland's Porous Filter Tubes, 6 x 1/2 in. with porcelain flange and nipple
each d £0 4 6

- *BP348 Chamberland's Porous Filter, 8 x 1 in., mounted in metal tube with tap to fit to
water supply each d £1 4 0

- *BP350 Klein's Laboratory Filter, 1-litre capacity, fitted with Pasteur-Chamberland filter tube
(No. BP344) each d £4 10 0

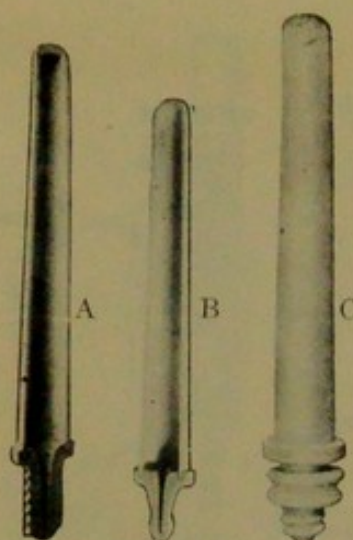
- *BP352 Pasteur-Chamberland Laboratory Filter Tubes, as specified below each d £0 3 6

The special laboratory bougies are made in nine graduated porosities, L-1, L-1a, L-2, L-3, L-5, L-7, L-9, L-11 and L-13. They are approximately 150 mm. long, 10 mm. internal dia., and 3 1/2 mm. thick, enamelled at the open or upper end for a distance of 45 mm. They have no flange or nozzle, the user cementing them into some fitting suitable for his particular purpose, with a suitable cement such as red lead and glycerine.

The most porous (L-1) allows all microbes to pass, being merely a clarifying filter, the next two (L-1a and L-2) arrest the largest microbes and allow the smaller ones such as that of peripneumonia to pass, the next (L-3) arrests the diphtheria bacillus and tetanus spore, and the others are true filters with decreasing sizes of pores, L-5 being of the same porosity as the Pasteur-Chamberland "F" Bougie, and L-7 the same porosity as the "B" Bougie.

See figure BP370 for illustration.

- BP353 Pasteur-Chamberland Filter Tubes, as above, porosities L-1, L-1a, L-2 and L-3,
small size approximately 75 mm. long and 15 mm. outside diameter, enamelled at the
open part for a distance of 45 mm. each d £0 3 6



BP354

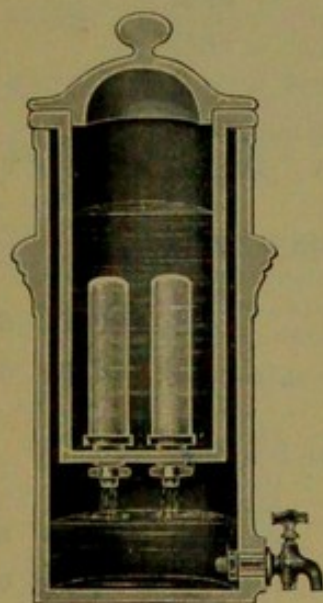


BP355

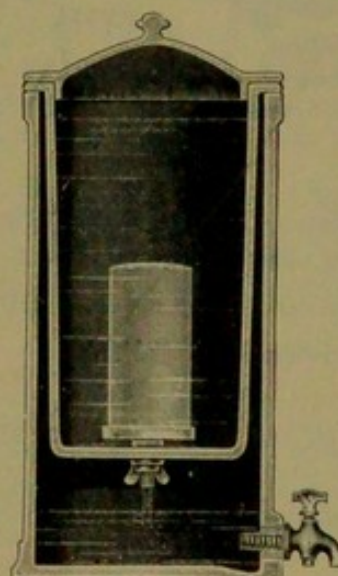
BP354 Doulton's Germ-Proof Filters, 8 x 1 in., with nipples A, B or C patterns each d £0 6 9

BP355 Doulton's Filter Candles.

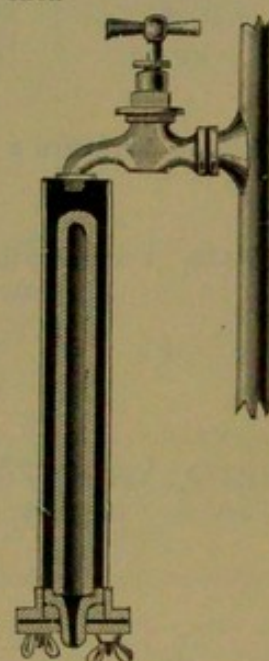
Inside size	38 x 78	18 x 90	24 x 160	18 x 88 mm.
Price	d 6/-	d 4/9	d 8/6	d 4/9 each



BP356



BP358



BP362

BP356 Drip Filter, manufactured in strong cream glazed stoneware, and combining strength, simplicity, efficiency and good appearance. All fittings chromium plated. Capacity 3 gallons. No. of cylinders 2, yield per 24 hours 6 gallons each d £1 6 6

BP357 Spare Cylinders for above, size 7 x 2 in. each d £0 5 0

BP358 Drip Filter, as above, in best white English Ironstone China, glazed and finished. All fittings chromium plated. Owing to the size of filtering cylinder used gives a large output of pure sterile water. Capacity 1½ gallons, No. of cylinders 1, yield per 24 hours 5 gallons each d £1 12 0

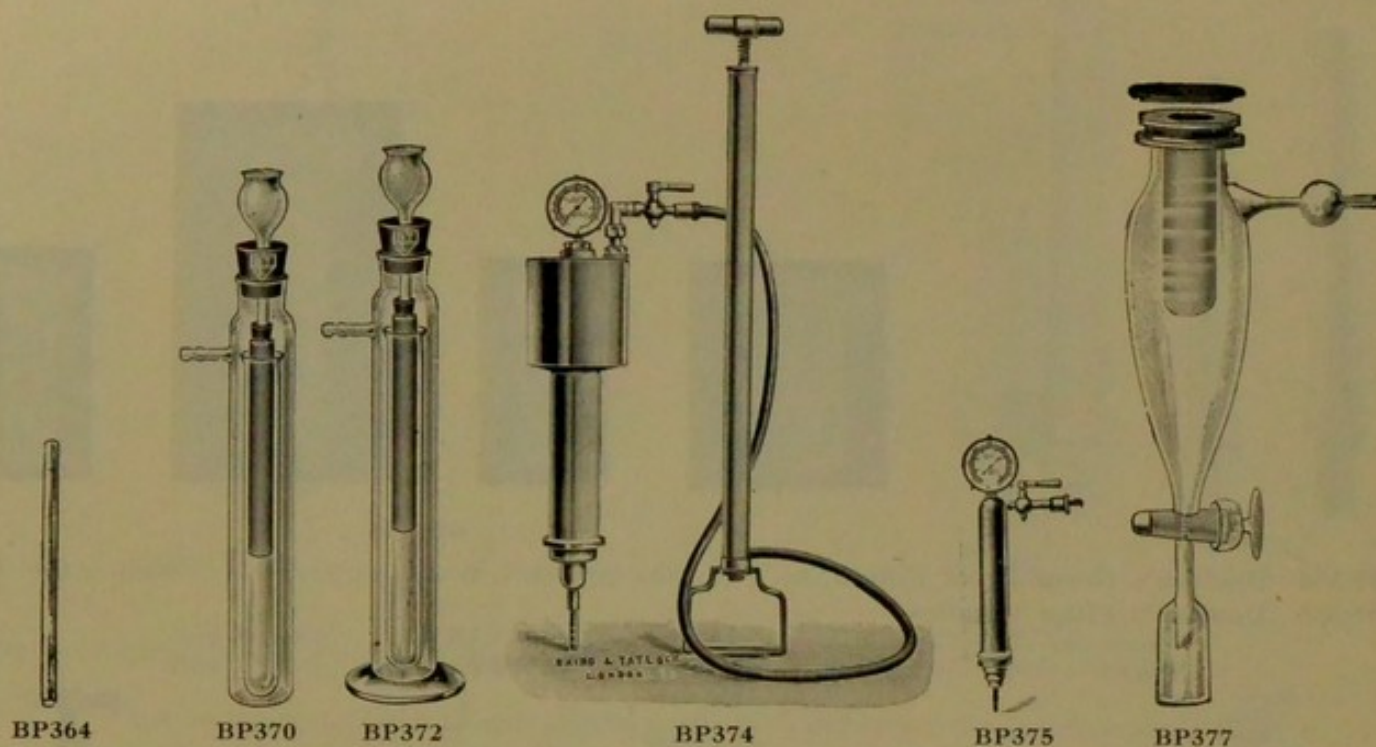
BP359 Spare Cylinders for above, size 5½ x 3 in. each d £0 7 0

Prices of other sizes on application.

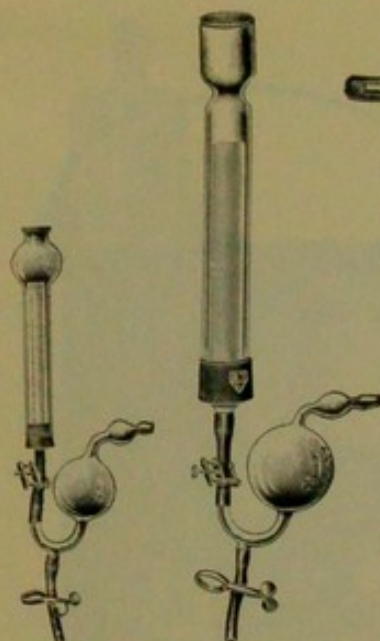
BP362 House Pressure Filters, for use with ordinary main service pressure of 45 lbs. per square in. With a new and properly cleaned cylinder gives an output of approx. 6 gallons per hour each d £1 1 0

BP363 Spare Cylinders for above, size 8 x 1 in. d £0 4 0

Stoneware Vacuum Filter, see Section III, page 508.

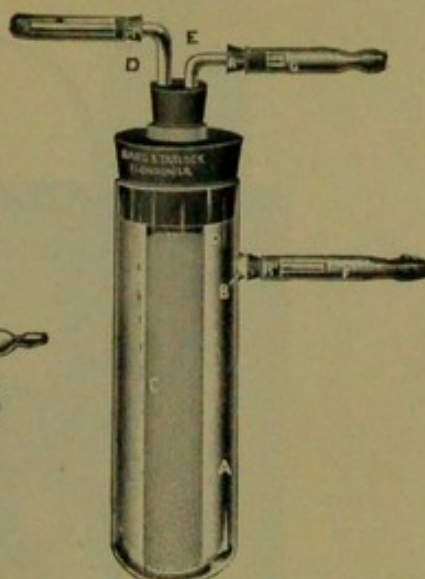


- *BP364 Kitasato's Porous Tubes**, for filtering, 15 cm. long, 1 cm. external diam., 5 mm. bore
each $d \frac{1}{3}$; per doz. $d \text{ £0 } 14 \text{ } 0$
- BP370 Vaccine Filter**, Martin's, complete as illustrated (see "Bacteriophage and its Behaviour," by Dr. F. d'Herelle, page 22). Price including candle—
- | | | | | |
|---|-------|-------|-------|-------------------------------|
| A. Suitable for L.3 filter candles 7.5 cm. long (BP353) | ..... | ..... | ..... | $b \text{ £0 } 11 \text{ } 6$ |
| B. Taking filter candle 16 cm. long (BP352) | ..... | ..... | ..... | $b \text{ £0 } 13 \text{ } 6$ |
- BP372 Vaccine Filter**, as illustrated, on heavy glass sole, as supplied to the Haffkine Institute, Bombay, etc.
- | | | | | |
|---|-------|-------|-------|-------------------------------|
| A. Price including candle, small size, as above | ..... | ..... | ..... | $b \text{ £0 } 15 \text{ } 6$ |
| B. " " large " " | ..... | ..... | ..... | $b \text{ £0 } 18 \text{ } 0$ |
- BP374 Dr. Houston's Pressure Filter**, with Pasteur-Chamberland Porous Candle fitted into nickel-plated brass vessel, capacity 1 litre, with pressure gauge, stopcock, foot force pump, and rubber tube connections, to work up to a pressure of three atmospheres. Each $c \text{ £8 } 10 \text{ } 0$
- BP375 Dr. Houston's Pressure Filter**, small size, for filtering toxins, with Pasteur-Chamberland Porous Candle, $6 \times \frac{1}{2}$ in., fitted into nickel-plated brass vessel, to hold 100 ml. with pressure gauge, stopcock and force pump, and rubber connections, to work up to a pressure of three atmospheres
- | | | | | |
|-------|-------|-------|-------|-------------------------------|
| | | | | $b \text{ £6 } 10 \text{ } 0$ |
|-------|-------|-------|-------|-------------------------------|
- *BP377 Massen's Filtering Apparatus**, capacity 500 ml. complete with porous filter and india-rubber cap
- | | | | | |
|-------|-------|-------|-------|-------------------------------|
| | | | | $b \text{ £1 } 10 \text{ } 0$ |
|-------|-------|-------|-------|-------------------------------|

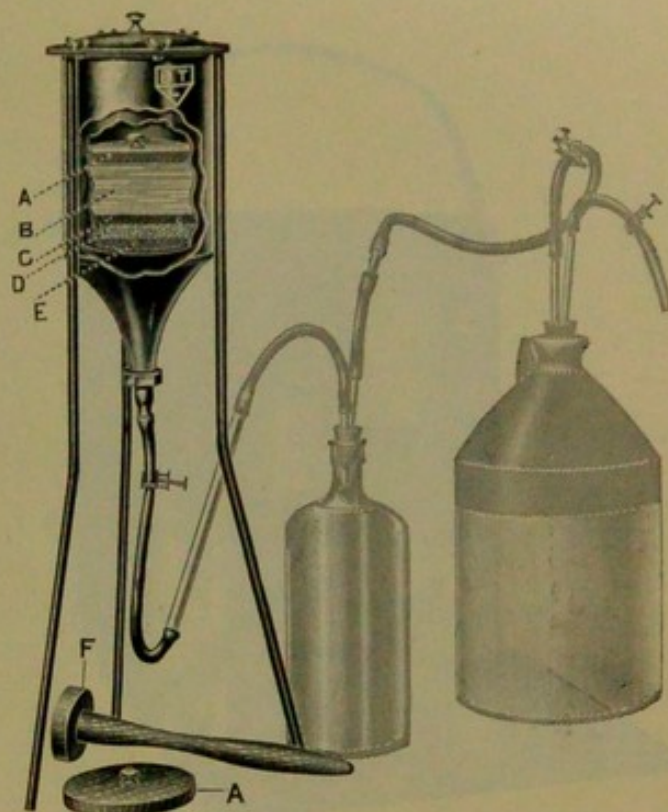


BP380

BP381



BP382



BP384

BP380 Cobbett's Filtering Apparatus, with
Kitasato's Candle (Fig. BP364) £0 10 6

BP381 Cobbett's Filtering Apparatus, with
Chamberland-Pasteur Candle (BP344) £0 17 6

BP382 Dr. Paine's Laboratory Filter, mounted complete with filter candle as shown.

A.

Candle, $5\frac{1}{2} \times \frac{1}{8}$ in. £ 12/6

B.

Candle, 6×1 in. £ 17/6

BP384 Filtering Apparatus, for culture media, as devised by Messrs. Thompson and Chard.
The apparatus is designed for the purpose of holding filter paper pulp in such a way that
as much as possible of the under surface of the pulp should be free for the passage of the
filtered material

£ 27 10 0

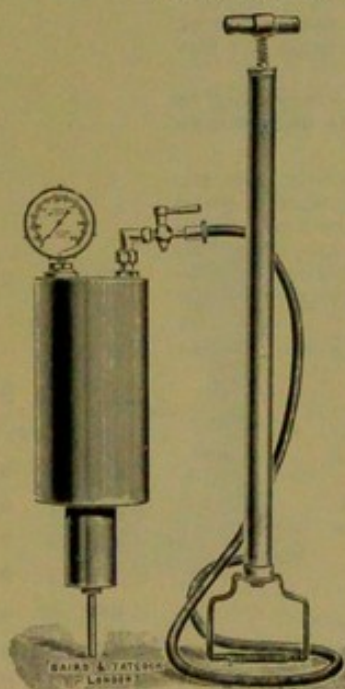
INSTRUCTIONS FOR USE.

Preparation of the filter :

1. For a filter of six inches diameter 4 oz. of dry filter paper pulp is broken up in about two litres of water. It is then reduced to a state of very fine division by the hands, or with a whisk.
2. Pour the prepared pulp into the filter holder and allow the superfluous water to drain away.
3. Connect to the exhaust pump and filter-bottle. Exhaust gently in the meanwhile pressing the pulp down firmly and evenly with the rammer (F) until no more water is drawn through.
4. Cover the pulp (D) with about one inch of washed sand (C).
5. Place the float (A) on the sand. The float is of service because fluids poured on to the float do not disturb the surface of the sand.
6. Draw through about a pint of water (hot water if jellies are to be filtered, to clear away any fragments of pulp which may have escaped through the gauze. (See Fig. No. E.) When the water reaches the surface of the sand, clamp the tube connecting the filter with the exhaust pump.
7. Disconnect the filter-bottle or flask, empty the bottle and reconnect to the filter. The filter is now ready for use. The foregoing procedure should not take longer than 10 to 15 minutes.

Procedure for filtering :

1. Pour the fluid to be filtered on to the float, until the filter is full. If a jelly is to be filtered, replace the remainder in the steamer till there is room in the filter.
 2. Connect exhaust bottle by unscrewing clamp and exhaust gently. The water which was held in the pulp will come through first. By observing the glass connection G, the filtrate can easily be seen to follow the water which was held in the pulp.
- At this point clamp off, empty filter bottle, reconnect, and exhaust again gently. With a properly made filter 5 to 6 litres of agar can be filtered in half an hour without the addition of egg albumin.
- By preparing the filter with two layers of pulp and sand alternately, bacterially contaminated fluids or broth cultures can be freed of at least 90 per cent. of bacteria. When such fluids have to be passed through a germ-proof filter, a preliminary passage through a pulp filter represents a great saving of time, and also the number of filter candles necessary.



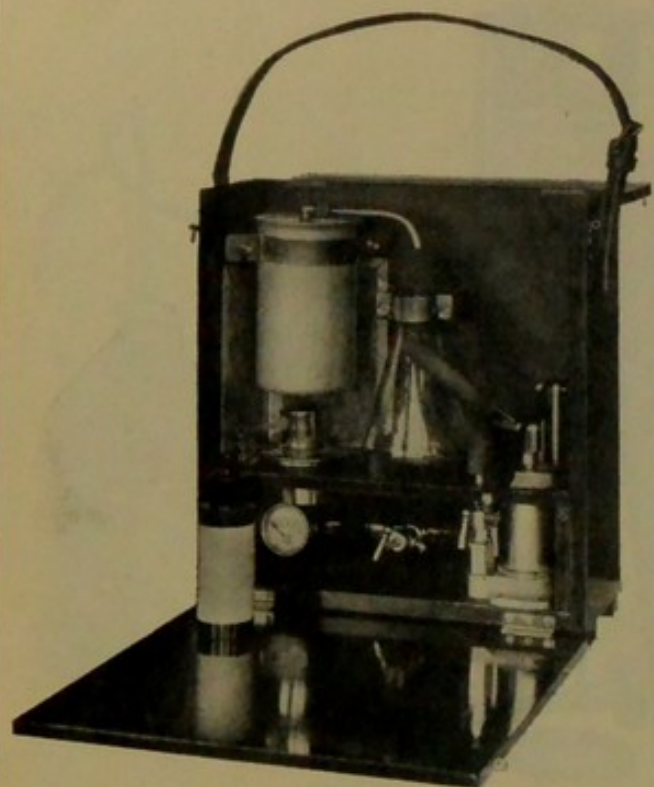
BP385

BP385 Pake's Pressure and Vacuum Filter, for use with porous
candle, vessel containing $2\frac{1}{2}$ litres, with pressure gauge and
force pump

£ 8 10 0

(See description, "Public Health Journal" for March, 1900, page 423.)

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(1) Filtering a sample using the Brass Filter.
The spare Ebonite Filter is in the foreground.



(2) Cleaning the Brass Filter by Reversal
with Compressed Air.

BP386

BP386 Stream-Line Filter, Portable Trial Outfit.

The high efficiency of the Stream-Line Filter as a means for removing the smallest particles of impurity from a liquid is generally appreciated. Its suitability for use in connection with any particular problem may be tested by means of a single short filter column, and the use of such a unit in the laboratory is simplicity itself.

Often, however, it would be more convenient and convincing to carry out tests in the works or elsewhere rather than to submit samples to a laboratory, and for this purpose the portable set has been devised.

The set is the size only of a small attaché case, and is easy to carry. It includes everything to make the testing of samples, even those which require heating, a matter which can be undertaken without any accessories.

The outfit includes two filters for use alternatively, according to the nature of the liquid to be dealt with, one being of ebonite and the other of brass. An aluminium beaker is provided to hold the liquid to be filtered, and a glass vacuum flask to receive the filtrate. Either filter may be connected to the vacuum flask, which is evacuated by means of a few strokes of a hand-pump secured in the casing. A spirit lamp heats the prefilter in cases where this is necessary. When the rate of filtration has slowed up to such an extent that it becomes desirable to clean the filter in order to restore the rate, this is done by reversal with compressed air obtained from a pressure vessel included in the equipment and charged by the same pump as is used for creating vacuum.

The whole equipment is contained in a polished mahogany case only $12 \times 13 \times 5\frac{1}{2}$ inches when closed, and the complete outfit weighs under 17 lbs.

Price complete d £12 5 0

Accessories.

BP394 Ebonite Filter	.....	.....	.....	.....	.....	.....	d £0 13 6
BP387 Brass Filter	.....	.....	.....	.....	.....	.....	d £1 1 6
BP388 Aluminium Beaker	.....	.....	.....	.....	.....	.....	d £0 2 9
BP389 Glass Vacuum Flask	.....	.....	.....	.....	.....	.....	d £0 3 0
BP390 Spirit Lamp	.....	.....	.....	.....	.....	.....	d £0 5 6
BP391 Vacuum and Pressure Pump, with cock	.....	.....	.....	.....	.....	.....	d £4 9 6
BP392 Pressure Vessel, with cock	.....	.....	.....	.....	.....	.....	d £1 0 0
BP393 Gauge for pressure vessel	.....	.....	.....	.....	.....	.....	d £0 4 9

Refills for Filters, see BP396.



Fig. 1. Without Papers.

Fig. 2. Ready for use.

BP394-BP395

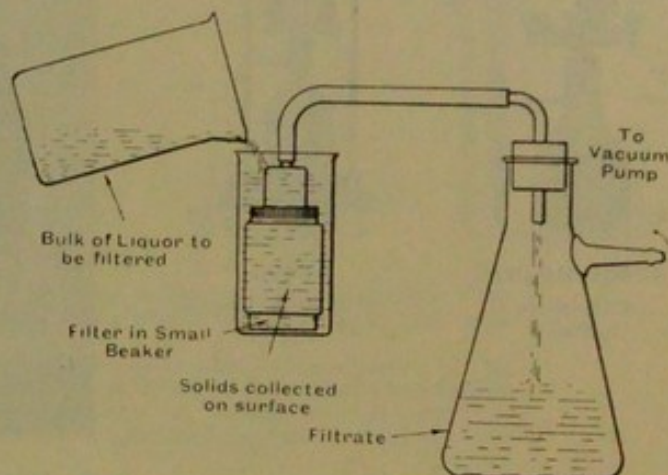


Fig. 3

BP394-BP395. Illustration shows method of use.

Stream Line Filter, Vacuum Model. This filter has the following advantages :

1. Immediate, perfect and rapid filtration.
2. Compact, sturdy and adaptable form.
3. Easy cleaning.
4. Long life of filter medium.

BP394	Filter only, of ebonite, complete with paper and one refill	.....	.....	.....	d £0 13 6
BP395	Filter, of hard porcelain, complete with paper and one refill	.....	.....	.....	d £0 16 6
BP396	Refills for above :				
	Grade A for oils and fine water filtration	.....	.....	each	d £0 1 0
	Grade D for general filtration	.....	.....	.....	d £0 1 3
	Grade E for aqueous liquids	.....	.....	.....	d £0 1 6
	Grade F for strong acids and alkalis	.....	.....	.....	d £0 1 6

Above prices do not include the fittings shown in right-hand illustration.

SEITZ LABORATORY FILTERS.

The Seitz Germicide Filters, particularly adapted for Serological Research laboratories, and for the commercial production of serum.

Filtering candles are not used in the Seitz process but the patented "Seitz-E.K." Sterilizing Films. These are soft filtering films, 3 mm. in thickness, which, like filter paper, are used only once until exhausted and then discarded. New films are used for each filtration. These films cannot be cleaned, but their price is such that their use is very economical.

The smallest laboratory filter is fitted with a "Seitz-E.K." Film of 3 cm. diameter, ensuring a negligible loss by absorption when small quantities are filtered. For commercial purposes filters can be supplied with a filtering capacity of 400 litres of serum a day. (See Section II, page 320, for particulars.)

The first figure in the various filter sizes indicates the diameter of films in cm., and the second figure the number of the films that are employed.



BP398 BP400

Left : Manteufel model.
Right : Uhlenhuth model.

***BP398 Seitz Laboratory Filter, Manteufel model, for negative pressure, silver plated, No. 3/1. Output of serum per day, 20-30 ml.**
Price without flask d £2 1 0

***BP399 Seitz Laboratory Filter, Manteufel model, for negative pressure, silver plated, No. 6/1. Output of serum per day, 100 ml.**
Price without flask d £2 7 6

***BP400 Seitz Laboratory Filter, Uhlenhuth model, for negative and positive pressure, silver plated, No. 6/1. Output of serum per day, 100 ml.** Price without flask d £3 12 6

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BP401-BP402
(with filling
funnel)



BP403
(with feed vessel
and stand)



BP404



BP406
"Seitz-E.K." Water
Sterilising Filter
size 14/1.

*BP401 Seitz Laboratory Filter, Uhlenhuth model, with funnel, silver plated, No. 14/1. Output of serum per day, $\frac{1}{2}$ gallon. Price without flask	.....	d £8 8 0
*BP402 Seitz Laboratory Filter, Uhlenhuth model, with funnel, tinned, No. 14/1. Output of serum per day, $\frac{1}{2}$ gallon. Price without flask	.....	d £8 8 0
*BP403 Seitz Laboratory Filter, Uhlenhuth model, with feed vessel and stand, silver plated, No. 14/1. Output of serum per day, $\frac{1}{2}$ gallon. Price without flask	.....	d £17 5 0
*BP404 Seitz Universal Laboratory Filter, with 2-litre feed vessel, No. 14/1.		
A. For alluviation	.....	d £13 16 0
B. For sheet filtration	.....	d £14 7 0
C. For alluviation and sheet filtration	.....	d £15 11 6

In the laboratory one is so often faced with many different types of filtration problems, that to solve them all satisfactorily it would be necessary to have a number of filters of varying type. The Universal Filter, illustrated here, overcomes this difficulty, as by the use of its various component parts according to the particular problem, filtrations of widely differing kinds, which each previously required a special filter, may be made.

With this filter liquids may not only be clarified but also freed from all disease germs, bacteria, micro-organisms, etc. It can also be used for straining, an important point when coarse impurities are to be removed (e.g. skin particles from liquids) and when straining oil colours, etc.

Filtration may also be carried out under pressure and, if required, liquids may be filtered hot.

Method of use and full particulars are given in special leaflet, which will be sent on request.

*BP405 Seitz Laboratory Water Filters, brass nickelled, No. 9/1. Output per hour, 2-2 $\frac{1}{2}$ gal.	d £1 11 9
*BP406 Seitz Laboratory Water Filters, brass nickelled, No. 14/1. Output per hour, 3-4 gal.	d £2 4 6
*BP407 Pressure Container, to work at three atmospheres, for use with above, capacity 5 litres	d £14 10 0
*BP408 "Seitz-EK" Asbestos Filtering Films. "Special Sterilizing" or "Sterilizing."	
The "Special Sterilizing" Films are recommended for use with sera and similar fluids whilst the "Sterilizing" are more useful with liquids of a viscous nature.	

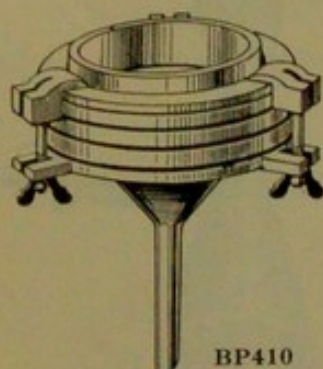
Size 3 cm., in box containing 25	.....	d £0 2 0
" 6 " " " 25	.....	d £0 3 3
" 14 " " " 25	.....	d £0 13 3

*BP409 "Seitz-K" Clarifying Asbestos Filtering Films.

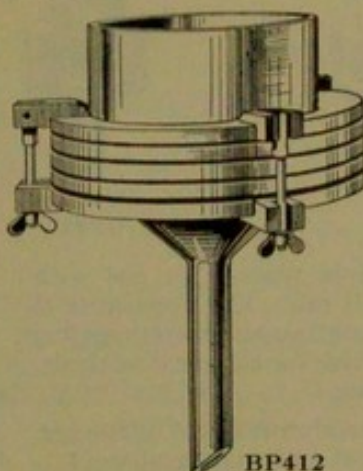
Size 3 cm., in box containing 25	.....	d £0 2 0
" 6 " " " 25	.....	d £0 2 11
" 14 " " " 25	.....	d £0 9 6

For Filtering Flasks, see SC4630, Section III.
Pumps for Pressure and Vacuum, see Section II.

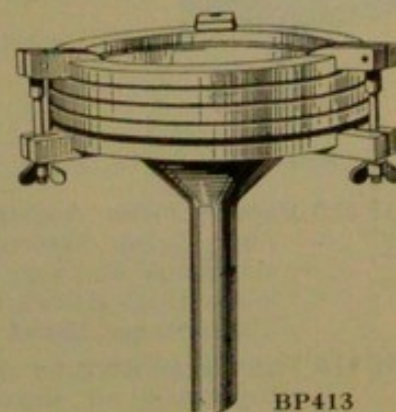
MEMBRANE AND ULTRA FILTERS.



BP410



BP412



BP413

ZSIGMONDY ULTRA FILTERS.

These filters possess a glazed flat surface so that any and every precipitate can be separated quantitatively. They are comparatively compact, combined with a certain elasticity so that the same filter may be used repeatedly. Although the pores are very fine, the filter has a rapid rate of filtration.

The filter apparatus are used with low pressure, that is to say, with a filter pump or other vacuum pump. On the funnel is the sieve plate or disc on which is placed a filter paper to ensure uniform distribution over the whole surface of the membrane, as without the paper the filtration would only take place through the perforations. The parts are made airtight by means of rubber washers, and the whole clamped together with a tightening ring and mounted in a filter pump flask or Wiggs filtering vessel which is then connected to the pump.

Three types of filters are employed, *viz.*, Membrane, Cellafilters and Ultrafine.

Membrane Filters correspond to Cellafilters in their porosity. Membrane Filters are classified "coarse," "medium" and "fine," and Cellafilters, "coarse," "medium," "fine" and "finest." With "coarse" filters one can filter fine kaolin suspensions, coarse hydroxides, yeasts, etc.; the "medium" filters serve for all analytical work and are also suitable for use in a large number of bacteriological operations. With grade "fine" filters, coarse gold solutions and the finer colloids are retained. The Cellafilter "finest" porosity is used in the quantitative estimation of silicic acid and further retains finer gold particles.

The series of Ultrafine Filters have filtering properties as follows: "Rapid" will filter fine gold particles and serve for the quantitative estimation of silicic acid. The grade "medium" holds back the finest particles of gold, as also colouring matter, such as Benzopurpurin and similar colloids. Grades "fine" and "finest" are employed in osmosis, dialysis and for the quantitative filtration of albuminous bodies.

The Membrane and Ultrafine Filters are flat and glazed and have the stiffness of parchment. They are useful in addition to general filtrations for the quantitative determination of precipitates and also serve for bacteriological and serological work. Both kinds are only employed for diluted acid, or alkaline, aqueous solutions. Organic solvents such as acetone, glacial acetic acid, etc. cannot be filtered. Membrane filters will not withstand alcoholic solutions for any length of time, but Ultrafine Filters will do so in any degree of concentration.

For organic solvents or solutions of same the Cellafilter is employed, as well as for filtering all other solutions. These filters are more of a gummy nature and in consequence require to be used several times before they become suitable for quantitative determinations of precipitates.

When using a concave filter plate care should be taken not to clamp the rings too tightly at the commencement, but first to allow the vacuum to cause the membrane to conform to the shape of the filter plate, before finally tightening up. If the ring is tightened up to its fullest extent at the commencement the membrane will tear.

Further particulars sent on request.

***BP410 Porcelain Filter Apparatus**, for use with a filter 9 cm. diameter, complete with funnel, clamp, I.R. rings, etc. Supplied with either flat or curved sieve plates, the latter being especially suitable for analytical work. Capacity of headpiece approx. 50 ml.

d £2 2 0

***BP411 Spare Parts for above.**

A. Plate. Flat	....	d £0 8 0	D. I.R. Ring	....	d £0 1 0
B. Plate. Concave	....	d £0 9 0	E. Headpiece	....	d £0 5 0
C. Funnel	....	d £0 11 0			

***BP412 Porcelain Filter Apparatus**, with high headpiece, flat sieve plate, for use with a filter of 15 cm. diameter, capacity approx. 350 ml., complete

d £2 19 0

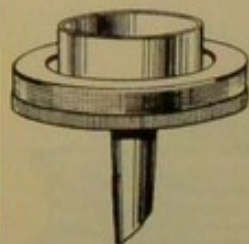
***BP413 Porcelain Filter Apparatus**, for use with a membrane filter of 15 cm. diameter, complete. This type is fitted with a concave sieve plate and has the headpiece only 1 cm. high. It is especially suitable for analytical and chemical, bacteriological and serological work

d £2 18 0

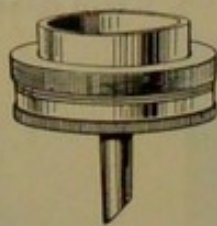
***BP414 Spare Parts for above Nos. BP412-BP413.**

A. Plate, flat (for BP412)	....	d £0 10 0	D. I.R. Ring	....	d £0 1 3
B. Plate, convex (for BP413)	....	d £0 11 0	E. Headpiece, high (for BP412)	....	d £0 13 0
C. Funnel	....	d £0 15 0	F. Headpiece, flat (for BP413)	....	d £0 12 0

Note.—Porcelain Filter Apparatus may be sterilized in a steam sterilizer.



BP415



BP416



BP417

*BP415 Bronze Filter Apparatus, chromium plated, for use with filter $7\frac{1}{2}$ cm. diameter, capacity 40 ml. The apparatus is sterilizable and very suitable for continuous bacteriological and serological work, but is not suitable for chemical analysis. The sieve and funnel are in one piece

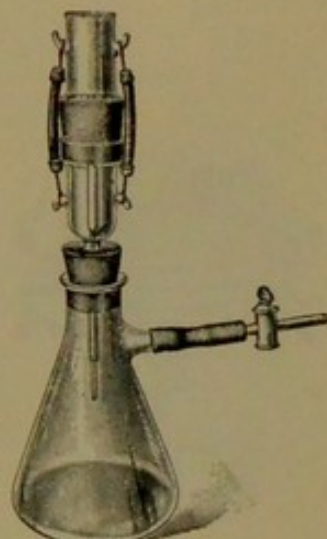
d £3 10 0

*BP416 Vulcanite Filter, for use with filter membrane $6\frac{1}{2}$ cm. diameter, capacity 40 ml., suitable for chemical and analytical work....

d £3 5 0

*BP417 Vulcanite Filter, for use with filter membrane of 4 cm. diameter, capacity 40 ml., suitable for chemical and analytical work

d £2 16 0



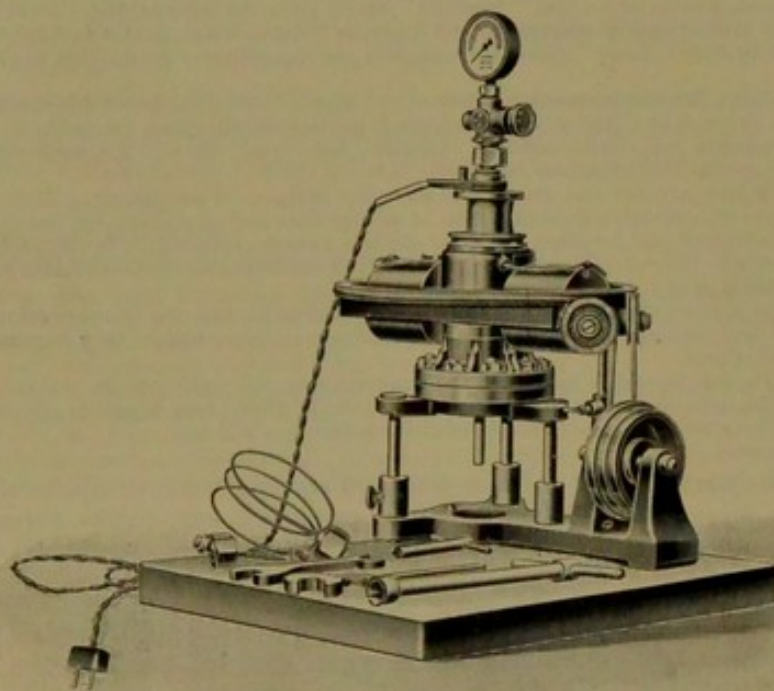
BP418

*BP418 "Buwa" Filtering Apparatus, for filter of 4 cm. diameter, without flask or cork, capacity of upper part about 50 ml. each

d £1 12 6

Special Uses.—Filtration; ultra filtration; filtration with membranes in organic and bio-chemistry and bacteriology, microanalysis.

Advantages.—(1) It is possible to work with very small quantities of fluid, and scanty precipitates as in microanalysis and certain biological work. (2) Wholly constructed of glass, and so the precipitate comes in contact only with glass. (3) The subsequent management of the precipitate is extremely easy.



BP419

*BP419 High Pressure Filtering Apparatus, for filters of 9 cm. diameter. Price complete with manometer and stirrer but without motor

d £25 0 0

This apparatus is used for filtering with fine pore Ultrafine or Ultra Cellafilter at high pressures up to 125 atmospheres, which considerably shortens the time of filtration. It is particularly suitable for serum filtering for obtaining filtrates free from albumin; for gummy suspensions, cellulose solutions and similar liquids which are tough, slimy or viscous. To prevent small particles being deposited on the filter, this filter is fitted with magnetic stirring gear. The apparatus is arranged for connection with cylinders of gas under pressure, e.g. carbon dioxide, hydrogen, nitrogen or compressed air.

*BP420 Membrane Filters, ordinary.

15	9	7.6	6.5	4 cm. diam.
d 2/3	d 2/-	d 1/3	d 1/3	d 3d. each.

Note.—When ordering state porosity required, *i.e.* coarse, medium, or fine.

*BP421 Membrane Filters, ultra-fine.

15	9	7.6	6.5	4 cm. diam.
d 3/9	d 3/-	d 2/3	d 2/3	d 1/3 each.

*BP422 Cella Filter Discs.

15	9	7.6	6.5	4 cm. diam.
d 2/3	d 2/-	d 1/3	d 1/3	d 3d. each.

Note.—When ordering BP421 or BP422 state porosity required, *i.e.* coarse, medium, fine, or finest.



BP426



BP428

BP426 The "Kenrick" Ultra-Filter, for the ultra-filtration of small quantities of undiluted serum or plasma. Originally designed for use in the Medical Unit Laboratory at the London Hospital by Drs. R. S. Aitken and H. D. Kay. (See "Journal of Physiology," Vol. LXII., "Proc. Physiol. Soc.," Jan. 22, 1927.) It is now being manufactured and marketed as the "Kenrick" Ultra-Filter, with the permission of Drs. Aitken and Kay.

DESCRIPTION.

The apparatus is simple and easy to use—the pressure necessary (up to 8 atmospheres) being produced by an ordinary motor tyre pump. 0.5 ml. of protein-free filtrate may be obtained with the ordinary size instrument, and correspondingly more with one of larger filtering area.

The membrane is of cellophane, supported by a disc of silver gauze which lies on the perforated base of the pressure chamber. The chamber is in three parts, which are screwed together; it has a valve (to fit motor tyre pump) and mercury pressure gauge. Filtrate is received in a shallow glass dish.

The instruments are of brass, heavily plated, and well finished. Each one is tested and guaranteed.

Capacity 3 to 5 ml., complete with gauge, silver gauze, glass dish and 1 dozen membranes	Price	d £4 4 0
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BP427 Filters as above, but 15 ml. capacity	Price	d £6 10 0
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BP428 Ultra-Filters , designed by W. J. Elford (see "Jour. of Path. and Bact.," No. 34, July 1931) of brass, heavily nickel-plated with perforated plate, taking a membrane of 4 cm. diam., capacity 25 ml.	Price	d £1 7 6
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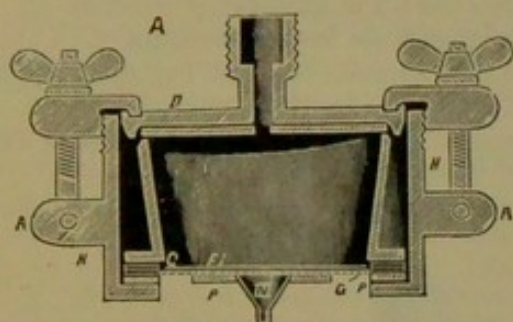
BP429 Cells , for making the membranes. (See "Jour. of Path. and Bact.," as above.)	Price	
20 cm.	40 cm. diam.	
d 57/6	d 120/- each.	

Filters of larger capacity supplied to order.

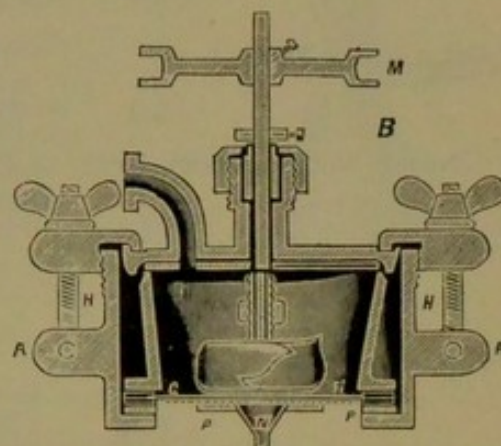
Ultra-Filtration Apparatus, Bechold's improved pattern. (See "Colloids and Medicine," by Bechold.)

The filter papers are prepared in the special trough BP436 and filtration carried out under a suitable pressure in the special apparatus BP432-BP435. The pressures can be applied by means of a hand air pump; this method is recommended for experimental work where sustained pressures are not required as the pressures can be accurately controlled.

For practical work pressures are best applied by means of cylinders of compressed air, nitrogen or carbon dioxide. A reducing valve and two manometers must be placed between filter and cylinder—one to show cylinder pressure, the other to show filter pressure.



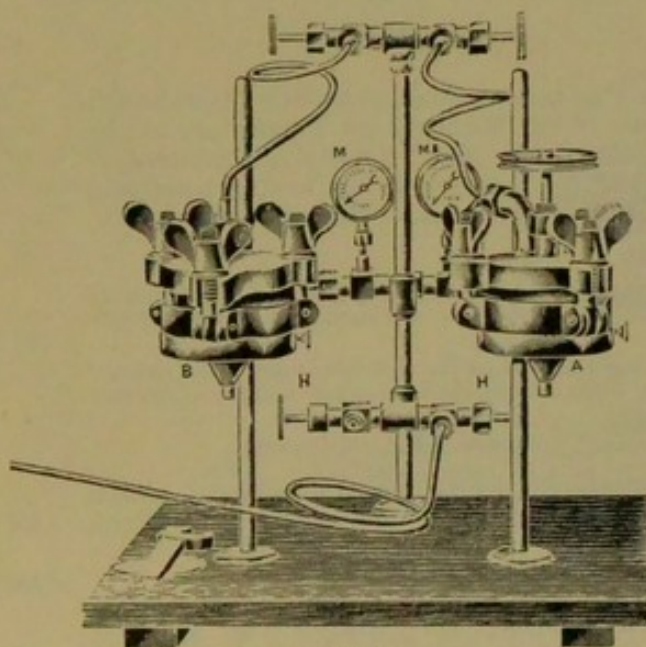
BP432



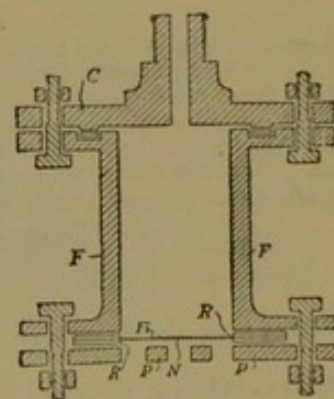
BP433

BP432 Ultra-Filtration Apparatus, Bechold's, suitable for pressures up to 12 atmospheres £14 0 0

BP433 Ultra-Filtration Apparatus, as above, but with stirring arrangement £18 0 0



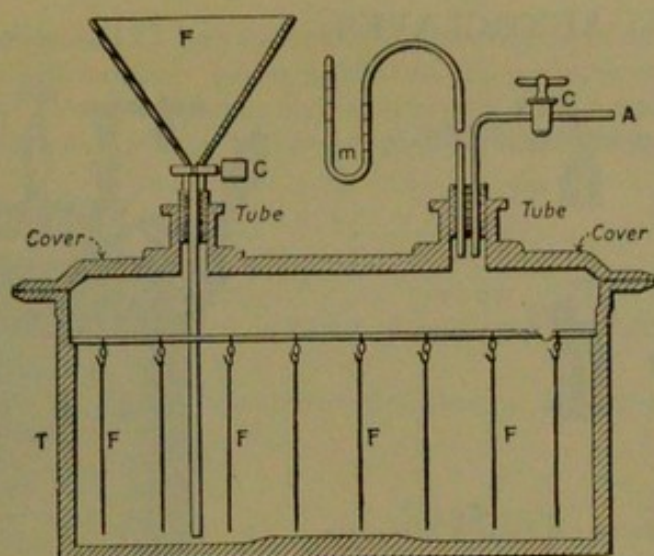
BP434



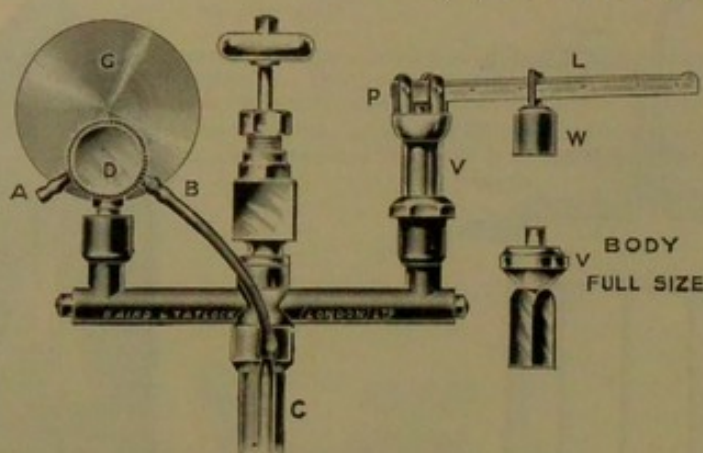
BP435

BP434 Ultra-Filtration Apparatus, consisting of two filtration apparatus, one with stirrer as BP433 and the other without as BP432, mounted on stand with metal tube connections, two manometers up to 3 and 12 atmospheres, rubber rings, etc., as illustrated. Complete £55 0 0

BP435 Ultra-Filtration Apparatus, Bechold's, suitable for pressures up to 20 atmospheres £18 5 0



(A) AUTOCLAVES.



BP450

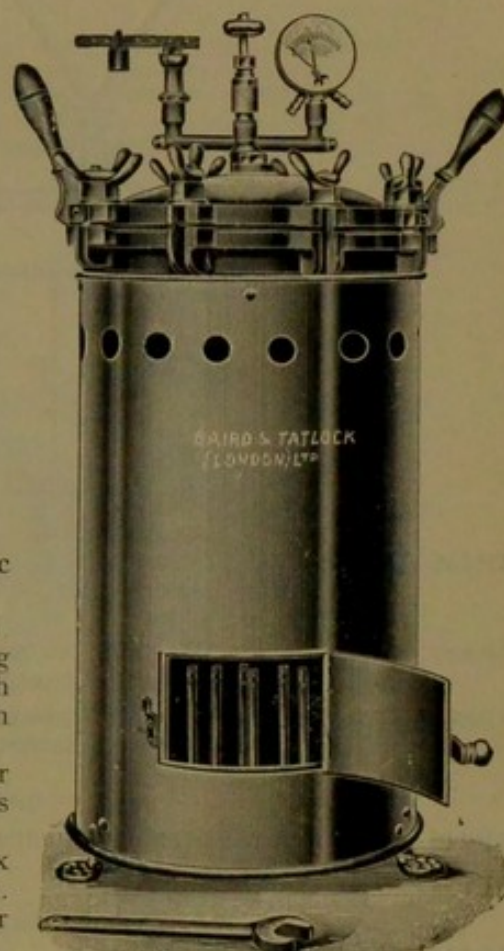
Automatic Gas Regulator as fitted to our Regulated Gas Heated Autoclaves.
See instructions below.

Instructions for fixing and working Autoclaves with Automatic Gas Regulator.

The Autoclaves are sent out complete with the gas-regulating gauge (G).
When fixing up, place valve body (V) in seating after carefully cleaning both, fix lever (L) by screw pin (P), and lastly put on weight (W), which is adjusted to allow valve to blow off at pressure indicated on lever when hung from the corresponding marks.

The gas inlet (A) must be connected to gas supply by means of rubber tubing. A second piece of tubing is taken from (B) to (C), which leads to the gas burner.

The part (D) must then be turned round so as to set the red index pointer on front of gauge to the temperature at which it is desired to work. The gauge will then regulate the gas supply to burner so as to keep interior of autoclave about this temperature.



BP450

TEMPERATURE AT PRESSURE.

Pressure	.....	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	5	10	20	atmospheres.
Temperature		111°	120°	128°	134°	139°	143°	148°	152°	159°	185°	214°	Centigrade.
"		233°	248°	262°	273°	282°	290°	298°	305°	318°	364°	417°	Fahrenheit.

Autoclaves of all patterns with all bright parts nickel plated, viz. top, wing nuts, gauge and valve fittings, can be supplied at the following additional prices.

No.	.....	1	2	3	4	5
Extra to all following prices		d £2 2 0	d £2 7 6	d £2 15 0	d £3 3 0	d £3 17 6

BP450 Autoclaves, B.T.L. Bacteriological, Chamberland's pattern, improved form for sterilizing under steam pressure up to three atmospheres, heavy copper boilers, brazed joints, with gun-metal cover, and brass wire basket. Pressure gauge marked in lbs. and also thermometric degrees, and fitted with arrangement so that the gas burners are automatically lowered when the required temperature is reached (see Diagram and Instructions above). All Autoclaves are tested to double the pressure at which they are to be used.

Size 1 is fitted with brass jacket; Nos. 2, 3, 4 and 5 with sheet-iron jackets.

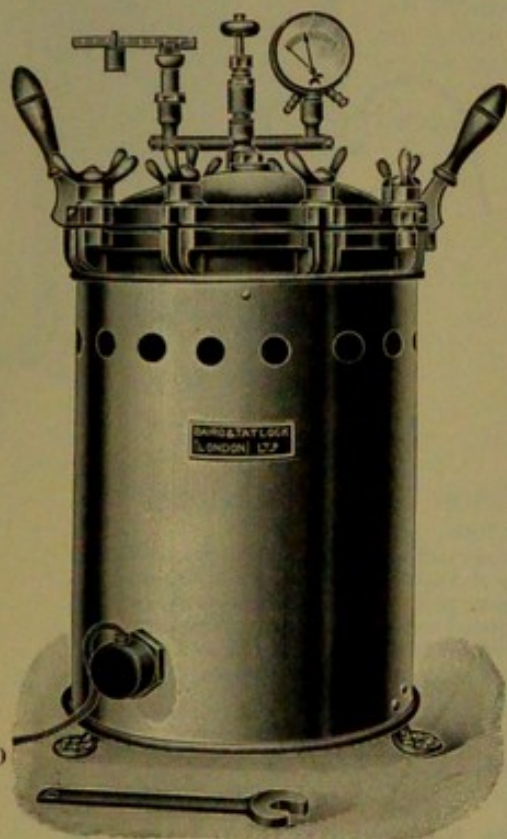
No.	.....	1	2	3	4	5	6
Depth of copper pot inside		6 $\frac{1}{4}$	9 $\frac{1}{2}$	13	17	21	30 in.
Diameter	" "	4 $\frac{3}{4}$	7 $\frac{1}{2}$	10	13 $\frac{1}{2}$	18 $\frac{1}{4}$	18 $\frac{1}{4}$ in.
Price complete with gas burners and wire basket		d £14 0 0	d £20 10 0	d £25 0 0	d £31 0 0	d £51 0 0	d £60 0 0

BP452 Autoclaves, B.T.L. Bacteriological, Chamberland's pattern, similar to No. BP450, but fitted with ordinary gauge marked in lbs. and thermometric degrees, **without** the arrangement for adjusting the temperature, **with brass lamp for burning paraffin oil**. These Autoclaves are adapted for use where gas is not available.

No.	1	2	3	4	5	6
Depth of copper pot inside	6½	9½	13	17	21	30 in.
Diameter „ „	4¾	7½	10	13½	18¼	18½ in.
Price complete with suitable lamp	£14 0 0	£20 0 0	£24 0 0	£30 0 0	£49 0 0	£58 0 0

BP454 Autoclave, B.T.L. Standard Bacteriological, as BP452, arranged for heating by means of steam coil.

No.	2	3	4	5
Price	£20 10 0	£25 0 0	£31 0 0	£51 0 0



BP456 Autoclaves, B.T.L. Standard Bacteriological, as above, arranged for **heating by steam direct**. These should be used with a steam safety reducing valve in order that the maximum steam pressure is not exceeded. Each Autoclave is fitted with draw-off cock.

No.	1	2	3
Price	d £12 10 0	d £18 10 0	d £23 10 0
No.	4	5	
Price	d £29 0 0	d £48 10 0	

BP458 Steam Safety Reducing Valve, price according to steam supply.

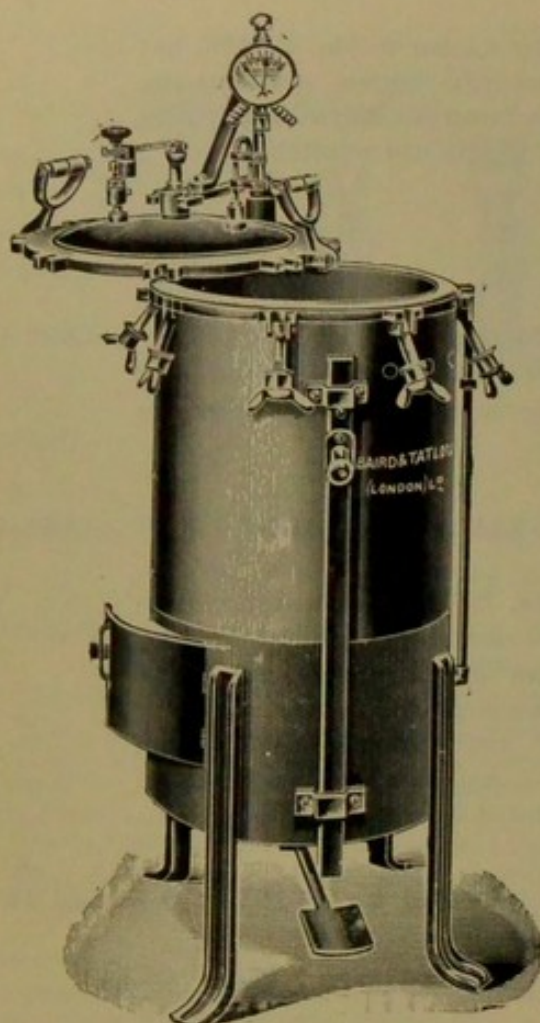
For Autoclave Washers, see BP534.

BP460 Autoclaves, B.T.L. Bacteriological, similar to BP450, but adapted for heating by electricity, **with ordinary gauge** marked in lb. and thermometric degrees, with blow-off valve.

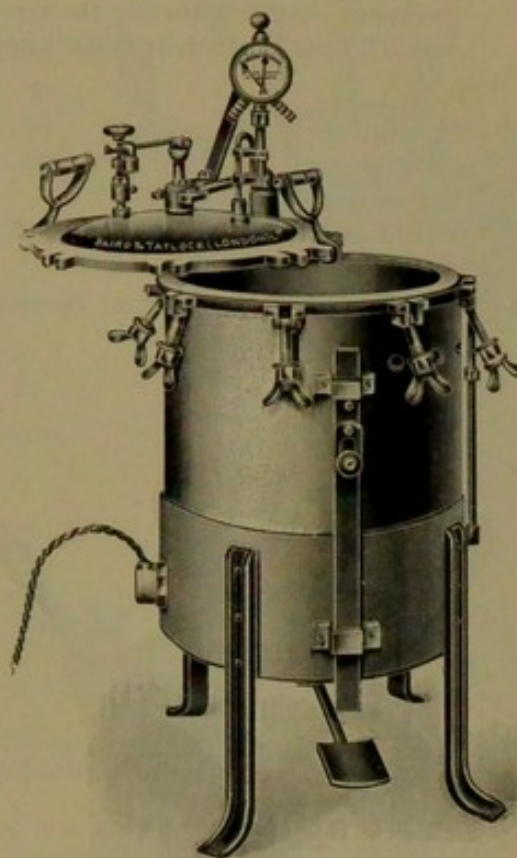
No.	1	2	3	4	5
Depth of copper pot inside	6½	9½	13	17	21 in.
Diameter of copper pot inside	4¾	7½	10	13½	18¼ in.
Consumption	500	700	1500	2000	5000 watts.
Price complete	£15 10 0	£21 10 0	£30 10 0	£36 0 0	£55 0 0

BP461 Spare Heaters for above each £2 5 0 £2 10 0 £2 17 0 £3 10 0 £4 5 0
(2 heaters required.)

Please state voltage when ordering.



BP462



BP464

BP462 Autoclave, B.T.L. Chamberland's, for sterilizing under steam pressure, improved form, with arrangement for removing top by hand or foot.

By pressing down the foot lever or handle on vertical shaft the cover is raised sufficiently to clear top, and can be swung to one side, the shaft supporting same in position. To place cover on top of Autoclave the movement is reversed. The Autoclave is tested to three atmospheres pressure, and is fitted with pressure gauge graduated in lb. pressure and thermometric degrees centigrade. By a mechanical device the gauge can be adjusted so that when the required pressure is reached the burners are automatically lowered. The cover is of gun-metal, and the boiler of heavy copper; all joints brazed. It is mounted on mild steel jacket, and fitted with a set of suitable star gas burners. Complete, as figured, with safety valve and inner vessel for sterilizing.

No.	3	4	5
Depth of copper vessel inside	13	17	21 in.
Diameter of copper vessel inside	10	13½	18½ in.
Price complete	d £30 0 0	d £36 0 0	d £63 0 0

BP464 Autoclave, B.T.L. Chamberland's, similar to BP462, but fitted with brass lamp for burning paraffin oil where gas is not available. In this Autoclave the gauge is of the ordinary pattern graduated in lbs. pressure and thermometric degrees centigrade.

No.	3	4	5
Depth of copper vessel	13	17	21 in.
Diameter of copper pot	10	13½	18½ in.
Price complete with lamp	d £29 0 0	d £35 0 0	d £55 0 0

BP465 Autoclave, B.T.L. Chamberland's, exactly as above, but adapted for heating by electricity, complete with gauge graduated in lbs. and thermometric degrees and blow-off valve.

No.	3	4	5
Depth of copper pot	13	17	21 in.
Diameter of copper vessel	10	13½	18½ in.
Consumption	1500	2000	5000 watts.
Price	d £30 0 0	d £38 0 0	d £62 0 0

Spare Heaters for above, see BP461.
Please state voltage when ordering.

BP467 Autoclave, B.T.L. Chamberland's, as BP462, but arranged for heating by steam direct. It is recommended, if steam is under high pressure, to use a steam safety reducing valve, No. BP458.

No.	3	4	5
Price	d £27 0 0	d £34 0 0	d £54 0 0

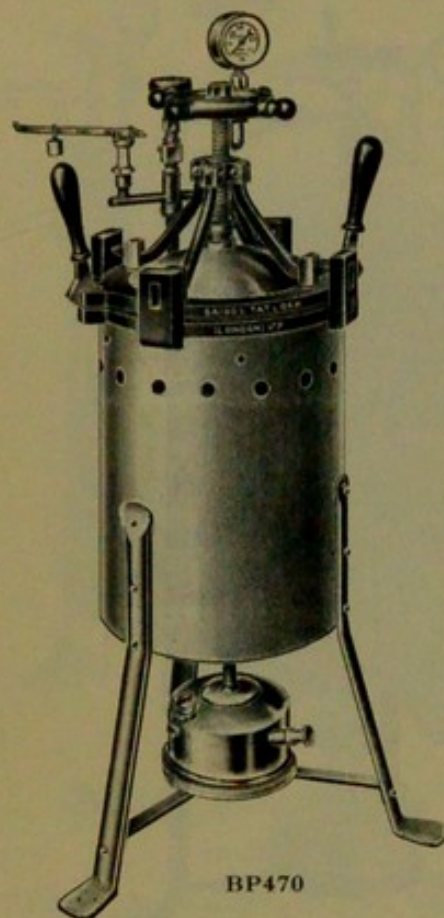
For Autoclave Washers, see BP534.

B.T.L. AUTOCLAVES WITH QUICK RELEASE LIDS.

These autoclaves are fitted with an improved arrangement which greatly reduces the time occupied in opening and closing the cover. Instead of unscrewing a number of nuts all that is necessary to remove the cover is to turn the capstan wheel until the four sliding steel bolts are withdrawn from their sockets; then operate the two side handles which break the joint, and lift the cover bodily off.

In addition to the autoclaves below, this type of cover can be fitted to any other pattern of vertical autoclave listed here, except Nos. BP474-BP479. Prices on application.

BP468 Autoclaves, B.T.L. Bacteriological, Chamberland's pattern, improved form for sterilizing under steam pressure up to **three atmospheres**, heavy copper boilers, brazed joints, with gun-metal cover, fitted with quick release arrangement, and brass wire basket. Pressure gauge marked in lbs. and also thermometric degrees, and fitted with arrangement so that the gas burners are automatically lowered when the required temperature is reached. All Autoclaves are tested to double the pressure at which they are to be used.



BP470

Size 1 is fitted with brass jacket; Nos. 2, 3, and 4 with sheet-iron jackets.

No.	1	2	3	4
Depth of copper pot inside	6½	9½	13	17 in.
Diameter " " " "	4½	7½	10	13½ in.
Price complete with gas burners and wire basket	d £20 0 0	d £30 0 0	d £35 0 0	d £47 0 0

BP470 Autoclaves, B.T.L. Bacteriological, Chamberland's pattern, similar to No. BP468, but fitted with ordinary gauge marked in lbs. and thermometric degrees, without the arrangement for adjusting the temperature, with brass lamp for burning paraffin oil, as illustrated. These Autoclaves are adapted for use where gas is not available.

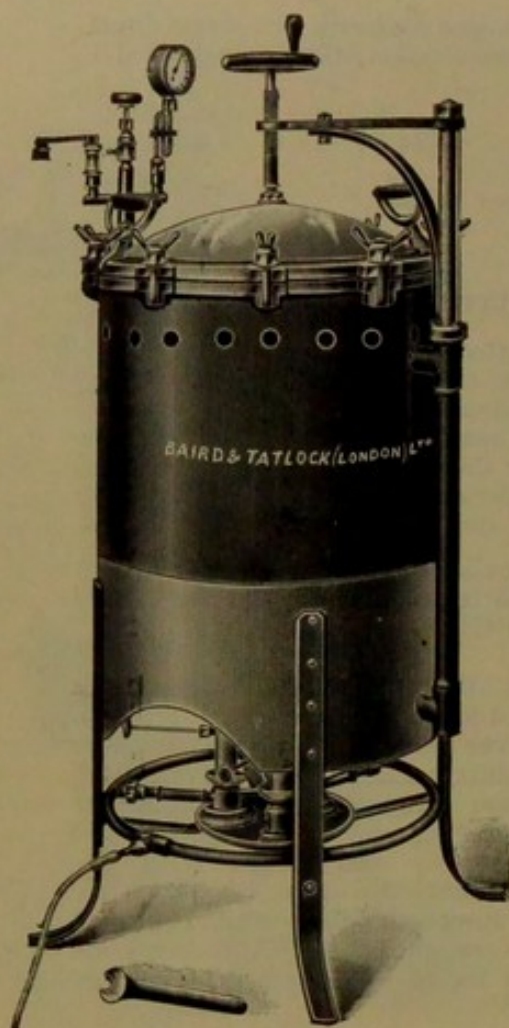
No.	1	2	3	4
Depth of copper pot inside	6½	9½	13	17 in.
Diameter " " " "	4½	7½	10	13½ in.
Price complete with suitable lamp	d £21 0 0	d £31 0 0	d £36 10 0	d £48 10 0

BP472 Autoclaves, B.T.L. Bacteriological, similar to BP468, but adapted for heating by electricity, with ordinary gauge marked in lb. and thermometric degrees, with blow-off valve.

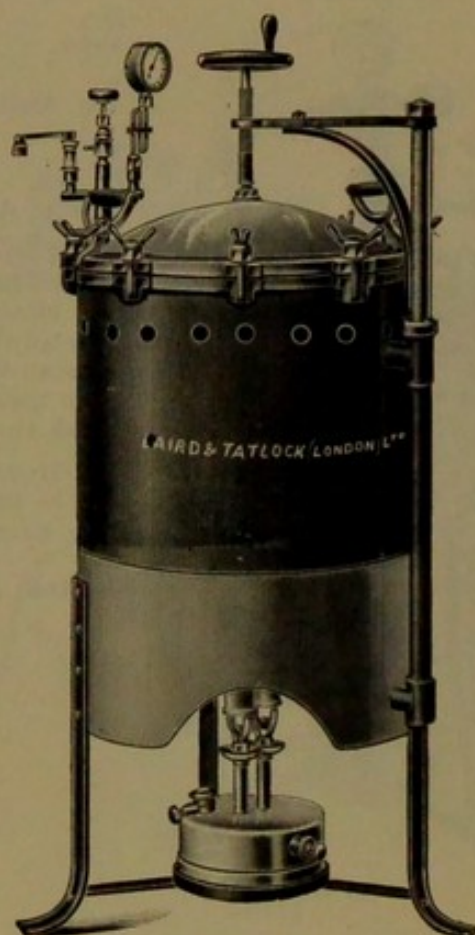
No.	1	2	3	4
Depth of copper pot inside....	6½	9½	13	17 in.
Diameter " " " "	4½	7½	10	13½ in.
Consumption " " " "	500	700	1500	2000 watts.
Price complete	d £24 0 0	d £32 0 0	d £40 0 0	d £50 0 0

Spare Heaters for above, see BP461.

Please state voltage when ordering.



BP475



BP476

BP474 Autoclaves, B.T.L. Chamberland's, for sterilizing under steam pressure, for heating by gas; improved form with bracket arm and screw for raising top.

By giving the wheel handle a few turns the cover is raised sufficiently to clear top of Autoclave, and can then be swung to one side and supported in position by the bracket and vertical steel shaft. The Autoclave is tested to **three atmospheres pressure**, and is fitted with pressure gauge graduated in lbs. pressure and thermometric degrees centigrade. By a mechanical device the gauge can be adjusted so that when the required pressure is reached the burners are automatically lowered. The cover is of gun-metal and the boiler of heavy copper; all joints brazed. It is mounted on mild steel jacket and fitted with a set of suitable star Bunsen gas burners. Complete, similar to Fig. BP475, with safety valve, inner basket for sterilizing, etc.

No.	3	4	5	6
Depth of copper vessel	13	17	21	30 in.
Diameter of copper vessel	10	13½	18½	18½ in.
Price complete	d £28 10 0	d £36 0 0	d £57 0 0	d £65 0 0

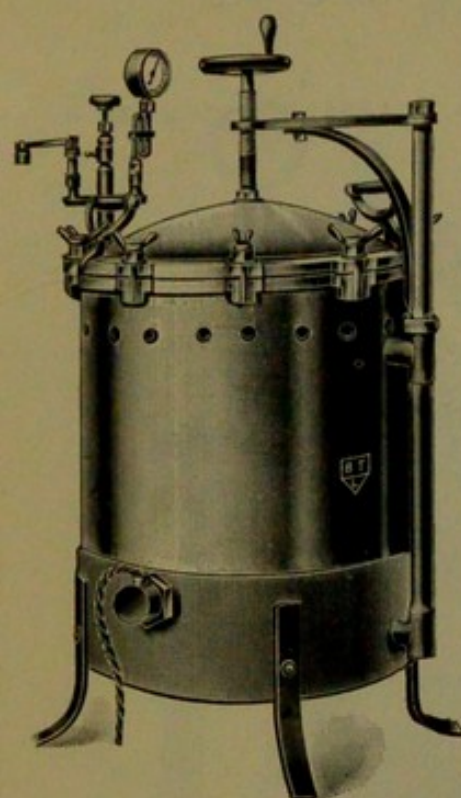
BP475 Autoclaves, B.T.L. Chamberland's, exactly as BP474 but arranged for heating with methylated spirit bunsen burners where gas is not available, with ordinary pressure gauge.

No.	3	4	5
Price complete	d £28 0 0	d £36 0 0	d £57 0 0

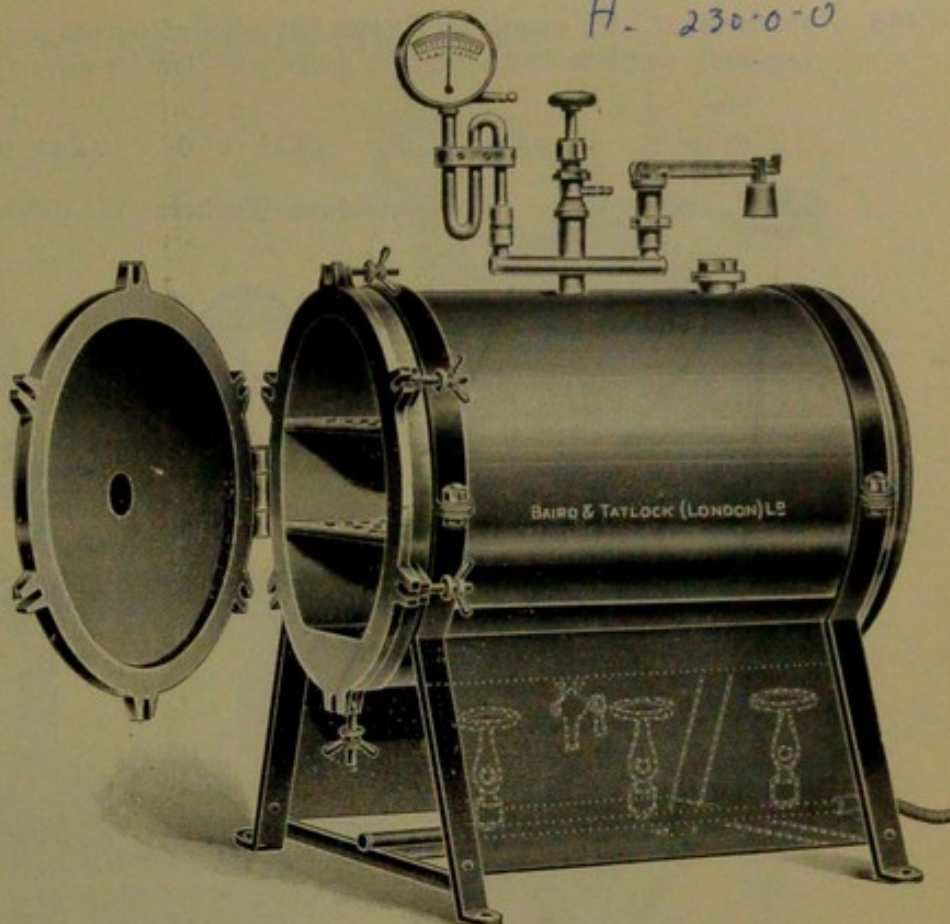
BP476 Autoclaves, B.T.L. Chamberland's, exactly as No. BP474, but arranged for heating with brass lamps for burning paraffin oil.

No.	3	4	5	6
Price complete with lamp	d £27 10 0	d £35 0 0	d £56 0 0	d £60 0 0

18 1/4 x 20 V. 205-0-0
H. 230-0-0



BP477



BP486

BP477 Autoclaves, B.T.L. Chamberland's, exactly as BP474, but arranged for heating by electricity.

No.	3	4	5
Consumption in watts	1500	2000	5000
Price	d £20 0 0	d £37 10 0	d £65 0 0

Spare Heaters for above, see BP461.

Please state voltage when ordering.

BP479 Autoclave, B.T.L. Chamberland's, as BP474, but arranged for heating by steam coil.

No.	3	4	5	6
Price	d £27 0 0	d £34 10 0	d £55 0 0	d £63 0 0

For Autoclave Washers, see BP534.

BP480 Inner Vessels or Baskets for Autoclaves, of brass wire mesh.

To suit Autoclaves	4 3/4	7 1/2	10	13 1/2	18 1/4 in. diam.
Price	d £0 12 6	d £0 16 0	d £0 17 6	d £1 5 0	d £1 12 6

BP481 Inner Vessels or Baskets, for Autoclaves, of perforated copper sheet.

To suit Autoclaves	4 3/4	7 1/2	10	13 1/2	18 1/4 in. diam.
Price	d £0 12 6	d £0 16 0	d £0 17 6	d £1 5 0	d £1 12 6 each.

BP486 Autoclave, B.T.L. horizontal pattern, for sterilizing under steam pressure up to three atmospheres, heavy copper boiler, with brazed joints, gun-metal cover, with hinged back so that the cover can be opened as shown in illustration. The Autoclave is fitted with two movable shelves as shown, and is mounted on heavy iron stand with burners and draught screen. The Autoclave is fitted with a gauge and automatic gas regulator, so that the gas is lowered when the required pressure is reached. The gauge is graduated to read in lbs. and temperature in centigrade degrees.

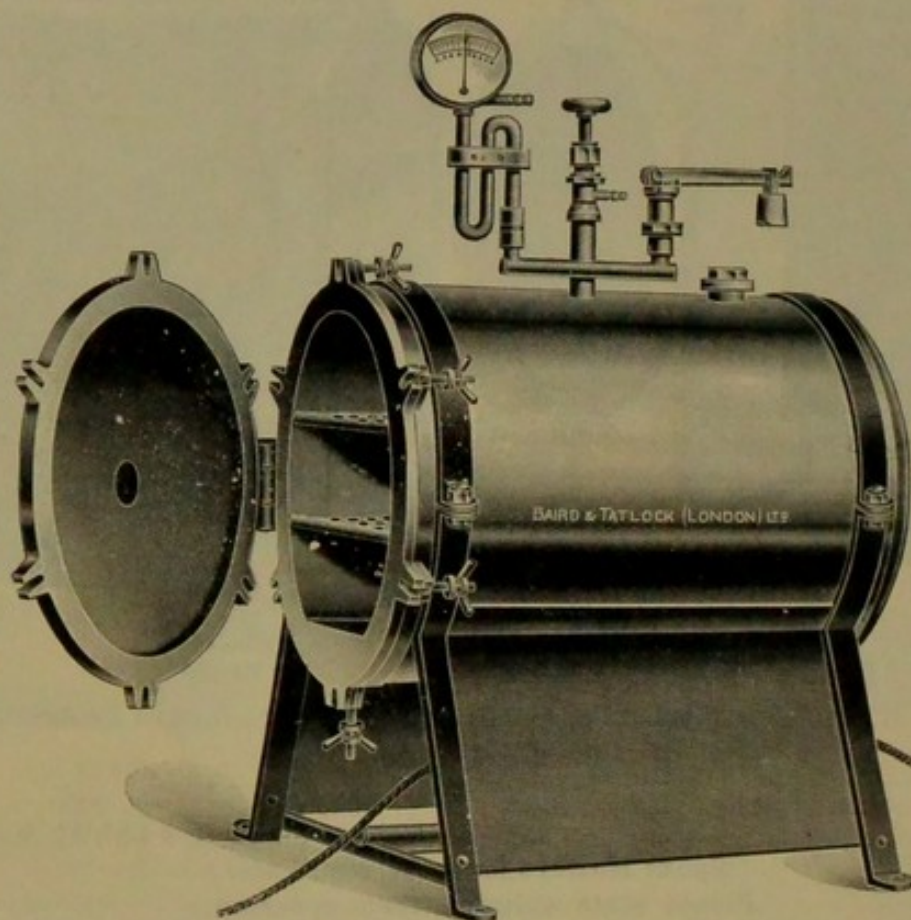
Size No.	2	3	4	5	6
Diameter	7 1/2	10	13 1/2	18 1/4	18 1/4 in.
Depth	9	13	17 1/2	21	30 in.
Price	d £26 5 0	d £34 0 0	d £42 10 0	d £57 0 0	d £75 0 0

Page 1911

BP488 Autoclave, B.T.L., exactly as BP486, but adapted for heating by oil where gas is not available, and fitted with ordinary gauge and blow-off valve.

Size	2	3	4	5	6
Price	d £26 0 0	d £33 0 0	d £41 10 0	d £56 0 0	d £73 0 0

For Autoclave Washers, see BP534.



BP490

BP490 Autoclave, horizontal pattern, adapted for heating by electricity for sterilizing under steam pressure up to three atmospheres, heavy copper boiler with brazed joints, gun-metal cover with hinged back so that cover can be opened as shown in illustration. The Autoclave is fitted with two movable shelves as shown, and is mounted on a heavy iron stand, lagged to prevent radiation. The heaters are totally immersed, thus giving the maximum of heat with the minimum of current. A gauge graduated in lbs. pressure and degrees Centigrade, and blow-off valve are fitted.

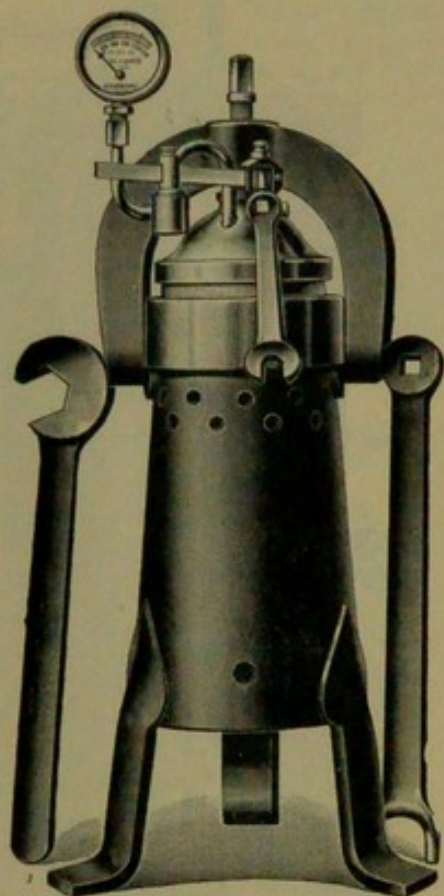
Size	2	3	4	5	6
Consumption in watts	700	1500	2000	5000	5000
Price	d £31 0 0	d £43 0 0	d £51 0 0	d £63 0 0	d £75 0 0

BP491 Spare Heater for above, per set

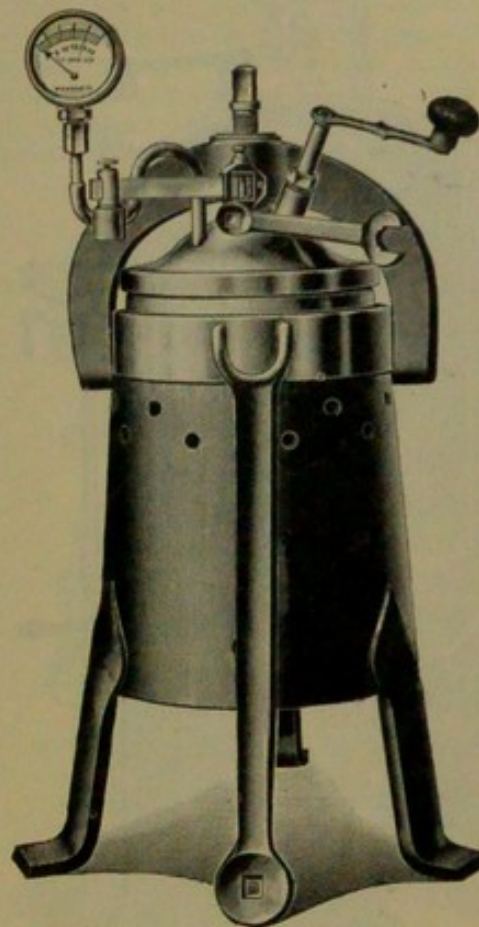
d £2 9 0	d £2 17 0	d £3 6 6	d £8 5 0 (2 heaters)	d £8 5 0 (2 heaters)
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Please state voltage when ordering.

HIGH-PRESSURE AUTOCLAVES.



BP500-BP502



BP504-BP506

Steam Digester or Autoclave for high pressure, with copper boiling vessel and cover of phosphor bronze, fitted with gas-pressure regulator, with automatic arrangement for lowering the gas burners when the required pressure is obtained. Prices complete with burner.

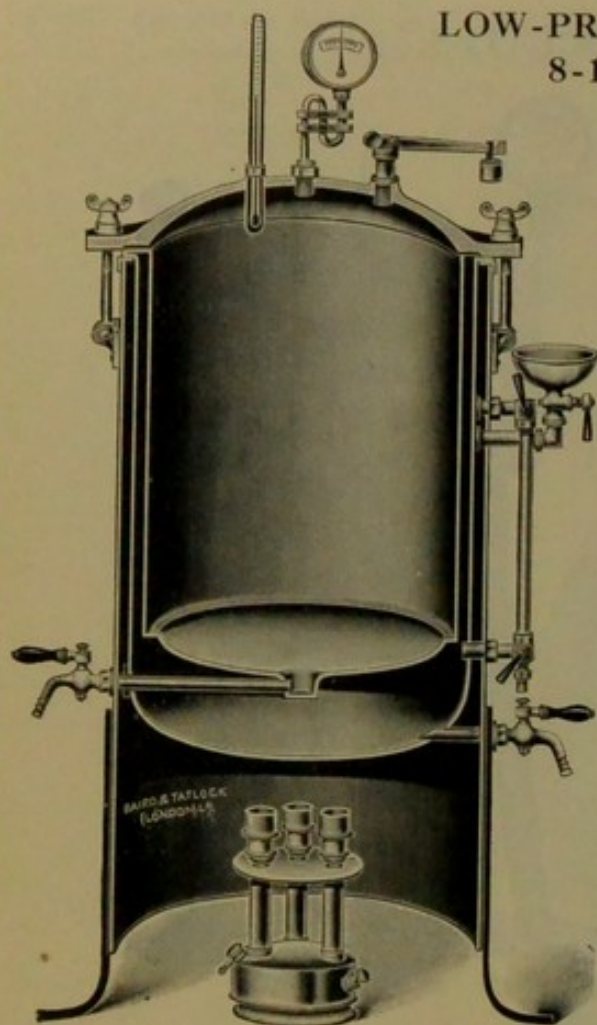
	Size of copper vessel	depth 8" x 4" diam.	depth 8" x 6" diam.	depth 10" x 8" diam.
BP500	To work at 8 atmospheres	d £18 10 0	d £21 10 0	d £27 10 0
BP502	" 20 "	d £21 0 0	d £27 10 0	d £33 10 0

Digester, Steam, as above, fitted with stirrer, adapted for high pressure.

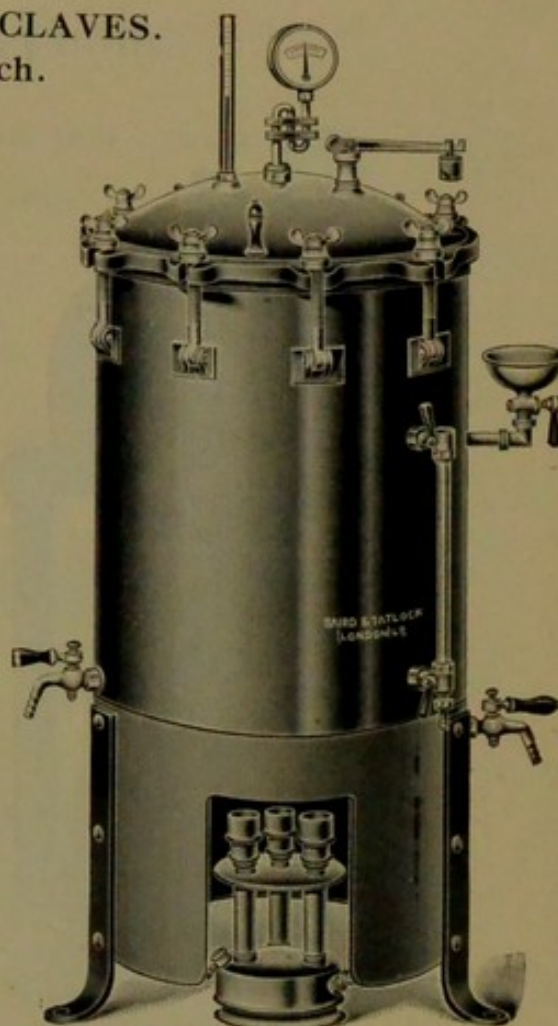
	Size of copper boiling vessel	depth 8" x 4" diam.	depth 8" x 6" diam.	depth 10" x 8" diam.
BP504	To work at 8 atmospheres	d £20 0 0	d £24 10 0	d £30 10 0
BP506	" 20 "	d £22 0 0	d £30 10 0	d £36 0 0

These Digesters are tested several atmospheres above working pressures.

Prices given on application for Digesters of other sizes and to stand pressures up to 50 atmospheres.

LOW-PRESSURE AUTOCLAVES.
8-10 lb. per sq. inch.

BP512 (Section)



BP512

- BP510 Autoclave**, Schimmelbusch's pattern, of stout sheet copper, inner jacket brazed, for sterilizing under a steam pressure of **8 lb. per sq. in.**, outer jacket of sheet iron; fitted with thermometer, automatic gauge graduated to 10 lb. per square in. and marked in degrees Fahrenheit, blow-off valve, water sight level, filling cup and draining taps, jacket for condensed steam, and fitted with **Bunsen Burners**.

	A.	B.	C.	D.
Size of inner chamber	dia. 10" × 15" deep.	dia. 10" × 19" deep.	dia. 13½" × 20" deep.	dia. 18" × 24" deep.
Price	d £27 10 0	d £28 10 0	d £41 0 0	d £54 0 0

- BP512 Autoclave**, Schimmelbusch's pattern, as above, fitted with ordinary gauge, graduated to 10 lb. per sq. in. and marked in degrees Fahrenheit, blow-off valve, etc., but fitted with **paraffin heating lamp** for use where gas is not available.

	A.	B.	C.	D.
Size of inner chamber	dia. 10" × 15" deep.	dia. 10" × 19" deep.	dia. 13½" × 20" deep.	dia. 18" × 24" deep.
Price	d £28 10 0	d £29 10 0	d £43 0 0	d £56 0 0

- BP514 Autoclave**, Schimmelbusch's pattern, as above, but adapted for heating by electricity.

	A.	B.	C.	D.
Size of inner chamber	dia. 10" × 15" deep.	dia. 10" × 19" deep.	dia. 13½" × 20" deep.	dia. 18" × 24" deep.
Consumption	1500	1500	2000	2500 watts.
Price	d £30 0 0	d £33 0 0	d £44 0 0	d £57 0 0

- BP515 Spare Heaters**, for above d £2 17 0 d £2 17 0 d £3 10 0 d £4 5 0 each.

- BP516 Autoclave**, as above, but arranged for heating by means of steam coil.

	A.	B.	C.	D.
Size of inner chamber	dia. 10" × 15" deep.	dia. 10" × 19" deep.	dia. 13½" × 20" deep.	dia. 18" × 24" deep.
Price	d £28 10 0	d £29 10 0	d £44 0 0	d £56 0 0

For Inner Vessels, see Nos. BP531-BP533. For Autoclave Washers, see BP534.

STERILIZERS.

A large range of sterilizers is described, all of which are manufactured at our Factory at Walthamstow. As **actual manufacturers** of these instruments we can guarantee that they will fulfil all the requirements of a bacteriological laboratory. A heavy gauge of copper is used throughout, all joints are "lapped joints," as against some of the single joints in many of the cheaper sterilizers now on the market. Those which are controlled by capsule regulation are fitted with our Registered Capsule Regulator, permitting an even temperature within 1° being maintained. Capsules are made, covering a wide range, each capsule can be used for a variation of 4° C.

Also, wide range sterilizers are now available fitted with Automatic Electric Control capable of being easily adjusted over a wide range.

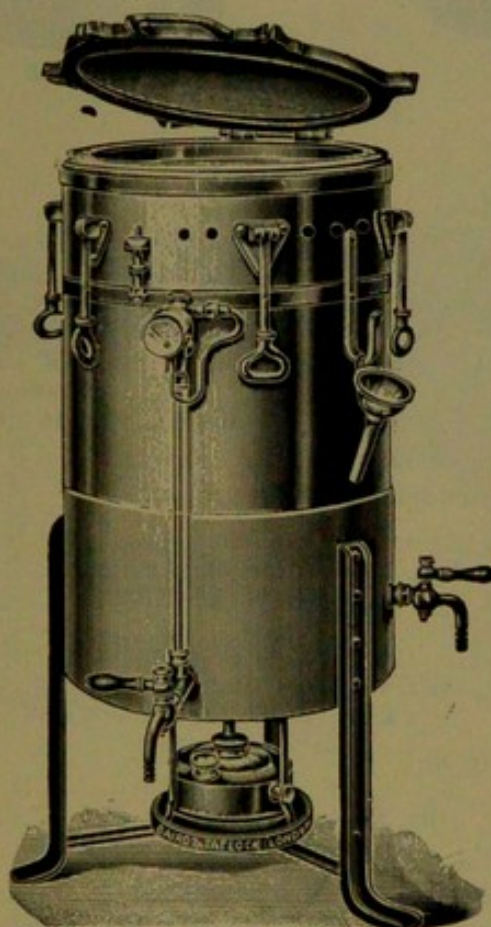
Sterilizers are arranged as follows :

STEAM.

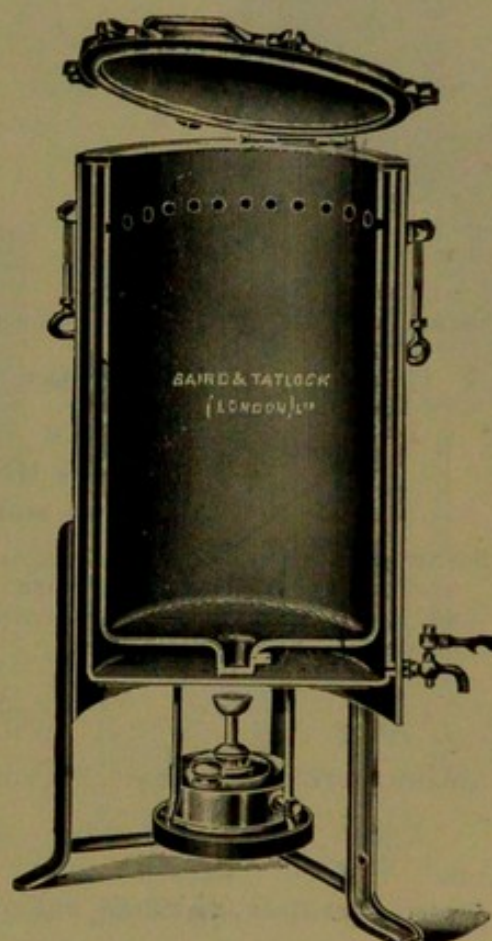
Low Pressure. Moist and Dry.

High Pressure.

HOT AIR.



BP520



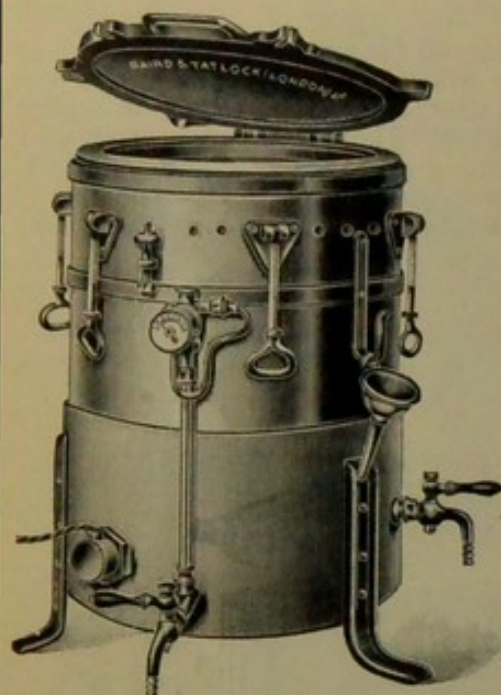
BP522 (Section)

BP520 Steam Sterilizer, B.T.L., constructed to work at a steam pressure of **4 lb. per sq. in.** with pressure gauge graduated in lb. and thermometric degrees, to hold **two containers** (Fig. BP531), with gun-metal cover and clamping screws, thermometer, gauge glass, stopcock and condenser. The sterilizer is encased in a stout japanned iron jacket, and is supplied with suitable Bunsen burners. Complete with gas burners. Containing vessels extra.

	A.	B.	C.	D.
Size	dia. 10" x 15" deep	dia. 10" x 19" deep	dia. 13½" x 20" deep	dia. 18" x 24" deep
Price	d £27 0 0	d £27 10 0	d £34 0 0	d £43 0 0

BP522 Steam Sterilizer, as above, but arranged for heating by petroleum lamp.

	A.	B.	C.	D.
Size	dia. 10" x 15" deep	dia. 10" x 19" deep	dia. 13½" x 20" deep	dia. 18" x 24" deep
Price	d £27 5 0	d £28 10 0	d £35 0 0	d £45 0 0



BP524



BP531



BP532

BP524 Steam Sterilizer, as BP520, but arranged for heating by electricity.

	A.	B.	C.	D.
Size	dia. 10" x 15" deep	dia. 10" x 19" deep	dia. 13½" x 20" deep	dia. 18" x 24" deep
Consumption	1500	1500	2000	2500 watts
Price	d £29 10 0	d £30 0 0	d £38 0 0	d £46 0 0

Spare Heaters, for above, see BP515.

Please state voltage when ordering.

BP526 Steam Sterilizer, Schimmelbusch's pattern, as BP520, but without pressure gauge, to work at atmospheric pressure, but capable of standing a pressure of 2 lb. per sq. in., with double-walled copper vessel, to hold two containers (Fig. BP531), arranged for heating by gas.

	B.	C.	D.
Size	dia. 10" x 19" deep	dia. 13½" x 20" deep	dia. 18" x 24" deep
Price	d £25 10 0	d £31 0 0	d £39 0 0

BP528 Steam Sterilizer, as above, but arranged for heating by oil.

	B.	C.	D.
Size	dia. 10" x 19" deep	dia. 13½" x 20" deep	dia. 18" x 24" deep
Price	d £25 10 0	d £31 10 0	d £39 0 0

BP530 Steam Sterilizer, as BP526, but arranged for heating by electricity.

	B.	C.	D.
Size	dia. 10" x 19" deep	dia. 13½" x 20" deep	dia. 18" x 24" deep
Consumption	1500	2000	2500 watts
Price	d £31 0 0	d £34 0 0	d £41 0 0

Spare Heaters, for above, see BP515.

Please state voltage when ordering.

BP531 Containing Vessels, for sterilizers BP510-BP530, nickel-plated brass, height 9 in., to suit sterilizers

	A.	B.	C.	D.
	7½	10	13½	18 in.
Price	b £2 5 0	b £2 10 0	b £3 0 0	b £3 10 0 each.

BP532 Containing Vessels, for sterilizers, BP510-BP530, nickel-plated brass, height 4½ in., to suit sterilizers

	A.	B.	C.	D.
	7½	10	13½	18 in.
Price	b £2 0 0	b £2 5 0	b £2 10 0	b £3 0 0 each.

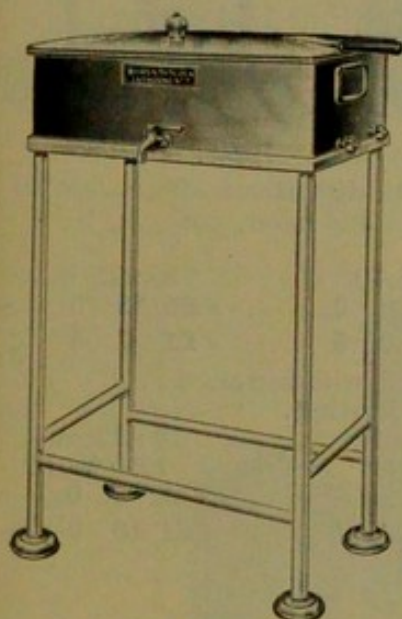


BP533

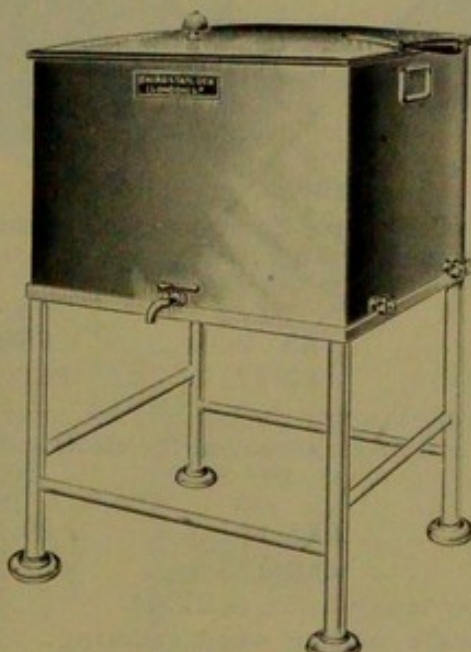
BP533 Containing Vessels, for sterilizers BP510-BP530, nickel-plated brass, semi-circular, $9\frac{1}{2} \times 13 \times 6\frac{1}{2}$ in. each c £2 10 0

BP534 Autoclave Washers, of special asbestos and steam rubber, to suit Autoclaves Nos. BP450-BP530.

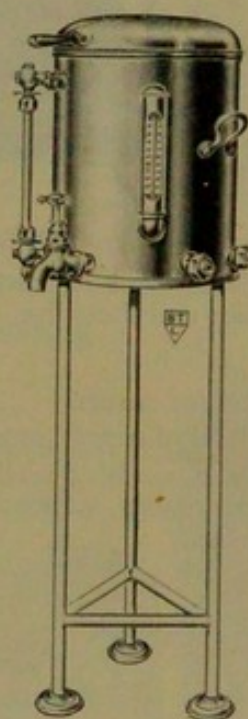
For Autoclaves Size No.	1	2	A. & B. 3	C. 4	D. 5
Price	d 2/-	d 4/-	d 6/6	d 9/-	d 15/6 each.



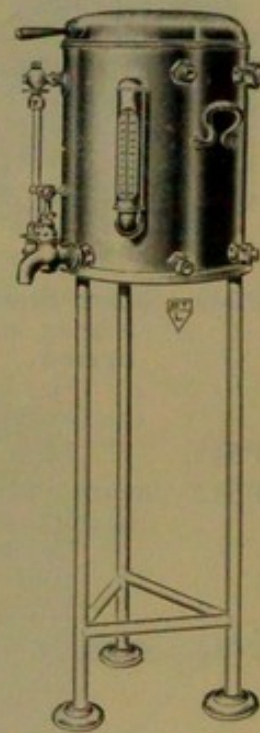
BP535



BP536



BP538



BP539

Instrument Sterilizers suitable for Hospital or Laboratory Use.

BP535 Instrument Sterilizer, of copper, with inner lift-out perforated tray and hinged lid with insulated handles, size $21 \times 12 \times 6$ in. deep, provided with internal steam heating coil fitted at the bottom, dull silvered inside and **nickel chromium plated** outside: fitted with thermometer and drain tap and mounted on **white enamel tubular stand** d £18 15 0

BP536 Bowl Sterilizer, of copper, with lift-out perforated tray and hinged lid with insulated handles, size $23 \times 20 \times 16$ in., provided with internal steam heating coil, dull silvered inside and **chromium plated outside**: fitted with drain tap and thermometer and mounted on **white enamel tubular stand** d £27 10 0

BP538 Hot Water Sterilizer, vertical cylindrical type, of copper, 5 gallon capacity, fitted with steam heating coil and $\frac{3}{4}$ in. draw-off bib-cock and gauge glass, dull silvered internally and **finished externally with chromium plating**. Top fitted with hinged lid and insulated handle: mounted on **white enamel tubular stand** d £17 17 6

BP539 Hot Water Sterilizer, as above, but fitted with an additional internal coil for cooling purposes d £21 0 0

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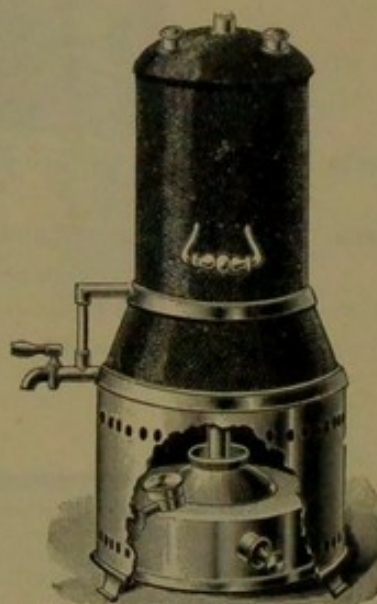
(B) STEAM STERILIZERS—LOW PRESSURE.



BP540



BP542



BP544



BP548-PB550

BP540 Steam Sterilizer, made of hard rolled copper throughout, felt covered, with increased heating surface and sheet-iron screen for burner, with gauge, stopcock and cover, gas heated.

Size inside	20 x 8	20 x 10	20 x 12 in.
Price without burner	d £5 5 0	d £6 0 0	d £6 15 0

BP541 Inner vessel of copper, extra d £0 17 6 d £1 0 0 d £1 7 6

BP542 Steam Sterilizer, made of hard rolled copper throughout, felt covered, with increased heating surface, gauge, stopcock and cover, arranged for electrical heating.

Size inside	20 x 8	20 x 10	20 x 12 in.
Consumption	850	1000	1200 watts.
Price	d £8 17 6	d £9 17 6	d £11 5 0

BP543 Spare Heaters, for above d £0 17 6 d £1 1 0 d £1 10 0

Inner vessels extra, as BP541.

Please state voltage when ordering.

BP544 Steam Sterilizer, same as Fig. BP540, of hard rolled copper, fitted with suitable lamp for burning petroleum, giving smokeless flame, oil heated.

Size inside	20 x 8	20 x 10	20 x 12 in.
Price with lamp and screen	d £5 16 0	d £7 6 0	d £8 6 0

Inner vessels extra, as BP541.

BP548 Steam Sterilizer, simple form, of hard rolled copper, felt covered, with cover, thermometer tubulure, water gauge and stopcock, on iron stand.

Size inside	20 x 8	20 x 10	20 x 12	20 x 16 in.
	d £4 0 0	d £5 0 0	d £5 10 0	d £7 10 0

BP549 Inner Vessel of copper, extra d £0 17 6 d £1 0 0 d £1 7 6 d £1 15 0

BP550 Steam Sterilizer, zinc with copper bottom, felt covered, similar shape to above.

Size inside	20 x 8	20 x 10	20 x 12	20 x 16 in.
	d £3 10 0	d £4 0 0	d £4 15 0	d £6 15 0

BP551 Inner Vessel of zinc, extra d £0 12 0 d £0 14 0 d £0 17 6 d £1 5 0

BP552 Thermometers (TH51), engraved scale 0°-110° C., for steam sterilizers, Nos. BP540-BP578

each b £0 3 0



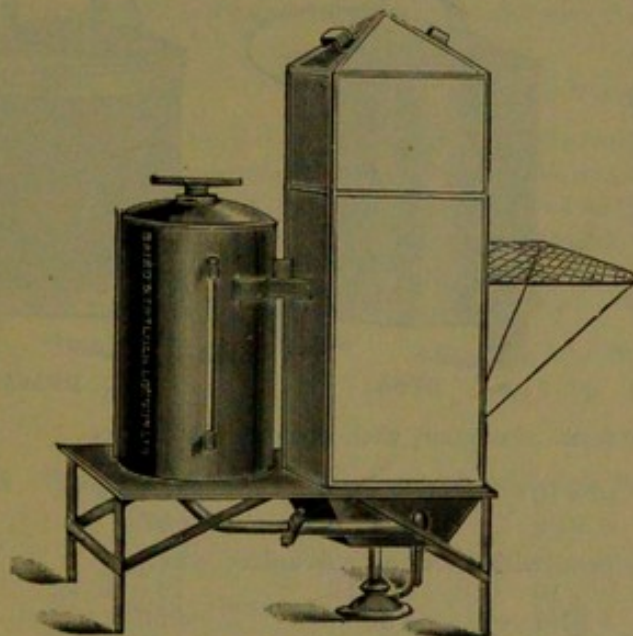
BP553

BP553 Steam Sterilizer, as No. BP548, simple form of hard rolled copper, felt covered, with cover, thermometer tubulure, gauge and stopcock on stand, arranged for heating by electricity.

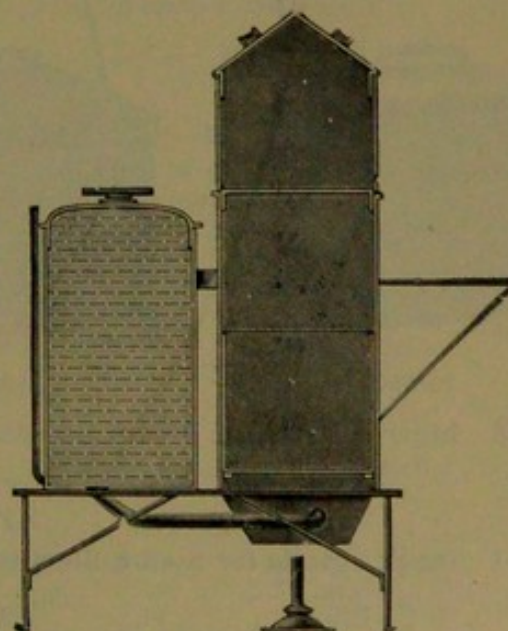
Size	20 × 8	20 × 10	20 × 12	20 × 16 in.
Consumption	800	900	1000	1200 watts.
Price	d £7 7 0	d £8 0 0	d £9 5 0	d £10 10 0

BP554 Spare Heaters, for above d £0 17 6 d £0 19 6 d £1 1 0 d £1 10 0

Please state voltage when ordering.



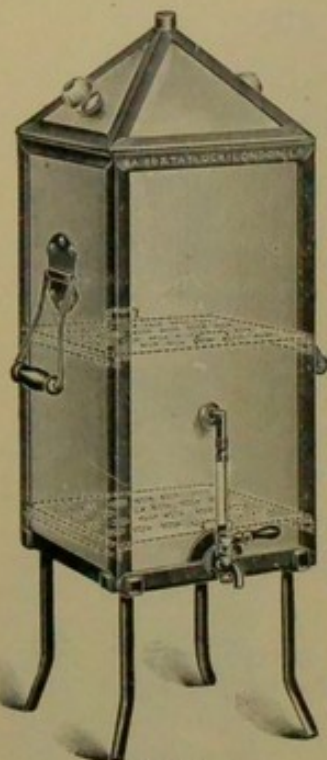
BP555



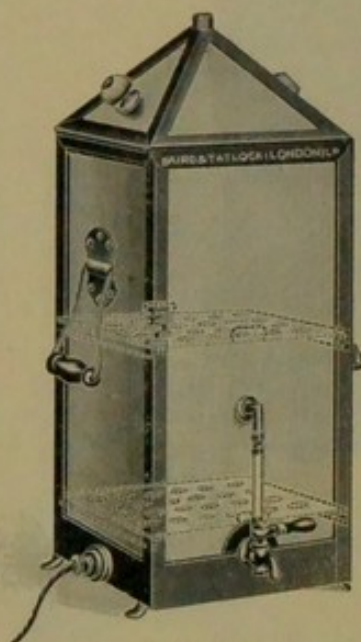
BP555 (Section)

BP555 Steam Sterilizer, with automatic feed, in hard rolled copper, asbestos covered, mounted on galvanized iron stand. The supply of water from cistern is so arranged that the water in sterilizer is maintained at a constant level.

A. Size of sterilizer, 20 × 10 × 10 in.	....	....	....	....	d £15 10 0
B. " " 20 × 12 × 12 in.	....	....	....	....	d £17 10 0
C. " " 20 × 16 × 16 in.	....	....	....	....	d £21 0 0



BP556



BP557

BP556 Steam Sterilizer, square, copper, tinned inside, covered asbestos, with two perforated movable trays, on stand, with tap and gauge.

A.	20 x 10 x 10 in.	....	d £6 0 0
B.	20 x 12 x 12 in.	....	d £6 10 0
C.	20 x 16 x 16 in.	....	d £9 0 0

BP557 Steam Sterilizer, as above, but adapted for heating by electricity.

		Consumption.	
A.	20 x 10 x 10 in.,	1100 watts	d £9 10 0
B.	20 x 12 x 12 in.	1400 ..	d £10 10 0
C.	20 x 16 x 16 in.	1600 ..	d £13 10 0

BP558 Spare Heaters, for above (2 in set)

A.	....	....	per set	d £1 7 6
B.	....	....	..	d £1 15 0
C.	....	....	..	d £2 0 0

Please state voltage when ordering.



BP560



BP561



BP562



BP563

BP560 Inner Vessels for Steam Sterilizers, square form of copper, with cover, bottom perforated.

Size	....	8 x 8	10 x 10	12 x 12	16 x 16 in.
Price	....	d 27/6	d 30/6	d 37/6	d 67/6

BP561 Inner Vessels for Steam Sterilizers, square form, with cover, of galvanized wire.

Size	....	8 x 8	10 x 10	12 x 12	16 x 16 in.
Price	....	d 25/-	d 32/6	d 36/-	d 50/6

BP562 Inner Vessels for Steam Sterilizers (Figs. BP540-BP544), with cover, bottom perforated.

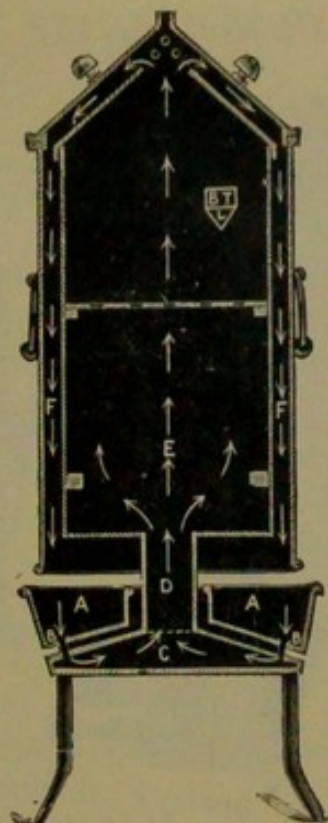
Diameter	....	6½	8	10	14 in.
A. Zinc	....	d 11/-	d 14/-	d 17/-	d 30/-
B. Copper	....	d 17/6	d 20/-	d 27/6	d 35/-

BP563 Inner Vessels for Sterilizers, of galvanized iron wire, with cover.

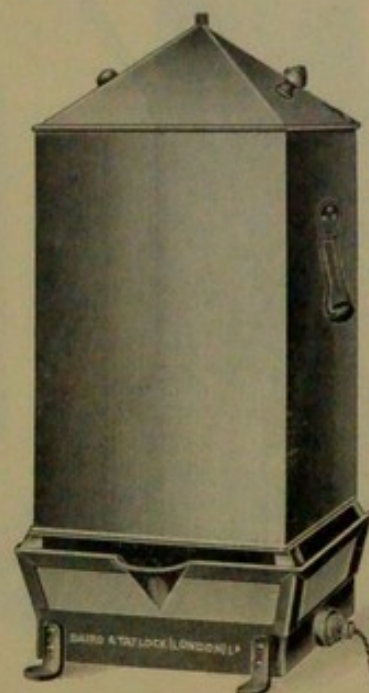
Diameter	....	6½	8	10 in.
Price	....	d 15/-	d 17/6	d 21/-



BP565



BP565 (Section)



BP566

BP565 Steam Sterilizer, Automatic Condensing Pattern, square form, of copper, with shelf in centre.

DESCRIPTION.

This sterilizer is rapid in action; water is poured into the reservoir (A) and percolates through (B) into the shallow generator (C), where it is immediately converted into steam, and rises through (D) into sterilizing chamber (E). The excess of steam escapes through jacket (F), and is condensed by the air, falling again into reservoir (A) and thence to generator (C). The sterilizer is thus automatic in action and will attain a steam temperature almost immediately the burner is lit.

Size No.	1	2	3
Size of chamber E	20 x 10 x 10	20 x 12 x 12	20 x 16 x 16 in.
Price	d £12 0 0	d £14 0 0	d £18 10 0

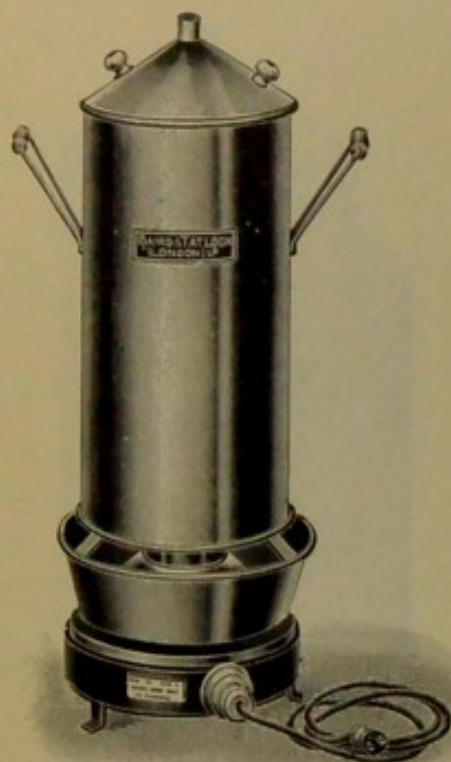
BP566 Steam Sterilizer, Automatic Condensing Pattern, as above, but arranged for heating by electricity.

Size of chamber E	20 x 10 x 10	20 x 12 x 12	20 x 16 x 16 in.
Consumption	1200	1500	1750 watts.
Price	d £16 10 0	d £18 10 0	d £23 10 0

BP567 Spare Heaters, for above

(2 in set)	d £1 12 6	d £1 17 6	d £2 0 0 per set.
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Please state voltage when ordering.



BP568



BP571



BP572

BP568 Steam Sterilizer, Automatic Condensing Pattern, of copper, as BP567, round pattern, arranged for heating by electricity.

Size	....	20 x 8	20 x 10	20 x 12	20 x 16 in.
Consumption	....	900	1100	1300	1600 watts.
Price	....	d £15 5 0	d £16 2 6	d £18 0 0	d £21 10 0

BP569 Spare Heaters, for above.

No. in set	....	1	2	2	2
Price	....	d £1 7 6	d £1 10 0	d £1 15 0	d £1 17 6

Please state voltage when ordering.

BP570 Steam Sterilizer, as above, Automatic Condensing Pattern, arranged for heating by gas ring, but without burner.

Size	....	20 x 8	20 x 10	20 x 12	20 x 16 in.
Price	....	d £11 10 0	d £12 15 0	d £15 0 0	d £16 17 6

BP571 Kettle, for electrical heating ; made of heavy gauge copper—tinned inside—and mounted on three heat insulating feet ; capacity 2 pints, consumption in watts 650 ; will boil in approximately 11 minutes. Price complete with connector, six feet of flexible cord, and bakelite adaptor to permit of its use with a lighting circuit d £1 6 0

Please state voltage when ordering.

BP572 Can, for sterilized water, made of heavy brass, well nickelled, tinned inside.

Capacity	....	5	10	15	20 litres.
Price	....	d 66/-	d 80/-	d 96/-	d 112/-

DRY STEAM STERILIZERS.



BP574



BP575



BP576



BP578

BP574 Dry Steam Sterilizers, heated by gas with our Registered Automatic Gas Regulator, and fitted with constant level apparatus.

Size	....	....	8 × 10	10 × 14	13 × 20	14 × 22 in.
With	....	....	1	1	1	2 baskets.
Price	....	....	d £7 7 0	d £8 8 0	d £11 11 0	d £14 10 0

For Inner Vessels see Nos. BP562–BP563.

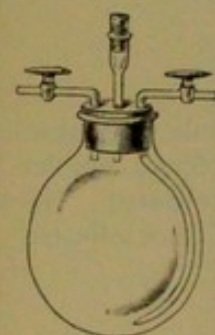
BP575 Steam Sterilizers, as above, but heated by oil lamp, and without Automatic Regulator.

Size	....	....	8 × 10	10 × 14	13 × 20	14 × 22 in.
With	....	....	1	1	1	2 baskets.
Price	....	....	d £5 17 6	d £6 10 0	d £8 10 0	d £11 10 0

BP576 Dry Steam Sterilizer, similar to above, but square form, to take inner vessels, Nos. BP560–BP561, fitted with our Registered Automatic Regulator, and adapted for heating by gas.

Size	....	10 × 10 × 10	12 × 12 × 12	20 × 10 × 10	20 × 12 × 12	20 × 16 × 16 in.
No. of shelves	....	1	1	2	2	2
Price	....	d £9 9 0	d £10 10 0	d £12 12 0	d £13 13 0	d £15 15 0

For Inner Vessels see Nos. BP560–BP561.



BP589

BP578 Dry Steam Sterilizer, as above, but arranged for heating by oil lamp, and without Automatic Regulator.

Size	....	10 × 10 × 10	12 × 12 × 12	20 × 10 × 10	20 × 12 × 12	20 × 16 × 16 in.
Price	....	d £7 7 0	d £8 2 6	d £9 5 0	d £11 10 0	d £13 15 0

For Hot Air Sterilizers see Section II f.

BP589 Apparatus for the Sterilization of Gum Saline, devised by Mr. Gardner, London Hospital, for use in subcutaneous injection, with stopcocks each d £1 1 0
(See description, "British Medical Journal," Oct. 26th, 1901.)

Cultivation and Isolation of Organisms.

INCUBATORS.

We have re-designed our well-known range of Incubators to suit modern requirements, and have incorporated a number of detailed improvements.

Outer Casing.—This is now made of Best Moulmein Teak with asbestos compound panels, giving a handsome appearance with a practically everlasting finish. As teak does not warp, and is immune from attack by white ants, it is very much more suitable than oak, particularly for use in tropical climates.

Both inner and outer doors are fitted with spring catches and open right back, so that they can be operated with one hand without danger of breaking the glass in the inner door.

Inner Jacket.—This is made of Hard Rolled Copper, and all joints are double lapped. The water jacket which surrounds the top, sides, and bottom maintains an even temperature throughout all parts of the incubator.

The space between the inner jacket and outer casing is heavily insulated with cork. This has a great advantage over slag wool, felt, and similar insulating materials, in that it does not become damp, is not liable to attack by moths, silver fish, etc., and does not harbour dust and dirt.

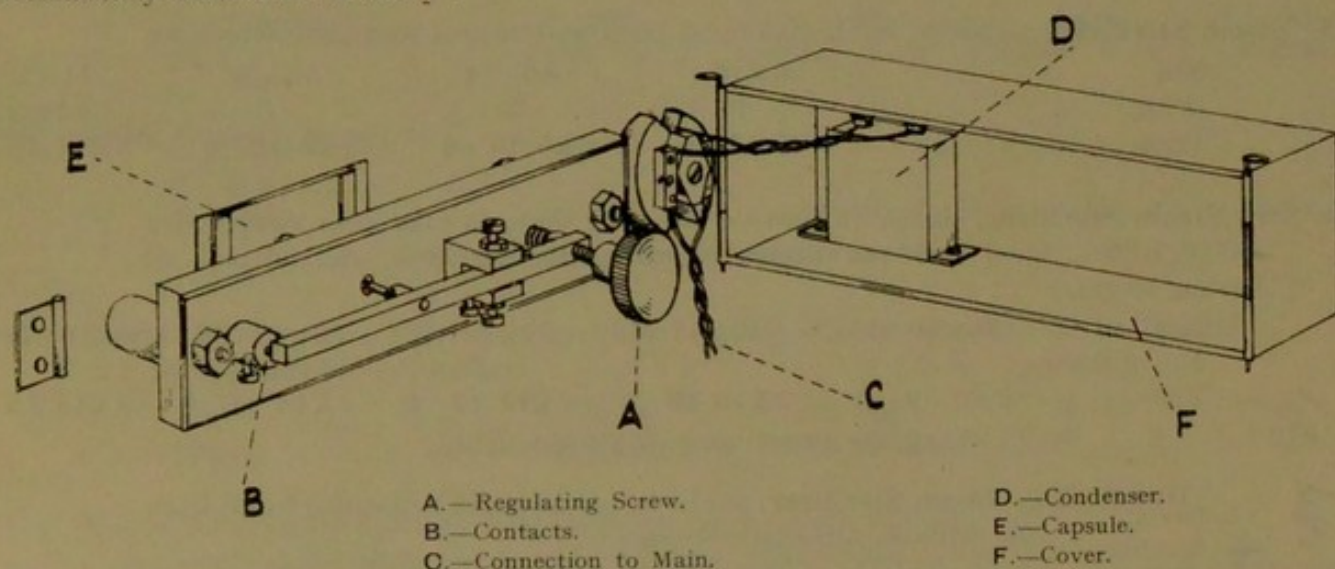
Heating.—Incubators can be supplied for heating by Gas, Electricity, or Oil Lamp.

Working Instructions.—A complete set of instructions is supplied with every incubator.

Special types or modifications can be made to order.

REGULATION OF TEMPERATURE.

Gas Heated Models. This is effected by our bi-metallic regulator; a large Bakelite control fitted on the side of the incubator is turned by hand till the figure corresponding to the required temperature is indicated on an engraved scale. Any temperature from 25° to 80° C. can be obtained. Once set on the dial the temperature is automatically maintained within $\frac{1}{2}^{\circ}$.

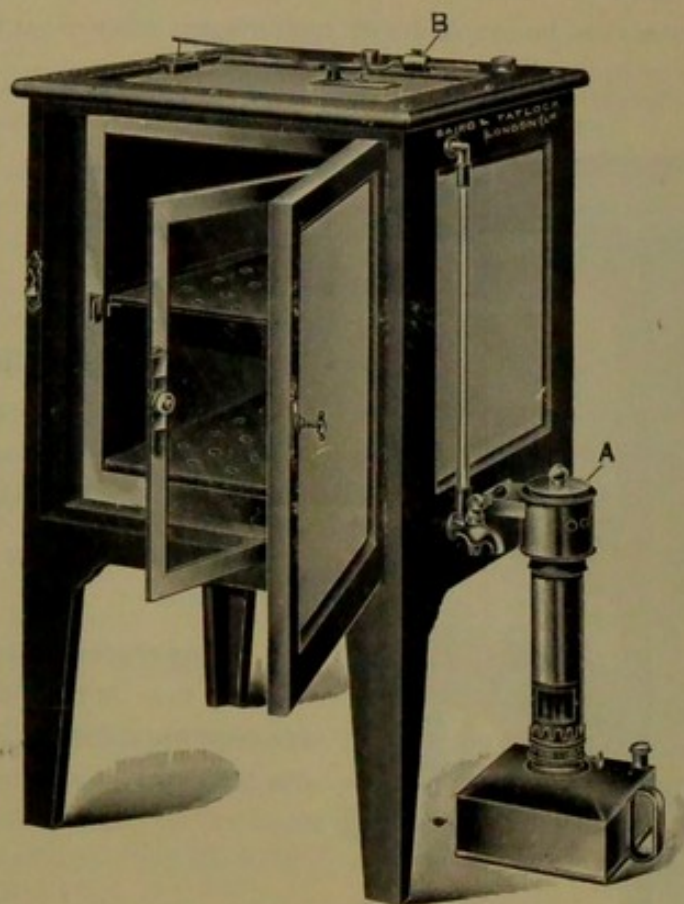


Electric Heated Models. Temperature is controlled by our Registered Automatic Capsule Regulator, and can be adjusted within 2° above or below the temperature for which the capsule is supplied. Spare capsules can be supplied for any temperature from 25° to 80°; a 37° capsule is supplied unless otherwise stated. The changing of a capsule is a simple operation and full directions are supplied with the incubator. Once adjusted the temperature is automatically maintained within $\frac{1}{2}^{\circ}$.

All-metal incubators suitable for temperature of 80° C.

Wooden framed incubators suitable for temperature of 70° C.

INCUBATORS FOR HEATING BY OIL LAMP.



BP602

BP602 B.T.L. Bacteriological Incubator, for temperature of 37° C. For general description, see page 1924.

Heated by paraffin oil lamp, and controlled by our capsule regulator. The lamp is placed at the side, as shown, and the heated air circulates through a rectangular duct in the water jacket. The outlet of the duct is at the top of the incubator, and is fitted with a damper operated by the capsule so as to control the circulation of heated air through the water jacket.

In practice, the set temperature is maintained with an accuracy of $\pm 1^\circ \text{C}$.

The price includes a heating lamp and complete equipment.

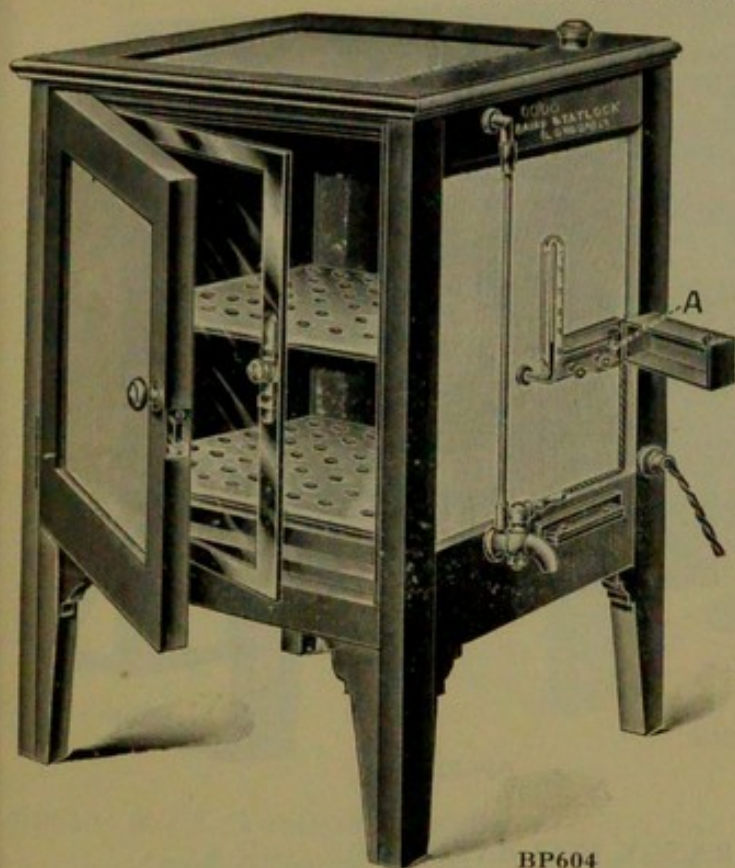
No. 1.	Size,	10 × 8 × 8 in. with 1 shelf	....	....	....	....	....	....	....	£11	0	0
No. 1a.	„	12 × 9 × 9	„	„	....	....	....	....	....	£11	10	0
No. 2.	„	12 × 10 × 10	„	„	....	....	....	....	....	£12	0	0
No. 2a.	„	14 × 12 × 12	„	„	....	....	....	....	....	£12	10	0
No. 3.	„	16 × 14 × 14	„	„	....	....	....	....	....	£15	10	0
No. 4.	„	20 × 16 × 16	„	2 shelves	....	....	....	....	....	£18	10	0
No. 4a.	„	24 × 20 × 20	„	„						£22	10	0

BP605	Additional or Spare Capsules, see page 1924					each	d £0	5	0
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It is sometimes convenient to have a second heating lamp, so that incubation can be continued while the lamp is being cleaned or refilled.

P603 Spare Heating Lamp £1 1 0

ELECTRIC HEATED INCUBATORS.



BP604

BP604 B.T.L. Bacteriological Incubator,
for temperature of 37°C. For
general description, see page 1924.

The heating resistance is designed to withstand double the load at which it is used, so that it is not liable to get out of order. The heater is inserted in a narrow pocket in the water jacket, and can be removed for inspection without risk of electric shock, and without disconnecting any leads, the connection being made by two insulated plugs.

In common with all our electrical apparatus, this incubator is shock-proof, and is supplied with a triple flexible lead for connecting to a mains plug.

The price includes complete equipment, as illustrated, and detailed working instructions are supplied.

Temperature Regulation.—This is effected by our registered automatic capsule Regulator, which maintains the temperature to $\pm \frac{1}{2}^{\circ}\text{C}$.

The capsule can easily be removed without taking out any screws, or disconnecting the regulator; capsules of other ranges may be used if desired. No one capsule is suitable for a range greater than 4°C , i.e. a 37° capsule can be adjusted to give 39° or 35° , or any intermediate temperature.

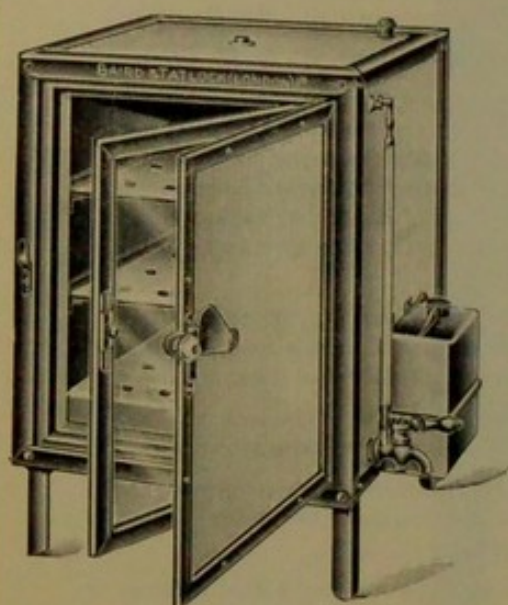
No. 1.	Size 10 × 8 × 8 in. inside, with 1 shelf.	Consumption in watts 200	....	....	d £12 15 0
No. 1a.	„ 12 × 9 × 9 „ „ „ „	240	....	....	d £13 10 0
No. 2.	„ 12 × 10 × 10 „ „ „ „	240	....	....	d £14 5 0
No. 2a.	„ 14 × 12 × 12 „ „ „ „	260	....	....	d £15 0 0
No. 3.	„ 16 × 14 × 14 „ „ 2 shelves.	280	....	....	d £17 10 0
No. 4.	„ 20 × 16 × 16 „ „ „ „	320	....	....	d £21 0 0
No. 4a.	„ 24 × 20 × 20 „ „ „ „	330	....	....	d £23 0 0
No. 5.	„ 30 × 18 × 16 „ „ „ „	380	....	....	d £28 0 0
No. 6.	„ 36 × 20 × 18 „ „ 3 „ „	400	....	....	d £31 0 0
No. 7.	With two chambers, each 24 × 18 × 16 in., and double doors.	Consumption in watts 660	....	....	d £48 10 0
No. 8.	With two chambers, each 36 × 20 × 18 in., and double doors.	Consumption in watts 800	....	....	d £55 10 0

BP605 Additional or Spare Capsules can be supplied for any temperature from 25° to 80°C . Price, each d 5/-

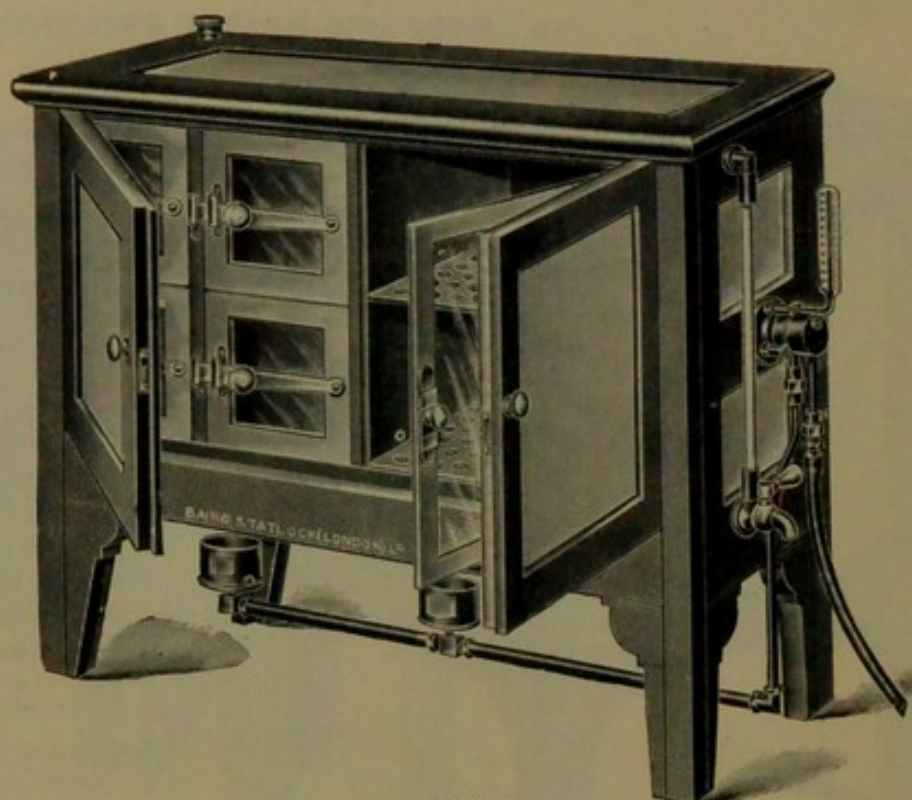
Please state temperature range required when ordering.

BP606 Spare Heaters for above
Nos. 1-6 d £1 1 0
 7-8 d £2 2 0 per set.

Please state voltage when ordering.



BP606



BP612

B.T.L. UNIVERSAL WIDE RANGE INCUBATOR.

BP606 Electric Heated Wide Range Incubator for temperatures from 25° to 70° C.

Temperature is controlled by our bi-metallic regulator which enables any temperature to be selected by setting a graduated dial.

These incubators are much used in small laboratories where the amount of work is not sufficient to justify the use of a separate incubator for each temperature.

For general description of the incubator, see page 1924. Price includes full equipment.

	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Size	12 × 10 × 10	16 × 14 × 14	20 × 16 × 16	30 × 18 × 16	36 × 20 × 18 in.
Consumption	220	320	500	750	1000 watts.
Price	d £18 10 0	d £22 10 0	d £26 0 0	d £33 5 0	d £36 0 0

BP608 Spare Heaters, for above

No. in set	1	2	2	2	2
Price per set	d £1 10 0	d £2 2 0	d £2 2 0	d £3 0 0	d £3 5 0

Please state voltage when ordering.

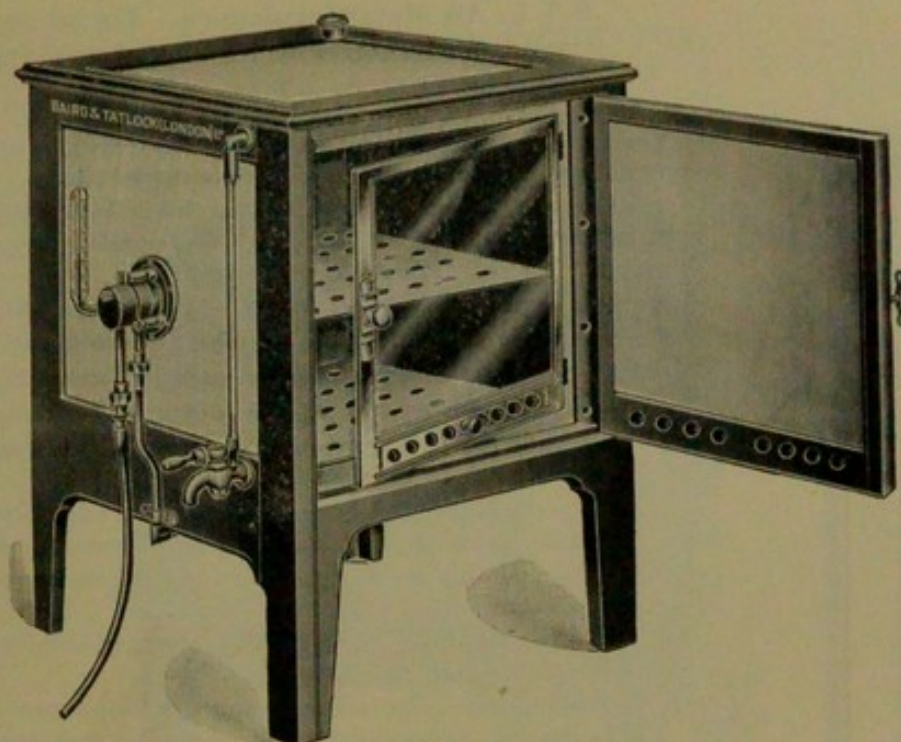
BP612 B.T.L. Incubator with five Chambers, gas heated, one chamber 12 × 18 in. high by 10 in. deep; the remaining four 9 × 9 × 10 in. inside. The incubator is fitted with our Automatic Temperature Regulator to control temperature at 37° C., and the water jacket and chambers are made of hard rolled copper throughout. The large chamber is fitted with movable shelf in centre. Outer casing is of teak with uralite panels insulated from copper jacket d £29 15 0

BP614 B.T.L. Incubator, as above, but arranged for electrical heating. Consumption in watts 400 d £32 10 0

BP615 Spare Heaters for above (two in set) per set d £2 2 0

Please state voltage when ordering.

Full instructions sent with each apparatus.



BP618

BP618 B.T.L. Tuberculin Incubator, similar to B.T.L. Bacteriological Incubator, new registered pattern for maintaining a uniform temperature of 37°C ., and fitted with our Registered Automatic Regulator, which will control the temperature to $\pm \frac{1}{2}^{\circ}\text{C}$. See page 1924.

Exterior frame of teak, and panelled with uralite and enamelled white. The interior is made of hard rolled copper sheet, and fitted with glass doors and movable shelves. A tap is provided for draining off the water, and a sight tube is fitted for ascertaining the level of water in water chamber. Each incubator is fitted with adjustable ventilators which allow the flow of air through the working space to be regulated.

Prices quoted include regulator for 37°C . thermometer and gas burner.

No.	1	2	3	4	5
Size	$10 \times 10 \times 8$	$12 \times 10 \times 10$	$16 \times 14 \times 14$	$20 \times 16 \times 16$	$30 \times 18 \times 18 \text{ in.}$
Shelves	1	1	1	2	2
Price	d £12 10 0	d £14 0 0	d £17 10 0	d £20 0 0	d £31 0 0

BP620 B.T.L. Tuberculin Incubator, exactly as above, but arranged for heating by electricity.

No.	1	2	3	4	5
Consumption in watts	200	240	280	310	410
Price	d £14 0 0	d £15 0 0	d £18 10 0	d £21 0 0	d £32 0 0

BP621 Spare Heaters for above ... d £1 0 0 d £1 0 0 d £1 0 0 d £1 4 0 d £1 8 0

Please state voltage when ordering.

B.T.L. All Metal Incubators. The all metal construction has marked advantages over the usual wood framed type in certain climates.

The latest product of our Factory, most modern and up-to-date design, handsomely finished in polished copper with white enamel panels.

The following features will appeal to the discriminating user :

1. All metal construction. No possibility of shrinking or warping. Great strength and rigidity. Practically everlasting.
2. Flush panels and frame-work. No edges or recesses to harbour dust.
3. Can be kept clean by occasionally wiping over with a duster.
4. All working parts are protected by covers and cannot be accidentally disturbed.
5. No material is used which is liable to be stained or contaminated by spilling.
6. Electrically heated models are fully protected against any possibility of electric shock.
7. No electrical knowledge is required to remove and replace the heating element, and this can be done without touching or even exposing any " live " parts.
8. Heating elements are designed to stand twice the current used, thus giving an almost indefinite " life."
9. Both outer door and inner glass door open and close easily and smoothly ; no danger of jarring the contents.
10. The gas heated model can be used at any temperature up to 80° C. by merely setting the regulator dial to the appropriate graduation.

CONSTRUCTION.

The construction of the inner and outer jackets follows the practice of our standard Bacteriological Incubator—both jackets are of heavy gauge copper, and all seams are double lapped and soldered, thus obviating any possibility of leakage in the water jacket.

The outer frame-work is of angle copper with flush panels of cellulose enamelled iron.

The stand, which is supplied as an extra, is of welded steel tube, all joints being flush ; it is finished in white enamel.

TEMPERATURE REGULATION.

In the gas heated model the temperature is controlled by our bi-metallic regulator which gives a range of 25° to 80° C., the selected temperature being set on a dial. In the case of electrically heated models, the temperature is controlled by our registered automatic capsule regulator ; this is normally supplied for 37° C., but additional capsules can be supplied for other temperatures, if required.

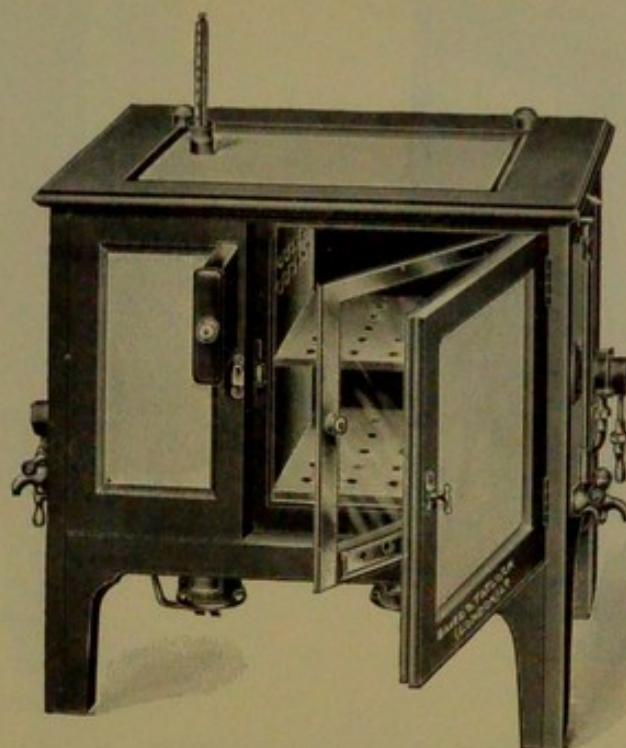
Each capsule has a range of 4° C. ; the operation of changing capsules is a very simple one, and is fully explained in the illustrated instruction card supplied with the incubator.

The temperature is maintained with an accuracy of $\pm \frac{1}{2}^{\circ}$ C.

	No. 2a.	No. 4.	No. 5.
	14 x 12 x 12	20 x 16 x 16	30 x 18 x 16 in.
BP628 Gas Heated Model, without stand	 d £15 0 0	d £19 17 6	d £28 0 0
BP630 Electric Heated Model „ „	 d £16 16 0	d £21 10 0	d £31 10 0
Consumption in watts	 280	350	450
BP632 Spare Heaters (one per set)	 d 21/-	d 30/-	d 35/- each.
BP605 Spare Capsules	 d 5/-	d 5/-	d 5/- „
BP634 White Enamelled Steel Stands	 d 42/-	d 50/-	d 57/6 „

Please state voltage when ordering.

PARASITOLOGICAL INCUBATOR.



BP644

BP644 B.T.L. Parasitological Incubator, for temperature of 37°C . under moist conditions.
Gas heated.

The construction is similar to that of all our incubators (see page 1924), but there is a separate water bath at one side, heat controlled independently from the incubator. This bath supplies warm moist air to the working space, the degree of humidity in the latter being regulated by adjustment of a sliding shutter.

Price includes thermometer, bi-metallic regulator, and full equipment.

Size	....	....	....	....	10 × 8 × 8	12 × 10 × 10	16 × 14 × 14 in.
Price	....	....	....	....	d £20 0 0	d £22 0 0	d £25 10 0

BP646 Incubator, exactly similar as above, but electrically heated and controlled by capsule regulator.

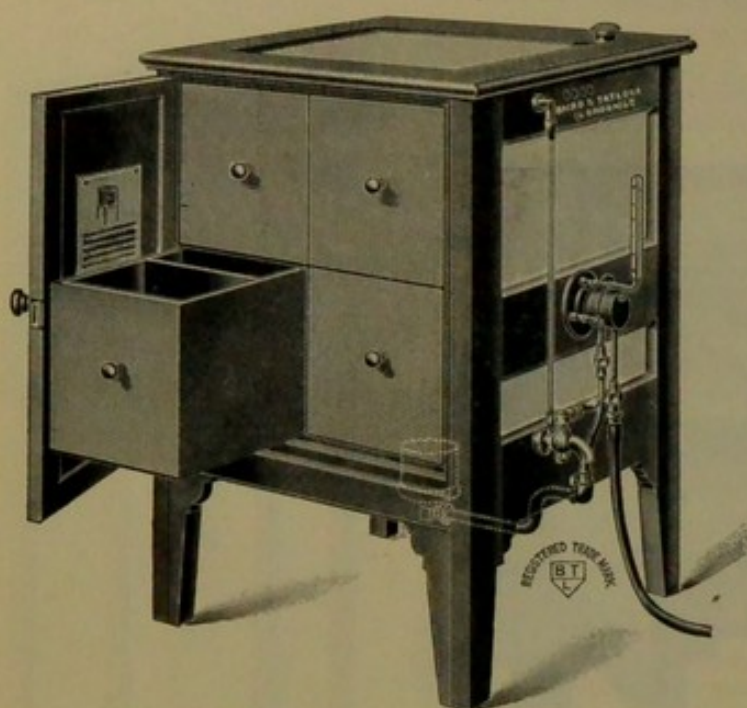
Size	....	....	....	....	10 × 8 × 8	12 × 10 × 10	16 × 14 × 14 in.
Price	....	....	....	....	d £23 10 0	d £26 10 0	d £30 0 0

Consumption in watts 400 480 560

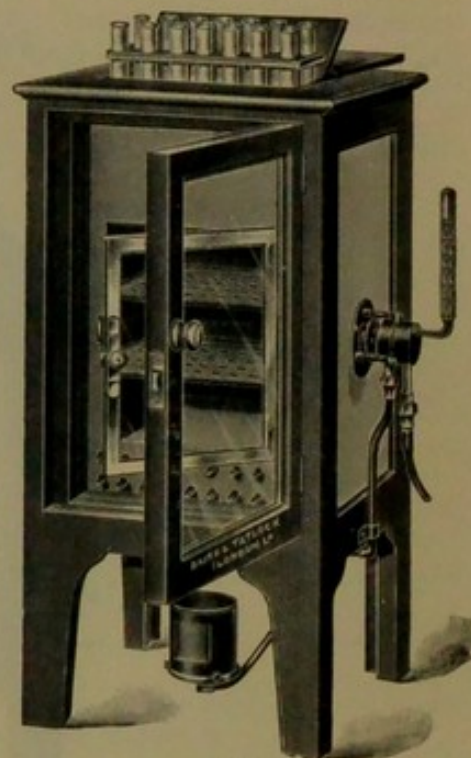
BP647 Spare Heaters, for above (two per set) d 39/- d 39/- d 39/- per set.

BP605 Spare Capsules d 5/- each.

Please state voltage when ordering.



BP652



BP654

BP652 B.T.L. Compartment Incubator, for temperature of 37° C., similar in construction to No. BP646, but fitted with a series of four drawers, size of each drawer, $4\frac{3}{4} \times 11\frac{3}{4} \times 7\frac{1}{2}$ in. deep. Complete with thermometer.

A. For heating by gas	.....	.....	.....	.....	.....	.....	d £21	0	0
B. For heating by oil	.....	.....	.....	.....	.....	.....	d £22	5	0
C. For heating by electricity. (Please state voltage.)	Consumption 320 watts	d £23	0	0					

BP653 Spare Heater for BP652 C d £1 1 6

We specialise in incubators, and manufacture same with 1, 2, 4, 6 or more compartments or drawers as may be required.

BP654 Wassermann Incubator. For gas heating. Specially designed for the medical practitioner, fitted with movable tube stand for $3 \times 1\frac{1}{2}$ in. tubes for Wassermann Test, and with 12 brass receptacles numbered 1 to 12 for tubes for opsonic work. Complete with thermometer. d £18 10 0

The general construction and finish is the same as that of our standard incubators, see page 1924.

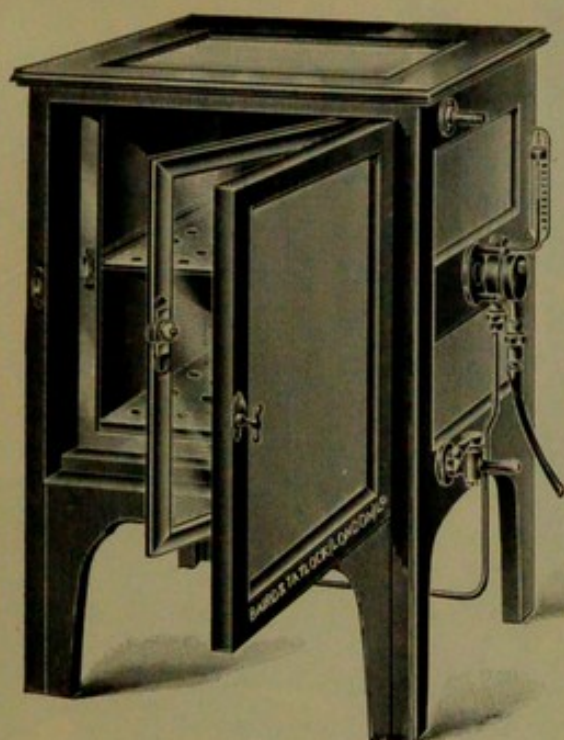
Controlled by bi-metallie regulator at 37° C. Higher temperatures, up to 80° C., can be obtained by setting the required temperature in the dial of the regulator.

BP656 Wassermann Incubator. As above, but electrically heated and controlled by capsule regulator. Consumption 200 watts. Complete with thermometer d £19 15 0

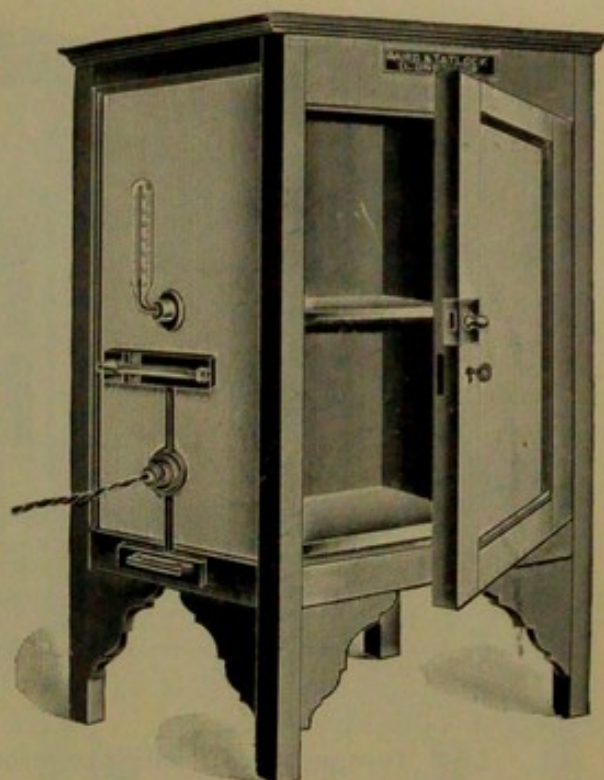
BP657 Spare Heaters, for above (one per set) each d £0 12 6

BP605 Spare Capsules d £0 5 0

Please state voltage when ordering.



BP658



BP660

BP658 Cool Incubator, gas heated. The general construction and finish is as described on page 1924. Complete with thermometer.

The incubator is designed for a temperature of 22° C., but can be used for any temperature up to 80° C., by setting the required temperature on the dial of the bi-metallic regulator.

When the room temperature is above that at which the incubator is required to work, the water tap must be connected to the water supply, and water allowed to flow gently through the water jacket and out by the open tube at the side, whence it can be led away by rubber tube to a convenient waste.

When the room temperature is below that at which the incubator is required to work, a supply of running water is unnecessary, but the water jacket must of course be filled before use.

No. 2.	Size, 12 x 10 x 10 in.	....	....	....	....	....	....	d £13 0 0
„ 3.	„ 16 x 14 x 14 „	....	....	....	....	....	....	d £15 10 0
„ 4.	„ 20 x 16 x 16 „	....	....	....	....	....	....	d £17 10 0
„ 5.	„ 30 x 18 x 16 „	....	....	....	....	....	....	d £26 0 0
„ 6.	„ 36 x 20 x 18 „	....	....	....	....	....	....	d £30 10 0

BP660 Cool Incubator, as BP658, but electrically heated and controlled by capsule regulator. For temperature of 22° C. Higher temperature can be obtained by the use of the appropriate capsule, each capsule having a range of 4° C. Complete with thermometer.

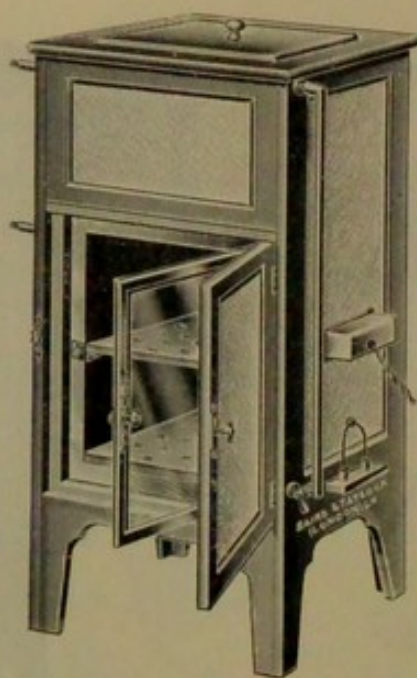
No. 2.	Size, 12 x 10 x 10.	Consumption in watts	240	....	....	....	d £14 5 0
„ 3.	„ 16 x 14 x 14.	„ „	280	....	....	....	d £16 17 6
„ 4.	„ 20 x 16 x 16.	„ „	310	....	....	....	d £21 0 0
„ 5.	„ 30 x 18 x 16.	„ „	380	....	....	....	d £28 10 0
„ 6.	„ 36 x 20 x 18.	„ „	410	....	....	....	d £31 10 0

BP661 Spare Heaters, for any of above, one in set each d £1 1 0

Please state voltage when ordering.

BP605 Capsules, for any temperature „ d £0 5 0

Full instructions sent with each Incubator.



BP667

Low Temperature Cool Incubators. For a temperature of 18° C. and above where a supply of cold water is not available.

The incubator is similar to our cool incubators BP658 and BP660, with the addition of an ice tank which can be mounted on top of the incubator, or in any convenient adjacent position, the inlet being connected to a supply of running water, and the outlet to the incubator tap.

The Ice Tank consists of a cylindrical copper vessel, heavily insulated with cork lagging, and fitted in a strongly made polished wood case.

The water supply is led through a coil of piping in the tank, the latter being filled with broken-up ice.

BP666 Low Temperature Cool Incubator, gas-heated, general construction and finish as described above.

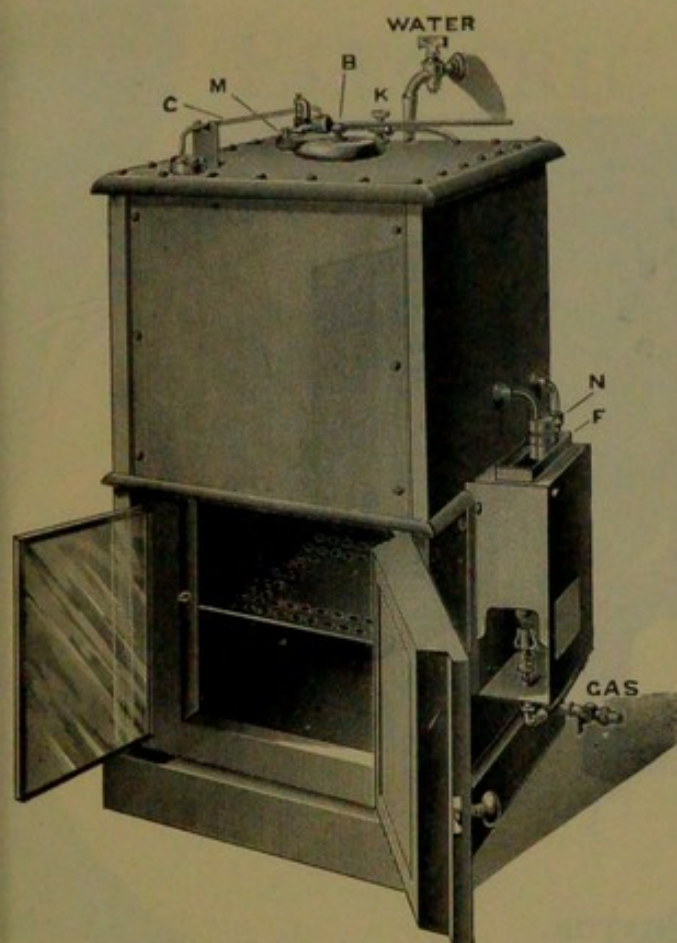
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BP667 Low Temperature Cool Incubator, electrically heated, general construction and finish as described above.

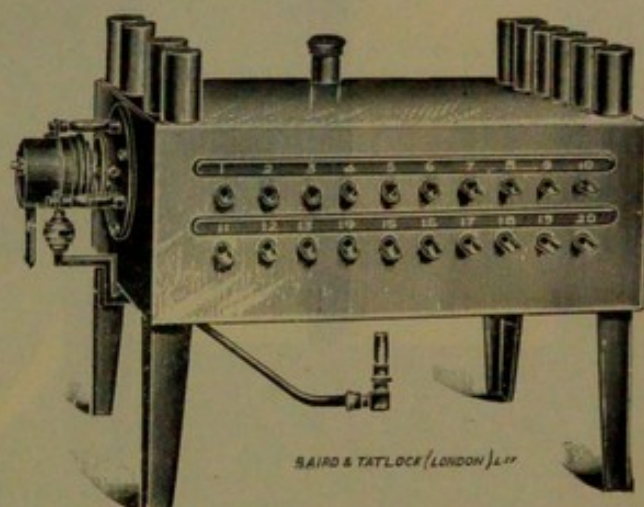
No. 2.	Size	12 × 10 × 10.	Consumption in watts, 240			 d £19 0 0
3.	16 × 14 × 14	280	....	....	.... d £23 0 0	
4.	20 × 16 × 16	310	....	....	.... d £27 10 0	
5.	30 × 18 × 16	380	....	....	.... d £38 0 0	

Spare Heaters as BP661.

Please state voltage when ordering.



BP668-BP671



BP672

Cool Biological Incubator, consisting of water-jacketed chambers, surmounted by a vessel containing ice, the whole apparatus being surrounded by non-conducting material and wood. At the side is a lantern containing an open boiler, heated by a small gas or petroleum lamp-flame.

BP668	Inside measurements, 9 x 9 x 12 in.	....	....	....	....	....	....	£13 5 0
BP669	" " 12 x 12 x 14 "	....	....	....	....	....	....	£16 10 0
BP670	" " 15 x 15 x 18 "	....	....	....	....	....	....	£19 15 0
BP671	" " 20 x 20 x 24 "	....	....	....	....	....	....	£27 0 0

BP672 Opsonic Incubator, copper, with our new pattern Automatic Regulator (Registered No. 536814), adjusted for a temperature of 37° C., with twenty water-jacketed tubes for blood pipettes, and ten tubulures for carrying culture tubes. The automatic gas regulator is similar to that described under No. BP612. Price with burner d £8 0 0

BP673 Opsonic Incubator, as above, but arranged for oil heating d £8 15 0

BP674 Opsonic Incubator, as above, but arranged for electrical heating. Consumption 300 watts d £9 10 0

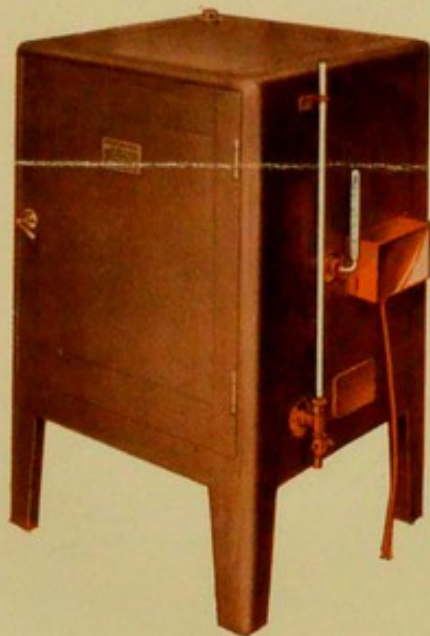
BP675 Spare Heater, for above d £1 1 0

Please state voltage when ordering.

BP678 Glass Blood Pipettes, for use with above, straight per gross d £0 17 6

BP679 Glass Blood Pipettes, for use with above, curved d £1 5 0

B.T.L. NEW MODEL ELECTRIC INCUBATOR



CLEANLINESS

Outer casing of well-seasoned teak, flush panels and rounded corners.

ACCURACY

Control accurate to $\pm \frac{1}{2}^{\circ}\text{C}$.
Regulator protected from damage and accidental alteration by hinged cover.

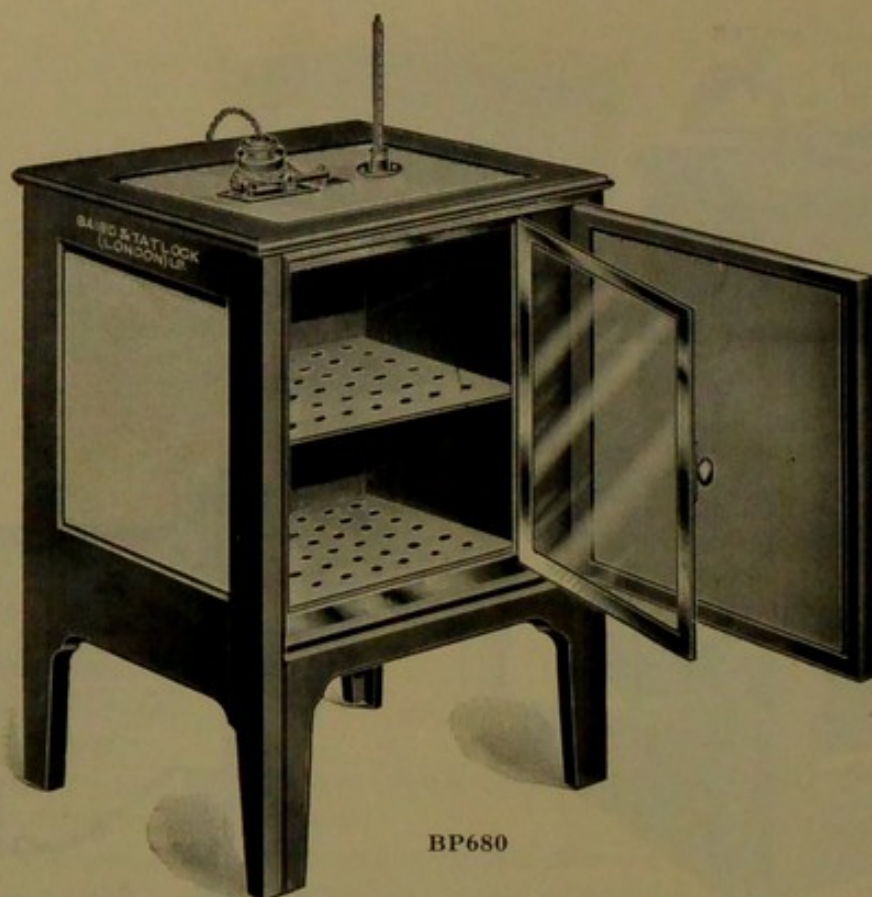
DURABILITY

Double jacket of 22 S.W.G. hard rolled copper. Specially designed make and break, thus reducing sparking and wear on points to a minimum.

CONVENIENCE

Shelves adjustable for height at 2" intervals and supported efficiently throughout their length.





BP680

ANHYDRIC INCUBATOR.

BP680 B.T.L. Electric Anhydric Incubator.

The disposition and grading of the electric heating elements is such that a uniform temperature is maintained in all parts of the incubator, without the use of a water jacket.

The case is constructed of teak with uralite panels, and the double jacketed copper inner chamber is heavily insulated.

The temperature (60° C.) is controlled by our registered automatic capsule regulator.

Higher temperatures, up to 90° C., can be obtained by the use of the appropriate capsule.

No. 1.	Size, 10 × 8 × 8 in., with 1 shelf.	Consumption in watts	200	Complete with thermometer	d £13 15 0
" 2.	" 12 × 10 × 10 " " "	" "	250		d £15 5 0
" 3.	" 16 × 14 × 14 " " 2 shelves.	" "	440		d £18 0 0
" 4.	" 20 × 16 × 16 " " "	" "	500		d £19 5 0
" 5.	" 30 × 18 × 16 " " "	" "	1200		d £25 10 0
" 6.	" 36 × 20 × 18 " " "	" "	1800		d £32 0 0

BP682 Spare Heaters.

Size	....	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
No. in set	....	6	6	6	6	8	8
Price per set	....	d 27/6	d 30/-	d 35/-	d 41/-	d 55/-	d 66/-

BP605 Capsules, for any temperature each d £0 5 0

Please state voltage when ordering.

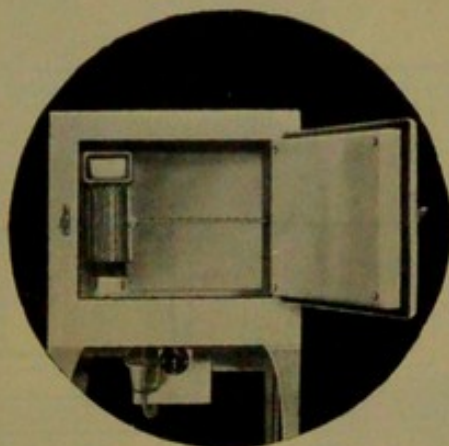
INCUBATOR CHAMBERS.

We supply the necessary fittings for accurately controlling these rooms. The rooms should be fitted with double doors, and the walls built of non-conducting material. Full details and specification sent on application.

We have made these rooms with heat regulation by means of **gas, electricity or oil.** Prices and specification sent on receipt of particulars as to size of rooms and heating required.

Incubators for paraffin embedding, inactivating and agglutination. Any of the incubators listed can be supplied with capsules adjusted at 55°-60° C., or other temperatures if desired. (See also our **Wide Range Incubators**, page 1928.)

ELECTROLUX REFRIGERATORS.



BP710



BP716

Electrolux Refrigerators operate without machinery, are soundless, automatic and have no moving parts—cost but a trifle to run and will work with either gas, electricity or oil. All cabinets are provided with a thermostat as standard for automatically regulating the cabinet temperature—the cooling water being also automatically controlled. Consumption is very low, ranging from approx. 2 units of electricity daily; 24 cu. ft. of gas; or 1 pint of paraffin oil. The cabinet temperature **only** is thermostatically controlled on the oil operated cabinet.

PRICES.

- BP710** The "Minor" Refrigerator, finished in white washable cellulose on rustless steel outer fittings chromium plated, interior lining pure porcelain white enamelled on seamless steel. The shelf is rustproof, and the whole is easy to handle and portable. This model is air-cooled and requires no water. External dimensions: Height (with legs) $31\frac{1}{4}$ × width $19\frac{3}{4}$ × depth $19\frac{1}{2}$ in. Price as described h £19 10 0
- Extra for paraffin oil operated model h £1 0 0
- BP712** The "Freezolux" Refrigerator, white washable enamelled steel finish, chromium plated door furniture, black Troilite door jambs and facings. Shelf area, $4\frac{1}{2}$ sq. feet, 3 lbs. of ice. External dimensions: Height $36\frac{1}{2}$ in. (including $8\frac{7}{8}$ in. legs) × width $26\frac{3}{4}$ × depth $20\frac{1}{8}$ in. Operates by gas or paraffin oil. Price as described h £29 15 0
- BP714** The "Kitchen" Model Refrigerator, as No. BP 712, but with oak door jambs and facings. Shelf area, $10\frac{1}{2}$ sq. feet, 3 lbs. of ice—quick cooling compartment in addition. External dimensions: Height $35\frac{3}{4}$ in. (including $2\frac{1}{2}$ in. feet) × width $37\frac{3}{4}$ × depth $25\frac{3}{8}$ in. Price as described h £54 15 0
- BP716** The "Household" Model Refrigerator, as No. BP712. Shelf area, 10 sq. feet, 4 lbs. of ice. External dimensions: Height $54\frac{1}{2}$ in. (including $6\frac{7}{8}$ in. legs) × width 35 × depth $22\frac{7}{8}$ in. Price as illustrated h £72 10 0

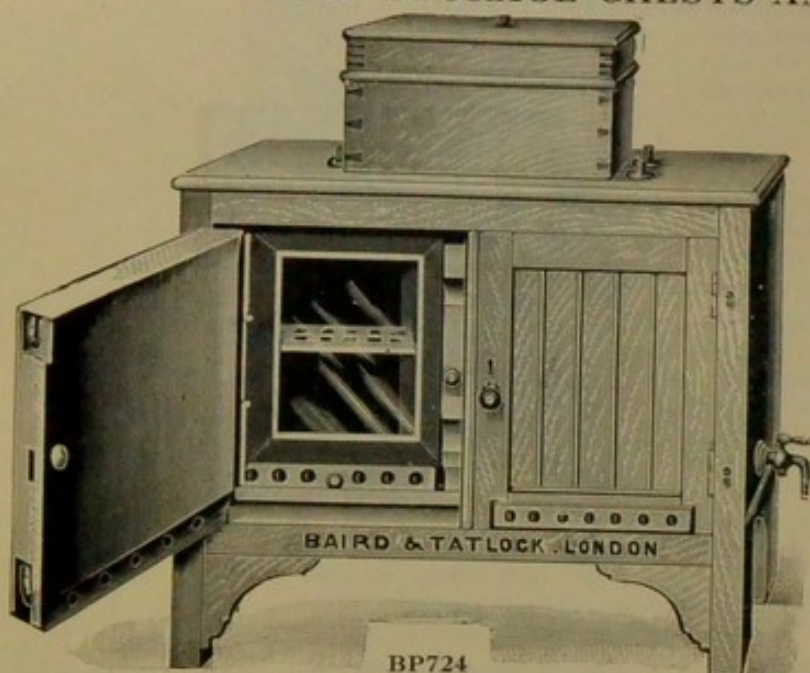
Note.—The Prices quoted above are special ex-works prices.

Please state voltage when ordering.

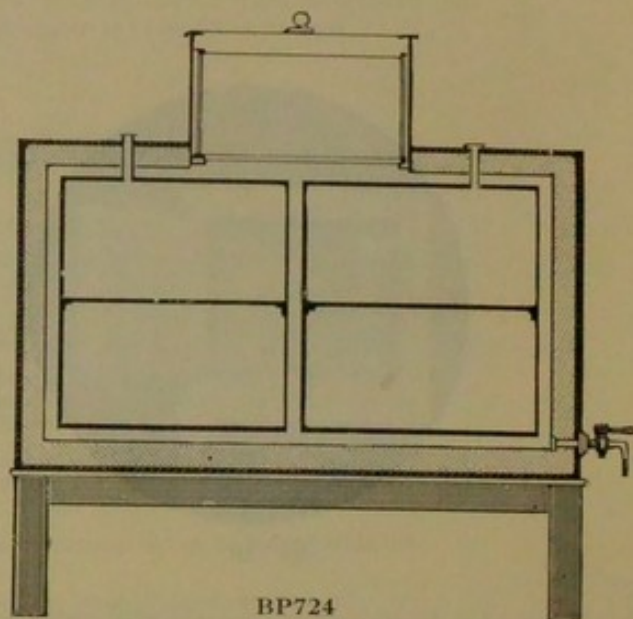
INSTALLATION.

Where premises are supplied with gas, electricity and water from the mains of a local Supply Company, the installation will be arranged at purchaser's request; the charges being from £3 10s. 0d., which price does not include the supply and/or fitting of meters, should such be required. In Northern Ireland, Irish Free State and Channel Islands, an extra charge of £1 is made for delivery, and a special quotation will be given for installation.

COLD STORAGE CHESTS AND REFRIGERATORS.



BP724



BP724

BP724 Cold Storage Chest, with two chambers, each 13 in. high $\times$ 9 $\times$ 9 in. inside, fitted with a box on top with grid for ice, set in a strong wooden case, the space between the outer case and chest being filled with slag wool to ensure uniformity of temperature. A stopcock is fitted at the bottom to run off the excess of water; two tubulures are fitted on top of each chamber, one for ventilation and one for thermometer. Price with two suitable thermometers *b* £19 10 0



BP730



BP732

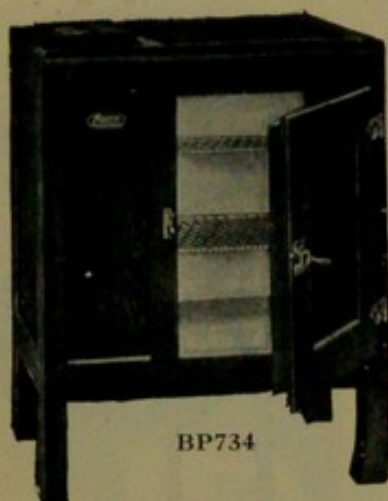
All the models listed below are constructed of sound, matured, kiln-dried pine and finished externally in an attractive oak effect. In the Super-Model flush panelling is exclusively employed; this gives an unbroken surface without projections or crevices likely to harbour dust. Also it is simple and easy to keep clean. All cabinet models have hinges, fasteners, etc., of solid brass, heavily nickel plated. Most of the models shown are fitted with a patent ice container which ensures a perfect circulation of "pure dry air." The Super-Model has a one-piece metal lining finished in hard, snow-white, odourless enamel; the most hygienic durable lining possible. The shelves in this model are of patented expanded steel construction, and are heavily tinned, exceptionally strong and easily cleaned. This model also has insulation by highest quality compressed cork slabs, completely isolating the interior from the temperature outside it. This is one of the many secrets which make these models as perfect as possible in every detail.

BP730 Cold Storage Chest, "Polar" Model. Height 16 in., length 22 in., depth 16 in. Price complete, as figured *d* £2 7 6

This model veritably brings refrigeration within the reach of all. The construction and design are on the same lines as the larger models listed below. It is fitted with removable ice container and unbreakable shelf.

BP732 Cold Storage Chest, "Fridgette" Cabinet Model. Height 30 in., width 17 in., depth 16 in. Price as figured *d* £3 18 0

These Cabinet Refrigerators are intended primarily for very small households, but are also particularly suitable for small laboratory and hospital use. Very handy and inexpensive.



BP734

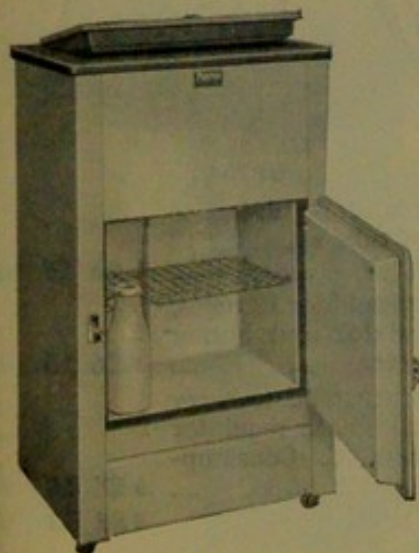
BP734 Cold Storage Chest, " Briton " Cabinet Model, with food chamber on one side and ice container on the other. An excellent low-priced refrigerator for average laboratory use.

A. Height 30 in., width 23 in., depth 17 in.

d £4 0 0

B. Height 34 in., width 27 in., depth 17 in.

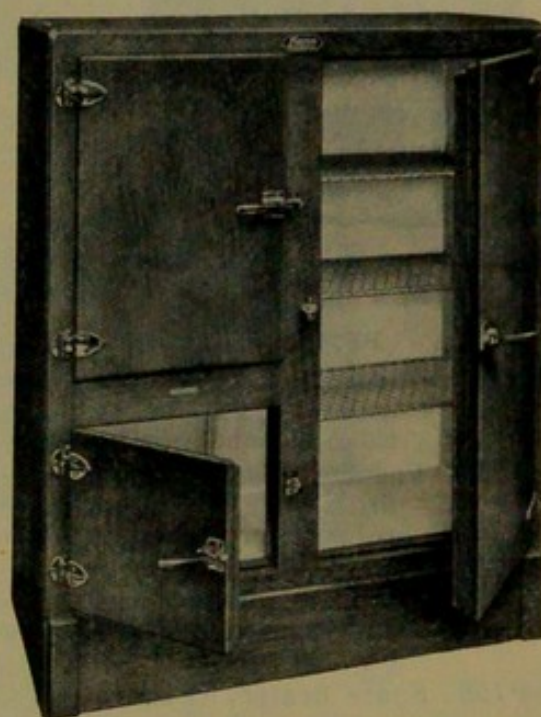
d £5 0 0



BP736



BP738



BP740

BP736 Ice Cooled Refrigerator, small pattern. Size 38½ in. high, 22½ in. wide, 17 in. deep. Complete as figured

d £9 10 0

Embodying all the finest qualities of appearance and efficiency. Exterior finished in beautiful white cellulose on steel with polished teak wood trimming and heavy chromium plated hinges and fasteners. The interior linings are of one-piece white porcelain enamel on steel with rounded corners and specially designed edges to facilitate easy cleaning of the interior.

BP738 Cold Storage Super Dry Air Cabinet or Refrigerator, medium capacity. Ice container opens from the top instead of from the front. One piece white enamelled metal linings to food chambers, and strong expanded steel shelves. Made of specially selected kiln dried pine, finished with solid brass hinges and patent easy fasteners, heavily nickel plated.

Size A. 37 in. high, 22 in. wide, 17 in. deep

d £7 15 0

" B. 42 " 25 " 18 "

d £9 10 0

" C. 48 " 28 " 20 "

d £12 10 0

BP740 Cold Storage Super Dry Air Cabinet or Refrigerator, a very useful sized model, having two food chambers and three shelves. It incorporates all the latest up-to-date super features.

Size A. 46 in. high, 35 in. wide, 20 in. deep; internal capacity 10 cubic feet.

d £18 10 0

" B. 50 " 38 " 21 " " " 13 "

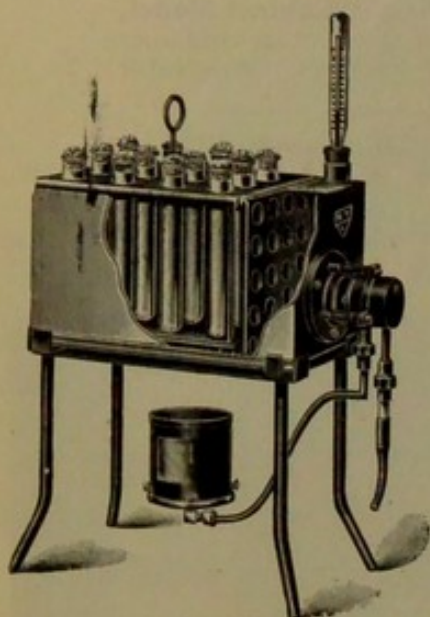
d £21 10 0

" C. 54 " 44 " 23 " " " 18 "

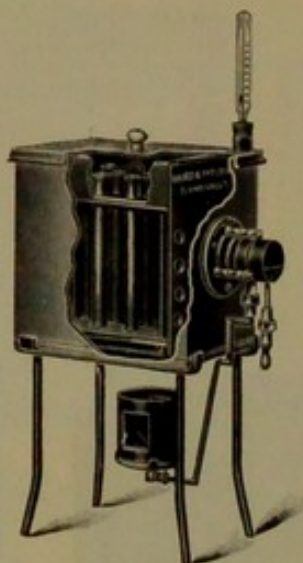
d £27 0 0

Refer to Section III. for Ice Making Machines.

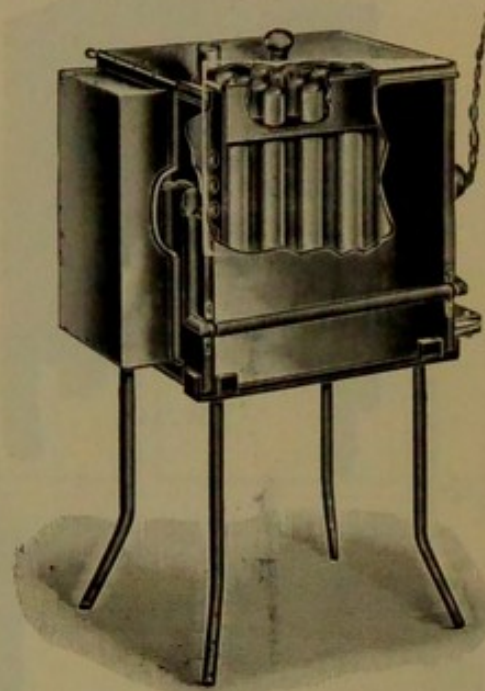
VACCINE BATHS.



BP750



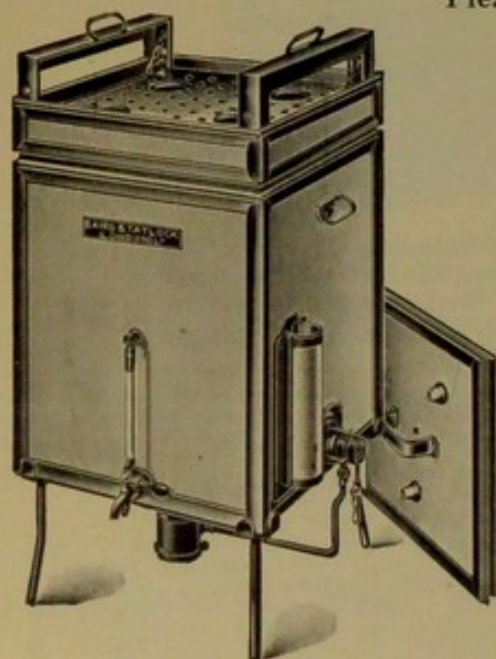
BP752



BP754

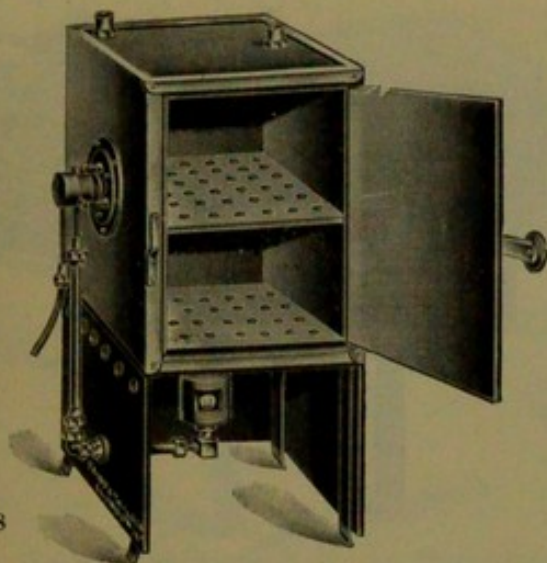
- BP750 Vaccine Bath, of Copper**, for sterilizing Vaccines, with automatic regulator to maintain a uniform temperature of 56° C., with movable copper test tube stand for 12 tubes to be immersed in bath. On stand, with thermometer *b* £6 15 0
- BP752 Vaccine Bath, of Copper**, for sterilizing Vaccines, with movable inner stand for 12 tubes, fitted with lid and thermometer. Our registered automatic regulator and burner adjusted for temperature of 56° to 60° C. On stand, with thermometer *b* £6 15 0
- BP754 Vaccine Bath, of Copper**, for sterilizing Vaccines, with movable inner stand to carry 12 tubes, with cover and thermometer, and fitted with our registered automatic regulator and arranged for heating by electricity, with capsule to work at 56° to 60° C. Consumption 300 watts. On stand *b* £8 10 0
- BP755 Spare heater**, for above *d* £1 2 0

Please state voltage when ordering.



BP756

- BP756 Copper Bath for the Preparation of Vaccines**, as used in the Vaccine Department, Royal Army Medical College. Size $16 \times 16 \times 20$ in., asbestos covered, with removable extension at top 3 in. deep. The bath is fitted with B.T.L. automatic regulator working at 58° C., and provided with thermometer sheath at side and two tubulures in the cover. A metal framework rests on a shelf 4 in. from the bottom and carries two perforated shelves, the upper one of which can, by means of a special arrangement, be fixed at any desired height inside the chamber. Price complete on stand, gas heated, as illustrated *b* £15 10 0



BP758

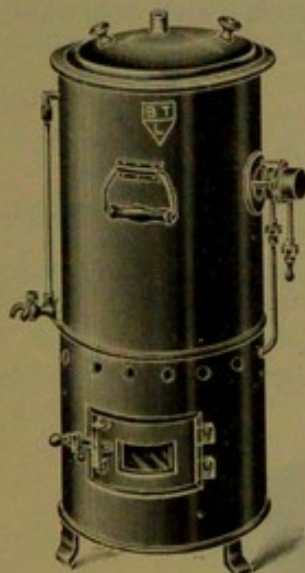
BP758 Copper Vaccine Bath, double-jacketed, fitted with automatic regulator, to work at 56° C. Size inside, 12 x 8 x 15 in. high d £9 0 0

Wassermann Baths.

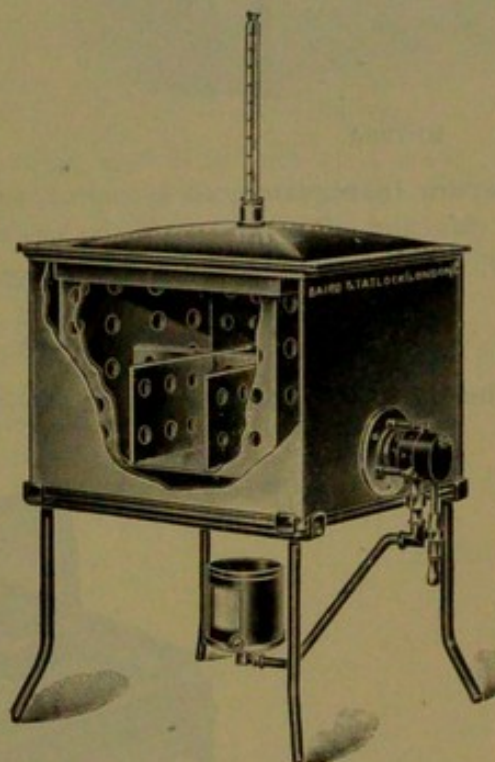
(See Nos. BC340-BC357, Section XXV.)

Wassermann Racks and Stands.

(See Nos. BC382-BC391, Section XXV.)



BP760



BP766

BP760 Vaccine Bath, of Copper, double walled, internal size of bath 8 in. diam. x 14 in. deep, fitted with removable galvanized wire basket capable of taking twenty tubes, complete with thermometer and our registered automatic regulator to work at 56° to 60° C. Arranged for gas heating. On stand d £9 10 0

BP762 Vaccine Bath, as above, but arranged for heating by electricity d £11 10 0
Please state voltage when ordering.

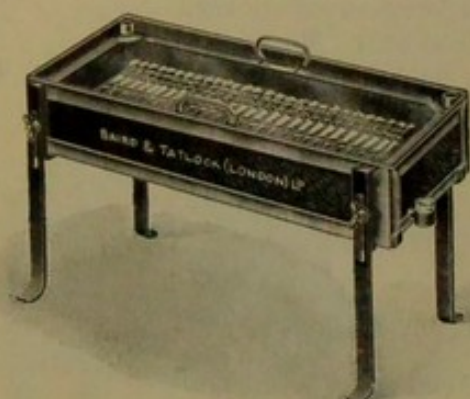
BP764 Spare Wire Baskets, for use with above each d £0 6 6

BP766 Copper Water Bath, designed by Sir Alexander Houston, Metropolitan Water Board Laboratories, for keeping sterile agar in liquid state at 42° C. ready for inoculation previous to pouring into Petri dishes for cultivations, fitted with automatic regulator, burner and stand, complete with thermometer and copper test tube stand for immersion in bath each b £7 0 0

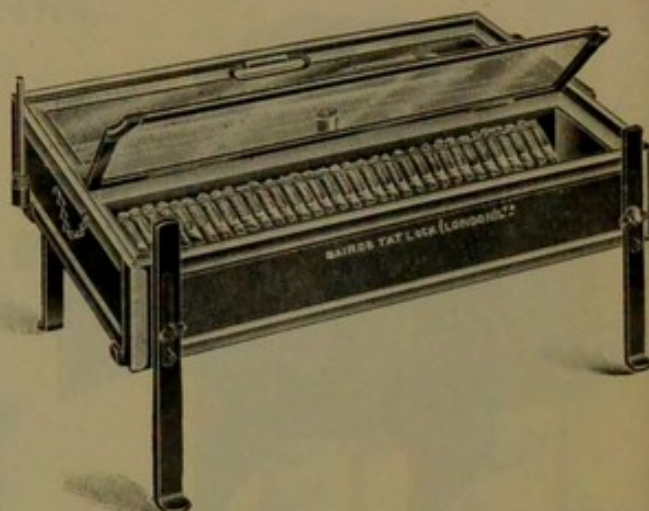
BP768 Copper Water Bath, as above, but arranged for heating by electricity and fitted with our registered automatic regulator and capsule to work at 42° C. b £9 10 0
Please state voltage when ordering.

Other Patterns and shaped vaccine baths made to order and fitted with capsule working at any temperature of from 30° to 80° C. Each capsule will give a range of 4° to 5° C.

Wassermann Baths, see Section XXV.



BP770A

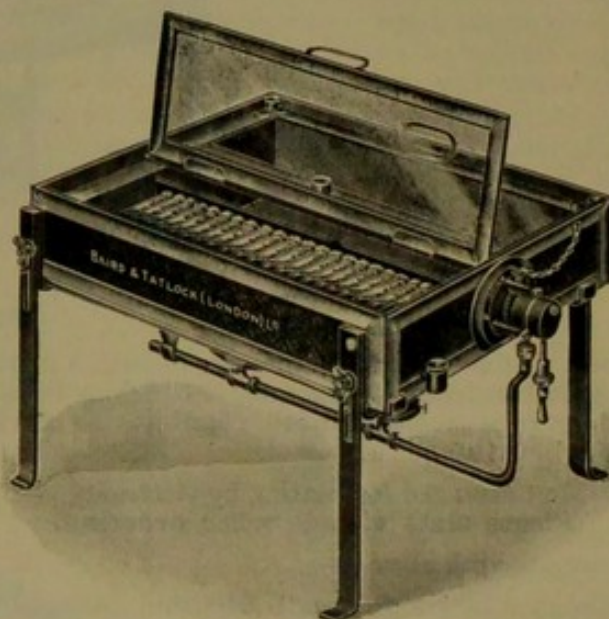


BP770C

BP770 Serum Inspissator, all of copper, felt covered, and water jacketed, with double walls, glass and felt cover, two of the legs adjustable for sloping tubes, with gauge.

	Size A, for 25.	Size B, for 50.	Size C, for 100 tubes.
Size inside	18 × 7½ × 2	18 × 14 × 2	24 × 14 × 2 in.
Price	d £3 10 0	d £5 0 0	d £6 6 0

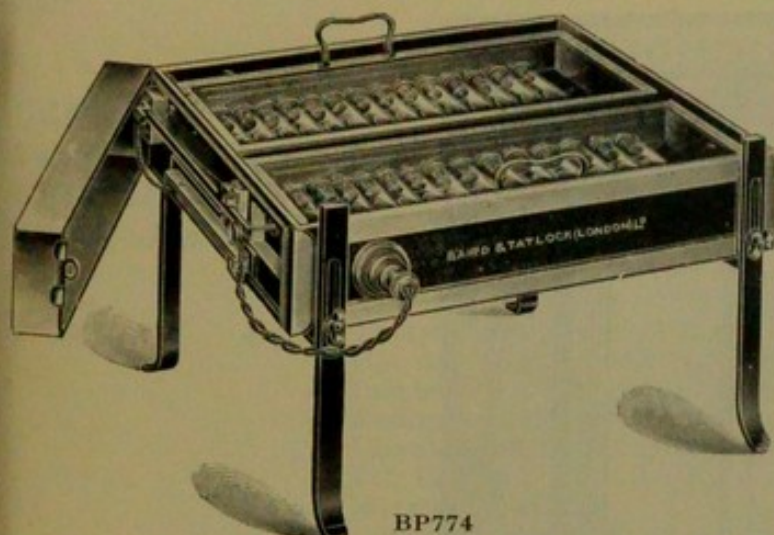
BP771 Thermometers extra, for above (TH51) each d £0 3 0



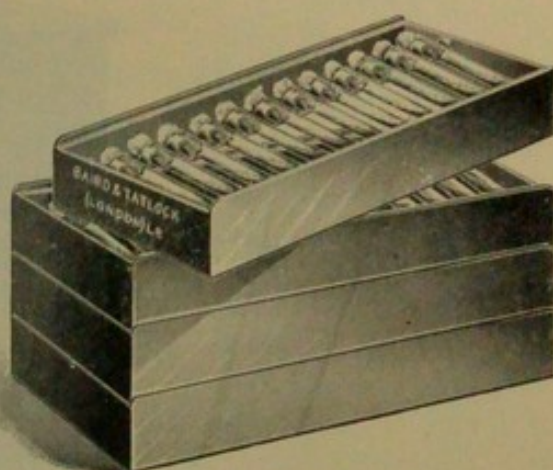
BP772

BP772 Serum Inspissator, all of copper, felt covered, and fitted with water jacket, glass cover and our registered automatic gas regulator for regulating between 74°-78° C. See page 1924 for description of regulator.

	A.	B.	C.
Size	18 × 7½ × 2	18 × 14 × 2	24 × 14 × 2 in.
To hold	25	50	100 tubes.
Price	b £8 8 0	b £10 10 0	b £12 12 0



BP774



BP776

BP774 **Serum Inspissator**, copper throughout, double jacketed, and fitted with glass cover, felt lined outside and regulated by means of our registered automatic regulator and capsule, heated electrically.

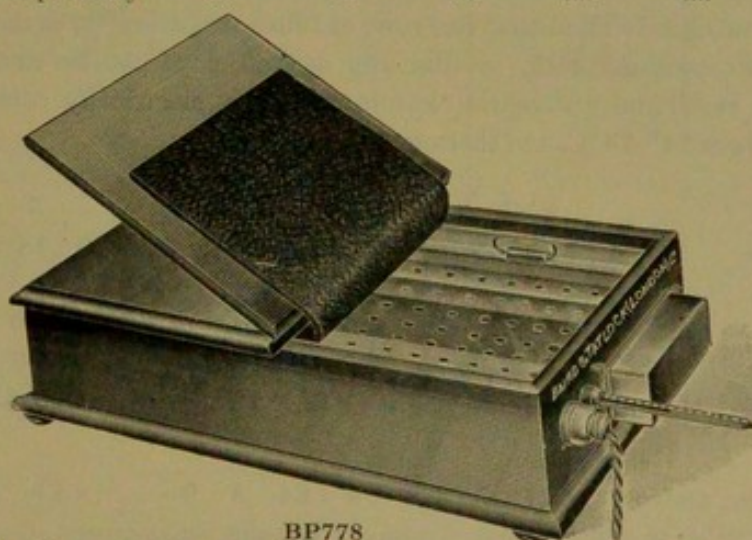
	A.	B.	C.
Size inside	18 x 7½ x 2	18 x 14 x 2	24 x 14 x 2 in.
To hold	25	50	100 tubes.
Consumption	230	320	400 watts.
Price	b £10 10 0	b £11 10 0	b £13 10 0

BP775 **Spare Heaters**, for above each d £1 9 0 d £1 16 6 d £2 0 0

Please state voltage when ordering.

BP776 **Copper Trays**, for sloping culture media tubes, numbered 1-10 and 11-20, and made so that the trays can be arranged in tiers, as shown Set A, Ten trays numbered 1-10 b £2 18 0
Set B, " " " 11-20 b £2 18 0

BP777 **Trays as above, separately** each b £0 6 0



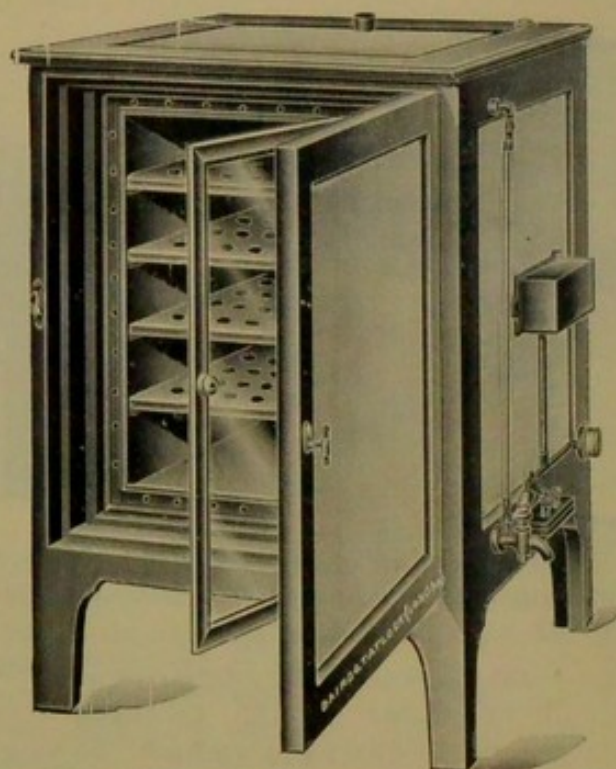
BP778

BP778 **B.T.L. Anhydric Electric Inspissator**, made of stout copper, panelled outside with oak, fitted with our automatic electric heating element, regulator and capsule, to work at 74°-78° C.

	A.	B.	C.
To carry	25	50	100 tubes.
Consumption	500	700	900 watts.
Price	d £9 17 6	d £12 0 0	d £14 5 0

BP779 **Spare Heaters**, for above each d £1 15 0 d £1 2 0 d £1 2 0
(2 in set.) (2 in set.)

Full instructions for working sent with each instrument.
Please state voltage when ordering.



BP780

BP780 Serum Inspissator, of copper, for the simultaneous sterilization and coagulation of blood serum, with double walls, glass door, oak case, panelled in uralite, well lagged and well insulated with slag wool, air circulation. All trays are removable and are fitted with ledge to prevent tubes moving so that two rows of tubes are carried on each tray. They are adjustable by means of a rack, so that any desired slope can be easily attained. Fitted with our registered automatic capsule regulator, electrically controlled, with capsule to regulate at 74°–78° C. and thermometer.

		1	2	3	Double Doors. 4
Size No.	....	1	2	3	4
Inside space	....	14 × 12 × 12	16 × 12 × 12	20 × 16 × 16	24 × 20 × 20 in.
No. of trays	....	3	4	5	6
To hold	....	72	96	160	216 tubes.
Consumption	....	350	450	600	700 watts.
Price	....	d £19 10 0	d £21 10 0	d £28 15 0	d £31 10 0
BP782 Spare Heaters, for above		d £1 2 0	d £1 3 0	d £1 4 0	d £1 5 0

Please state voltage when ordering.

BP784 Serum Inspissator, as above but arranged to work by gas. Adjusted to regulate from 74° to 78° C., with our new pattern regulator. Price complete with thermometer

Size No.	....	1	2	3	4
Price	....	d £16 17 6	d £18 18 0	d £26 0 0	d £28 10 0

Thermometers, see Thermometer Section IV.

Immunology.

CENTRIFUGES AND SHAKING MACHINES. See Section II.

FILTRATION AND SEPARATION.

CELL DISINTEGRATORS. See Hayden's Bacteriological Mortar No. BP310.

ATTENUATION.

Antiseptics. (See Chemicals Section, XXXI and Section III for general glass apparatus, burettes, pipettes, flasks, etc.)

Heat. Thermostats. (See Section VI.)

Hot Air Ovens. (See Section II.)

Incubators. (See pages 1924-1936.)

Radium. Prices on application.

Ultra Violet Light.

Arc Lamps.

Mercury Lamps.

Particulars on application.

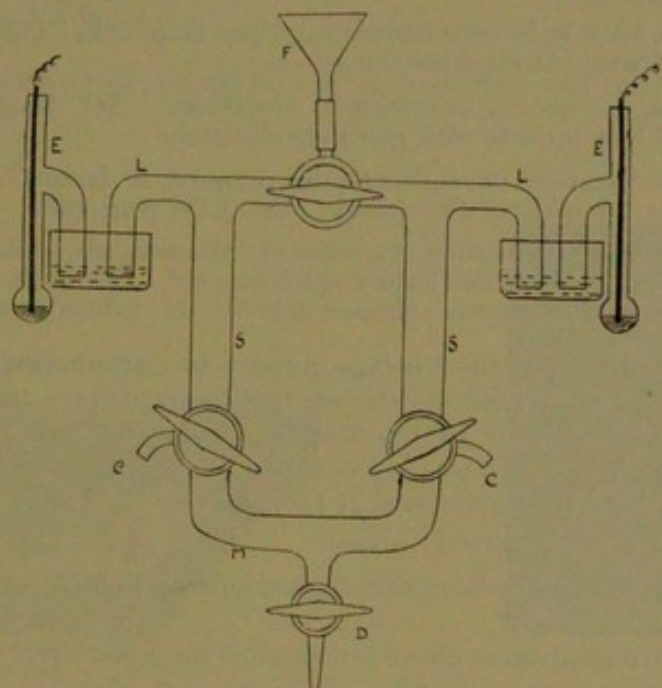
Quartz Glass Apparatus. (See Section III.)

COUNTING APPARATUS.

PRESERVATION. For Serum Bottles and Ampoules see Section III.

CALF LYMPH AND VACCINATION.

FILTRATION AND SEPARATION.

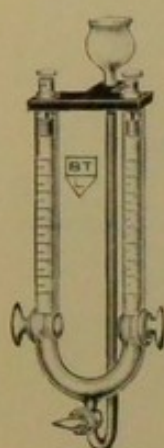


BP785

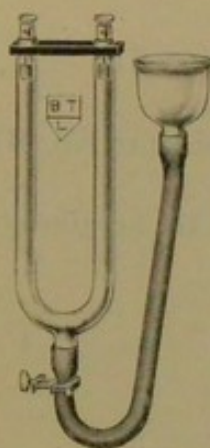
Electro-phoresis Apparatus, specially constructed for ease in collecting the polarised fractions and in dealing continuously with a large bulk of fluid.

BP785	Electro-phoresis Separator with wide bore stopcocks; complete with agar bridge vessels and silver electrodes (which have to be coated with AgCl)	£3 0 0
BP786	Electro-phoresis Separator as above, together with Current Limiting Device BP800, mounted and wired on same stand	£8 5 0
See Nos. BP796-BP799 for Transformers for use with above.		
BP787	Todd's Cataphoresis Apparatus (see "A System of Bacteriology," Vol. IX, page 275). Complete with platinum electrodes	£1 1 0
BP788	Apparatus for the Determination of Charge by the Moving Boundary Method (see "A System of Bacteriology," Vol. IX, page 276). Complete with zinc electrodes	£1 10 0

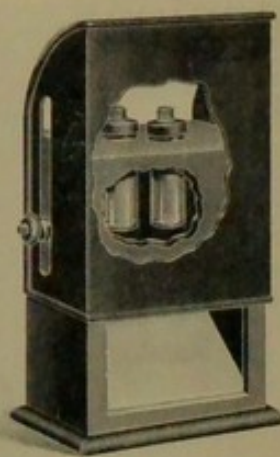
Page 1945



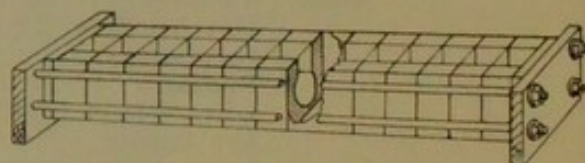
BP792



BP793



BP794



BP795

- BP789 Micro Cataphoresis Cell, Brown and Broom's Pattern**, modified by A. Millwood (see "A System of Bacteriology," Vol. IX, page 278). Price on application.
- BP790 Cataphoresis Tubes**, Hardy modification of Whetham's method of determining the sign of the electrical charge of colloidal particles. (See Bayliss, "Principle of General Physiology," page 91.) Price with platinum electrodes d £2 17 6
- BP791 Cataphoresis Tubes**, as above. Price without platinum electrodes or vulcanite caps.... d £1 12 6
- BP792 Cataphoresis Tubes**, with wide bore stopcocks. (See Hatschek, "Colloid Chemistry," page 82.) Complete with platinum electrodes d £2 17 6
- BP793 Cataphoresis Tubes**, as above, but without stopcocks. (See Hatschek, "Colloid Chemistry," page 84.) Complete with platinum electrodes d £1 15 0
- BP794 Dialysis Indicator** for hydrogen ion concentration of blood, as devised by Drs. Dale and Lovatt Evans. (See "Journal of Physiology," Vol. LIV, page 167) d £1 10 0
- BP795 Electro-dialysis Apparatus** consisting of a series of vulcanite cells, each holding approx. 25 ml. of extract, bolted between two hard wooden supports. The cells are separated by parchment paper membranes, firmly clamped between soft rubber gaskets d £5 15 0

Apparatus for controlling the Voltage Supply to Cataphoresis Apparatus.

The stronger the directional field and the less the current density the more effective the separation and the less will be the electrolysis.

- BP796 High Voltage Transformer**, with primary to suit any standard A.C. mains voltage and with secondary to deliver 10 milliamperes at 1500 volts d £3 15 0
- BP797 Rectifying Valve HT2** to use with the above d £6 6 0
- BP798 High Tension D.C. Generator**, hand driven, developing an output of 10 milliamperes at 2000 volts d £16 16 0
- BP798A High Tension D.C. Generator**, as above but suitable for power drive d £14 10 0

High Tension Accumulators and Batteries, see Section VI.

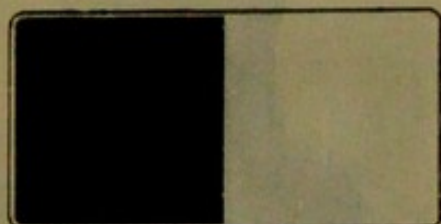
- BP799 Control Panel** for use with the High Voltage Transformer BP796 or High Tension Generators BP798-BP798A. The panel is fitted with fuses, D.P. switch, two adjustable resistances, milliammeter, electrostatic voltmeter, and change over switch to enable polarity to be changed. Complete with iron supports d £19 10 0
- BP800 Current Limiting Device**. This includes a moving coil milliammeter 0-5 milliamps, a diode and a controlling resistance, mounted on stand and wired ready for use d £5 0 0

Note.—Where current is drawn wholly or partly from the mains supply, some means are essential for keeping the current density at a low value, preferably not exceeding 1 milliamperes per sq. c.m. cross-sectional area.

Water Filters, see page 1900. **Bacteria Filtering Apparatus**, see pages 1892-1905.

Ultra Filtration, see pages 1901-1905.

COUNTING APPARATUS.



BP803

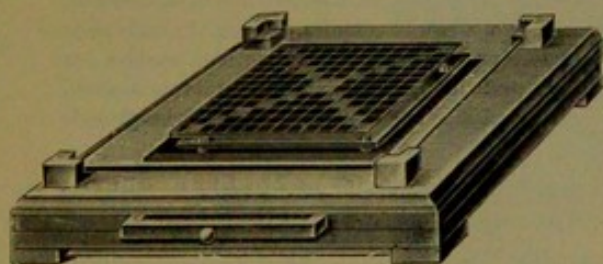


BP804

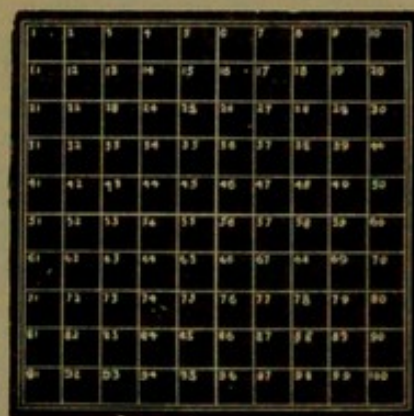


BP805

- BP803 Glass Plates, half black, half white, of laminated glass. A. Size of each square, 4 x 4 in. b £0 1 0
B. " " 6 x 6 " b £0 1 6
- BP804 Glass Plate for microscope slides, 10 x 8 in., painted half black and half white, with ridge cemented on, in wooden frame each b £0 17 6
- BP805 Tiles, earthenware, 6 x 6 x 1/4 in., glazed both sides, half white and half black, for microscope work, etc. each b £0 2 3

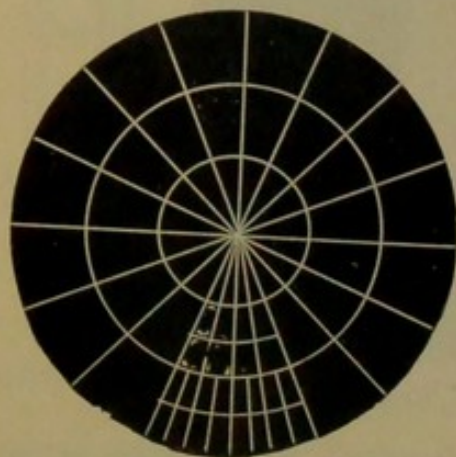


BP806

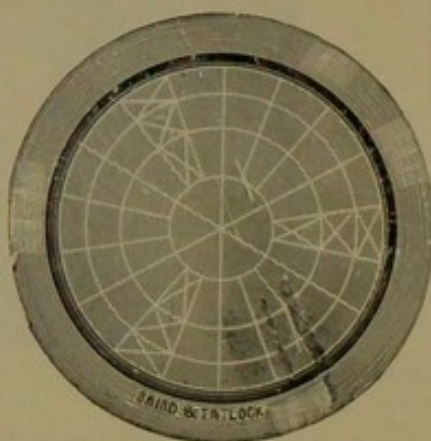


BP808

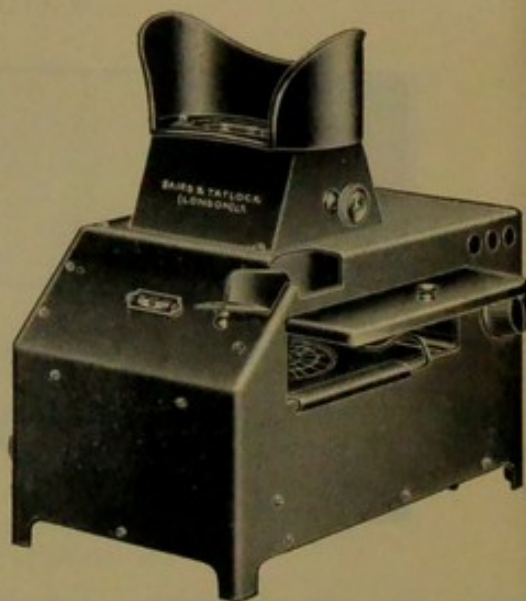
- BP806 Wolfhugel Counting Apparatus, consisting of polished mahogany board with drawer and counting plate 17 centimetres square, with 12 quadratic centimetre divisions, 24 of these divisions subdivided into nine squares each d £1 10 0
- BP807 Glass Counting Squares, divided into centimetres for Wolfhugel's apparatus, No. BP806 each b £0 12 6
- BP808 Cardboard Counting Squares, divided into centimetres, black, numbered in white figures each b £0 0 8
- BP810 Paper Duplicates of above, numbered for registering colonies per doz. b £0 1 0



BP812



BP814



BP816

BP812 Pake's Enumerating Discs, on paper per doz. £0 0 9
(See "Journal of Pathology and Bacteriology," July, 1896.)

BP814 Counting Disc, of glass, in brass frame, for counting the colonies in petri dishes each £1 1 0

BP816 The "Buck" Plate Colony Counter, as described in the "Journal of the American Public Health Association."

DESCRIPTION.

The counter is supplied with artificial light from an elongated, 25-watt ground glass bulb, which is encased in a metal frame. The case is so constructed that all outside light is excluded, and it is provided with two doors for this purpose. The tray holds, first, a dark blue glass plate; this permits indirect light rays to come from beneath, giving a translucent light which is much desired in counting transparent and opalescent colonies. Upon the blue plate is placed the ruled Jeffer plate and then a protective glass plate. The latter plate provides a depth which enables one to see through the petri dish before the lines of the Jeffer plate are reached, and should be replaced at intervals to avoid the accumulating scratches. Inside the casing there are two rotating mirrors, and also two stationary ones; these provide the amount of uniform light desired both above and below the plates.

The entire counting field is visible (instead of only a portion), as the counter is equipped with a specially designed $3\frac{1}{2}$ times lens, as specified in "Standard Methods" of the American Public Health Association.

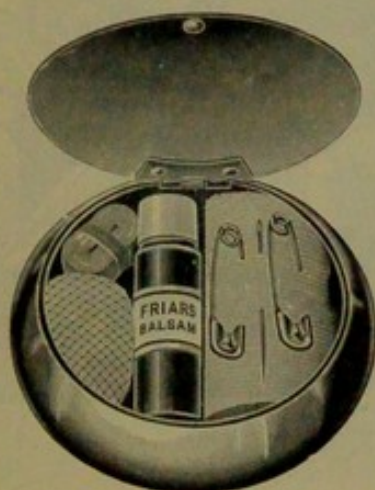
By reason of the brilliant illumination and special lens set in a stationary position, the operator can readily distinguish pin point, transparent, and opalescent colonies, and will not confuse them with agar precipitates, bubbles, or debris.

The counting may be done with much greater speed, far more accurately, with less tedium and much less eye strain than with other counters.

The plates to be counted are usually arranged on the left-hand side. The top is removed; the plate is placed in the counter and then counted. The top is then replaced on the right-hand side. The petri dishes are placed in a convenient pile or basket. Inverted plates placed in the counter are not desirable, as the scratches on the petri dish will obliterate the small colonies and do not allow the proper magnification.

Price complete with lamp, flex and plug £17 17 0

Please state voltage when ordering.



BP834



BP836

BP834 Pocket First Aid Outfit, for minor accidents. Contains bandage, lint, tape, needle, pins, silk, adhesive plaster, artificial sponge, Friar's balsam, court plaster, in nickel-plated case with spring lid, size $3\frac{1}{2}$ in. each d 1/9 ; per doz. d £0 19 0

BP836 The Ever Ready Case, a First Aid Case of particular utility, being handy in size, measuring only $8 \times 5 \times 2$ in., and replete with everything necessary for the immediate treatment of minor accidents. each d £0 10 6

The contents include : Lint, bandages, safety pins, cotton wool, needles, silk, tape, vaseline, adhesive plaster, collodion paint, Carron oil, sal volatile, caustic in case, camel-hair pencils, scissors, forceps, etc., Ambulance Remembrancer, being a complete guide to first-aid. On the lid are printed concise instructions for the use of the various contents.



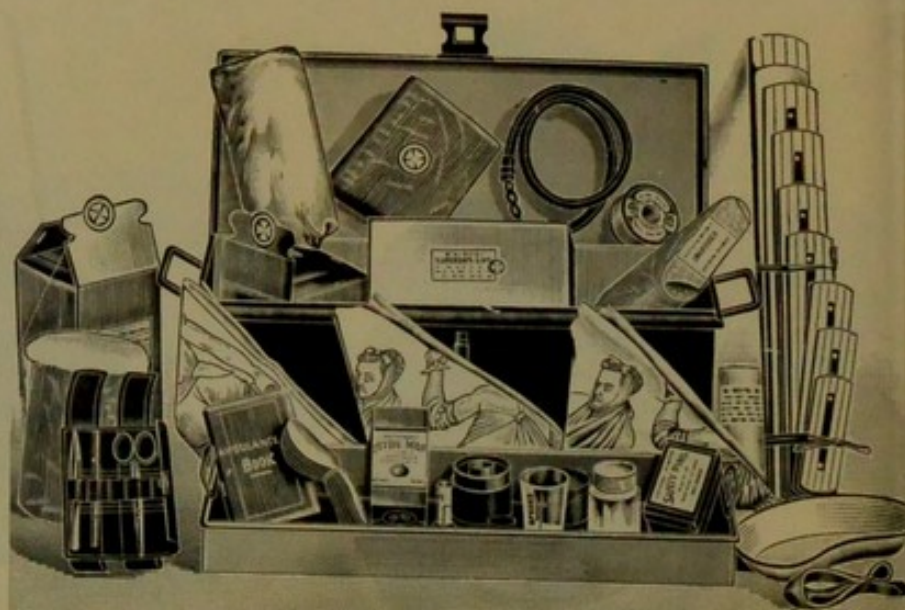
BP838

BP838 "Sterilex" First Aid Outfit. Suitable for laboratories, motor-cars, yachts, the pavilions of sports clubs, etc. Size, $8 \times 5\frac{1}{2} \times 2\frac{3}{4}$ in. Complete in best japanned case, with handle for carrying d £0 15 0

Containing : Scissors, camel-hair pencils, splinter forceps, cotton wool, surgeon's lint, bandages, safety pins, plaster, cold cream, medicine tumbler, needles, silk tape, thread, etc., etc., also bottles for sal volatile, smelling salts, Carron oil.



BP840



BP842

BP840 First Aid Box. Size $17 \times 9\frac{1}{4} \times 3\frac{1}{2}$ in. deep. Stained wood case, with hinged lid with lock and key, containing :

- | | | |
|-----------------------------------|--|-----------------------------|
| 1 set scored arm splints. | 1 Foulis' tourniquet. | 1 pin cushion. |
| 4 oz. cotton wool. | 1 tin adhesive rubber plaster. | 1 Ambulance Remembrancer. |
| 4 oz. surgeon's lint. | 1 medicine glass in case. | 4 tapes and buckles. |
| 1 dozen assorted bandages. | 1 screw cap pot vaseline. | 1 5-inch dressing scissors. |
| 1 illustrated triangular bandage. | 1 stoppered bottle Carron oil. | 1 clinical thermometer. |
| 1 packet double cyanide gauze. | 1 stoppered bottle for smelling salts. | 1 splinter forceps. |
| 1 box assorted safety pins. | 1 stoppered bottle sal volatile. | |

Price complete d £1 17 6

BP842 First Aid Outfits, suitable for works, collieries, schools, etc. Black japanned tin case with tray. Size $20 \times 10 \times 8$ in., containing :

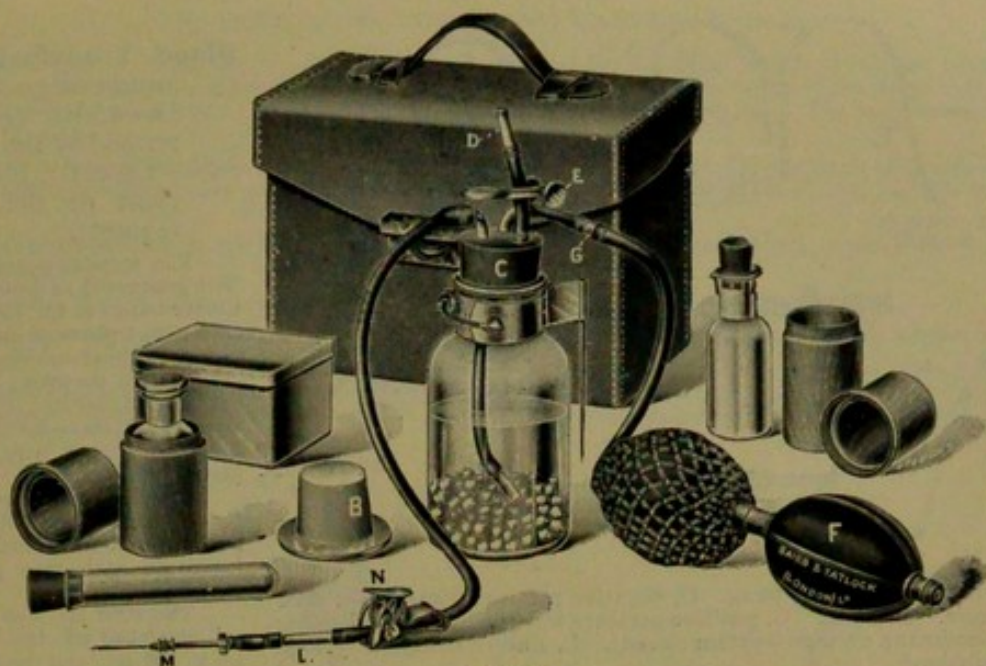
- | | | |
|--|-------------------------|------------------------------------|
| 3 doz. bandages, assorted. | 1 tourniquet. | 6 artificial sponges. |
| 3 triangular bandages. | Medicine tumbler. | 1 enamelled dressing tray. |
| 3 doz. surgical safety pins, assorted. | First-Aid Book. | 1 hank tape. |
| 10 yds. rubber adhesive plaster. | 8 oz. plain lint. | 4 straps and buckles, for splints. |
| 1 set splints. | 8 oz. boric lint. | Antiseptic powder dredger. |
| 6 yds. double cyanide gauze. | 8 oz. absorbent cotton. | |

and also pocket case, containing 1 pair scissors, pair of forceps, 1 clinical thermometer, 6 surgical needles and silk.

Price complete d £3 15 0

BP843 Bandages, in 6 yard lengths:

Size	.....	.....	$\frac{1}{2}$	1	$1\frac{1}{2}$	2 in. wide
Price	.....	.....	d 3/9	d 7/6	d 11/-	d 15/- per gross.



BP844

BP844 Apparatus for the Intravenous Injection of "606" (Salvarsan, or Neosalvarsan), as devised by Drs. McIntosh, Fildes, and Dearden of the Bacteriological Laboratory, London Hospital. Price complete in leather case, with thermometer, etc.

d £4 10 0

Spare parts :

A. Thermometer, graduated 60° to 160° C.	each	d £0 9 0
B. I.R. Bellows	..	d £0 4 6
C. I.R. Tubing, $\frac{1}{8}$ -in.	per ft.	d £0 0 4
D. Needles	per doz.	d £0 15 0

BP846 Robertson's Transfusion of Blood Apparatus, Citrate Method, as devised by Dr. O. H. Robertson, and used by Dr. J. W. McNee, University College Hospital, London.

INSTRUCTIONS FOR USE.

160 ml. of 3·8 per cent. citrate solution is placed in bottle, and the whole apparatus is sterilized in the autoclave, the two needles being protected by plugging into test tubes half full of liquid paraffin. Outlet tube closed by stopcock.

Donor's arm has light tourniquet applied to 50 mm. Hg. pressure, the vein well filled by movements, skin cleansed, and novocain 1 per cent. injected into skin. Pressure is made with pump to fill the inlet tube with citrate solution and drive air out of needle. Close stopcock on inlet tube and reverse pump ready for suction. Slight suction is made in bottle, then make small nick over vein with point of scalpel, insert needle under skin, open inlet stopcock and push needle into vein. Moderate suction is maintained, bottle rocked with rotary movement, and donor keeps up grasping movements. 700 ml. can thus be obtained. If clotting occurs a fresh start must be made. When 700 ml. is obtained remove tourniquet, close stopcock and remove needle. Place bottle in glass jar containing water at body temperature, and see that rubber cork is tight to prevent being forced out by pressure.

Recipient's arm is prepared as donor's was, then produce pressure inside bottle by pump, and open outlet stopcock to fill tube with citrated blood, and close it again. Tighten tourniquet, place needle in vein, when glass connection will fill with blood. Directly this occurs tourniquet is released, tube connected, and transfusion begins. At the end close stopcock before air bubbles reach the needle.

It may be necessary to expose one or both veins and use a cannula. 3·8 per cent. sodium citrate solution is prepared by adding 6 grammes of citrate to 160 ml. of water.

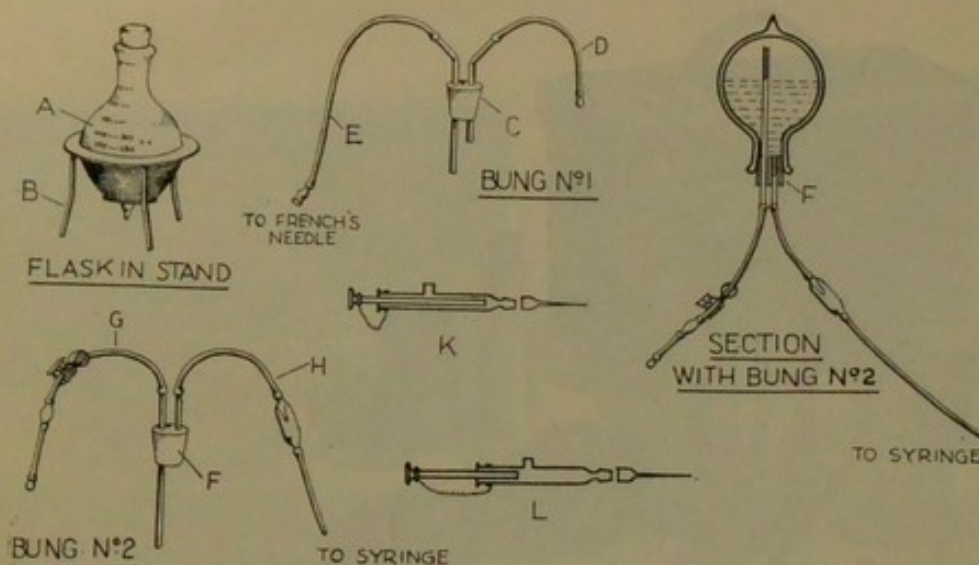
Price with 2 needles d £1 5 0



BP846-BP847

BP847 Robertson's Apparatus, as above, with set of 7 needles, glass venous cannulae, etc., in case

d £2 5 0



A, Dewar flask. B, basket stand. C, bung. D, negative pressure fitment. E, tube leading to French's needle. F, bung. G, positive pressure fitment. H, tube leading to syringe. K, Luer-Kaufmann syringe (system closed). L, Luer-Kaufmann syringe (system open for transfusion).

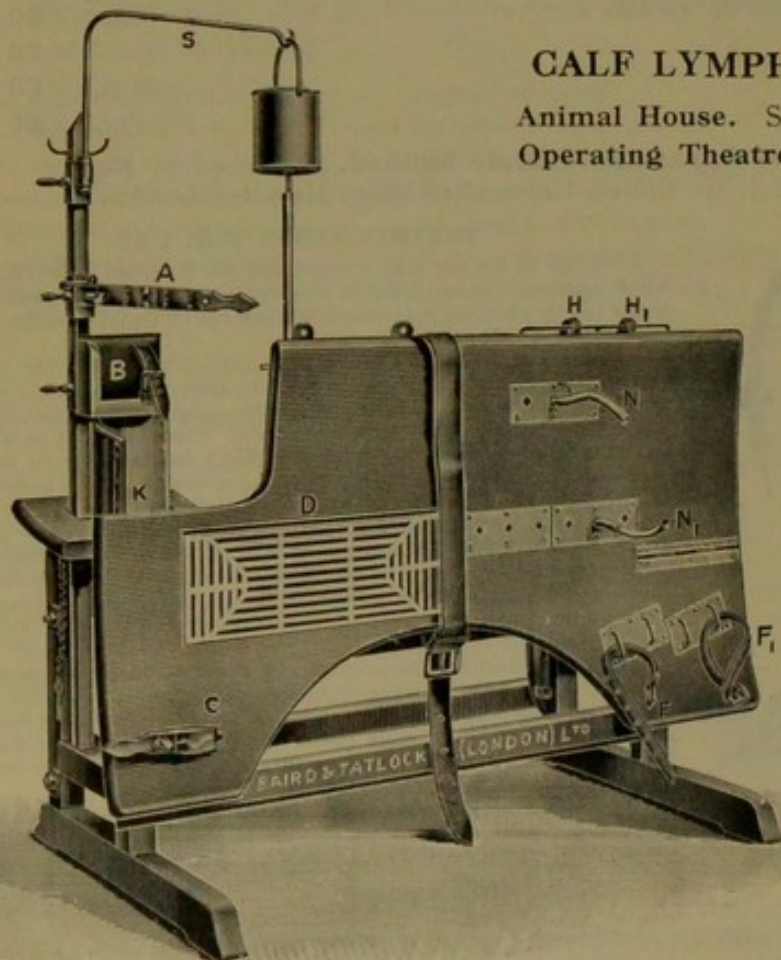
BP848-BP850

BP848	Apparatus, complete with 1000 ml. Dewar Flask	....	....	....	....	....	£3 3 0
BP849	" " " 500	" "	" "	" "	" "	" "	£2 15 6
BP850	" " " 250	" "	" "	" "	" "	" "	£2 12 0

CALF LYMPH AND VACCINATION.

Animal House. See Section XXV.

Operating Theatre. See Sections XXVII and XXVIII.



BP851 (Fig. 1)

BP851 Vaccine Table for Calves,
as used at the Government Animal
Lymph Establishment, table supplied
complete with fittings as illustrated
and described each at **£70 0 0**

The table, as illustrated, has been specially designed for the convenient and speedy manipulation of the calves when under treatment. The top and framework are strongly constructed of oak wood. As may be seen from the illustrations, the top (which measures $74 \times 40 \times 2$ in.) can be conveniently fixed in either vertical or horizontal position as required.

INSTRUCTIONS FOR USING CALVES' TABLE.

When a calf is to be fixed on table, the top should be set in a vertical position (Fig. 1, page 1952), and the animal led alongside facing the right. The iron supports (N), (N₁) for neck are then placed in position, and the outer ends joined by a leather strap. The body of the calf is secured by the long leather strap round table top. The front feet are then fastened with straps (F) (F₁).

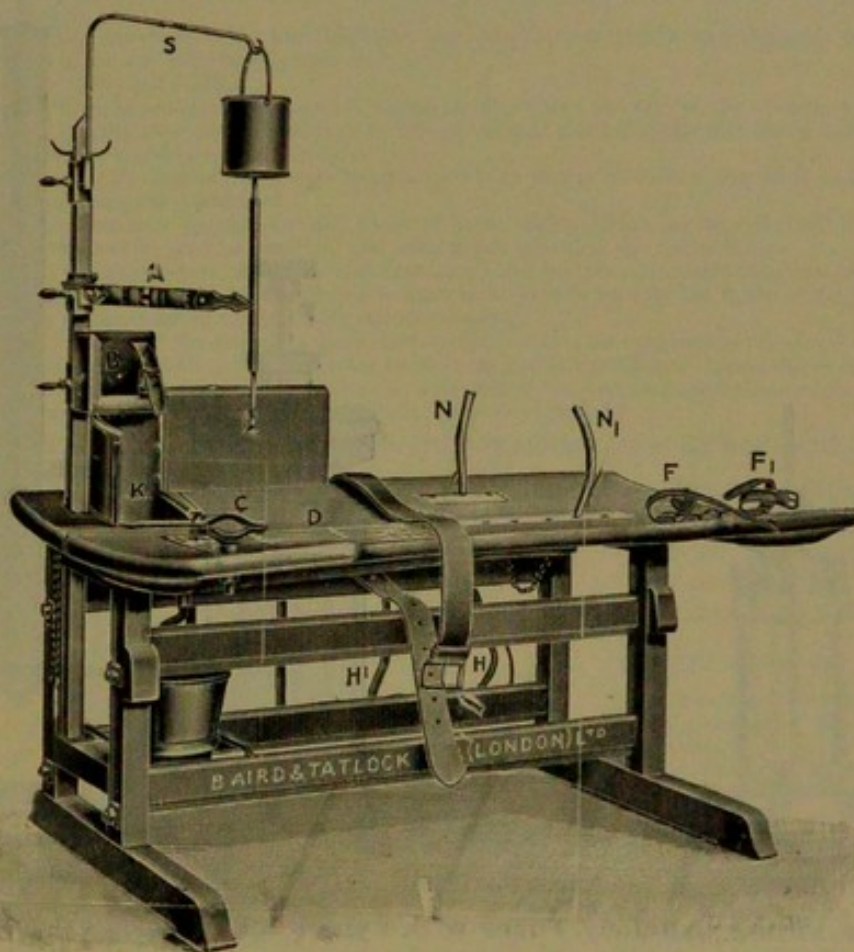
The near hind foot is secured in clamp (C). The head is held down by straps (H) (H₁), though (H₁) may not be required. The table top is now tilted back to horizontal position (Fig. 2 below) with calf on it, and the two bolts at back secured.

At the same time the off hind leg of calf is raised so that the hock joint rests in bracket (B) on pillar, the leg being kept in position by clamp (A).

The abdomen of calf is then in proper position for operating on.

Hot water for shaving and washing purposes is supplied from copper vessel on swing arm (S). To release calf the above operations are reversed.

Note that any water accumulated in drainer (D) should be drawn off by cock before tilting table vertical. A bucket should also be placed under table when in use so as to catch any droppings through hole (K).



BP851 (Fig. 2)

INSTRUMENTS

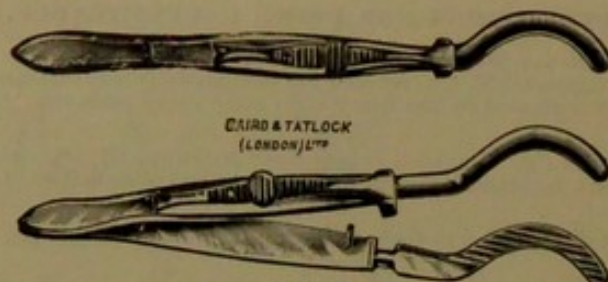
BP852 Gauze Sponges, non-antiseptic, 4 in. diameter per doz. *b* 1/- ; per gross *b* £0 11 0



BP854

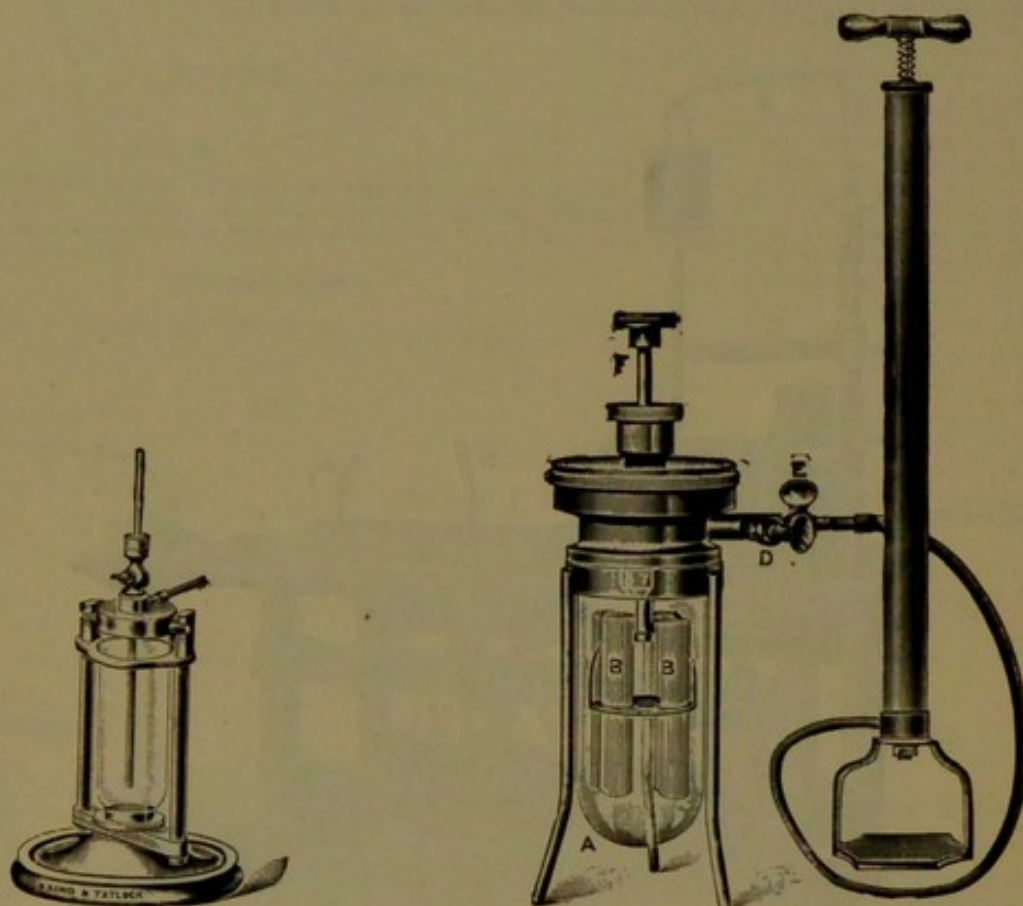
BP854 Lymph Spoons, Volkmann's, for collecting lymph, nickel-plated each *b* £0 15 0

Page 1953



BP856

BP856 Lymph Forceps, nickel-plated, special pattern as used at the Government Vaccine Establishment, length $6\frac{3}{4}$ in. each **£1 5 0**



BP858

Patent No. 19651.

BP860

BP858 Machine for Filling Capillary Tubes with Lymph by means of water force-pump, as used in the Government Lymph Laboratory each **£5 0 0**

BP860 Vaccine Lymph Capillary Tube Loading Machine, designed by Major Entrican. Complete with vacuum pump and 5 ft. tubing each **£10 10 0**

Method of Working the Vaccine Lymph Capillary Tube Loading Machine.

The apparatus consists of a glass receiver (A) containing the lymph, closed by a movable cap which when screwed down makes the vessel air-tight. Through the centre of the cap passes a piston rod (F), carrying at one end a circular horizontal perforated plate. An air-tight packing surrounds the piston rod where it passes through the cap, so that it can be raised or depressed without affecting the state of air tension inside the receiver.

Two stopcocks are fitted to the receiver—one, the air-cock (D), communicates with the atmosphere; the other, the pump-cock (E), with an exhaust pump.

The capillary tubes sealed at one end are placed, sealed ends first, into a glass test tube of the size supplied. Over the test tube a thick and a thin rubber ring are supplied, the latter nearer the open end. The test tube is then inverted on a smooth surface, and the open ends of the capillary tubes brought to one level by gentle tapping.

The test tube is now gently raised, and the two rubber rings slipped on to the bundle of capillary tubes, the correct position being $\frac{1}{2}$ to $\frac{3}{4}$ in. from either end.

The bundle (B), which consists of about 100 tubes, held together by a thick rubber ring near the sealed ends and a thin rubber ring near the open ends, is now inserted into one of the holes in the circular plate attached to the piston, open ends downwards, sealed ends upwards, and is kept in an upright position by the thick rubber ring.

All the holes in the circular plate are filled in this manner, taking care that the lower ends of the bundles are approximately level.

The piston carrying the bundles is now inserted in the receiver, taking care that the lower open ends of the bundles do not at this period dip into the lymph.

The metal cap closing the receiver is screwed tight, the air-cock is closed, pump-cock opened, and the air in the receiver is exhausted by working the pump.

When the vacuum is as perfect as can be obtained the piston carrying with it the bundles of tubes is depressed (this is best done by a twisting motion) until the open ends of the capillary tubes dip into the lymph.

The air-cock is now opened and atmospheric pressure drives the lymph up into the capillary tubes. The height to which the lymph is driven depends upon the completeness of the previous exhaustion. If a perfect vacuum were obtainable the lymph would completely fill the tubes, but in practice it usually stops short about $\frac{1}{2}$ to $\frac{3}{4}$ inch from the upper sealed end.

The lower ends of the bundles are now raised out of the lymph by pulling up the piston, the air-cock is closed and the receiver slightly exhausted. As the air pressure in the receiver is gradually lowered the lymph will be observed to run out of the tubes. Experience will soon tell the correct amount that must be withdrawn, and when this has been done the air-cock is opened and the column of lymph will be observed to run up to its former level, leaving the lower ends of the tubes free from lymph.

The cap of the receiver is then unscrewed, the bundles taken out, the rings removed, and the open ends rinsed in distilled or sterilized water to remove any adherent lymph.

The capillary tubes are now ready for sealing.

When the quantity of lymph to be loaded is very small, as happens towards the end of the operation, it is best to load only one bundle at a time, placing it in the central hole of the horizontal plate, for the remaining lymph naturally drains to that portion of the receiver directly under this hole.

It is also advisable when loading the last of the lymph to admit air very slowly and allow the tubes to fill gradually.

One or two points occasionally require attention.

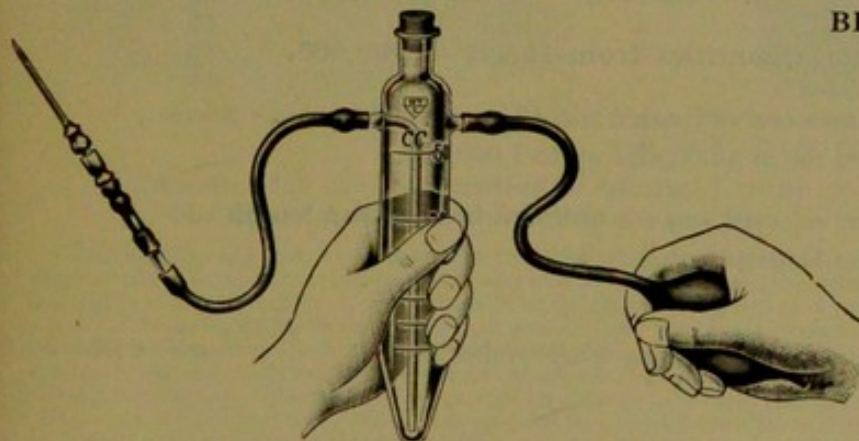
The packing round the piston rod may become dry and cease to be air-tight. This can be remedied by unscrewing the valve, repacking it with a little tow soaked in vaseline, and afterwards screwing the valve tight.

The pump, especially in hot damp climates, wants careful attention, and the periodic renewal of the small oiled silk valves contained in the piston and nozzle. If a good vacuum is not obtained it is usually the fault of the pump.

The rubber rings in the cap of the receiver occasionally require renewal.

It will sometimes be found that when the lymph is thick and viscid, as soon as exhaustion is carried out to a considerable extent the air entangled in the lymph causes the latter to froth up like bottled beer. Under these circumstances, if the air-cock is opened the froth will at once subside. It may be necessary to repeat this operation several times to get rid of the air. It is, however, only very occasionally that this procedure is required.

For prices of Lymph Tubes for use with this machine see BP864 and BP866.



BP862

BP862 Anti-Abortion Syringe,
as devised by the late Sir
Stewart Stockman, Labora-
tory of the Board of Agricul-
ture and Fisheries.

INSTRUCTIONS FOR USE.

1. Before use the syringe should be carefully sterilized. The best method of doing this is to put it in a pot of water and bring it to the boil. The pump and the rubber bung should be removed before sterilization. The pump should not be sterilized, but the bung should. The needle and the tube connecting it with the syringe can remain attached during sterilization. When several animals are being done at one time the sterilization of the

syringe should be repeated from time to time and on going to fresh premises. After sterilization the syringe should be taken out of the water and allowed to cool before the vaccine is poured in.

2. To fill the syringe, remove the bung with the thumb and first finger of the left hand, keeping the narrow part of the bung upright and avoiding bringing it in contact with any object; the syringe can be held by the other three fingers of the left hand. From the bottle of vaccine pour in the dose advised and replace the bung. Before pouring out the vaccine the outlet and lips of the bottle containing it should be disinfected by swabbing with a cotton wool plug soaked in corrosive sublimate 1-2,000.

3. While an assistant holds the syringe, the needle is pushed under the skin of the animal to be inoculated, and the connection is made between the syringe and the needle.

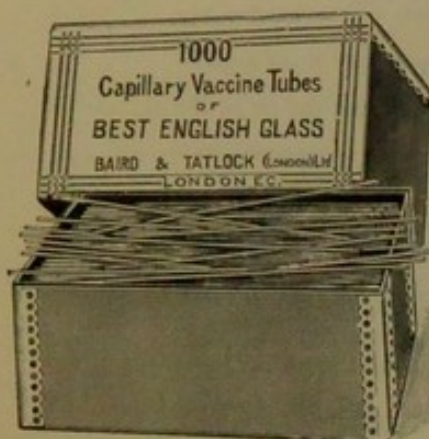
4. To inject, hold the syringe in the left hand with the fingers under the glass cross pieces and the thumb gently pressed on the top of the rubber bung. Pump gently with the bellows so as not to highly charge the syringe with compressed air—the fluid will move out gently without much pressure. Keep the eye on the glass tube between the rubber outlet and the needle, and when the last of the fluid has passed the glass tube the pumping should be stopped so as to avoid injecting any appreciable quantity of air into the tissues.

Standard size, capacity 50 ml.

Other sizes made to order.

d £0 18 6

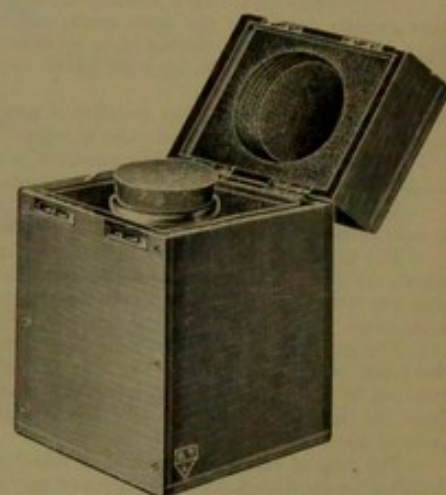
Page 1955



BP864-BP866



BP868



BP870

Lymph Tubes, specially selected, open both ends, 90 mm. long, about $1\frac{1}{2}$ mm. bore (in boxes of 1000 tubes).

BP864	Best soda glass, clear	....	....	....	....	per 1000	d £0 13 6
BP865	Best soda glass, amber	....	....	....	....	..	d £0 15 6

BP866 Lymph Tubes, as above, size 90 × 1 mm. Clear, d 9/- BP867 Amber, d 10/6 per 1000.

Special Quotations for Quantities from 10,000—1,000,000.

Note.—If tubes are required with one end sealed add d 2/- per 1000 to above prices. Any other size made or quoted for in quantities up to 1,000,000.

All Lymph Tubes are carefully selected and are **uniform in bore and length** and are made in our own Glass Blowing Department.

BP868 Iron Boxes, $4\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{1}{4}$ in., with lids, for sterilizing lymph tubes each b £0 3 9

BP869 Sieve, metal rim, for straining calf lymph, as used at the Government Lymph Laboratory. The base of the sieve is shaped to sit over an agate mortar measuring about $4\frac{1}{2}$ in. across the bowl d £0 7 0

BP870 Vacuum Flask Cases, of teak and fitted with silvered vacuum flask, well insulated with felt for carrying vaccine tubes, as made for the High Commissioner of South Africa.

A.	Price, with one vacuum tube to take 500 lymph tubes	....	....	....	d £2 5 0
B.	.. to take 2 vacuum tubes	....	....	....	d £3 0 0
C.	.. 3 ..	....	....	....	d £3 15 0

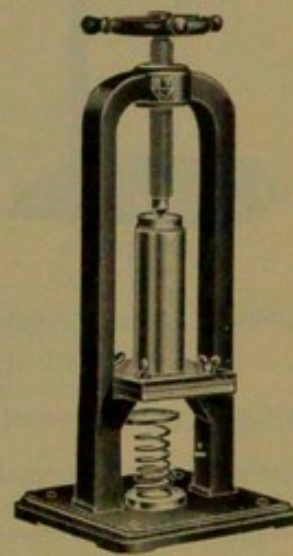
VACCINE LABORATORY.



BP872



Section of screwed spindle in cylinder
with funnel and driving pulley wheel



BP885

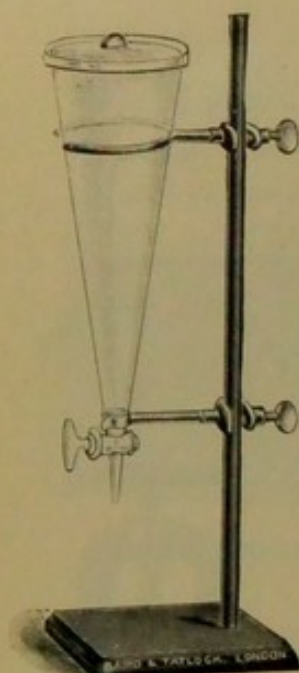
Machine for the Preparation of Animal Lymph, as manufactured by us to the order of the Government Lymph Establishment, etc.

This machine has been devised for the thorough mixing of the animal lymph with the necessary glycerine. The lymph is poured into the conical-shaped funnel and is carried by means of the revolving spindle through the cylinder. The spindle is of pure nickel screwed with a thread, gradually tapering from a rough thread at top to a very fine thread at bottom. The inside of the cylinder is also of pure nickel. The mixing spindle is run on a compound ball bearing, and is so arranged that it can easily be removed for sterilizing and replaced without any difficulty. In order that the bore of the cylinder can easily be cleaned and examined the cylinder is cut into two halves, and held together when in use by the clamps shown. The machine is mounted on a strong table with marble top, and the working part is encased under a glass cover with hinged door. This cover need not be removed when the machine is at work. By means of this machine the lymph is thoroughly mixed in about fifteen minutes, without any loss of the lymph, which is kept perfectly free from dust.

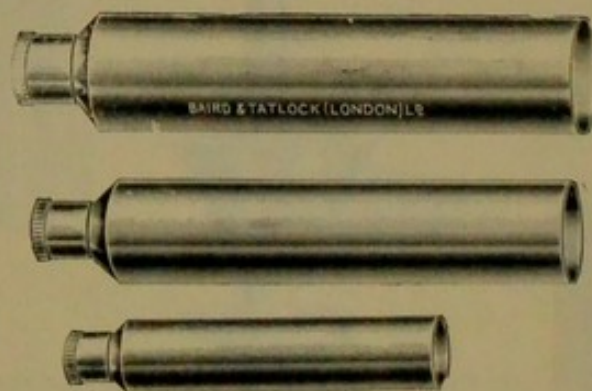
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|-------|--|--------|----------|-----------------|
| BP872 | Lymph Machine, fitted for power drive but without motor | | | d £47 10 0 |
| BP874 | Lymph Machine, fitted to be driven by foot, with treadle and driving wheel, as illustrated | d | £51 0 0 | |
| BP876 | Lymph Machine, with electric motor and adjustable resistance coils for starting | d | £62 10 0 | |

When ordering for use with electric motor please state voltage of electric supply available, and if alternating or continuous current.

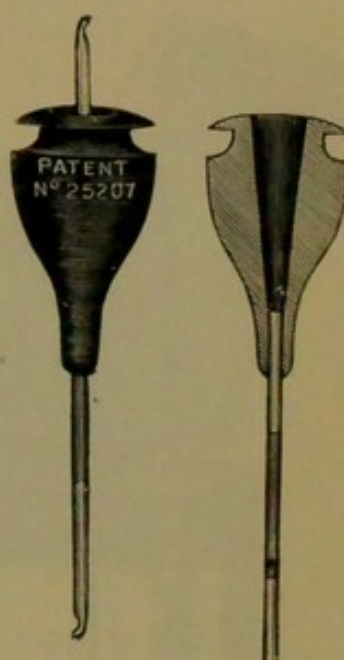
- | | | | | | |
|-------|---|-------|------|------|-----------------|
| BP885 | Press for preparing emulsion of brain and cord in the preparation of Anti-Rabies Vaccine, latest pattern. The brain and cord are pressed through a disc of wire gauze; when removed from the press the gauze is found to be coated with a layer of tissue which consists only of meningeal and vascular structures. The whole of the nervous tissue passes through the gauze. The original pattern as illustrated was described by L. Nicholls and E. Burgess in "The Ceylon Journal of Science," Vol. II, Part I. Modified design giving greatly improved performance. | Price | | | d £13 13 0 |
|-------|---|-------|------|------|-----------------|



BP888-BP891



BP892



BP894

BP888	Glass Vessel, conical, for containing lymph, 1000 ml. capacity, fitted with loose cover on top, with stand, ring, and clip	....	....	....	....	....	d £1 15 0
BP889	Glass Vessel, 500 ml. capacity. Complete on stand as above	....	....	....	....	....	d £1 12 6
*BP890	Glass Vessels only, with cover for above, 500 ml.	....	....	....	....	....	d £0 12 0
*BP891	Glass Vessels only, with cover for above, 1000 ml.	....	....	....	....	....	d £0 15 0
BP892	Collapsible Metal Tubes, tin plated, with screw caps for storing lymph, etc.						
	Length, excluding cap	....	1½	2½	2¾ in.		
	Diameter	....	⅜	½	⅝		
	Price per gross	....	d 4/6	d 5/-	d 5/3		

(Special prices for quantities and for other sizes.)

BP894	Patent India-rubber Vaccine Expeller				per doz.	d £0 18 0
-------	--------------------------------------	------	------	------	----------	-----------

The tube with sealed ends is first drawn midway through the larger opening as illustrated. The upper end is then broken off, and is drawn so far through the hole that the broken end is only about half-an-inch from the smaller hole. The other end of lymph tube is now broken off and the mount held between the first and second finger, whilst placing the thumb over the top opening and compressing, the vaccine is immediately expelled. By this means the vaccine can also be distributed as desired.

BP896	Dressings, Pad, for use after vaccination	....	....	....	per gross	d £0 12 9
BP898	Opacity Tubes, for the standardisation of Bacterial Vaccines. Sets of 10 tubes	....	....	....	per set	d £1 10 0

VACCINATION.

Antiseptics. See Chemicals, Section XXXI.

BP900	Scarifiers	....	....	....	....	each	b £0 5 0
BP902	Lancets	....	....	....	....	..	b £0 3 0
	Platinum Spatula. Price according to weight	....	....	....	Price approx. per oz. troy	f	£18 5 0



BP906



BP910

BP906 Mead's Adhesive Rubber Plaster, a perfectly pliable and self-adhesive plaster spread on cotton cloth, applied without heat or moisture, the ordinary temperature of the body being sufficient to ensure firm adhesion. Supplied in 10-yard spools of the following widths :

Width	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4 in.
Price	d 12/6	d 16/-	d 22/-	d 26/3	d 35/-	d 45/-	d 54/-	d 62/6	d 80/- per doz. spools.

BP908 Vaccination Outfit, consisting of bottle of ether soap, glass spirit tube, lymph ejector, spatula, lancet in metal box d £1 2 6

Helminthology.

Practically all the apparatus required for Research Work under this heading will be found in other sections of the Catalogue, as example for :

Collection of Samples, see beginning of this Section XXIV.

Sediment Glasses. (See Section III.)

Lenses.

Centrifuges. (See Section II.)

Dissecting Microscopes.

} (See Section XXII.)

Any other special apparatus required for the purpose of Research Work in this subject can be supplied to order.

BP910 Boas Sieve, for washing faeces d £2 2 0

A great variety of Sieves are listed in Section VIII. In addition we are prepared to make any special type required, *e.g.* with fine hair or other fine woven material.

We are always prepared to quote for
Complete Outfits for Special Investigations
and to make
Any Special Apparatus to Order

SECTION
XXIV
BP

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SECTION
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NOTES.

MANUFACTURERS OF LABORATORY FITTINGS

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Bell Jars - - -	III	SC	Kjeldahl's Apparatus - - -	III	SC	Sieves - - -	VIII	MC
Bellows, Foot - - -	I	LF	Kohlrausch Cell - - -	VI	PC	Shaking Apparatus - - -	II	SC
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Botanical Apparatus - - -	III	SC	Laboratory Benches - - -	I	LF	Soil Testing - - -	XXVI	DA
Bottles - - -	III	SC	Lamps, Microscope - - -	XXII	MP	Soxhlet's Apparatus - - -	III	SC
Brushes - - -	III	SC	Lanterns - - -	XXII	MP	Specific Gravity App. - - -	III	SC
Burettes - - -	III	SC	Lecture Apparatus - - -	XIV	LA	Spectroscopes - - -	VII	OP
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			Levels - - -	VI	PC	Steel Analysis - - -	VIII	MC
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Calorimeters - - -	VI	PC				Stopcocks - - -	III	SC
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Clamps - - -	II	SC	Malt Testing Apparatus - - -	IX	MC			
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Drying Apparatus - - -	II	SC	Nephelometers - - -	VI	PC			
			Nitrogen Apparatus - - -	III	SC	V		
E						Vacuum Evaporating Apparatus - - -	II	SC
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I	LF	16th	Laboratory Fittings *	These Sections were all contained in our Standard Catalogue, Vol. I. * Refers to Sections which, although appearing in the complete Catalogue, have also been published separately.
II	SC	16th	Laboratory Equipment	
III	SC	16th	General Chemical Apparatus	
IV	TH	3rd	Thermometers *	
V	PY	6th	Pyrometers *	
VI	PC	2nd	Physical Chemistry *	
VII	OP	1st	Refractometers, Spectroscopes and Polariscope s *	
VIII	MC	4th	Assay, Metallurgy, Iron, Steel and Cement *	
IX	MC	3rd	Organic Chemistry, Cotton Dyeing, Explosives, Brewing Sugar, Drugs *	
X	GA	4th	Gas Analysis *	
XI	LR	3rd	Leather, Paper, Rubber Textiles *	
XII	TC	10th	Oil and Tar Testing *	
XIII	CF	4th	Coal Testing *	
XIV	LA	2nd	Lecture Apparatus	
XV	SM	2nd	Meteorological Apparatus	
XX	SB	7th	Anatomy and Embryology	These Sections were all contained in our Standard Catalogue, Vol. III.
XXI	BB	7th	Botany	
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XXIII	HP	7th	Histology	
XXIV	BP	7th	Bacteriology and Protozoology	
XXV	BC	7th	Pathology and Biochemistry and Hygiene	
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XXVII	EP	4th	Experimental Physiology	These were contained in Vol. II.
XXVIII	LP	4th	Experimental Physiology, Laboratory Apparatus and Special Sections	
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