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OF THE

Specifications

RELATING TO

PRESERVATION OF FOOD.

PRINTED BY ORDER OF THE COMMISSIONERS OF PATENTS.

LONDON:
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PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY
PUBLISHED AT THE GREAT SEAL PATENT OFFICE,
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PREFACE.

THE Indexes to Patents are now so numerous and costly as to be placed beyond the reach of a large number of inventors and others to whom they have become indispensable.

To obviate this difficulty, short abstracts or abridgments of the Specifications of Patents under each head of Invention have been prepared for publication separately, and so arranged as to form at once a Chronological, Subject-matter, Reference, and Alphabetical Index to the class to which they relate. As these publications do not supersede the necessity for consulting the Specifications, the prices at which the latter are sold have been added.

Many Specifications being yet unpublished, the only guide in discriminating subjects in such cases has been the titles of Patents, which are frequently defective, and may therefore have led to an occasional omission.

When the entire series of Specifications shall have been printed it is intended to publish a new and complete edition of these Abridgments; meanwhile, the manifest usefulness of such works, and the urgency of the demand for copies, have been considered a sufficient justification for the present issue.

B. WOODCROFT.

INDEX OF NAMES.

[The names of persons by whom inventions have been communicated from abroad, when known are printed in *Italic*.]

PRESERVATION OF FOOD.

A.D. 1691, October 7.—N° 278.

PORTER, THOMAS, and WHITE, JOHN.—A grant unto them "of the sole use, exercise, and benefit of their new invencon of "keeping and preserving by liquors or otherwise all sorts of flesh, "fowle, and fish, and many other things, either in pieces or in whole "bodyes, at a cheaper rate, for many years in all clymates, without "changing the nature, quality, taste, smell, or colour thereof, as "good, palatable, and wholesome, to be eaten and made use of for "any intent and purpose whatsoever, as when first killed or put "into such liquor; to hold and enjoy the same for 14 y" according "to the statute."

[No Specification of this invention has been enrolled.]

A.D. 1763, July 29.—N° 793.

COCKBURN, ALEXANDER.—"Curing salmon with spices," by boiling them in a given time with water to which has been added, in certain proportions, the following ingredients; namely, cloves, mace, comon pepper, vinegar, and salt. Water, to which has been added, in certain proportions, vinegar, salt, cloves, mace, and common pepper, and the whole boiled for a given time and allowed to cool, "is put upon the salmon," when boiled and cold.

[Printed, 3*d*. See Rolls Chapel Reports, 6th Report, p. 158.]

A.D. 1780, December 30.—N° 1275.

GRAEFER, JOHN.—"Drying and preparing" vegetables so that they shall "keep a twelvemonth or longer without losing any of" their "real natural flavor," by immersing them first in boiling water containing salt in certain proportion, and boiling them for "the space of a minute or thereabouts;" they are "then taken "out and hung by separate plants on lines or small hooks" "in a "room impregnated with heat or fumigation by means of a buzaglo "or any other stove, or a steam issuing through funnels, or by the "natural heat of the sun or atmosphere, where they must continue "until they are perfectly dry." "To complete them for exporta-

" tion they must, after they are dried as above, be removed into " a damp room, in order to imbibe a sufficient degree of humidity " to prevent their crumbling or falling to pieces in packing."

[Printed, 3*d*. See Rolls Chapel Reports, 6th Report, p. 165.]

A.D. 1791, February 8.—N° 1791.

JAYNE, WILLIAM.—Preserving eggs " for the space of two years " at the least," by keeping them in a mixture of " that consistence " that it will cause an egg put into it to swim with its top just " above the liquid," and composed of the following substances, in certain proportions; namely, quicklime, salt, cream of tartar with water.

[Printed, 3*d*. See Repertory of Arts, vol. 2, p. 177; and Rolls Chapel Reports, 6th Report, p. 185.]

A.D. 1793, February 19.—N° 1933.

DONALDSON, JOHN.—" Preserving animal and vegetable sub- " stances " by combining " certain principles " " contained in " vegetable bodies themselves," " by proportioning the farinaceous " vegetable principle with the coagulative or mucilagenous one." For vegetables " of a watery or deliquescent nature, a greater por- " tion of farina or mucilage is required, than for others more solid " and readily disposed to dry." For carrots or turnips " the pre- " serving matter may be compounded of wheat or barley meal, " with a solution of any common gum, or vegetable mucilage." But the preserving materials and matters to be preserved " are " innumerable and various; it is impossible that any uniform rule " can be given." The substances, either raw or otherwise, are afterwards " dryed in a way similar to that by which malsters dry " their grain," and are " put up in wooden boxes or other close " packages."

[Printed, 3*d*. See Repertory of Arts, vol. 2, p. 1; and Rolls Chapel Reports, 6th Report, p. 187.]

A.D. 1800, September 11.—N° 2441.

BATLEY, BENJAMIN.—" Curing and preserving herrings and " spratts" by severing the head, taking out the entrails, and salting the body with common salt, " but the bay or rock salt is prefer- " able," and afterwards packing them in casks, and between each layer of the fish sprinkling a little salt and pickle made by boil- ing in water,—spring water preferred,—in certain proportions, the

following substances; namely, bay salt, saltpetre, and molasses; "the same proportion of sugar might be used, as a substitute for "the molasses;" room is left at the "head of the cask for a full "portion of pickle," and more may be added after the cask is headed up, by a "cork hole either in the head or centre." The pickle "would answer for flavoring fish in their original state," but it is preferable to proceed in the manner described above.

[Printed, 3*d*. See Repertory of Arts, vol. 14, p. 307; and Rolls Chapel Reports, 6th Report, p. 197.]

A.D. 1801, January 20.—N° 2465.

BATLEY, BENJAMIN.—"Curing and preserving other fish as "well as herrings and spratts," in the same way as is described for curing herrings and sprats in his last invention, "& from two "to three months should be allowed after curing in order to give "the fish a full flavor." The roes of fish may be preserved by themselves, and "the same pickle, with a small portion of salt, and "sugar or molasses mixed with the salt, will suffice." With shell-fish, particularly oysters, "it may not be found expedient to put "salt to them in the barrel;" in this case the pickle is to be used with a certain addition of salt.

[Printed, 3*d*. See Rolls Chapel Reports, 6th Report, p. 198.]

A.D. 1807, June 13.—N° 3051.

PLOWDEN, FRANCIS.—"Preserving butchers' meat, animal and "other comestable substances," by encrusting them with a substance which "must not only resist the effects of atmospheric air," but "must not communicate any noxious quality to its contents;" and for this purpose concentrated "essence or extract of meat" is employed. The substance to be preserved, "being dressed will "preserve the longer," and is put into a "vessel in a cold state "and wiped dry," and the extract poured over it "in that fusible "state as to find its way into every vacuum. The vessels are best "of wood, and should be kept as dry as possible."

[Printed, 3*d*. See Repertory of Arts, vol. 13 (*second series*), p. 34; and Rolls Chapel Reports, 7th Report, p. 198.]

A.D. 1810, February 26.—N° 3310.

HEINE, AUGUSTUS DE.—Applying "known principles to pre-"serve animal food, vegetable food, and other perishable articles a "long time from perishing or becoming useless." "The pre-"serving vessels may be made of iron, glass, or any other metal,

" or of earthenware, of any shape and size required, strong enough " to withstand the pressure of the atmosphere when exhausted." In the lid there is a " protuberance wherein a valve is fitted that " will let the air escape out of the vessel, but not suffer it to come " in," when it is exhausted by a particular exhausting machine described. " The process with the common air pump " is said to be " tedious, and not to be relied upon."

[Printed, 6*d*. See Rolls Chapel Reports, 7th Report, p. 208.]

A.D. 1810, August 25.—N° 3372.

DURAND, PETER.—First, " Preserving animal food, vegetable " food, and other perishable articles a long time from perishing " and becoming useless," by excluding " all communication with " the external air." The food or articles are enclosed " in bottles " or other vessels of glass, pottery, tin, or other metals or fit ma- " terials," and they are closed by " the usual means of corking, " airing, luting, or cementing." When large vessels are employed, corks are used " formed of pieces glued together," so that " the " pores of that substance shall be in a cross direction with regard " to the aperture into which such corks are to be driven." Making use of vessels with " stoppers fitted, or ground with emery, or " screw caps with or without a ring of leather or other soft sub- " stance between the faces of closure, and also of corks or cross " plugs or covers of leather, cloth, parchment, bladder, and the " like."

Second, Immersing the vessels which " have been thus charged " or well closed " completely in cold water, gradually heating to boiling, and continuing the boiling " for a certain time." " Vege- " table substances are to be put into the vessels in the raw or crude " state, and animal substances partly or half cooked, although " these may be put in raw." The vessels are opened when their " contents shall be wanted for consumption."

Lastly, Although the application of the water bath as described is preferred, " an oven, or a stove, or a steam bath, or any other " fit situation for gradually & uniformly raising the temperature " of the same, and suffering them to cool again," may be employed; and also the " aperture of the vessel, or a small portion " thereof," may be left open, and is closed when " the effect of the " heat has taken place."

[Printed, 3*d*. See Repertory of Arts, vol. 19 (*second series*), p. 193; and Rolls Chapel Reports, 7th Report, p. 208.]

A.D. 1812, July 16.—N° 3585.

WALKER, JAMES.—Making tubes "out of lead or copper, or "any other tough and flexible metal or metallic substance or "metallic compound, by soldering flat pieces thereof, or by cast- "ing, forming, or punching out" a piece "in the shape of a ring "or hollow cylinder," and applying and using the same "to keep "and preserve" the "more valuable fluids, and other vegetable, "animal, and other products," such as "oils, gums, resins, fluid "or solid balsams, leaves, flowers, seeds, grain, and farinaceous "powders of vegitables, the aromatic parts of animals' bodies," &c., and for the preservation of gunpowder, or making cartridges either with balls or shot, "for large and small fire-arms and "artillery."

[Printed, 3*d*. See Rolls Chapel Reports, 8th Report, p. 91.]

A.D. 1817, August 5.—N° 4150.

GRANHOLM, LUDVIG.—Preserving "animal and vegetable "products," separately or mixed together, "as are fit for the food "of man, and for such a length of time as to render them fit for "ship and garrison stores," by "pouring into the vessel in which "the pieces of food that are to be preserved are packed, melted "and hot fat, or pouring in a strong hot animal fluid jelly, in such "a manner that not only all the interstices between the pieces, but "the whole interior of the vessel, shall be so completely filled as to "displace entirely all the atmospheric air."

Second, "Coating the different pieces with melted suet before "they are packed," and placing the pieces in vessels, and filling up all the interstices by a "saturated acqueous solution of common "sea salt."

Third, When the article will permit, "filling the vessel so com- "pletely with the article itself as to expel all the air;" as an example, butter is given. The vessels in which to pack the articles are particularly described, and porous substances are to be coated in certain ways to prevent the air passing, "by percolation "or otherwise, through the substance of the vessel." "Flesh, "fish, fowls, or vegitables" are "fully cooked before enclosing "them in their containing vessel;" and the vessels are not heated by any means after their apertures are closed.

[Printed, 4*d*. See Repertory of Arts, vol. 32 (*second series*), p. 196.]

A.D. 1819, March 23.—N° 4350.

MORRISON, ÆNEAS.—Preserving "animal and vegitable food" "for a great length of time," by enclosing the food "by the several "manufactures" given, in vessels which previous to and in the process of cooking are rendered perfectly air-tight by means of a cork or bung which has been prepared by coating "the under part "and sides" in a certain manner given with "moistened bladder." The cork is forced into the vessel, some distance below its lip, by means of a screw press; above the cork is put "such a lute as "when dry" will "adhere to the cork as a solid mass." A lute composed of tallow and rosin in certain proportions is said to answer well; bladder is tied over this, and a "cap, having a cushion "of soft laid hemp or other material calculated to make a steam-"tight joint," is screwed over all, and the whole placed "in a "steam or water bath till the contents of the jar are fully cooked."

[Printed, 9*d*. See Repertory of Arts, vol. 38 (*second series*), p. 7.]

A.D. 1820, June 20.—N° 4480.

VALLANCE, JOHN.—The "method and apparatus for packing "hops," by "casking" them in a particular manner so as to be "out of the reach of the atmosphere," if necessary, "and in conse-"quence" they may be kept as long as is pleased, "perhaps half "a century, even without being damaged." "The envelopes, "coverings, cases, or vessels in which" they are put "are made of "wood or of metal, and are of whatever shape, size, appearance, "and construction circumstances may render desirable," cheapness being the great object; the expense over the pockets or bags is said to be compensated for, by getting so much more into a wooden or metal package; and to attain this, "wherever it is desirable," "other means of pressure than the screw, hydraulic press, or "racks" may be employed. "The joints or crevices between the "sides or ends or heads" of the packages are filled up, by pour-ing into them "a lute or luting composed of pitch or rosin," "softened and toughened in texture" by "addition of a little "tallow;" between the boards, when forming the packages, a piece of "list or listing" may be placed, "to render partially air-tight "the joint," and if this joint be not satisfactory "cover" the listing either with the lute or luting "described." "Cloth or any-"thing that will answer the purpose" may be used.

[Printed, 11*d*. See London Journal (*Newton's*), vol. 2, p. 11.]

A.D. 1825, April 23.—N° 5156.

ROBERTS, THOMAS ALEXANDER.—"Preserving potatoes and "certain other vegitables," by taking "potatoes that are thoroughly "ripe, and before they have grown in the spring," and "cutting "out" or otherwise destroying "the eyes or germs;" "the more "they are kept from the air the firmer they will be." "Carrots, "turnips, and other vegitables may be preserved by cutting away "or destroying the growing or germinating parts."

[Printed, 3*d*. See London Journal (*Newton's*), vol. 10, p. 257; and Register of Arts and Sciences, vol. 4, p. 31.]

A.D. 1827, July 12.—N° 5523.

VAZIE, ROBERT.—First, "Preventing the injury which corn and "pulse too frequently sustain by rain and wind during harvest," by placing around a stake driven into the ground eight sheaves of the grain, and placing a "hood sheaf" "spread around the upper "part of the upright sheaves." This is called "The Corn Preserver." Second, "Saving in labour, extracting the grain with-"out bruising it," and "preserving the straw uninjured," by using what is denominated "The Corn Extractor;" and this is to be effected by a wheel "formed by six arms of iron or other metal "placed parallel to each other, which stand obliquely," one end "being eighteen inches further forward than the other," beating against "the sheaf or parcel of corn or pulse" suspended over another wheel, which wheel "is loaded on the hind part," "to "counterbalance the said sheaf." Third, Reducing "in manual "labour," and preserving "the flour or meal" "from heating "during the process of" grinding corn or pulse, by using what is denominated "The Conical Corn Mill," which is made by suspending in a frame described "a hollow cone of steel or other "metal," and within this cone placing "an interior cone of like "metal." "These cones are grooved, declining at the rate of "forty-five degrees, and act transversely to each other," and are caused to work in a certain manner by "manual labour." When the cones are enlarged they require "the power of horses, water, "or steam;" with horses and water "the machinery will be of the "usual description; but when the power of steam is required" a machine called "The Centrifugal Steam Engine" is to be applied and is described. Fourth, Preparing food by means of apparatus denominated "The Steam Stove," which consists of a covered

vessel of tin or other metal, "rather less at the bottom than at the "top, to permit it to pass into" a "boiler, where it is suspended "in such manner" that a lid may be placed over the boiler, and allow "extra steam generated in the boiler to pass into the upper "chamber or space betwixt the covers." Certain shapes are preferred and dimensions given. The result from a mixture of "meat "cut in slices or pieces, with a due quantity of rice, onions, "pepper, and salt," covered with water, "and vegetables to be "afterwards applied," is denominated an "English Stew." "Steaks "may be dressed in butter or other oily substance, and conserves "in sugar." Cooked by this apparatus "the flavour of the food "is peculiarly grateful." "This apparatus is also applicable to "the manufacturing of glue and size."

[Printed, price 7*d*. See Repertory of Arts, vol. 7 (*third series*), p. 47; London Journal (*Newton's*), vol. 3 (*second series*), p. 193; and Register of Arts and Sciences, vol. 2 (*new series*), p. 211.]

A.D. 1828, January 31.—N° 5614.

CURRIE, DONALD.—"Preserving grain and other vegitable and "animal substances," "by enclosing them in air-tight vessels, "vaults, or other proper receptacles, from which" the atmospheric air is extracted "as much as possible, and" replaced "by carbonic "acid gas procured from any of the well-known methods," such as "combustion of charcoal or fermentation." "Liquids must be "put into tightly corked or otherwise closed bottles or other fit "and proper vessels," and these vessels enclosed as above with carbonic acid gas to "hinder the usual destruction of the corks or "other closures, and consequently preserve the said liquids in a "more complete manner than has hitherto been effected."

[Printed, 3*d*. See Repertory of Arts, vol. 9 (*third series*), p. 140; and London Journal (*Newton's*), vol. 4 (*second series*), p. 141.]

A.D. 1833, June 1.—N° 6432.

ANGILBERT, PIERRE ANTOINE.—First, "Closing the apertures "of metal cases or boxes which are used for preserving meat and "vegetables;" and secondly, "Closing the apertures of earthen-"ware jars or vessels which are used to preserve fruit and "vegetable substances that act upon metals." The metal cases or boxes are "made with a projecting hollow rim," "forming a "channel all round it into which the cover," "its lower edge "being turned downwards," is "adapted to fit;" an annular plate

of iron of a certain breadth is clasped round the vessel below the rim. "Some solder is melted and poured into the channel;" "red-" "hot coals are put on the plate all round the box," and the lid is pressed so that its lower edge is immersed in the solder; the hot coals are then removed, and the iron plate also. "A small hole is "left in the cover to allow" air, &c. to escape while the lid is being put on, "and as soon as the operation is finished that hole "must be stopped up with a little solder." To take out the provisions when required, the annular plate is put on again and fire put upon it, which melts the solder, when the lid may "be easily "lifted off without injuring the box." A solder easily melted is recommended to be used, and may consist of tin, lead, and bismuth, in certain proportions. The earthenware "vessels are made "with a flat rim projecting out all round the edge of the mouth;" a ring of india-rubber is laid upon this; "apply a cover made of "earthenware, or else of silver or of plated metal, which has a flat "rim also, projecting all round it to fit upon the flat rim of the "jar. The cover is forced tight down upon the packing of india-"rubber, interposed between the two rims by means of small "wedge-shaped staples." If "fruit or other vegitable substance" contained in the jar is to be boiled after the jar is closed, it will be necessary to have a small hole in the cover, and then a metal cover should be used, and the hole stopped up afterwards with solder, and to prevent damage to the earthenware by hammering on the staples a washer may be put on the top of the cover and one under the rim of the vessel.

[Printed, 6*d*. See Repertory of Arts, vol. 2 (*new series*), p. 1; and London Journal (*Newton's*), vol. 5 (*conjoined series*), p. 53.]

A.D. 1834, November 13.—N° 6711.

LONG, DANIEL RUTTER.—"Injecting certain antiputrescent "and flavoring preparations into the blood-vessels" of animals "by means of a force pump." The "antiputrescent and flavoring "preparations" may consist of water, salt, saltpetre, spices, and vinegar.

[Printed, 3*d*. See Repertory of Arts, vol. 6 (*new series*), p. 25; and London Journal (*Newton's*), vol. 10 (*conjoined series*), p. 244.]

A.D. 1835, March 11.—N° 6787.

NEWTON, WILLIAM.—Preparing "animal milk" so as it may be "preserved for any length of time with its nutritive properties,

" and capable of being transported to any climate for domestic or " medicinal purposes," and this is to be effected by adding to the milk a certain amount of loaf sugar and evaporating it by any suitable means, using only " a gentle warmth to quicken the " operation." It may be brought " to the consistency of cream, " honey, or soft paste, or even into dry cakes or powder." Cocoa, coffee, or tea may be evaporated with it. This process is said to be different from the process of M. Braconneau, which " consists " in separating by means of an acid the cerum from the other " constituents of milk, and adding to the residuum (viz. the " caseum and butyrous substance) a sufficient quantity of carbo- " nate of soda to render it soluble in liquid."

[Printed, 3*d*. See London Journal (*Newton's*), vol. 8 (*conjoined series*), p. 170; and Rolls Chapel Reports, 7th Report, p. 160.]

A.D. 1836, March 21.—N° 7036.

SEIGNETTE, Louis Elizee.—Preserving " meat, fish, vege- " tables for the use of the navy, &c.," by " surrounding the sub- " stance " in " an atmosphere free from any oxygen."

First, " The meat, raw or partly cooked, must remain in a " mixture of salt and nitre " for a given time, then " placed in tin " cases or other vessels," which should be tight, and partially exhausted by an air pump, " filled up with salt and water or brine, " and turned over a vat" of the same liquid, to introduce carbonic acid gas; to do which " a pump may be used, or the gas may flow " by a tube or pipe."

Second, Instead of making a vacuum by an air pump, " a small " bag of nails or iron filings, or small portions of iron, must be " placed internally in the upper part of the vessels;" the air " will " then be deprived of its oxygen by the iron filings." The brine must then be replaced by the carbonic acid gas, as in the first process.

Third, Replacing the brine by vinegar, in which case the salt and nitre may be dispensed with.

" In all these processes it is useful to place in the upper part of " the vessels small pieces of calcined charcoal, so as to destroy any " smell the meat might acquire." Several other gases might be used, " such as deutoxide d'azote, hydrogen, & azote."

[Printed, 3*d*. See London Journal (*Newton's*), vol. 13 (*conjoined series*), p. 101.]

A.D. 1839, June 20.—N° 8117.

WERTHEIMER, JOHN.—"Certain improvements in preserving "animal and vegitable substances and liquids."

[There is no Specification of this Patent enrolled.]

A.D. 1840, February 8.—N° 8378.

WERTHEIMER, JOHN.—First, "The mode of employing a "burner for excluding the atmosphere, and for closing the open- "ings of cases wherein animal and vegitable substances and "liquids produced therefrom are to be preserved;" and second, Preserving animal and vegetable matter by heating them in cases with covers in which "there are one or two small holes" of a specified size. After a given time these holes are to be closed, and the heat continued after "for a time, in order to decompose the "remaining atmospheric air."

The first part of this invention is afterwards disclaimed.

[Printed, 7*d*. See Inventors' Advocate, vol. 3, p. 115.]

A.D. 1840, August 8.—N° 8597.

EDWARDS, DOWNES.—The title of this invention is as follows: "Improvements in preserving potatoes and other vegitable sub- "stances." Potatoes are "boiled or steamed till the skins just "show symptoms of cracking," and put into a cylinder pierced with small holes; a piston presses down into the cylinder and causes "the potatoes to pass out through the holes in the form of "small threads or fibres, which retain the form in which they pass "from the cylinder." These are afterwards dried on water baths, which are particularly described.

This invention as applied to *other vegetable substances* is afterwards disclaimed, on the ground of want of novelty; and the words "peeled or stripped of their skins," &c., are added.

[Printed, 4*d*. See Repertory of Arts, vol. 16 (*new series*), p. 249, and vol. 16 (*enlarged series*), pp. 102 and 161; London Journal (*Newton's*), vol. 21, (*conjoined series*), p. 422, and vol. 36 (*conjoined series*), p. 127; Mechanics' Magazine, vol. 34, p. 190; Patent Journal, vol. 8, p. 266; and Inventors' Advocate, vol. 4, p. 116.]

A.D. 1840, October 13.—N° 8658.

PAYNE, CHARLES.—"Salting animal matters (preserved or "cured by salt), by causing the liquors used to penetrate into such "animal matters by pressure, or pressure and vacuum." The apparatus suggested is "on the principle of the ordinary air pump,"

with the addition of a force pump for "supplying the liquor" for salting.

[Printed, 6*d*. See Repertory of Arts, vol. 17 (*new series*), p. 168; London Journal (*Newton's*), vol. 21 (*conjoined series*), p. 104; Mechanics' Magazine, vol. 34, p. 334; and Inventors' Advocate, vol. 4, p. 261.]

A.D. 1840, November 25.—N° 8717.

GRELLET, CHARLES.—The title of this Patent is as follows: "New modes of treating potatoes in order to their being converted "into various articles of food, and new apparatus for drying appli- "cable to that and other purposes." And first, potatoes (with their skins pared off by a machine particularly described) are "boiled and "reduced to a paste;" second, raw potatoes, with the skin pared off by the same machine, are boiled, and dried in a new apparatus also particularly described, and reduced into a state of flour by another new machine, particulars of which are fully given; third, "pulp of "the potatoe, (deprived of the feculent parts,) and made into a moist "paste;" fourth, "pulp of the potatoe (deprived of the feculent "parts) boiled, dried, and reduced to a state of meal" by the machine before alluded to. "These pastes and mealy parts are to be "mixed together according to the article required to be made."

[Printed, 1*s*. 3*d*. See Mechanics' Magazine, vol. 34, p. 446; and Inventors' Advocate, vol. 4, p. 357.]

A.D. 1841, January 6.—N° 8776.

GUNTER, HENRY.—Treating animal and vegetable substances so as they "may be preserved for a great length of time and retain "their natural flavour." The vessels containing these substances hermetically sealed, in preference in tin boxes, are placed in a boiler and covered with water and boiled for the proper time to cook their contents. They are then placed in a hot sand bath and a minute hole punctured on the top; after the air is driven out the holes are closed "by a soldering iron while the steam is flowing off." "By "causing the process of heat to be carried on during the time the "vessel is hermetically closed, all the flavor of the substances treated "will be retained."

[Printed, 3*d*. See Repertory of Arts, vol. 16 (*new series*), p. 184; Mechanics' Magazine, vol. 35, p. 77; and Inventors' Advocate, vol. 5, p. 35.]

A.D. 1841, March 8.—N° 8873.

GOLDNER, STEPHAN.—Employing a chemical bath, which shall be above boiling water, and "on the other hand not of so a

" high a temperature as to burn the animal or vegetable matters in " the cases," when following the operation in the manner described in the Specification of a Patent granted to John Wertheimer, February 8, 1840. The bath may consist " of a solution of muriate " of lime or nitrate of soda," but a preference is given to muriate of lime, because a constant temperature of 270° or 280° Fahrenheit can be maintained " without much evaporation."

[Printed, 3*d*. See London Journal (*Newton's*), vol. 21 (*conjoined series*), p. 442; Mechanics' Magazine, vol. 35, p. 250; and Inventors' Advocate, vol. 5, p. 178.]

A.D. 1841, March 8.—N° 8874.

WERTHEIMER, JOHN.—The first part of this Specification is a repetition of N° 8378, but instead of a dry heat for the purpose of heating up the tins, a bath is to be employed, made with a solution of muriate of lime or nitrate of soda, but the preference is given to the muriate of lime, because it can be maintained at 270° or 280° Fahrenheit " without material evaporation."

[Printed, 6*d*. Mechanics' Magazine, vol. 35, p. 250; and Inventors' Advocate, vol. 5, p. 178.]

A.D. 1842, January 27.—N° 9240.

BENJAMIN, HENRY, and GRAFTON, HENRY.—Preserving " animal and vegitable matters by freezing or cooling them." A mixture of ice and salt in certain proportions, and pulverized, is preferred, " although other well-known freezing mixtures may be " resorted to." " This invention is particularly applicable to " preserving fish." " The fish intended to be frozen is placed " in a copper or other metallic vessel" with cold water, and this is deposited in a mixture of pulverized ice and salt, " the said " mixture being in a wooden trough."

[Printed, 3*d*. See Repertory of Arts, vol. 18 (*new series*), p. 233; and London Journal (*Newton's*), vol. 22 (*conjoined series*), p. 303.

A.D. 1842, April 6.—N° 9312.

BEVAN, JOHN.—Expelling the air from cases in which various articles of food are placed for preservation, by connecting the said cases with a vacuum chamber on the one hand, and with a vessel with gelatine or other suitable material on the other hand, in such manner that by opening the communications the air escapes into the exhausting apparatus, while the gelatine succeeds to supply its place. In all cases the gelatine cannot be used.

The apparatus is fully described. This method is said to admit of the food being cooked "at a very low temperature," a high temperature being "a great detriment to articles of food."

[Printed, 5*d*. See Repertory of Arts, vol. 1 (*enlarged series*), p. 24; London Journal (*Newton's*), vol. 22 (*conjoined series*), p. 375; Mechanics' Magazine, vol. 38, p. 59; and Record of Patent Inventions, vol. 1, p. 177.]

A.D. 1842, August 3.—N° 9435.

CARSON, SAMUEL.—First, "Injecting pickling or preserva- "tive liquids into pieces of meat or anima substances."

Second, "Causing pickling or preservative liquids to penetrate "more quickly into meat or animal substances by atmospheric "pressure, by means of a vacuum or partial exhaustion being "obtained at some part of the piece of meat or animal substance, "and any gases in the meat consequent on partial decomposition "will be removed and replaced by atmospheric air or preservative "materials."

Third, "Causing preservative liquids to penetrate more quickly "into meat or animal substances by means of pressure produced "by centrifugal force."

Fourth, "Causing preservative liquids to penetrate more quickly "into meat or animal substances by means of a weight of liquor "in motion being suddenly checked or stopped." The apparatus to be employed is described at considerable length.

[Printed, 1*s*. 1*d*. See Repertory of Arts, vol. 2 (*enlarged series*), p. 134.]

A.D. 1842, October 8.—N° 9487.

DEUTSCHE, CLAUDE EDWARD.—The title of this invention is, "Improvements in combining materials to be used for cementing "purposes, and for preventing the passage of fluids, and also for "forming or constructing articles from such compositions or ma- "terials." A number of mixtures are made of different kinds of gums, resins, &c., with turpentine, naphtha, alcohol, and essential oils, some of which it is said "may also be employed to pre- "serve provisions, by coating the vessels containing them in such "manner as to exclude the atmospheric air."

[Printed, 4*d*. See Repertory of Arts, vol. 3 (*enlarged series*), p. 299.]

A.D. 1843, March 24.—N° 9677.

NEVILL, ALFRED HOOPER.—First, Manufacturing "a product "of lentils separated from the husk, and thus rendered suitable

" for man's food," by splitting them in the same manner as peas, and separating the husk by " winnowing or other suitable ma-" chines."

Second, Manufacturing flour from " lentils separated from the " husk," and obtaining " a valuable material for the making of " puddings, soups, and other articles of food for man."

Third, Combining " with such flour of lentils a small quantity " of curry powder," which " will be found to improve the flavor " of the lentils."

[Printed, 3*d*. See Repertory of Arts, vol. 3 (*enlarged series*), p. 313; and London Journal (*Newton's*), vol. 24 (*conjoined series*), p. 350.]

A.D. 1843, December 5.—N° 9970.

COOPER, JAMES.—First, Constructing vessels " in such manner " that they may be applied to an opening in a boiler of a kitchen " range, when preserving provisions in jars or other vessels by " steam."

Second, " Constructing apparatus for stopping jars and vessels " when preserving provisions therein, and securing such stoppers " till the contents of such jars or vessels are cooled, and also the " corkscrew for withdrawing the cork or stopper."

The " vessel to receive " the " jar or other suitable vessel " has a cap, and is open at the bottom to admit steam through a perforated platform on which it stands in the boiler. Into this the jars are placed, and " after remaining a proper time " removed from the " vessel " and corked; this is facilitated by placing them in a " screw press," and " to prevent the expulsion of the cork or " stopper " a " screw clamp " is applied; the jar is returned to the vessel to be again steamed, and " the screw clamp is to remain " till the contents of the jar be cooled down." The corkscrew to draw these corks or stoppers is passed through a frame which rests on the shoulder of the bottle; this, with the other apparatus, is described at length.

[Printed, 8*d*. See Repertory of Arts, vol. 3 (*enlarged series*), p. 335; London Journal (*Newton's*), vol. 27 (*conjoined series*), p. 38; and Engineers and Architects' Journal, vol. 7, p. 88.]

A.D. 1844, March 28.—N° 10,126.

DAVIDSON, ROBERT, and SYMINGTON, WILLIAM.—The title of this invention is, " A method or methods of drying, sea-" soning, and hardening wood and other articles, parts of which

"are applicable to the desiccation of vegetable substances gene-
"rally." For this latter purpose producing "rapid currents of
"heated air," more particularly applicable to "sugar, coffee, starch,
"wheat, and other grain." "Atmospheric air should be heated by
"causing it to pass through a series of pipes exposed to the heat
"of a furnace."

"Desiccating sugar by causing the air heated to any degree found
"beneficial, to be impelled" "through pipes or vessels, and thence
"to circulate in the drying chambers, at any rate of speed that may
"be most approved." With coffee, instead of closed cylinders,
which is the usual way of "drying and preparing coffee," using
"perforated or pierced cylinders." The acrid "vapours and spent
"heat pass off through hollow axles." The modes and apparatus
are fully described.

[Printed, 1*s.* 1*d.* See Engineers and Architects' Journal, vol. 7, p. 422.]

A.D. 1844, September 19.—N° 10,322.

FITCH, MICHAEL.—First, "Producing a substance to be used in
"preventing decomposition in provisions."

Second, "The means used for producing such substance."

Third, "Condensing and applying gas or fume evolved in dis-
"tilling wood to preventing meat or fish from perishing, by com-
"bining such gas or fume with salt, sugar, treacle, or saltpetre,
"and then using such materials for preserving purposes." Wood,
and in preference oak, is put into a retort with a refrigerator, and
distilled into a receiver containing a solution of salt or sugar,
treacle or saltpetre, and the product is used for preserving meat or
fish.

[Printed, 6*d.* See Repertory of Arts, vol. 5 (*enlarged series*), p. 296.]

A.D. 1845, January 28.—N° 10,496.

YULE, WILLIAM TRUEMAN.—First, "Drying animal and vegi-
"table matters when preserving the same."

Second, "Keeping animal and vegitable matters dry when
"preserving them in closed vessels." By the first part the sub-
stances are either "hung up or thinly spread" on shelves in a
drying chamber with a "blowing machine, which may be either a
"fan or a piston or a cylinder." The air passes through a vessel
containing fragments of chloride of calcium to deprive it of mois-
ture before it enters the chamber. The second part, "keeping dry"

the substances, which in some instances are to be put into cases with chloride of calcium. The vessels are generally "made of tin," and "when the matters are very moist and thin" it is "advan- "tageous to make a partial vacuum in the cases or vessels," and to increase considerably the chloride of calcium.

[Printed, 3*d*. See Repertory of Arts, vol. 6 (*enlarged series*), p. 177; and London Journal (*Newton's*), vol. 27 (*conjoined series*), p. 113.]

A.D. 1845, July 21.—N° 10,781.

LINGS, JOHN.—Constructing "safes, chests, or closets for the "reception of victuals and other perishable articles," a low temperature being the object. The outer casing is generally of wood, with an inner case of "zinc or galvanised iron," and between the two, either "powdered charcoal, or sawdust, or hair, or other im- "perfect conductor of heat." The interior is divided into such "compartments as may be required." In "the middle of the "safe" is a box with a perforated bottom to contain ice. This construction is lengthily described, along with other modifications of the same.

[Printed, 8*d*. See London Journal, (*Newton's*), vol. 28 (*conjoined series*), p. 83.]

A.D. 1845, November 4.—N° 10,922.

CARSON, SAMUEL.—"Packing eggs in cases from which the "atmospheric air is withdrawn, and partially cooking the eggs," "by which means the eggs may be preserved for the purposes of "food for a length of time." The eggs are first punctured at one end with a pin, and packed in a case "similar to those used for "the preserving meat by the aid of a vacuum;" the punctured ends are put uppermost in the case. The lid is soldered on, and the vessel exhausted from a tube in the lid: this tube has two openings, one into a steam-boiler; steam enters the box, and the condensed steam is let out by a small hole in the bottom of the box, which is afterwards soldered. If the eggs are without the shell very little steam is condensed, and the hole at the bottom of the box is not required.

[Printed, 11*d*. See Repertory of Arts, vol. 7 (*enlarged series*), p. 347; and Patent Journal, vol. 1, p. 19.]

A.D. 1846, March 5.—N° 11,120.

WARINGTON, ROBERT.—First, "Coating substances to be pre- "served with common glue, gelatine, or concentrated meat gravies,

" or otherwise, " by dipping them in warm solutions of such substances, or dipping them " in a vessel of thin cream of plaster of " Paris," which, when set hard, saturate with melted suet, wax, stearine, &c. The things may be wrapped in waterproof cloth, or with caoutchouc or gutta-percha, or coated with a varnish of these substances.

Second, Preserving the substances coated by keeping them constantly " submerged in glycerine, treacle, elaines, oils, & other the " like matters not liable to oxidation."

[Printed, 3*d*. See Repertory of Arts, vol. 9 (*enlarged series*), p. 44; London Journal (*Newton's*), vol. 29 (*conjoined series*), p. 200; and Patent Journal, vol. 1, p. 263.]

A.D. 1846, June 12.—N° 11,240.

RETTIE, ROBERT.—The title of this invention is, " Certain im- " provements in the manufacture of fuel, parts of which improve- " ments are applicable for the purposes of purifying, compressing, " and extracting vegetable and other substances and fluids, and in the " machinery or apparatus to be used for the same." The vessel for extracting juice or liquor from any substance is a double box, the upper box having a false bottom, the lower one having a tube to which an exhausting apparatus may be attached, and with other arrangements described, so that when the air is extracted, on turning a tap liquor flows in, which takes the place of the air, and this may be employed in salting provisions.

[Printed, 6*d*.]

A.D. 1846, September 17.—N° 11,372.

NEWTON, WILLIAM EDWARD.—Preserving fruit and vegetables by constructing apparatus so as they shall be kept " nearly ap- " proaching the freezing point of water, without being actually " allowed to freeze." The ground is excavated, and a wall of stone or brick built for the purpose of supporting the excavation; this is divided into compartments, all of which have double sides, so as to admit of their being lined " with charcoal, tan, bark, or other bad " conductor of heat." The floor is supported above the bottom of the excavation. " Ice may be placed upon the covering of the " ice house," which forms one of the compartments, " and as this ice " melts the water from it will trickle down an inner wall of the ice " compartment, and will absorb any heat which might otherwise " find its way through the charcoal or imperfect conductor."

[Printed, 6*d*. See London Journal (*Newton's*), vol. 30 (*conjoined series*), p. 404; and Patent Journal, vol. 2, p. 718.]

A.D. 1846, October 15.—N° 11,414.

PALMER, WILLIAM.—Taking "the fat of beef, mutton, veal, or "lamb, when fresh," melting them "in an open boiler, heated by "preference by a steam jacket; when melted the fat is strained "through a fine sieve into vessels; the temperature of the room is "kept about 70° Fahrenheit; when the fat begins to granulate it is "put into cloths and pressed." The weaker or more fluid portion of the fat, separated by pressure or by other means, is returned to the boiler, "and heated until" there is no evidence of steam going off, when it is flavoured with a few bay leaves, and strained through sieves, salt is stirred into it when it begins to cool, and "it is packed "into bladders," &c.

[Printed, 7*d*. See Patent Journal, vol. 2, p. 791.]

A.D. 1846, October 17.—N° 11,420.

RYAN, JOHN.—First, Preserving "organic and other substances, "by supplying thereto a mixture of gases, acids, or vapours," "non-supporters of combustion," and a mixture of carbonic and chlorohydric acids, or a mixture of carbonic and acetic or pyroligneous acids" is preferred; sometimes a small quantity of creosote is put in with the materials generating the gases, "where "coarse pyroligneous acid cannot be obtained;" but this is not used upon fermented liquids or vegetable substances. Organic matters such as meat should be previously deposited in a suitable air-tight box, not described.

Second, "Constructing of a self-acting apparatus for generating "the gases." This is constructed of glass or other suitable material, and is a large outer vessel, having an inner one with a false bottom, containing fragments of marble; the outer one is for acid, having a pipe with a stop cock which may be opened at will, for emitting the gas; this pipe has a flexible tube attached to it, to lead to the "suitable air-tight box," or otherwise.

[Printed, 6*d*. See London Journal (*Newton's*), vol. 31 (*conjoined series*), p. 351; Patent Journal, vol. 2, p. 814; and Engineers and Architects' Journal, vol. 10, p. 178.]

A.D. 1847, May 6.—N° 11,691.

HORSLEY, JOHN.—Using "ammonia in such a combination "with acetic or purified pyroligneous acid as shall not interfere with "the principle of decomposition or volatilization of their elements

" upon the application of heat or in cooking." The " preservative " liquor " is made by neutralizing strong acetic acid by sesquicarbonate of ammonia; the result is " acetate of ammonia, which is " eminently volatile, and is given off in the act of cooking." Salt is dissolved in water, boiled, and filtered through animal charcoal, and to this some of the acetate of ammonia is added; the meat is " injected with this liquid," " and either put into vessels and " covered with the liquor," or wrapped up in cloth " saturated with " the liquid, and placed between layers of charcoal."

[Printed, 3*d*. See Repertory of Arts, vol. 10 (*enlarged series*), p. 353; Mechanics' Magazine, vol. 47, p. 631; and Patent Journal, vol. 3, p. 575.]

A.D. 1847, May 14.—N° 11,703.

GRIMWADE, THOMAS SHIPP.—Preserving milk and " rendering " it fit for use at any time, by the simple admixture of pure water," by " the mixing of salt-petre with the milk, and then exposing it " to heat in vacuo, so as to evaporate and extract the aqueous " particles thereof," and then enclosing this " in bottles from which " the air has been previously exhausted," and securing the contents from the atmosphere till required for use.

The apparatus for accomplishing this is described.

[Printed, 10*d*.]

A.D. 1847, May 29.—N° 11,726.

BEKAERT, FRANCIS BERNARD.—First, Increasing the quantity of cream procured from milk, by adding to the milk, in the proportion of one table-spoonful to two quarts of milk, a liquid prepared by dissolving " in one quart of water 1 oz. of carbonate of soda," adding " one tea-spoonful of a solution of turmeric or curcuma, " and three drops of marigold water." Although soda is most convenient, other alkalies may be employed, and the soda solution may be used alone without the addition of the other substance.

Second, Preserving milk, by adding to one quart one spoonful of soda solution, which should fill the bottle full. The cork is fixed in the bottle " by merely putting a piece of string round the cork, to " prevent its flying." " Bottles thus filled and corked " are put into " a vessel or copper of cold water;" the water is brought to boil, and allowed to cool. " The bottles thus corked and boiled " are put on one side for use."

[Printed, 3*d*. See Repertory of Arts, vol. 11 (*enlarged series*), p. 43; and London Journal (*Newton's*), vol. 31 (*conjoined series*), p. 421.]

A.D. 1847, October 7.—N° 11,892.

LIGNAC, JULES JEAN BAPTISTE MARTIN DE.—"Evaporat-"ing, and then storing and closing milk in vessels so as more effec-"tually to preserve the same than has heretofore been accomplished." The milk, after straining, is evaporated in large flat shallow pans, heated by a steam bath to 186° Fahrenheit, to about one-sixth of its bulk, and then filled into tin vessels, which are hermetically sealed after standing twenty-four hours. These tins, when sealed, are put into water at a temperature of 210° Fahrenheit, and "remain at that "temperature for ten minutes."

[Printed, 1*s.* 1*d.* See London Journal (*Newton's*), vol. 32 (*conjoined series*), p. 246.]

A.D. 1847, November 6.—N° 11,947.

DAVISON, ROBERT, and SYMINGTON, WILLIAM.—Applying heat to the preparation, desiccation, and preservation of bread stuffs, confectionary, pulse, meats, vegetables, and other edible substances:

First, To prevent the temperature of the air fluctuating in the oven described in a former Patent, some pipes and valves are to be added to it.

Second, Substituting for the ordinary bakers' oven, one heated by rapid currents of air; and another chamber may be built over it "for substances not requiring so high a degree of heat for their "preparation."

Third, Roasting "coffee, chicory, cocoa, barley," &c., in revolving cylinders, with small holes for the admission of heated air, and with cavities of a U form.

Fourth, Drying vegetables, &c., "upon trays with hair cloth or "lattice-work bottoms," "one above another in the heating cham-"ber." When they are large, they are first cut into slices.

Fifth, Drying meat by cutting in thin slices and hanging it up in the drying oven until it ceases to lose weight.

Sixth, Mixing "yolks and whites of eggs" "with flour, ground "rice, or other faranaceous substance," and drying, and "when tho-"roughly dry (the cakes are) reduced to the state of flour, and in "that state packed up for use." Instead of mixing the yolks and whites, they may be preserved separately.

[Printed, 10*d.* See London Journal (*Newton's*), vol. 36 (*conjoined series*), p. 127; Mechanics' Magazine, vol. 48, p. 457; and Patent Journal, vol. 4, p. 624, and vol. 8, p. 266.]

A.D. 1848, May 26.—N° 12,166.

LOUIS, FELIX HYACINTHE FOLLIET.—Preserving "cows' milk, "goats' milk, and asses' milk," by converting them "into solid "cakes or masses soluble in warm water, and capable of pre- "serving for a long time their original freshness and sweetness," by mixing in certain proportion "with the milk in its natural "state" "well-clarified raw sugar," agitating it, and evaporating it in apparatus described. These are, shallow pans with steam jackets; however, pans not "having more than about the tenth of an inch" in depth of milk may be "exposed to the ordinary temperature of "the atmosphere till the milk evaporates to dryness, after which the "solid residuum is collected and pressed into moulds as before."

[Printed, 6*d*. See London Journal (*Newton's*), vol. 33 (*conjoined series*) p. 409; Mechanics' Magazine, vol. 49, p. 525; Practical Mechanics' Journal, vol. 1, p. 227; Artizan, vol. 7, p. 105; and Patent Journal, vol. 6, p. 88.]

A.D. 1848, August 21.—N° 12,250.

BETHELL, JOHN.—Preserving corn and grain of all sorts by the aid of heated steam, "obtained by simply passing steam generated "in the usual way through a series of heated or red-hot pipes," "or the grain may be made to pass through a revolving cylinder "of perforated metal or wire gauze placed in a close oven or "chamber," heated in any way; or, they are to be dried in a machine described, and which consists of a box, in which are placed a series of endless cloths mounted on rollers, and made to travel with a constant and uniform speed; the grain or other matters are carried onward to the opposite side of the box, where they fall on to a second cloth or belt, which carries them backward in the opposite direction, while a current of the heated steam passes through the apparatus until the matters are dry.

To preserve meat for food, "wood naphtha, or fine pyroligneous "or pyroacetic spirits, or pyroligneous acid," but "what is com- "monly called wood naphtha" is preferred, mixed with water "in "certain proportion, and in which common salt is dissolved in the "proportion generally used for brines," and the animals directly after they are killed are impregnated with this liquid by any of the modes now known. The meat may also be put into casks charged with compressed carbonic acid; or it may also be cut into thin strips steeped in the solution, and dried by air or heated steam "at a temperature not exceeding 170° of Fahrenheit."

"All kinds of malt liquors and wines" are preserved by putting them into strong small barrels or vessels made of metal, well tinned, and strong enough to bear a pressure of from 60 to 80 pounds to the square inch;" "compressed carbonic acid gas" is "forced into the liquid."

Milk or cream is preserved "by first scalding it and then im-"pregnating it with carbonic acid gas in a soda-water machine." "After the milk is charged with the gas, it is drawn off into bottles "and corked in the usual way, or into metal barrels, cases, jars," &c.; or the milk, after scalding, is treated like the malt liquors above.

[Printed, 10*d*. See London Journal (*Newton's*), vol. 35 (*conjoined series*), p. 25; Mechanics' Magazine, vol. 50, p. 187; Artizan, vol. 7, p. 208; and Patent Journal, vol. 6, p. 225.]

A.D. 1848, December 21.—N° 12,381.

TRAVIS, JOHN, and M'INNES, JOHN.—Packing lard in "a "suitable woven fabric," which may be "closely-woven calico or "muslin." The package is made to resemble in shape "the "bladder now in general use." It may be coated, and a coating well adapted is said to be made by mixing "animal gelatine "with farina or starch paste;" after dipping in this solution, it is again "dipped into a saturated solution of common salt and "alum."

[Printed, 3*d*. See London Journal (*Newton's*), vol. 35 (*conjoined series*), p. 34; Mechanics' Magazine, vol. 50, p. 619; and Patent Journal, vol. 7, p. 131.]

A.D. 1849, March 28.—N° 12,548.

BRITTEN, JOHN.—First, "Constructing kitchen ranges with "an inner mantel shelf projecting partially over the fire," with doors down to the hobs, "so as to form, when the doors are open, "a sort of bonnet to prevent the chimney from smoking."

Second, Constructing ovens which "are heated by a top and a "bottom draft directly from the fire," with "an additional damper "or door to shut off the top draft without closing the bottom "one."

Third, Heating ovens "by combining the ordinary bottom 'draft from the fire with a circulation of hot air," to avoid the necessity of "a hollow top."

Fourth, Heating air by means of "a hollow cheek between the oven and the fire."

Fifth, Avoiding any cover to the fire, by causing "the draft "which heats the hot plate to pass from a point of the fire lower "down than the ordinary level of the coals."

Sixth, Constructing "fall-down oven doors," with "a pendant "handle to the door, having a short lever through" the door, so that "this handle, when at right angles with the door, forms an "efficient leg for supporting the door in a horizontal position when "open."

Seventh, Feeding boilers by a tap having a ball "open at the "bottom and connected with a steam pipe from the boiler by "means of an elastic tube attached to the bottom of the ball;" a slight pressure of steam generated in the boiler displaces the water, and causes the ball "to rise and open the feed tap."

Eighth, Getting the parts of a range square by using "a set screw" "instead of the ordinary chipping bit."

Ninth, Constructing "apartments with perforated bottoms, "having air-tight chambers underneath such perforated bottoms," for preserving corn or other food, so "that currents of air can "be conveniently forced through such materials."

Tenth, Burning "clay slabs by means of hot air, and heating "the air which feeds the fire of one kiln by causing it to pass "through the hot bricks or slabs in another."

Eleventh, Improving roasting jacks by "making the bottom "cap to drop through the tube, and fixing it in that position by "means of a side screw."

Twelfth, Manufacturing jack chains by "first coiling a rod or "wire of iron of the required size on a spit, the one edge or side "of which is wider than the cross section of the required link;" cutting "the several coils asunder at the part which corresponds "with the wide edge of the spit;" heating them and welding them by means of a die or stamp. This process is claimed for the manufacture of other chains.

[Printed, 3*d*. See Mechanics' Magazine, vol. 51, p. 328; and Patent Journal, vol. 8, p. 6.]

A.D. 1849, November 17.—N° 12,850.

BRINDLEY, William.—The first part of this invention relates to the producing of ornamental designs in papier-mâché; and second, the preserving of vegetable substances. "Leaves and "flowers and stalks of plants" are to "be placed between oil "paper and then stoved" at a heat between 250° and 300° Fahren-

heit, "in like manner to what papier-mâché is done for this "purpose." Nothing is said to what they are to be applied when thus dried.

[Printed, 3*d*. See Repertory of Arts, vol. 15 (*enlarged series*), p. 381; London Journal (*Newton's*), vol. 36 (*conjoined series*), p. 316; Mechanics' Magazine, vol. 52, p. 417; and Patent Journal, vol. 9, p. 119.]

A.D. 1850, November 12.—N° 13,338.

MASSON, ETIENNE.—First, "Drying and forcibly compressing" vegetable substances to be preserved for food. Sometimes before drying they may be moistened "with vinegar diluted with ten "times its bulk of water."

Second, Preparing "stalks of cabages and of similar vegitables "by grinding them into flour or powder."

Third, Preparing "peas or beans by the combined process" of "immersion in boiling water and subsequent desiccation."

[Printed, 4*d*. See London Journal (*Newton's*), vol. 40 (*conjoined series*), p. 267; Mechanics' Magazine, vol. 54, p. 414; and Patent Journal, vol. 11, p. 87.]

A.D. 1851, January 30.—N° 13,477.

MURDOCH, JAMES.—Exposing "animal and vegetable sub-"stances in a close chamber to a forced current of dry air, in order "to dry such substances for the purpose of preserving the same, "independent of any preliminary or subsidiary processes which "may be adopted as auxiliary to such preserving."

Second, Injecting the carcases of animals with "a saline "liquid made by dissolving in water, in certain proportion, "chloride of aluminum, chloride of sodium, and nitrate of pot-"ash," alone or in conjunction with the desiccating process, or with any other preliminary or subsidiary processes that may be deemed advisable. The desiccating chamber and the furnace to heat it are described, and may be applied also to drying glue.

[Printed, 7*d*. See Mechanics' Magazine, vol. 55 p. 119; and Patent Journal, vol. 11, p. 265.]

A.D. 1851, July 3.—N° 13,680.

PAYNE, CHARLES.—First, "Drying animal and vegetable sub-"stances" by the "combining of apparatus so that there shall be "constant currents of air enduced to pass into and through the "chamber wherein the substances are placed to be dried, by means "of exhausting apparatus." No particular apparatus is described.

Second, "Heating and cooling liquids" by combining "apparatus for introducing air, heated or cold, into fluids, with apparatus "for exhausting." For heating or cooling liquids an apparatus may be used consisting of a close boiler or vessel connected to an exhausting apparatus, "at or near to the bottom tubes or plates, "or else, numerous tubes descending from larger pipes, above "the liquid." In using this apparatus for heating, the boiler is heated by any "means," "and to an extent depending upon the "liquid to be treated." In "cooling liquids such as worts," "they will be introduced into the vessel, and the process of exhaustion will go on."

[Printed, 4*d*. See Repertory of Arts, vol. 19 (*enlarged series*), p. 174; and Mechanics' Magazine, vol. 56, p. 37.]

A.D. 1851, August 21.—N° 13,723.

ROBERTON, JAMES.—The title of this invention is as follows: "Improved methods of producing or obtaining printing dyes and "other substances used in printing, which improvements in whole "or in part are applicable to other like useful purposes." And after describing apparatus to be employed in exhausting dye-woods, a modification of the same, it is said, may be applied in preparing "dry albuminous extracts." The meat, divested of fat, is cut up into small pieces, and put into pans "fitted with perforated false bottoms," and "having valves or common cocks or "taps." Each vessel is fitted with "a circular piece of wood or "flat metal," and this is pressed down "on the contents of the "vessel or pan by means of a lever handle." When the extracts are obtained they are evaporated by an apparatus described, and when dry yield a substance of a light brown pulverulent nature. The extracts "may be mixed with farinaceous substances, and form "an excellent substitute for solid animal food." The gelatine which remains unextracted in the vessels by the first process may subsequently be extracted, "and sold separately, or employed "conjointly with the dried extract of meat, as an article or articles "of food in a new form."

[Printed, 1*s*. 1*d*. See Mechanics' Magazine, vol. 56, p. 177, and vol. 57, p. 321.]

A.D. 1851, September 4.—N° 13,732.

WETTERSTEDT, BARON CHARLES. — "Mixing animal & "vegetable substances with flour of corn, or potatoes and other

" edible substances," drying them, and " enclosing them in vessels " capable of being closed to exclude the air." Earthenware vessels are preferred. If corks be used, " they are first to be dipped " in melted bees' wax," and " the outside of the stopper when in " the jar or bottle " is to be coated " with pitch mixed with pow- " dered coke;" and if casks are used, the whole of the outside is coated similarly. " Powdered coke may be used with great " advantage in the interior of the packages." Thus, a bottle is nearly filled with the meat or vegetable, the meat or vegetable covered with a piece of paper, and " the space filled up with " powdered coke," taking care to prevent " the coke getting to " the meat."

[Printed, 3*d*. See Repertory of Arts, vol. 19 (*enlarged series*), p. 239; London Journal (*Newton's*), vol. 40 (*conjoined series*), p. 272; Mechanics' Magazine, vol. 56, p. 216; and Artizan, vol. 10, p. 113.]

A.D. 1851, September 5.—N° 13,741.

BORDEN, junior, GAIL.—" Combining the nutritive portions of " flesh in a concentrated state with flour, farina, or meal, and " drying and baking them in the form of biscuits, to render them " more convenient for use, and for their better preservation." The meat is macerated by heat or steam, strained through strainers; the oil or fat skimmed off and mixed with the bread stuff, is dried in a chamber or oven.

[Printed, 4*d*. See London Journal (*Newton's*), vol. 40 (*conjoined series*), p. 270; Mechanics' Magazine, vol. 56, p. 217; and Artizan, vol. 10, p. 113.]

A.D. 1851, December 8.—N° 13,845.

BROOMAN, RICHARD ARCHIBALD.—The title of this invention is, " Certain improved modes of applying electro-chemical action " to manufacturing purposes." And " to preserve animal matter " such as meat," an antiseptic compound is formed in the meat itself. " In setting up this electro-chemical action " " such acids " and bases which, when united, form well-known antiseptic salts " or compounds," are chosen; for purifying syrup or oily matter acetate of magnesia is used, and the magnesia precipitated afterwards by free carbonic acid.

[Printed, 6*d*. See Mechanics' Magazine, vol. 56, p. 478.]

PATENT LAW AMENDMENT ACT, 1852.

1852.

A.D. 1852, October 12.—N° 351.

VITTRANT, Louis Constant Alexandre.—This patent is void by reason of notice to proceed not having been given within the time prescribed by the Act. The Provisional Specification states that the object "is to preserve grain or seeds or other "matters by enclosing it or them in a chamber hermetically "sealed, either from light or contact with the atmosphere, except "at one point or opening," to admit fresh air, "in a peculiar "manner, and by means of a suitably arranged apparatus, to the "chamber." Beneath this grain chamber should be made a chamber or cellar, which should be excavated out of the earth, "and having a communication with the upper one by means of a "pipe." In order to ventilate the upper chamber, "air is taken "from the lower," which having been in contact with the earth has "a proper electrical condition to preserve the grain and other "matters stored in the upper chamber." The substances may be placed in thin layers in the upper chamber; an "important point." The air is made to pass through the upper chamber by exhausting it, either "by means of a windmill, pump, fan, or other exhausting "apparatus." "Carbonic acid gas may be made to fill or pass "through the grain chamber, and any noxious insects will be "thereby destroyed." Warm air to dry the grain may be made to pass into the upper chamber from the lower; "a furnace being "provided in the latter for the purpose of heating the requisite "supply of air."

[Printed, 2½*d.*]

A.D. 1852, October, 22.—N° 486.

BOILESVE, Julien.—Employing "chlorineor other sulphurous "gas for the preservation of all kinds of vegetable substances, "animal coatings, and also for the destruction of insects," by "expanding" these gases "under a bell jar, a box, or an air-tight "cloth, or any similar apparatus." "The chlorine may be

" directed into any suitable apparatus perfectly air-tight and con-
" taining the substances " to be operated upon. A number of sieves are superposed one upon the other, so that " one sieve shall " rest upon the edge of another, and a vacant and convenient " space be left for the circulation of the gas," or " a cylinder " provided with a sufficient number of holes," and " placed in an " air-tight envelope or chamber," is used. The cylinder put in motion " will allow the grain, while traversing the interior of the " cylinder from one end to the other, to receive the effect of the " chlorine, which will escape by the lower part of the apparatus."

[Printed, 2½*d.*]

1853.

A.D. 1853, January 15.—N° 106.

VION, HIPPOLYTE CHARLES.—The title of this invention is as follows: " Certain improvements in apparatus for refrigerating;" and " apparati " are partly described in the Provisional Specification, which are lengthily described in the Complete Specification. In the Provisional Specification the following are said to be " among the applications of this principle," namely, the " separa-
" tion of liquids from one another by the freezing of the liquids or " by the lowering of the temperature," and " the production of " crystals from salts of soda, chloride of sodium, &c., &c.; the " precipitation of soluble blues; the purification of sea water by " precipitating its salt;" but no especial mention is made of " the " applications " of this system to the preservation of food. But in the Complete Specification, among its " various applications," it is said to be applicable to " the purification of wines, cyder, and beer, " and all liquids, by congealing a portion of the water which they " contain, the hydration of the sulphur, carbon, &c." " For the " preservation of food by surrounding it with ice."

[Printed, 1*s.* 6½*d.*]

A.D. 1853, January 31.—N° 246.

COWPER, CHARLES (*a communication from Jean Françoi Nicolas Breon*).—This invention is void by reason of notice to proceed not having been given within the time prescribed by the

Act. The Provisional Specification states it to be, "Certain improve-
"ments in preserving butter and other substances," by "the ap-
"plication of an aqueous solution of carbonic acid, commonly
"called aërated water, or of substances capable of evolving car-
"bonic acid, such as bicarbonate of soda, or other carbonates or
"bicarbonates, mixed with tartaric acid or other acid, so that in
"all cases carbonic acid is the preservative agent." The sub-
stance to be preserved is placed in a vessel capable of being
"closed in an air-tight manner," either with the carbonic acid
water or with the "materials capable of evolving carbonic acid."
This process is said to be "applicable to meat, fish, and a variety
"of other substances."

[Printed, 2½*d.*]

A.D. 1853, February 25.—N° 477.

SYMINGTON, WILLIAM.—Preserving milk and other fluids by
"obtaining a vacuum in the vessel which is to contain the milk or
"other fluid, and then to fill such vessel, and to close it air-tight."
Heat is applied to the vessel, having a short tube of soft metal, to
which is attached a longer tube dipping into the milk or other
fluid. This drives out the air, forming a vacuum. On the heat being
withdrawn, "the milk will flow into and fill the vessel; the short
"tube is then pinched together, and the end melted or soldered."
A little water may be put into the vessel before heating it; but
"instead of using water or any other expanding element to form
"a vacuum, the air from the interior of the vessels, before and
"after they are filled, may be exhausted by an air-pump or other
"suitable means or apparatus."

[Printed, 4½*d.*]

A.D. 1853, March 2.—N° 520.

SOYER, ALEXIS.—This invention is void by reason of notice to
proceed not having been given within the time prescribed by the
Act. The Provisional Specification states it to be "Improvements
"in preparing and preserving soups." The result is denominated
"Soyer's osmazome food." As a basis for several soups, a sub-
stance is prepared, which is named "osmazome,—but it may also
"be eaten separately,"—by stewing "together for hours leg of beef,
"knuckle of veal, ham, and calves' feet, adding onions, butter,
"and water in proportion;" the fibrous part is separated "from

" the gravy, which is reduced by boiling, and afterwards deposited " in bottles or other proper receptacles, which are subjected to " heat, and sealed, and in which it will keep till required." The soups, &c. " may be prepared with and kept as ' osmazome,' or " prepared with ' osmazome ' when required."

[Printed, 2½*d.*]

A.D. 1853, April 29.—N° 1041.

BANFIELD, THOMAS COLLINS.—The title of this invention is as follows : " Machinery for cutting or chopping roots, plants, or " other similar substances ;" and the " principle of this machine is " that of an horizontal wheel, armed with blades adapted for " cutting roots or vegetable substances, turning in an iron circular " box in a plane parallel to the bottom of the box, which is formed " of a bed of iron." In the Provisional Specification nothing is said of the object for which these substances are to be cut by such machinery ; but in the Complete Specification, where the machinery is described in detail, it is stated that " the immediate object " " is " to cut or chop roots, plants, or other similar substances, to " prepare them for drying and preserving ;" and a certain sized machine is given, " which will produce the size of cuttings recom- " mended as most conductive to the preservation of saccharine " matter in the process of drying."

[Printed, 6½*d.*]

A.D. 1853, April 29.—N° 1042.

BANFIELD, THOMAS COLLINS.—" Drying and preserving " vegetable or other succharine plants," " and more particularly " beet-root," so that the saccharine matter may be preserved ; and this is to be effected in a chamber particularly described, heated by a " series of grates and flues ; the number and distance of " which from each other depends on the degree of heat required " for the purpose in view."

[Printed, 5½*d.*]

A.D. 1853, June 10.—N° 1418.

SYMONDS, HENRY ELD.—This invention is void by reason of notice to proceed not having been given within the time prescribed by the act. The Provisional Specification states it to be " improve- " ments in preserving meat," and " peculiarly applicable for pre-

" serving meat on board ship, and consists of forcing by mecha-
" nical means, such as by fans, or by blowing or exhausting
" machinery, currents of artificially refrigerated or chilled air in
" contact with the meat to be preserved."

[Printed, 2½*d.*]

A.D. 1853, June 15.—N° 1448.

ROBERTSON, ALEXANDER.—This invention did not proceed to the Great Seal. The Provisional Specification states it to be, " Improvements in vessels or cases for storing and preserving " edible substances," by constructing a vessel of any desirable shape or suitable metal, with " a valve or door opening on a hinge, " and ground into its seat so as to fit air-tight." The provisions are placed in it, the door is closed, and the air is exhausted from it by means of a pump.

[Printed, 2½*d.*]

A.D. 1853, June 16.—N° 1467.

MOREAU, PETER ARMAND LE COMTE DE FONTAINE.—Preserving milk and other alimentary substances, " by forming a " vacuum within the substances by an exhaust pump, by raising " the temperature," or by " using a tube which is filled with milk, " and put in communication with a reservoir containing a con-
" venient quantity of that liquid, and covered with a layer of oil." The air is expelled from the milk by adapting " an air exhausting " pump either to one reservoir or to two reservoirs."

[Printed, 3½*d.*]

A.D. 1853, June 16.—N° 1468.

MOREAU, PETER ARMAND LE COMTE DE FONTAINE,—First, " Extracting and concentrating the juices of chicory, carrot, and " soft acorn of Spain or any other country, beetroot, barley or " oatmeal, and other similar substances, and employing the said " juices for the improvement or cheapening coffee infusions," by an apparatus which is particularly described. The substances ground and torrified are put into cloth sacks, and these sacks are manipulated in the apparatus above alluded to, firstly, in an " extracting boiler open at top," and, secondly, in a " concentrating " boiler closed at top, and provided a safety valve."

Second, " Combining the juices thus obtained with essences " extracted from dried dates, grapes, and other dried fruits con-

" taining pectoral juices, and from gum, barley, oatmeal, pectoral " flowers and roots, for the preparation of a new liquid or solid " alimentary product."

[Printed, 5½*d.*]

A.D. 1853, September 24.—N° 2205.

FARMER, WILLIAM.—Preserving provisions, by " using two " waterproof vessels, one being placed within the other, leaving a " space between the two," " for the purpose of containing water." " On the cover of the outer case there is a projection or flange, " which, when shut down, enters the water in the space between " the cases, and the provisions being thus excluded from the " atmosphere will be found to keep fresh for a considerable time."

[Printed, 4½*d.*]

A.D. 1853, October 5.—N° 2278.

STEVENS, HENRY.—This invention is void by reason of notice to proceed not having been given within the time prescribed by the act. The title was " Improvements in the preparation of vegetable " substances for the purpose of preserving the same;" and, for instance, " treating and preparing potatoes by steaming them with " their skins on," mashing them, submitting the mashed material to a current of warm air to dry, " during which process the skins " are removed by means of some convenient separating apparatus."

[Printed, 2½*d.*]

A.D. 1853, October 12.—N° 2348.

JACKSON, CHARLES SCOTT.—Preserving " seeds, potatoes, " and other roots from mildew, rot, fungus, and worms," " by " subjecting them to or applying to their surfaces salts of zinc," " principally the sulphate of zinc." " Before preparing potatoes " for seed," they are washed " clean, and then cut in the usual " manner," and steeped from " eight to twelve hours " in a solution of sulphate of zinc of a given strength. Small seeds do not require so long steeping in this solution as the larger ones.

[Printed, 2½*d.*]

1854.

A.D. 1854, January 31.—N° 231.

FATIO, ARNOLD MOREL, and VERDEIL, FRANÇOIS.—Preserving animal and vegetable substances after they have "been "previously prepared, according to their peculiar nature," by submitting them "to the action of heated steam." The substances will be rapidly "cooked without having the goodness "washed out of them;" when they are afterwards dried in stoves or in "a vacuum apparatus." "All kinds of vegetables may be "preserved in this manner," but as "somewhat similar means,— "such as the cooking of potatoes by steam,—has been employed "for the preservation of potatoes," the application of the process to that vegetable is not claimed. The duration of the action of the heated steam must vary with the nature of the substance "and "the purpose for which they are intended." When meat is to be operated upon, it is deprived of fat and bone, cut into slices, steamed, and sprinkled with a little salt, and "dried in the same "manner as described for vegetables." If the meat is intended for soup, the sprinkling with salt may be dispensed with. Fish may be preserved entire by gutting, placing some salt inside of them, and steaming them, but for a very short period, and "dried "by the same means as those above indicated for meat and "vegetables."

[Printed, 7*d*.]

A.D. 1854, March 9.—N° 570.

LAMY, HIPPOLYTE.—This invention received provisional protection, but notice to proceed with the application for Letters Patent was not given within the time prescribed by the Act. The title was as follows: "Certain improvements in preserving animal "and vegetable substances," and consisted "in the introduction "of sulphurous acid gas into the vessel containing the substance "to be preserved." "If an acid taste be engendered by this "process, it can easily be removed by the use of a solution of "baryta or bicarbonate of magnesia."

[Printed, 3*d*.]

A.D. 1854, July 12.—N° 1534.

BELLFORD, AUGUSTE EDOUARD LORADOUX.—This invention received provisional protection, but notice to proceed with the application for Letters Patent was not given within the time prescribed by the Act. The title was "Improvements in preserving "animal substances," and this was to be effected by means of a solution of sulphurous acid. "In order to prevent the sulphurous "acid from combining with the bases of alkaline carbonates found "in the meat, and thus giving to the meat a disagreable taste "arising from the sulphite formed," about one hundredth part of hydrochloric acid is added to it. "Into this solution then the "meat" "is immersed, and kept in any suitable vessel, which is "sealed or confined hermetically." "The meat or other animal "matter may also be preserved by keeping it immersed during "twenty-four hours, about, in a concentrated solution of sulphur-"ous acid, and then keeping it for the remainder of the time in "pure water."

[Printed, 3*d*.]

A.D. 1854, July 21.—N° 1600.

DELABARRE, TOUSSANT, and BONNET, LEON.—This invention did not proceed to the Great Seal. The title was "The pre-"servation of meat in its natural state, and without being cooked," and this was to be effected by "exposing to the action of a "machine (such as is used for drying linen), having a wheel "which revolves with the greatest velocity," fresh meat, by which means any moist substance dries rapidly. When about half the moisture is gone, the meat "is plunged for a short time (a "minute or two) in heated gelatine, made from the bones and "sinews of animals, hung up in a well-ventilated room, and dried." "The gelatine enters the pores of the meat, replacing the water "which has been driven out."

[Printed, 3*d*.]

A.D. 1854, August 5.—N° 1719.

STANSBURY, CHARLES FREDERICK.—(*A communication from Robert Arthur, M.D.*)—The title of this invention is as follows: "Improved air-tight vessels," applicable "for ordinary domestic "use," by "forming at or near the top of jars, pots, cans, bottles, "color plates, inkstands, and other vessels which it may be desired

" to render temporarily or permanently air tight, an annular groove " or gutter," which may be filled with " mercury, glycerine, honey, " treacle, or water, according to the requirements of each case. " Other fluids may be used. When the vessel is to be permanently " sealed, as in the preservation of fruits and vegetables, the fluid " medium is replaced by a fusible substance or composition which " is in a melted or semifluid state when the cover is applied, and " afterwards becomes hard by cooling." A " composition of " gutta-percha and rosin in various proportions, or a fusible " alloy," may be employed.

[Printed, 7*d*.]

A.D. 1854, August 26.—N° 1874.

KERMOAL, Corentin Marie Perron de.—This invention received provisional protection, but notice to proceed with the application for Letters Patent was not given within the time prescribed by the Act. Meat was deprived of bone and " immersed " for a few seconds in boiling water," and " then placed in boilers " already containing water in a state of ebullition, together with a " suitable proportion of vegetables." The first water in which the meat is dipped " is employed to fill the second boilers from time " to time." The meat partially cooked is cut up into pieces, " im- " mersed in a preservative mixture of vinegar and salt and water," introduced into a box " through a hole in the centre, which is " afterwards closed hermetically by soldering a disc over it." The boxes are afterwards " exposed to steam at a temperature of 250° " Fahrenheit," " more or less, by which means the cooking of the " meat is completed, and the oxygen of the small quantity of the " air remaining in the vessel is neutralized, and subsequent fer- " mentation prevented." " The boxes may be of tinned iron or " other suitable metal."

[Printed, 3*d*.]

A.D. 1854, October 20.—N° 2242.

CHENU, Louis Auguste, and PILLIAS, François Frederic.—This invention received provisional protection, but notice to proceed with the application for Letters Patent was not given within the time prescribed by the Act. Meat, the least sinewy and fat is preferred, is cut up in pieces, immersed in boiling water for about two minutes, allowed to drain for about a minute in a perforated vessel, and next plunged into a bath for about a second

" composed of water and sal-ammoniac, in proportions which may " be varied according to circumstances." It is then spread on a sieve or riddle, and left " to dry for about twenty-four hours in a " stove or drying chamber maintained at a temperature of about " 138° Fahrenheit." " The meat thus prepared may be either " cooked or eaten without further preparation."

[Printed, 3*d*.]

A.D. 1854, December 7.—N° 2572.

BLUMENTHAL, FERDINAND CELLIER, and CHOLLET, MAXIMILIAN LOUIS JOSEPH.—Preserving meats by drying or desiccating in small portions " either in a vacuum or by the aid of " heated air." " The dessiccated portions are then pounded and " reduced to a powder, which is again dessiccated." " By grating " or otherwise reducing the meat previously dried in small pieces," a powder is obtained, " which, by being submitted to a second " drying process is completely deprived of moisture." Seasoning of all kinds is submitted " to the same treatment." Combining " meat tablets with vegetable tablets by means of compression, so " as to obtain a single product, which may be termed compound " meat and vegetable tablets." Combining vegetable tablets " prepared in the ordinary manner" with fat in the following manner; namely, by submitting them to " successive immersions " in soup, allowing them to dry after each immersion either by " artificial or natural currents of air." " This coating when pro- " perly dried forms an even coat over the entire tablets, and other " coverings of lead or paper may be dispensed with."

[Printed, 3*d*.]

1855.

A.D. 1855, January 6.—N° 36.

DELABARRE, TOUSSAINT, and BONNET, ANGÉLINE.—Preserving " meat, poultry, bread, eggs, vegetable, or pastry, by coat- " ing them over with a varnish made from the flesh and bones of " animals," by boiling them, and obtaining a rich syrup, which is " clarified by the aid of albumen, and having added thereto " (while the syrup is warm) alcohol. The vegetables in some

" cases are to be parboiled, and then dryed sufficiently for the " beneficial reception of" the " preserving varnish." " After the " article is coated with the varnish, it should be exposed to a dry " current of air " to desiccate it perfectly.

[Printed, 3*d*.]

A.D. 1855, January 11.—N° 70.

HERVÉ, JACQUES LOUIS.—This invention received provisional protection, but notice to proceed with the application for Letters Patent was not given within the time prescribed by the Act. The meat or fish is first cut into narrow pieces; these are dried in a stove till they lose two thirds of their moisture; they are then placed on a hurdle over sulphuric acid, or, if preferred, chloride of calcium, in a vacuum chamber, " and the meat or fish thus " dried will keep good when exposed to the air."

[Printed, 3*d*.]

A.D. 1855, January 13.—N° 95.

WARNECKE, GUSTAV.—Preserving vegetables and fruit, by " absorbing or extracting albumen, cassein, chlorophyl, and bas- " sorine from vegetables and fruits, by first exposing them to a " heated saline vapour or water bath, and then washing them in " clear water. They are next dried and pressed, when they may " be packed for use." The saline vapour bath is prepared " by " heating water containing salt in the proportion of one pound of " mineral salt to one hundred pounds of water," and the vapour is maintained " at from 200° to 400° Fahrenheit, according to the " vegetable or fruit under treatment." " Instead of being ex- " posed to a saline vapor, it will be found preferable," in some instances, to place the vegetables and fruits " in a bath containing " salt in certain proportions, heated by steam passing into it at " about 400° Fahrenheit." In every case they are washed in " any " suitable vessel, through which clear water at from 40° to 70° is " kept running." Vegetables and fruits prepared as " described " will to a great extent retain their color and flavor, and will keep " good for a long time."

[Printed, 3*d*.]

A.D. 1855, January 19.—N° 153.

RENNIE, MATTHEW BOULTON.—This Patent is void by reason of the Patentee having neglected to file a Specification in pur-

suance of the conditions of the Letters Patent. The title is, "Preserving animal and vegetable substances for food," and this is to be effected by "applying a compound consisting of "gelatine or jelly mixed with albumen and alcohol, which, being "in a liquid state, is used as a coating to the animal or vegetable "substances to be preserved."

[Printed, 3*d*.]

A.D. 1855, February 5.—N° 269.

HARTNALL, EBENEZER. — Preserving animal and vegetable substances, by immersing them in baths consisting of gelatine and treacle, dissolved together in certain proportions. Sometimes the baths may contain, besides these materials, a little alcohol, and sometimes a small portion of isinglass. Generally, after the first coating has hardened, the substance is re-dipt, and the surface covered with "charcoal powder."

[Printed, 3*d*.]

A.D. 1855, February 20.—N° 375.

WOTHLY, JEAN.—Preserving meats by first removing the bones, and dusting them, when fresh, with a mixture of sugar and salt in certain proportions, allowing the liquor to drain away, submitting them "to pressure to force out all the blood and serous matter; or, in "place of being pressed, they may be moderately cooked." The pieces are then enveloped in greased paper, and packed in a cask, "first lined with melted fat," "and have melted fat run into the "spaces or interstices; and when the fat is set the cask is to be "closed, and is to be inserted in another cask somewhat larger, so "as to leave a vacant space between the inner and outer casks, "which space is to be filled with sand or lime or melted fat, and "then closed."

[Printed, 3*d*.]

A.D. 1855, February 21.—N° 381.

NASMYTH, GEORGE. — "Preserving animal and vegetable "matters" by employing "alcohol or other liquids which vapour-"ize at a low temperature, that is, below that of boiling water, as "a means for discharging the atmospheric air from vessels or cases "containing animal or vegetable matters to be preserved." The animal or vegetable matters, raw or cooked, are introduced into

the vessel, and the lid soldered securely. Through a small pipe in the vessel the "liquid capable of vapourizing at a temperature "below that at which water alone vapourizes" is forced, the vessel placed in a water bath, and when the air is expelled the vessel is sealed. Or the package with the meat may have two tubes; the one communicating with a vessel containing the "vapourizing "liquid." Heat is applied to both vessels. When the air is expelled from the vessel containing the meat, "close both pipes by "pinching them, and then soldering them."

[Printed, 4*d*.]

A.D. 1855, March 8.—N° 519.

TAYLOR, JOHN.—This Patent is void by reason of the Patentee having neglected to file a Specification in pursuance of the conditions of the Letters Patent. The object was "packing and pre-"serving eggs and other articles of food" by placing them in "moulds or shapes, and filling" them "with plaster of Paris." Eggs do not require a covering before this operation, "but in "respect of other articles of food it is preferred first to cover them "with tin foil paper, or woven fabric, before casting them in plaster "of Paris blocks."

[Printed, 3*d*.]

A.D. 1855, March 29.—N° 695.

ANGER.—FRANÇOIS JOSEPH.—Preserving vegetable substances by means of the principle *diastase*. The substances prepared are dipped in a decoction of malt, and afterwards dried, by artificial means, in drying rooms. "Thus prepared, the potato or other "vegetable is not susceptible to the decomposing influence of the "atmosphere." "Certain neutralized acids or chemical salts can "be used instead of diastasis," but they would not "effect the "purpose" "so well as the diastasis."

[Printed, 3*d*.]

A.D. 1855, April 30.—N° 965.

ACRES, EDWARD.—The title of this invention is as follows: "Improvements in desiccating and cooling atmospheric air, and "the application thereof to useful purposes;" and, first, withdrawing the moisture from air by "causing it in a heated state to "pass" into a vessel in which are contained a number of pipes, the

temperature of which is kept low by the constant circulation through them. The heated air "by coming in contact with the "cold surfaces of the pipes and the interior of the vessel" deposits the "moisture by condensation of its vapours." The air desiccated and cooled may be "used for drying and preserving grain in "air-tight reservoirs, and for curing and preserving fish and other "animal substances," by drawing it through such reservoir by an exhauster. This air "may be introduced between the surfaces of "mill-stones for the purpose of keeping them cool." The apparatus preferred is given in detail.

[Printed, 6*d*.]

A.D. 1855, May 1.—N° 971.

TORBITT, JAMES.—This invention did not proceed to the Great Seal. The object was the "Preservation of a constituent part of "the potato," and this was the "fibrine," not hitherto preserved. After the usual process for making starch from potatoes this remains, and it is to be dried and stored "for future use;" and rendering the "fibrine more saleable or suitable for making "bread," by grinding it to meal or powder, "and the machinery "now in use in grinding oats is suitable for the purpose."

[Printed, 3*d*.]

A.D. 1855, June 9.—N° 1320.

COOKE, MASTA JOSCELIN.—First, boiling meat under pressure, separating the tallow and bones from the meat, and returning the bones into the liquor, and boiling "until the bones are reduced to "powder." The meat is then pulped "in a pulping machine," and "the liquor drained from the bones" is concentrated to a jelly, and mixed with the meat, and "certain quantities of "vegetables and pepper, and add thereto as much flour as will "make the mixture into paste. This paste" is rolled "into "cakelets," which are baked in an oven or "taken and pressed "tightly into tin or other suitable air-tight packages." Vegetables are preserved by first dipping them, after having cut them into suitable sizes, into a coagulating fluid, which consists of alum or sulphate of alumina dissolved in a certain quantity of water. "Shell fish, such as oysters, lobsters, crabs, shrimps, and prawns, "are taken out of their shells, drained, and at once placed on "the trays of the drier, or in a drying apparatus, and dried at a

" temperature " of 105 to 110 degrees. "The driers" are fully described and claimed, and are chambers divided into compartments, heated by steam. Milk or cream is mixed with a certain quantity of gelatine, isinglass, or a prepared solution from Irish moss and loaf sugar, and placed "in a steam evaporating pan, " and concentrated down, with constant stirring, to half its bulk."

[Printed, 8*d*.]

A.D. 1855, July 12.—N° 1559.

BETHELL, JOHN.—" Preserving meat, fish, fruits, and other " eatables from decay, and for the purpose of their being used as " provisions," " by drying out of them about 80 per cent. of the " water usually contained in them, at a temperature not exceeding " that at which albuminous matter is coagulated." The articles are cut into small pieces, and deposited in thin layers upon trays perforated; the air dried " by passing it through burning coke or " charcoal, or anthracite coal." The temperature most convenient is " from 90 to 100 degrees of Fahrenheit." The drying apparatus described in the Specification filed by the Patentee to his Patent of 21st August 1848 " answers very well for this invention also, " but it must be supplied with the dry atmosphere, and of the " temperature as above described."

[Printed, 3*d*.]

A.D. 1855, July 16.—N° 1590.

TAYLER, WILLIAM HENRY.—The title of the invention is as follows: " Improvements in hermetically sealing preserve canisters " and other vessels by means of a new arranged screw cap and " fittings," and this is particularly described. It consists of any shaped vessel with a screw thread on the exterior of the neck, and having a cover or cap, the exterior of which has a screw thread in its interior. A small quantity of water is put into the interior, and the vessel heated in a water bath or otherwise. The cap is unscrewed, the steam blows off, when the provisions are placed in it, and the "cap or cover provided with a gasket or " washer of vulcanized caoutchouc or other elastic material," the lower edge of the said screw cap or cover entering an annular trough containing cement, which cement, after being fused and allowed to cool, hermetically seals the screw cap or cover upon the canister or vessel.

[Printed, 6*d*.]

A.D. 1855, July 18.—N° 1608.

THURGAR, WALTER CHRISTOPHER.—Preserving "the fluid "substance of eggs;" and this is effected by beating up "the "yolks and whites" completely, so as to break up "the mem- "branous structure of the egg, and facilitate its drying" in trays, (which are described,) at a very low temperature, till the substance of the egg is a dry powder or flour. The trays are heated by steam pipes placed under them.

[Printed, 6*d*.]

A.D. 1855, July 21.—N° 1650.

TOOTH, ALFRED.—"Preserving and curing by salting the flesh "and hides of animals in an entire state," "by injecting, by "preparing a solution of saline substances," and causing it "to "be forced into the veins and arteries of animals within a short "period after they are slaughtered," and this will "render them "incapable of becoming putrid."

[Printed, 3*d*.]

A.D. 1855, July 21.—N° 1651.

PERRY, GEORGE HENRY.—This invention received provisional protection, but notice to proceed with the application for Letters Patent was not given within the time prescribed by the Act. The subject was, "Improvements in vessels or cases to be used for the "preservation of articles of food." The vessels or cases are described as having a short neck with an exterior screw, and on which fits a cap or cover with an interior screw, which engages in the exterior screw of the neck or mouth, around the bottom of which is a cup-like flange, "capable of holding any liquid or fused solid "substance." "A washer of india-rubber or other suitable sub- "stance may be placed in said cap, in order to make it fit more "closely on the neck of the vessel or case."

[Printed, 3*d*.]

A.D. 1855, August 7.—N° 1788.

NASMYTH, GEORGE.—This invention received provisional protection, but notice to proceed with the application for Letters Patent was not given within the time prescribed by the Act. The object was using "carbonic acid gas, or carbonic acid gas in combi- "nation with vapour or gas obtained in a cold or natural state "from alcohol or alcoholic spirits." This was to be effected in

air-tight vessels or cases, " except at the passages required for the " ingress or egress (of the gas) during manipulation." A vacuum is created, and the gas is injected.

[Printed, 3*d*.]

A.D. 1855, August 25.—N° 1923.

AVERY, JOHN.—The title of this invention is as follows : " Cer- " tain new and useful apparatus for exhausting and closing vessels" " in which vegetable or animal substances are to be preserved" " or improved by being placed in a perfect vacuum." The principal parts of the apparatus are, an exhausting pump without valves, and certain devices which serve to hold the plug or stopper during the process of exhaustion, in the passage through which the communication is effected between the pump and the vessel, and to insert the plug in the mouth of the vessel after the air has been exhausted. The arrangements are described at length.

[Printed, 7*d*.]

A.D. 1855, September 19.—N° 2116.

BROOMAN, RICHARD ARCHIBALD.—Preserving " animal and " vegetable substances by exposing them to sulphurous acid gas, " to air, and then coating them with the preserving composition," " composed of animal albumen dissolved at a gentle heat in a " strong decoction of mallow root, together with a small quantity " of molasses. The substances" are deprived of their superfluous moisture " by a current of air from a fan, blown or otherwise, and " are next dried in the open air; they are then suspended in an " air-tight vessel or chamber in such manner that each separate " piece may hang apart," and in this manner submitted to a current of sulphurous acid gas, after which they are exposed to the air, and then coated.

[Printed, 7*d*.]

A.D. 1855, October 4.—N° 2223.

DEMAIT, FRANÇOIS MODESTE.—Preserving from decay meat, fish, vegetables, and other animal and vegetable substances, by hanging them up in a chamber, at the bottom of which is a fire of some kind, "well a-light," the temperature of the chamber being from 60 to 104 degrees Fahrenheit. On this fire is thrown a mixture, in certain proportions, of "flour of sulphur," chloride of lime, "flowers or roots a handful, lemon leaves about half a " handful."

[Printed, 3*d*.]

A.D. 1855, October 9.—N° 2258.

GOLDNER, STEPHAN.—The title of this invention is as follows: "Improvements in apparatus used in cooking and preserving "animal and vegetable matters." This apparatus consists of a tray or vessel of such depth as to receive "the metal cases which "contain the matters to be cooked;" this "is heated externally by "steam in a jacket or by other heated fluid." This vessel has a cover "the edges of which enter a sand joint, or are otherwise "formed so as to retain the heated atmosphere under this cover." There is an outlet for the vapours, &c. to escape. "Such outlets "are regulated by a cock or valve."

[Printed, 3*d*.]

A.D. 1855, October 27.—N° 2404.

HANDS, JOSEPH.—Preserving animal and vegetable substances for food by submitting them to "gaseous binoxide of nitrogen, "nitrous acid gas, and sulphurous acid gas, either alone" or mixed together. The vacant spaces in any vessel containing substances preserved by the above chemical compounds are filled with nitrogen and carbonic acid gases.

[Printed, 4*d*.]

A.D. 1855, October 30.—N° 2422.

LIGNAC, JULES JEAN BAPTISTE SYLVAIN MARTIN DE.—Preserving animal substances by drying them with a current of hot air until they lose about 50 per cent. of moisture, powerfully compressing them into boxes, filling up the interstices with "con- "centrated liquor," soldering on the lid, and submitting them "in a cooking vessel (or digester) to a temperature sufficiently "high to produce steam in the box."

[Printed, 3*d*.]

A.D. 1855, October 31.—N° 2430.

GRIMWADE, THOMAS SHIPP.—Treating milk in order to preserve it, by adding to it in certain proportions carbonates of soda or potash and refined sugar, removing the cream, then adding sugar, and sugar of milk, in certain proportions; when it is evaporated at 160° Fahrenheit with agitation; a dough-like substance is the result. This is pressed through rollers, which forms it into ribbons or

cakes; these are again dried, and "reduced to a fine powder," which, after being further dried, is preserved for use "in air-tight vessels."

[Printed, 7*d*.]

A.D. 1855, December 11.—N° 2800.

BOUËT, RENÉ SIMON, and DOUEIN, HENRI EMILE ISIDORE.—This invention received provisional protection, but notice to proceed with the application for Letters Patent was not given within the time prescribed by the Act. The object was preserving "meat and other animal substances" by applying to the same a layer of collodion, either alone or mixed with other suitable material or materials, so that a film is "over the outside of the substances "to be preserved."

[Printed, 3*d*.]

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