

## **Dental appliance / [Israel Stewart Kirkwood].**

### **Contributors**

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### **Publication/Creation**

Redhill : Printed for Her Majesty's Stationery Office by Malcomson & Co., Ltd, 1898.

### **Persistent URL**

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N<sup>o</sup> 10,016



A.D. 1898

*Date of Application, 2nd May, 1898—Accepted, 1st Oct., 1898*

# COMPLETE SPECIFICATION.

## Dental Appliance.

I, ISRAEL STEWART KIRKWOOD, of 416, New Era Buildings, Chicago, in the County of Cook and State of Illinois, one of the United States of America, Dentist, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained by the following statement:—

The invention relates to a stand or bracket, and apparatus carried thereby or accessory thereto, for the convenience of a dental table, comprising a box for the holding of absorbent or sterilized cotton and the stripping and reception of saturated wads, trays for the reception and separate support of cylinders or pellets of gold or other filling material, means for warming said trays; means for heating alloy or amalgam; means for moistening or damping drills or burrs, and various other facilities.

In dentistry it is of importance to keep the cylinders or pellets, and so forth, of fresh, unused annealing gold or silver or of gutta percha apart, since they anneal or combine if brought into contact; therefore I form the trays for their reception with dividing ridges, corrugations or pockets in which each cylinder or pellet or other form is kept isolated from the next. One of the trays holding cylinders or pellets is so formed that it will receive the ends of the nippers or pluggers, or other instruments, which are supported upon a rack projecting from the stand and movable therearound to accommodate itself to the position of the tray. A sponge cup, and a cotton case for both fresh and refuse cotton, are also mounted on the stand and swingable thereabout. A hot water tank and a gas jet to heat it are also provided.

In the drawings:

Figure 1 is an elevation of a stand embodying my invention;

Figure 2 is a top plan view;

Figures 3 and 4 are details;

Figure 5 represents a tray for sterilizing burrs and like small instruments, and

Figure 6 is a front view of the cotton box.

A represents a base in which is supported a vertical standard or post B. Upon this post, suitably spaced by sleeves *b*, are swinging sockets C, each adapted to hold a removable crane-like arm for the support of a tray or other device.

Commencing with the lowest agency of the apparatus, D is a burner supported at the end of the crane-arm *d*, and having nipple *d*<sup>1</sup> whereby it is secured to the flexible tube D<sup>1</sup> leading to a gas jet; air ports *d*<sup>2</sup> are provided in the burner to give an intense flame instead of an incandescent one, and by means of the socket and crane-arm it can be swung in any direction around the standard.

E is a shield mounted in such manner that it can be swung to follow the burner, or to go on opposite sides thereof, to guard it from air currents, and F is a cotton-box which is shown as made in two sections F<sup>x</sup> and F<sup>2</sup>, and preferably cylindrical in shape, since this or some other rounded outline is best adapted to thorough cleansing and disinfecting. The section F<sup>x</sup> is intended to hold saturated wads and refuse and is closed at one end only and at its other end is dammed by a low barrier *f*, which serves to confine the refuse wads, the saliva *etc.*, until inten-

[Price 8d.]



*Kirkwood's Dental Appliance.*

tionally emptied. This section is united to the second section  $F^2$  by a bayonet joint  $f^1$ , or any other suitable and easily opened coupling. The second section is closed at both ends, and serves as a receptacle for fresh and clean sterilized cotton, which, in case one end is not made removable for the purpose, may be introduced through the circular opening  $F^3$  in the side of the said receptacle. The base of this opening merges into a contracted slot  $f^2$  which terminates in a convergence  $f^3$ , the purpose of this slot being to limit and measure the quantity of cotton drawn out by the nippers, which after grasping a pinch of cotton are, in order to strip off any superfluity, drawn through the upper and wider part of the slot so long as the cotton is closely packed, and through the converging part when it is loose and but little remains. 5 10

The first or waste section of the box has a lateral opening  $F^4$ , made, for uniformity of appearance, of about the size and shape of the circular opening in the fresh cotton receptacle, and in line therewith. This is intended for the introduction of waste wads into the receptacle, and for the purpose of stripping these wads from the nippers it terminates at its base in a slot or slots  $f^4$  having converging sides between which the nippers are pressed until a purchase is contained on the wad; when the simple act of withdrawal strips the wad. One slot will work well, but as a moist and oftentimes foul wad will frequently stick in the slot, it is better to have a plurality. 15 20

At the rear of the box is attached a crane-arm  $f^5$  by which it may be swung from the stand and moved out of the way of other parts as occasion may require, or may be supported on the table, either by resting the arm directly on the table, or stepping it in a boss which may be secured either to the arm or to the table, or to neither fixedly. 25

Above the burner is a hot water tank  $G$  having two crane-arms  $g, g^1$ , by which it is supported from two of the sockets  $C$ , and at the same time readily removable, or displacable from over the burner. A crucible  $H$ , can be hung by hooks  $h$ , or otherwise, into this tank, to soften amalgam, gutta percha or alloy. Water can be quickly warmed in this tank for syringing purposes, or carried up to a boiling heat for sterilizing. 30

$K$  is a sponge-cup swung by crane-arm  $k$  to one of the sockets  $C$ , and having lateral openings  $k^1$ , and a cap  $K^1$  secured by bayonet joint  $k^2$  so as to be removable for the introductions of sponge, the purpose of this cup being to dampen and cool the drills, burrs, grinding disks and other instruments, and clean them of deleterious matter. For this purpose it has a plurality of lateral openings  $k^3$  and may have one or more,  $k^4$ , in the cap, as shown. 35

Above the sponge cup is the tray  $L$ , for gutta percha, alloy or amalgams, hung by crane-arm  $l$  so as to be removable for cleaning or disinfecting. This tray has ribs or elevations  $l^1$ , dividing its surface into a series of pockets or troughs which preferably run longitudinally and the purpose of which is to keep each block or pellet of fresh, plastic material separate from those adjacent. The troughs terminate near the edges of the tray and against the outer ends  $l^2$  of the troughs the points of the instruments discarded or for the moment out of use may be rested, the handles or shanks being supported upon a more elevated rack  $L^1$  sleeved or otherwise secured upon the post, to swing about it to maintain its relative position to the tray. 40 45

Beneath the sponge cup is the tray  $M$  for the reception of annealing gold, hung by crane-arm  $m$  from one of the above mentioned sockets sleeved upon the standard. This tray is also provided with troughs or pockets  $m^1$ , similar to those appertaining to the tray first described, for the purpose of holding the pellets or cylinders or other forms of filling material separate one from the other, and to divide off the remnants or fags from the fresh material and especially to prevent the material from annealing by contact when warmed or heated over the burner. As it is desirable to heat or warm the gold before using in order that it may more readily anneal this tray is located but a short distance above the gas burner, so that by swinging one or both the burner may be brought beneath it, and the flame so 50 55



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adjusted that the material will be kept at the proper degree of heat so long as being used, doing away with the guess work and objectionable features of warming it by passing it through the flame of a spirit lamp, and the time involved in warming each cylinder separately.

5 The tray for gutta percha can also be brought over the burner and warmed thereby, or warmed by steam from the tank, and as the points of the pluggers and other instruments used in filling, rest upon this tray, they will always be of the same degree of heat as the blocks of gutta percha, and will not sear to them as they might if of a higher degree of heat.

10 An advantage in heating alloys, amalgams and annealing silver in the crucible suspended in the hot water tank, as before explained, is that it prevents discoloration, drives off the oxygen, avoids melting to which such filling materials are liable if subjected to the same degree of dry heat, prevents expansion or shrinkage in said materials and improves their working qualities. The instruments

15 to be used can also be warmed in the same bath just before using.

The hot water tank affords a cleanly and convenient means for sterilization of instruments, trays and partially used filling materials, since by heating the water to the boiling point and plunging such articles therein for the proper length of time, they will be completely disinfected. Incidentally to this feature I have

20 shown in Fig. 5, a tray N for holding burrs and like small instruments. This has longitudinal ribs *n* extending not quite the entire length of the depressed portion N<sup>1</sup>, thus forming a series of short troughs opening into a pan-like area into which the shanks of the burrs will project, so as to easily be taken up. The ribs may be divided by a transverse depression *n*<sup>1</sup>, which will facilitate picking

25 up extremely short instruments, and over which a clasp or band *n*<sup>2</sup> will be applied to press upon them and hold them in place when plunged in the bath. A handle N<sup>2</sup>, of considerable length projects from the tray so that it may be plunged into the hot water tank and readily removed therefrom when the proper sterilizing period has elapsed. By the use of this tray a dozen or more burrs, according to

30 the number of trays, may be sterilized at once.

It will be obvious from this description that every instrumentality supported upon the post or standard can be swung therearound to make place for or avoid interference with another; that the tank can be swung away from the burner and the gold tray brought thereover; that the gold tray may be swung away from,

35 and the gutta-percha tray swung above said burner, or the tank, the burner and the gutta-percha tray brought in vertical line with each other.

Having now particularly described and ascertained the nature of this said invention and in what manner the same is to be performed, I declare that what I claim is:—

40 1. The dental bracket and its accessories substantially as herein set forth with reference to the first and second figures or the drawing hereto annexed.

2. The cotton box for dental use, substantially as herein described with reference to the first and sixth figures of the drawing hereto annexed.

3. The sponge cup for dental use, substantially as herein described with reference to the first and second figures of the drawings hereto annexed.

45 4. The dental trays for filling material, substantially as herein described with reference to the drawings hereto annexed.

5. The combination of the swinging burner and the swinging water-tank and trays in a dental stand, substantially as described.

50 Dated this 30th day of April 1898.

BOTTOMLEY & LIDDLE,  
154, St. Vincent Street, Glasgow, Applicant's Patent Agents.







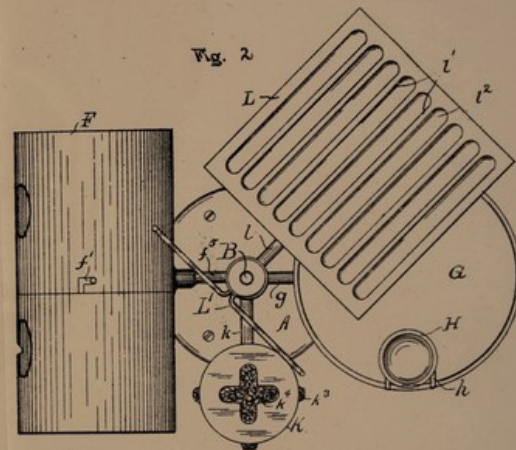
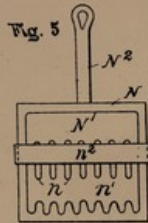
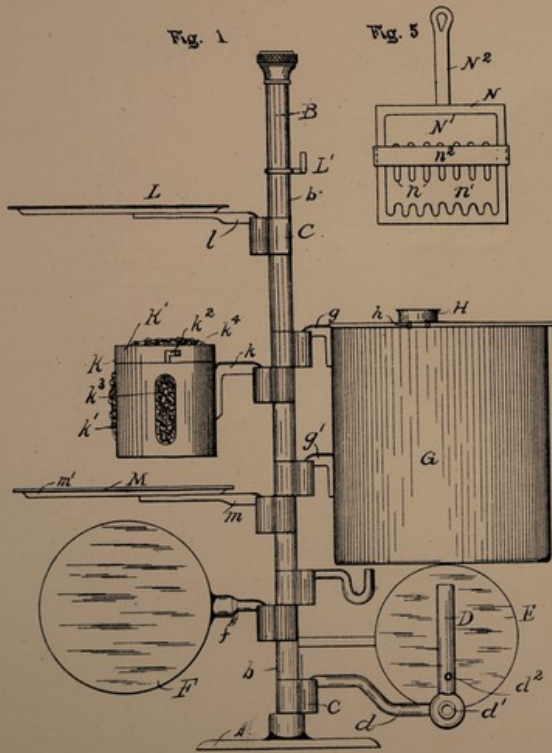


Fig. 3 Fig. 4



Fig. 6.



