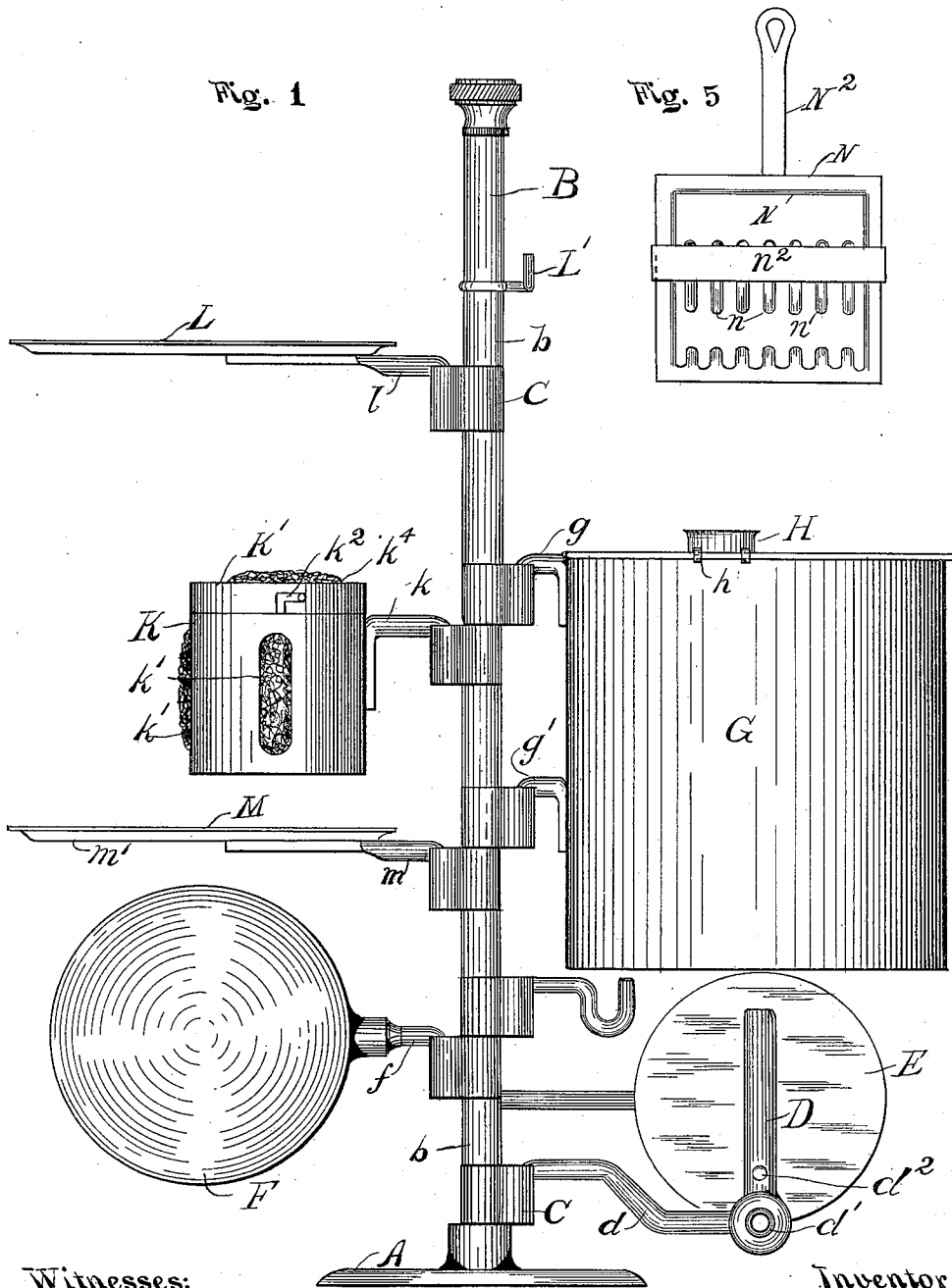


I. S. KIRKWOOD.  
DENTAL APPLIANCE.

(Application filed Mar. 2, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

G. S. Noble.  
J. Buchler

Inventor

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Att'y

No. 618,421.

I. S. KIRKWOOD.  
DENTAL APPLIANCE.

(Application filed Mar. 2, 1898.)

Patented Jan. 31, 1899.

(No Model.)

2 Sheets—Sheet 2.

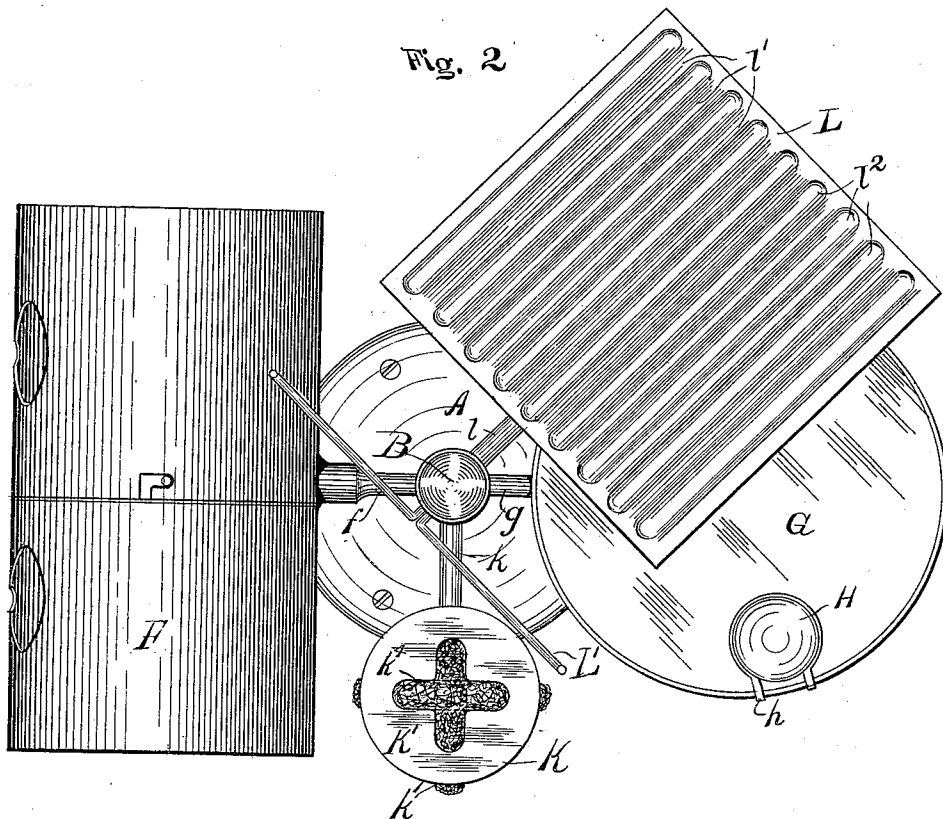


Fig. 3.

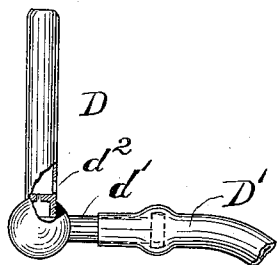
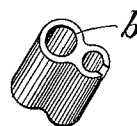


Fig. 4



Witnesses:

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# UNITED STATES PATENT OFFICE.

ISRAEL S. KIRKWOOD, OF CHICAGO, ILLINOIS.

## DENTAL APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 618,421, dated January 31, 1899.

Application filed March 2, 1898. Serial No. 672,325. (No model.)

*To all whom it may concern:*

Be it known that I, ISRAEL S. KIRKWOOD, a citizen of the Dominion of Canada, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dental Appliances, of which the following is a specification.

The invention relates to a stand or bracket for the convenience of a dental table, comprising 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 burs, and various other facilities.

In dentistry it is of importance to keep the cylinders or pellets, &c., 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. Fig. 2 is a top plan view. Figs. 3 and 4 are details, and Fig. 5 represents a tray for sterilizing burs and like small instruments.

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'*, whereby it is secured to the flexible tube D', leading to a gas-jet. Air-ports *d''* 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, such as described in my concurrent application, also hung by a crane-arm *f*, so as to be swung into convenient position or out of the way of other parts that require to be moved.

Above the burner is a hot-water tank G, having two crane-arms *g g'*, by which it is supported from two of the sockets C and at the same time readily removable or displaceable 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.

K is a sponge-cup swung by crane-arm *k* to one of the sockets C and having lateral openings *k'* and a cap K', secured by bayonet-joint *k''*, so as to be removable for the introduction of sponge, the purpose of this cup being to dampen and cool the drills, burr, grinding-disks, and other instruments and clean them of deleterious matter. For this purpose it has a plurality of lateral openings, and may have one or more, *k''*, in the cap, as shown. Above this 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'*, 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''* 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', sleeved or otherwise secured upon the post to swing about it to maintain its relative position to the tray.

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'*,

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 adjusted that the material will be kept at the proper degree of heat so long as being used, doing away with the guesswork 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. 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.

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 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 shown in Fig. 5 a tray N for holding burs and like small instruments. This has longitudinal ribs  $n$  extending not quite the entire length of the depressed portion  $N'$ , thus forming a series of short troughs opening into a pan-like area, into which the shanks of the burs will project, so as to easily be taken up. The ribs may be divided by a transverse depression  $n'$ , which will facilitate picking up extremely short instruments and over which a clasp or band  $n^2$  will be applied to press upon them and hold them in place when plunged in the bath. A handle  $N^2$  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 burs, according to 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 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.

I claim—

A dental appliance comprising a standard, a swinging burner, a swinging water-tank and a crucible in said tank, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ISRAEL S. KIRKWOOD.

Witnesses:

J. BUEHLER,  
L. HANKE.