No. 697,326. Patented Apr. 8, 1902.

G. H. CLAUDE.

DENTAL APPLIANCE.

(Application filed July 9, 1901.)

(No Model.)

FIG. 1.

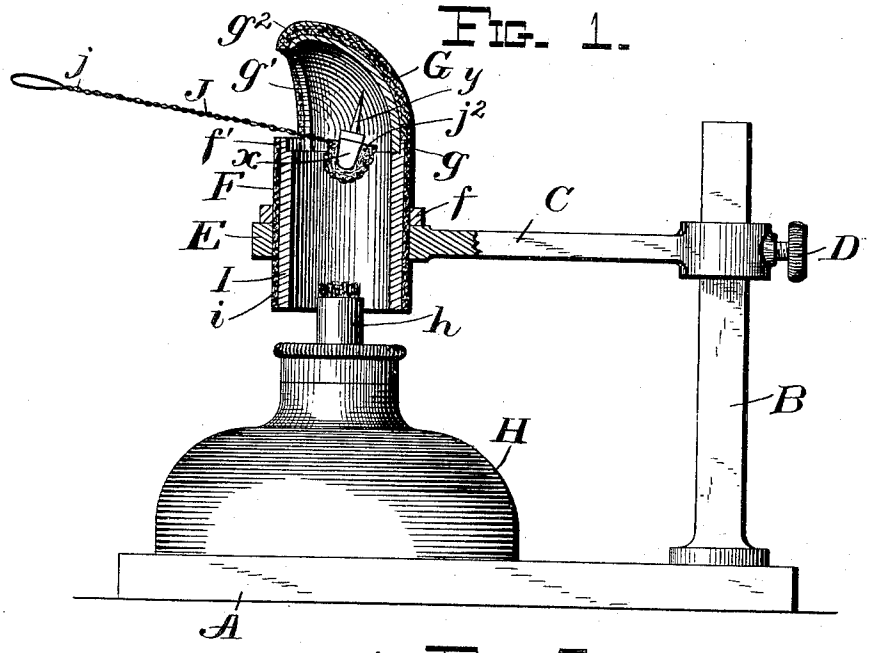
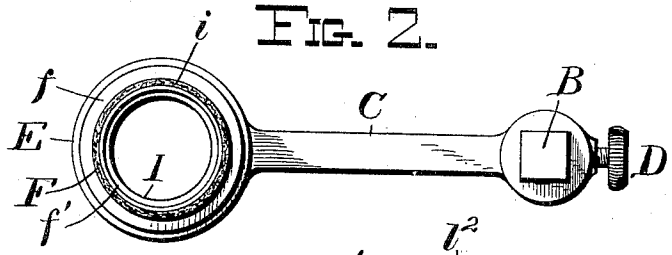


FIG. 2.



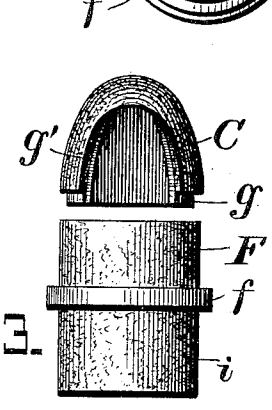


FIG. 3.

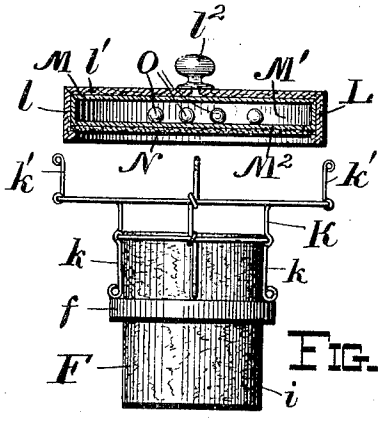


FIG. 4.

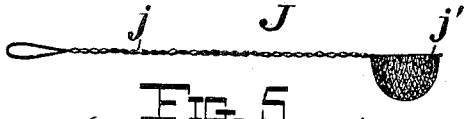


FIG. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

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DENTAL APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 697,326, dated April 8, 1902.

Application filed July 9, 1901. Serial No. 67,644. (No model.)

To all whom it may concern:

Be it known that I, GORDON H. CLAUDE, a citizen of the United States, residing at Annapolis, in the county of Anne Arundel and State of Maryland, have invented certain new and useful Improvements in Dental Appliances; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in dental appliances, and has for its object to produce a light and efficient portable furnace which may be used by the dentist at his chair without the inconveniences inherent with the use of dental furnaces heretofore in use.

My invention also contains certain features of novelty that will hereinafter appear.

In order to more fully explain my said invention, reference will be had to the accompanying drawings, illustrating my said invention, wherein—

Figure 1 is a side elevation of the device with the furnace attached. Fig. 2 is a plan view of the cross arm or support removed from the base with the curved hood removed from the furnace. Fig. 3 represents a detail of the furnace cylinder and hood detached. Fig. 4 is an elevational view showing the furnace-cylinder provided with a clip or frame and also shows the annealing-tray in section, and Fig. 5 is a side elevation of an investment-cup.

In the accompanying drawings the same letters are used to designate the same parts throughout the several views.

A represents a base-plate upon one end of which is mounted the upright or standard B. This standard B is preferably square or rectangular in cross-section, as shown in Fig. 2, upon which is mounted the cross-arm C. This arm C is adapted to slide vertically upon the upright B and is provided with a stop or set screw D, adapted to be screwed in the end of this arm C to lock the same in any desired position upon the standard B. The other end of this cross-arm C is provided with a ring E, within which is adapted to fit the cylindrical furnace F. This furnace F is preferably provided with a metal base or lining I, over which is provided a coating of asbestos or other non-conducting material *i*. This asbestos casing may be secured upon the metal base or lining I in any suitable manner. Fitted snugly upon and encircling the furnace F is provided an annular flange or ring *f*, which is adapted to rest upon the annular ring E of the arm C, and thereby support the furnace in position. Upon the upper end of this furnace F an annular recess *f'* is provided, which completely encircles the cylindrical furnace. Into the recess *f'* is adapted to snugly fit the flange *g* of the curved hood G. This hood is preferably separable from the cylindrical furnace F; but, if desired, both parts may be manufactured in one piece.

g' is an opening in the front of the hood, through which the heat and gases find an exit after having been utilized. To increase the efficiency of the furnace, the hood G is provided with a hollow dome-like portion g^2, which is adapted to deflect the rising heat and concentrate it upon a point centrally located within the hood, after which it finally finds an escape through the opening *g'* of the hood.

The hood G when made separate from the furnace F is manufactured in substantially the same manner, and consists of an inner lining or base of metal, curved in shape and covered upon the outside with a coating of asbestos or the like. When the furnace F and hood G are manufactured in this manner, the greatest possible amount of heat is retained within the furnace, increasing the efficiency of the furnace, and at the same time excessive heating of the parts is prevented, allowing the same to be handled freely. Beneath this furnace F is placed a lamp or other suitable burner H, the tip *h* of which occupies a position beneath the cylinder F on a direct line with the center thereof. The distance between the burner H and furnace F may be varied as desired by raising or lowering the support C and securing the same in position by the set-screw D upon the arm B.

J represents a wire investment-cup provided with a handle *j*, upon one end of which is attached the woven-wire cup *j'*. This cup *j'*, while shown in the drawings as being round and provided with a handle, may be of any desired shape and size to accommodate any shape or number of teeth to be invested, and, if desired, the handle may be omitted en-

tirely. This cup j' contains a filling of spongy asbestos j^2, into which is adapted to be embedded the crown x of a tooth or teeth, the gold or other backing y projecting upwardly toward the roof of the hood, as shown in Fig. 1.

While I prefer to use the cup J with a handle and usually use asbestos as a filling, it is obvious that any suitable investment material may be placed within the cup, and as the cup is flexible it may be bent into any desired shape to accommodate any shaped crown or bridge. This investment-cup, containing the tooth or teeth to be invested, is passed through the opening g' of the hood G, and the tooth-backing y projects upwardly directly in the concentrated heat, the crown being protected from the heat by the asbestos or other packing within the cup.

Should it be desired to increase the intensity of the heat directed upon the tooth-backing, the end of a blowpipe may be inserted through the opening g' and brought to bear upon the tooth-backing, or, if preferred, a second lamp or burner may be employed, the heat from the second burner passing through the opening g' and upon the tooth-backing, thereby materially increasing the return heat. It will thus be seen that a reverberatory furnace is provided, and instead of subjecting the tooth-backing directly to the gases of the burner the tooth-crown is inverted, the tooth-crown being embedded in a non-conducting backing and the tooth-backing being located directly beneath a reverberatory hood.

In Fig. 4 is shown an annealing attachment, adapted to be applied to the cylindrical portion F of the furnace.

K is a wire frame or clip having a narrowed portion k, adapted to fit over the upper half of the furnace F and rest upon the annular flange f, the enlarged portion k' being adapted to receive the annealing-tray L. This tray L is composed of the cylindrical or other shaped portion l and the annular cover l', adapted to fit upon the same, said cover being provided with a knob or handle l^2. The two portions $l\,l'$ are preferably made of sheet-asbestos and are lined upon the inside with sheet-mica M M', the lining M' being in the shape of a box having the bottom M^2 of mica. Below this mica bottom M^2 is placed a sheet of paper asbestos N, which will be directly above the burner. The sides of the cylindrical portion l preferably extend below the bottom N, so as to retain the heat and distribute it evenly over the bottom of the tray.

O O represent pellets of gold in the position they occupy while being annealed.

This cylindrical portion F of the furnace is placed in the ring E of the arm C, so as to retain the heat of the burner H upon the bottom of the tray, the height of the tray above the burner being adjusted by the set-screw D.

While I have shown my invention embodied in the forms herein shown and described, it is obvious that many changes and modifications might suggest themselves to those skilled in the art, it being understood that I do not limit myself to the precise details shown.

Having thus described my said invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a dental furnace, the combination with a support, a vertically-adjustable arm carried thereby, and a burner beneath said arm; of a cylindrical furnace supported by said arm, and a heating device adapted to be removably supported upon the said furnace, substantially as described.

2. In a dental furnace, the combination with a support, an adjustable arm carried thereby, and a burner beneath said arm; of a cylindrical furnace supported by said arm, and a curved deflecting-hood provided with an exit in one side carried by said furnace, substantially as described.

3. In a dental furnace, the combination with a support, a vertically-adjustable arm secured thereto, and a burner beneath said arm; of a furnace supported by said arm, a covering of asbestos upon the outside of said furnace, and a device adapted to receive articles to be heated, removably secured to said furnace, substantially as described.

4. In a dental furnace, the combination with a support, an adjustable arm carried thereby, and a burner beneath said arm; of a furnace having a flange adapted to rest in said arm, and a curved hood having an opening in one side carried by said furnace, substantially as described.

5. In a dental furnace, the combination with a base, an adjustable arm mounted thereon, provided with a ring upon one end, and a burner located beneath said ring; of a cylindrical furnace, resting in said ring, and provided with an annular flange for supporting the same, and a recess in the upper end of said furnace, and a curved hood having an opening in one side adapted to rest upon said furnace, and a flange upon said hood adapted to lock with said recess, substantially as described.

6. An investment-cup adapted to be used in combination with a dental furnace, comprising a woven-wire cup, having a filling of asbestos or the like, into which is adapted to be embedded the crown of a tooth, substantially as described.

7. An investment-cup adapted to be used in combination with a dental furnace, comprising a woven cup of flexible wire adapted to be bent in any desired shape, and a filling of spongy asbestos, within said cup, substantially as described.

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

GORDON H. CLAUDE.

Witnesses:
JULIET DEXTER,
FRANK H. STOCKETT.