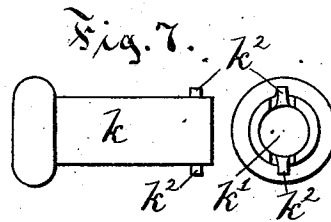
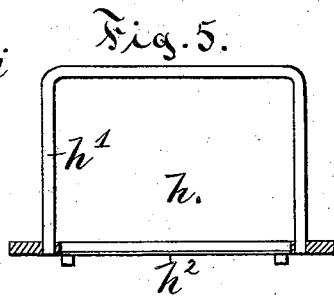
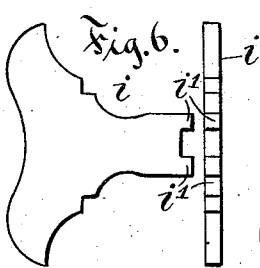
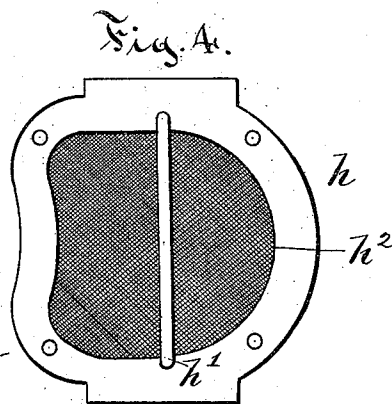
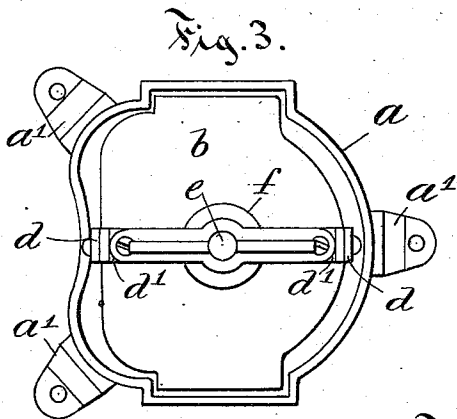
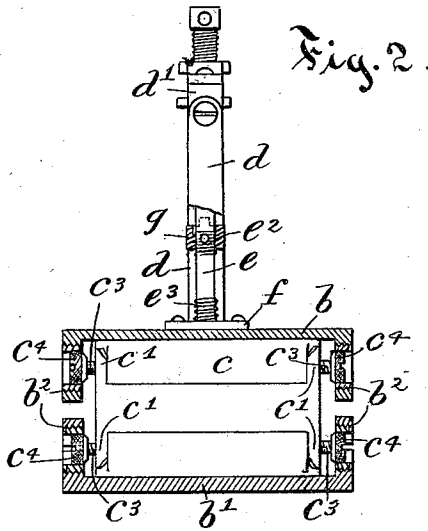
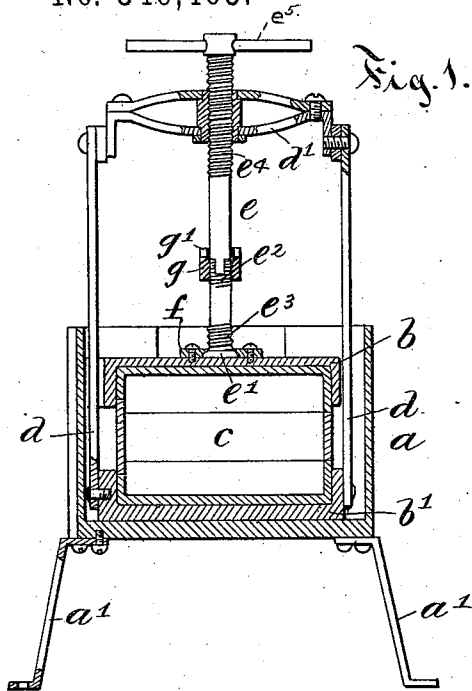


M. R. GRISWOLD.

PRESS HOLDER AND HEATER FOR DENTAL FLASKS.

No. 546,465.

Patented Sept. 17, 1895.



Witnesses:
J. A. Cantin.
Arthur B. Jenkins.

Inventor:
Malcolm R. Griswold.
by Chas. L. Burdett,
attorney

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Fig. 8.

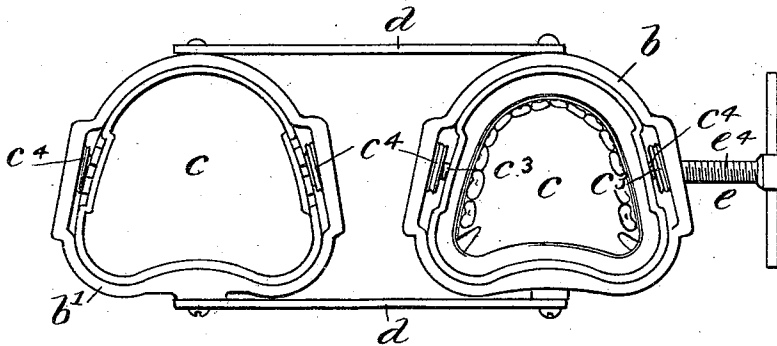


Fig. 9.

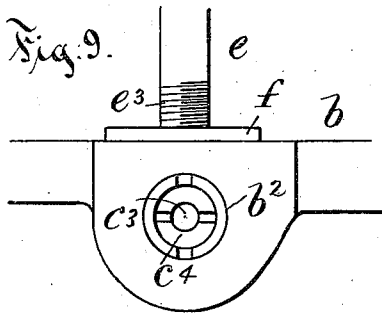


Fig. 10.

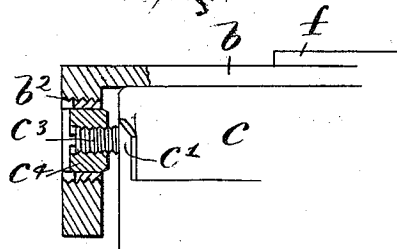


Fig. 11.

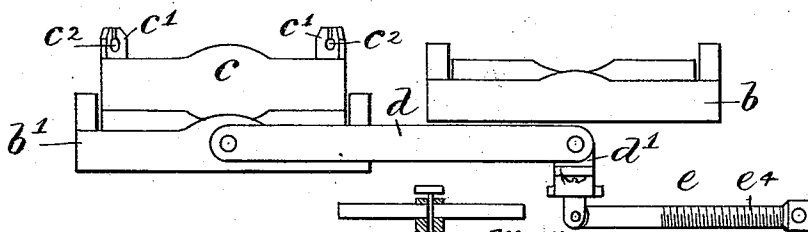


Fig. 12.

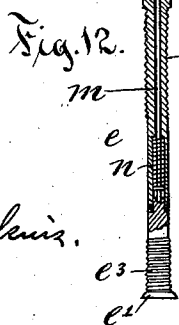


Fig. 13.



Witnesses:

J. A. Cantin

Arthur B. Jenkins.

Inventor:

Malcolm R. Griswold

By Chas. L. Burdett,
Attorney.

UNITED STATES PATENT OFFICE.

MALCOLM R. GRISWOLD, OF HARTFORD, CONNECTICUT.

PRESS-HOLDER AND HEATER FOR DENTAL FLASKS.

SPECIFICATION forming part of Letters Patent No. 546,465, dated September 17, 1895.

Application filed September 26, 1894. Serial No. 524,209. (No model.)

To all whom it may concern:

Be it known that I, MALCOLM R. GRISWOLD, a citizen of the United States, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Press-Holders and Heaters for Dental Flasks, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

My invention relates to the class of devices used for closing and holding dental flasks and for heating the same in order to enable the wax to be easily and readily removed and the rubber inserted in the process of constructing false teeth; and the object of my invention is to provide a device of this class that is simple in construction and one that can be easily and quickly operated without causing annoyance to the operator by reason of the heated flask or requiring the use of separate tools to handle the flasks.

To this end my invention consists in the combination of the several parts making up the device as a whole, and in the details of the construction of the several parts, as more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a detail view in vertical section through the tank and holder, showing a flask in place. Fig. 2 is a detail view in vertical section through the holder, showing a flask in place, in a line at right angles to the plane of view of Fig. 1. Fig. 3 is a top view of the heater and holder. Fig. 4 is a top view of the cover of the kettle. Fig. 5 is a side view of the same. Fig. 6 is a detail side and end view of a tool for manipulating the holding-screws. Fig. 7 is a side and end view of another tool for manipulating the holder-screws. Fig. 8 is a detail top or plan view of the holder as opened out with a flask in place in the holder. Fig. 9 is a detail view showing one of the ears of a flask and illustrating the holding devices. Fig. 10 is a detail view in section through the same. Fig. 11 is a detail side view of the holder opened out with a flask in place therein. Fig. 12 is a detail view in vertical section of the lifting-rod, showing a modified form of the invention. Fig. 13 is a detail view on an enlarged scale

and in vertical section of the rod, showing this same form.

In the construction of false teeth on rubber a flask is provided in which the wax and teeth are located, the teeth being held in proper position by plaster or the like inserted in the flask. After the mold has been thus formed it is necessary to remove the wax and replace it with rubber that is afterward vulcanized and forms the plate to which the teeth are secured. To accomplish this end the molds have to be heated in water to a degree sufficient to soften the wax so that it may be removed, the rubber being steamed or heated and pressed into the space formerly occupied by the wax. In performing this operation with the tools heretofore provided the operators have been put to a great disadvantage from the fact that the molds have to be removed from a clamp in which they have been secured and the different sections of the mold laid out separately, requiring the use of cloths or implements for handling the mold to avoid the burning of the operator. In a device constructed after the present application all of the above disadvantages are removed.

In the accompanying drawings the letter *a* denotes a kettle provided with suitable legs or standards *a'* to raise the former a suitable distance above the surface on which it rests for the purpose of inserting thereunder a lamp or like device for heating a liquid that may be contained in the kettle.

The letter *b* denotes the top of the shell of the holder and the letter *b'* the bottom of the shell. Flanges are provided on each of the parts *b* and *b'*, the flanges extending toward each other, and extending through these flanges are openings within which are located exteriorly-threaded sleeves *b²*. A flask *c* is adapted to be secured between the top and bottom plates *b* and *b'*, the flask being composed of sections secured together by means of ears *c'*, secured to one section, projecting along the side of the opposite section. These ears are provided with openings *c²*, within which is adapted to project a threaded stud *c³*, from the plates *b* or *b'*, a nut *c⁴*, beveled on its inner end, being fitted upon the stud *c³*. The opening *c²* is beveled on the outside to receive the beveled end of the nut *c⁴*, the latter being

of a size to adapt it to fit the opening in the sleeve b^2 . The latter may be adjusted toward or from the sections of the flask in order to adapt it to securely hold the same. The kettle a preferably conforms to the shape of the holder which is to be located therein, the latter being made of a size to leave sufficient space between its walls and the walls of the kettle when the flask is located in the kettle.

The object of this construction is to compel the sections of the flask to correctly register with each other, so that when they are forced downward by the means hereinafter described they will come together in exact alignment, the necessity for which is obvious. In constructing the kettle to conform to the shape of the holder the former acts as a guide to the flask-sections.

To the lower shell b' of the holder, preferably at each side thereof, are pivoted rods d that extend upward, the upper ends of said rods being connected by means of a cross-bar d' , the latter being pivoted to the rods at their upper end. This cross-bar is preferably formed of spring metal, as shown, in order that the flask-sections shall not be held together with an unyielding pressure.

A lifting-rod e is secured to the upper shell b of the holder in such manner as to be capable of rotation therein, in the present instance a cap f being secured to the upper section of the holder and a flange e' on the lower part of the lifting-rod e underlying the cap or a portion thereof. The lifting-rod e is jointed between the cross-bar d' and the top section b of the flask-holder, the rod being threaded, as shown at e^2 , just below the joint, and on this threaded portion is located a locking-sleeve g , having an interior thread meshing with the thread e^2 . On the upper side of the locking-sleeve g , preferably diametrically opposite each other, are upward-extending lugs g' , these lugs being located at such distance apart as to allow the cross-bar d' to be interposed between them. A thread e^3 is located on the lower part of the lifting-rod e , the said thread being of a size to correspond with the screw-threaded opening in the cross-bar d' , and a thread e^4 is provided on the upper end of the lifting-rod e , said thread meshing with the thread in the cross-bar d' .

In Figs. 12 and 13 is shown a modified form of lifting device. This consists of a locking-rod m , extending lengthwise through the upper section of the lifting-rod e . The lower end of the rod m is adapted to engage a socket in the lower section of the lifting-rod, a spring n being located in a chamber in the upper section of the rod e , one end of the spring thrusting against a shoulder in the chamber and the other end against a flange on the rod m , tending normally to hold the said rod in a downward position. In this construction of the parts the joint is held rigid and the two sections prevented from turning on each other.

If desired, the spring n may be omitted and

a thread provided on the locking-rod m , fitting an interior thread on the rod e , thus enabling the former to be turned to place with its lower end engaging the socket in the upper end of the lower section of the lifting-rod e .

The rubber that is inserted in the mold in place of the wax is heated, as by means of steam, and for this purpose I provide a cover h , having a handle h' and a perforated portion h^2 . As the flask is removed from the kettle, this cover can be placed over the kettle and the pieces of rubber to be softened placed on the perforated portions h^2 for this purpose.

In the manipulation of the nut c^2 and threaded sleeve b^2 special tools are required, slots being provided, preferably on diametrically-opposite sides of the opening, through both the sleeve and nut. In rotating the nut c^4 about the stud c^3 a key i is provided, having projections i' at one end adapted to lie on opposite sides of the stud c^3 , by means of which the nut may be easily and quickly turned to place. In manipulating the threaded sleeve b^2 a tool k is provided, having a central opening k' and on diametrically-opposite sides lugs k^2 , projecting laterally from the outside of the wrench and preferably some distance back from the end. This tool k is of a size to enable it to enter the opening k' in the sleeve, the lugs k^2 being located away from the end, allowing the end of the tool to be inserted in the sleeve before the lugs engage the openings or recesses in the sleeve, this insuring the retaining of the tool in proper position while the sleeve is being turned to place.

It is obvious that other means for pivoting the different mold-sections to the frame and for causing them to be clamped together may be employed, the means herein described being those preferred, and I do not desire to limit myself to the exact construction herein shown and described.

The sleeves located in the flanges in the shell of the holder have been described herein as threaded as a means of attaining a longitudinal adjustment thereof; but it is obvious that any means of securing this result may be employed and yet come within the scope of my invention.

The sections of the flask have been shown and described herein as clamped to a shell forming part of the holder; but it is obvious that means may be devised whereby the sections of the flask themselves may be pivoted to the holder and yet come within the scope of my invention.

The operation of the device is as follows: The parts being in the position shown in Fig. 1, this position being one in which the apparatus is ready for heating a flask for the purpose of softening the wax in the mold, when the desired heat has been applied, the handle e^5 is turned and the lifting-rod e is raised, carrying with it the upper section of the flask c . When the rod e has been turned sufficiently

to disengage the thread e^4 from the cross-bar d' , a pull on the handle e^5 brings the rod up so that the locking-sleeve g engages the cross-bar d' with the lugs g' , located on opposite sides of the bar. By still rotating the rod e the sleeve g is lowered on the rod e until it disengages from the thread e^2 , this thread being of a size to allow it to freely pass through the opening in the cross-bar d' . The sleeve then drops onto the upper portion of the flask c , and a pull on the handle e^5 brings the rod e far enough upward to allow the thread e^3 , which at this time projects above the upper edge of the sleeve g , to engage the threaded cross-bar d' , when a partial turn of the rod engages the thread e' with the cross-bar d' sufficiently to hold the rod e at the upper limit of its play. In this position the joint in the rod has been carried through to the outside of the cross-bar d' . The device as a whole is then lifted from the kettle and placed upon a table or like surface and the lifting-rod turned down, as shown in Figs. 8 and 11 of the drawings. The rods d are also turned to one side, carrying with them the upper section of the flask c , so that they assume the position shown in Figs. 8 and 11. This allows any work to be readily and easily performed in the flask without the handling of any portion, a grasp on the handle e^5 of the rod being sufficient to perform the entire operation. When the wax has been removed and the rubber inserted, the parts can be readily assembled by simply grasping the handle e^5 and reversing the motions above described and the flask again submerged in the water in the kettle for any desired purpose, as for softening the rubber, the rod e being turned down as the rubber softens to securely pack it in place in the mold.

I claim as my invention—

1. In a holder and press for dental flasks a frame pivoted to a lower mold section, an upper mold section pivoted to the frame, and a lifting rod pivoted to the upper mold section with means for clamping the mold sections together, all substantially as described.

2. In a holder and clamp for a dental flask, a frame pivoted to a lower mold section, a cross bar pivoted at the upper part of the frame, a jointed lifting rod rotarily secured to the upper mold section and to the cross bar and having means for clamping the sections together, all substantially as described.

3. In a holder and clamp for dental flasks, a frame pivoted to a lower mold section, a cross bar pivoted at the upper part of the frame, a jointed lifting rod extending through the cross bar and having a threaded portion engaging a threaded opening in the cross bar, an upper mold section secured to the lifting rod, and a locking sleeve adapted to surround the joint in the lifting rod to lock the same, all substantially as described.

4. In a holder and clamp for a dental flask, a frame pivoted to a lower mold section, a cross

bar pivoted to the upper part of the frame, a jointed lifting rod having a threaded portion engaging a threaded opening in the cross bar, an upper mold section secured to the lifting rod, a threaded locking sleeve located on a threaded portion of the rod and adapted to surround the joint to lock the same, and a retaining thread located on the lower part of the rod, all substantially as described.

5. In a holder and clamp for dental flasks, in combination, a frame, an exteriorly threaded sleeve located in the frame and provided with means of rotation, and a flask having a projecting part engaging the opening in the sleeve, all substantially as described.

6. In combination in a dental flask holder and press, a flask section having ears adapted to lie against the outer surface of the opposite section, beveled perforations located in said ears, a holder, and a screw threaded bevel locking device located in the holder and adapted to engage the beveled perforations in the ears of the flask sections, all substantially as described.

7. In combination in a dental flask holder and press, a flask section having ears adapted to lie against the outer surface of the opposite section, beveled perforations located in the ears, a holder, a threaded sleeve adjustably secured in the holder and having a beveled edge adapted to engage the beveled socket in the ears of the flask section, and a stud located in the threaded sleeve and adapted to project through the opening in the ears of the flask section, all substantially as described.

8. In combination with a dental flask holder, a kettle adapted to receive the holder, said kettle being provided on its interior side walls with guiding surfaces whereby the flask sections are aligned to properly engage each other as they are forced together, all substantially as described.

9. In combination with a holder and press for dental flasks or the like, a kettle provided on the under side with legs, and having its interior surface conforming to shape of the holder, and the mold held therein whereby the sections of the mold are guided into proper position one upon the other, all substantially as described.

10. In combination with a dental flask holder a clamp, a clamp key having a central opening and laterally projecting lugs, all substantially as described.

11. In a holder and clamp for dental flasks in combination with a frame, a longitudinally adjustable sleeve located in the frame, and a flask having a projecting part engaging a central opening in the sleeve, all substantially as described.

12. In combination in a holder and press for dental flasks, a jointed lifting rod, an automatic locking device located in one of the sections and adapted to engage the opposite section whereby the rod is held rigid at the

joint, and means for operating the locking device, all substantially as described.

13. In a holder and press for dental flasks,
a frame pivoted to a lower mold section, a
5 cross bar pivoted at the upper end of the
frame, a jointed lifting rod rotarily secured
to an upper mold section and to the cross bar,

and a lock to rigidly secure the joint in the
lifting rod, all substantially as described.

MALCOLM R. GRISWOLD.

Witnesses:

ARTHUR B. JENKINS,
J. STERN.