R. F. HUNT.

Process and Apparatus for Softening and Molding Celluloid.

No. 162,752. Patented May 4, 1875.

Fig. 1.

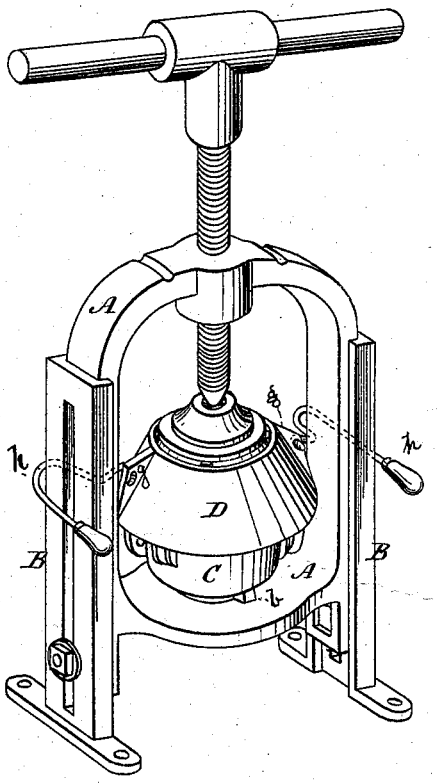


Fig. 2.

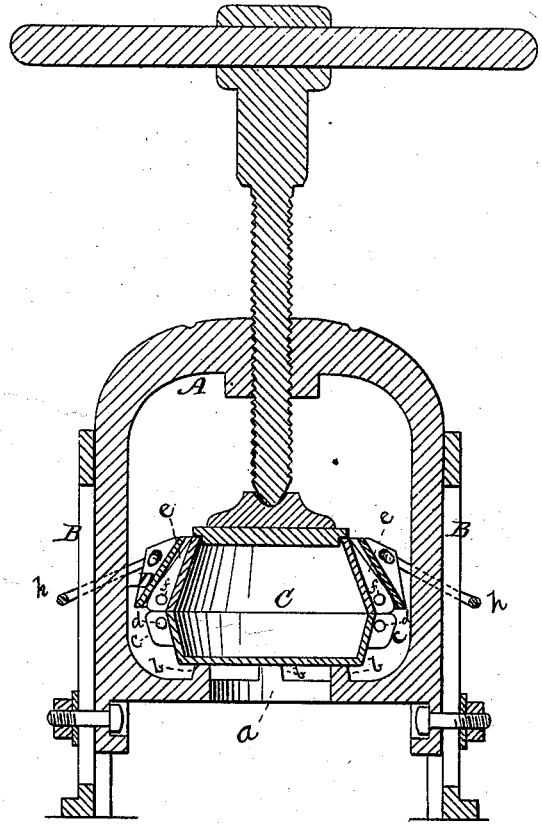
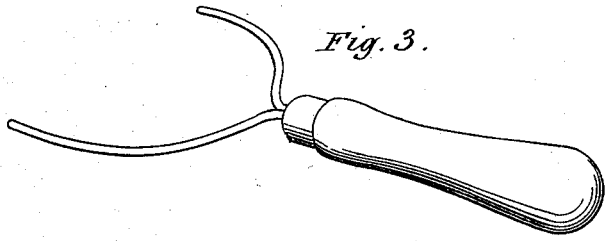


Fig. 3.



Witnesses.

John. L. Wolf.

R. M. Dawes.

Inventor.

R. Finley Hunt

UNITED STATES PATENT OFFICE.

R. FINLEY HUNT, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN PROCESSES AND APPARATUS FOR SOFTENING AND MOLDING CELLULOID.

Specification forming part of Letters Patent No. **162,752**, dated May 4, 1875; application filed October 9, 1874.

To all whom it may concern:

Be it known that I, R. FINLEY HUNT, of Washington, D.C., have invented an Improved Process and Apparatus for Softening and Molding Celluloid, of which the following is a specification:

My invention consists of an improvement in the process and apparatus for softening and molding celluloid and celluloid blanks for dental and other purposes, by the use of dry heat, as secured to R. Finley Hunt in Letters Patent granted to him, and bearing date July 21, 1874.

By this improved process and apparatus the heat is applied directly to the flask or mold containing the celluloid or celluloid blank.

To enable those skilled in the art to make and use my invention, I will proceed to describe the same, having reference to the accompanying drawings, in which—

Figure 1 represents an exterior view of the apparatus I employ. Fig. 2 represents a vertical section through the same, and Fig. 3 represents the fork or holder for handling the flask.

Reference being had to the same parts in Figs. 1 and 2, A is the screw-press made of the usual form, but with these modifications: First, the bottom has a circular opening, and three or more projections, at or near the circumference of the opening and equidistant from each other. These projections serve as supports for the flask when in use, and allow the flame or hot air to pass between the bottom of the screw-press and the flask. Second, the sides of the screw-press are cast with a flat face and square corners, to fit the face and flanges of the adjustable legs. Third, these sides are extended below the bottom, and the extensions have counter-sunk openings to receive the screw-bolts with square heads, used to fasten the legs to the press. B B are the adjustable legs, with flat bottoms for feet, flanges at the sides to fit the sides of the screw-press, and a slot nearly the whole length, in which the screw-bolts work, and by which the legs can be so adjusted as to regulate the height of the press above the flame used. C is the flask, made of any desired shape, and has lugs on two opposite sides of the lower part, with openings in them to receive the ends of the fork or holder. It has also, on the upper part, four webs for the support of the loose jacket. Suitable openings are made in these webs to receive the ends of the holder. D, the loose jacket, conforms in general outline to the shape of the upper part of the flask, and is so adapted to it that the space between the two is much larger at the bottom than the top. There are projections on two sides of the loose jacket, to which are attached loops or hooks for suspending it, when not in use, to the upper part of the screw-press. Fig. 3 represents the fork or holder for holding and handling the flask when hot.

In using this apparatus, the flame of gas, coal-oil, or other heating agent, is placed immediately below the circular opening in the bottom of the screw-press, and the hot air therefrom is kept in contact with the upper part of the flask by means of the loose jacket.

I am aware that for softening celluloid and rendering it plastic for molding, heat has been applied in various modes, as by a bath of oil, glycerine, water, or steam; also without this bath, as in the patent of R. Finley Hunt, July 21, 1874, in which the heat is applied to the exterior of a closed chamber, and communicated by conduction to the flask or mold contained therein; but my invention of bringing the heating agent directly in contact with the flask or mold to soften the celluloid is quicker and more economical, as it requires much less time and consumption of heating material than when the heat is communicated by the means and appliances above mentioned and hitherto used. It has also this advantage, that, the whole apparatus being exposed to view, the process can be observed without the removal of the flask or mold from the bath or chamber, and the consequent cooling off and loss of time attendant on the other methods.

What I claim as my invention is—

1. The process of softening and molding celluloid and celluloid blanks by the application of the heating agents directly to the flask or mold containing the celluloid, by means substantially as herein described.

2. The herein-described apparatus for softening and molding celluloid and celluloid blanks, consisting of the screw-press A, having in its bottom a circular opening, *a*, and

at or near the edge of this opening three or more projections, *b*, equidistant from each other, on which the flask or mold rests, thus forming a space or channel through which the flame and hot air are made to pass under the bottom of and around the flask or mold; the flask C having the lugs *c* on opposite sides, with the holes *d* in each lug to receive the ends of the fork or holder, and having four tapered lugs or webs, *e*, equidistant from each other, the two opposite the lower lugs *c* being provided with holes *f*, and the loose jacket D having projections *g* on opposite sides, with holes in them to receive the loops or hooks *h*, all combined as and for the purpose herein described.

R. FINLEY HUNT.

Witnesses:
JOHN L. WOLF,
R. M. DAWES.