

A. T. KEIGHTLEY.

DENTAL-MOLD.

No. 173,647.

Patented Feb. 15, 1876.

Fig. 1.

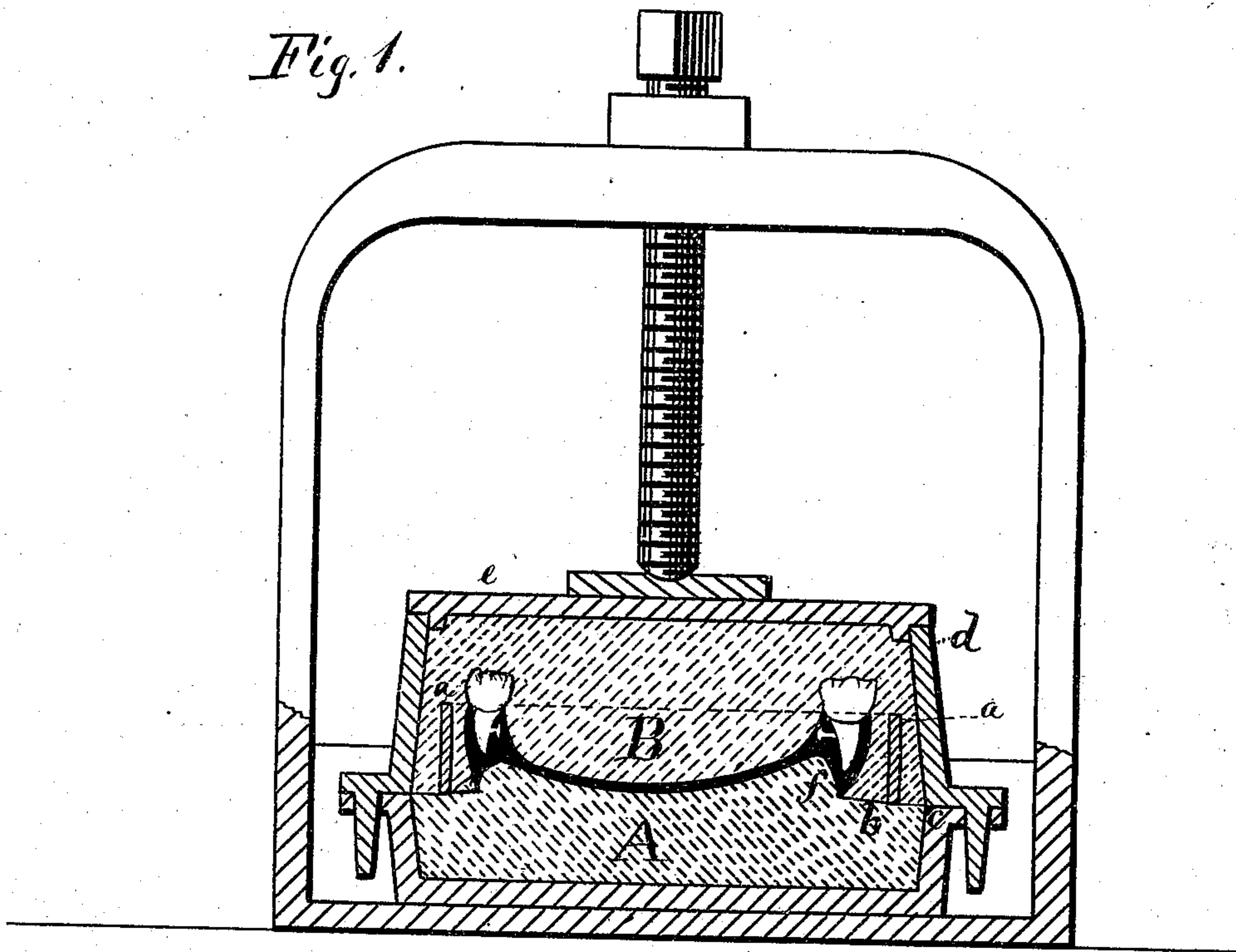
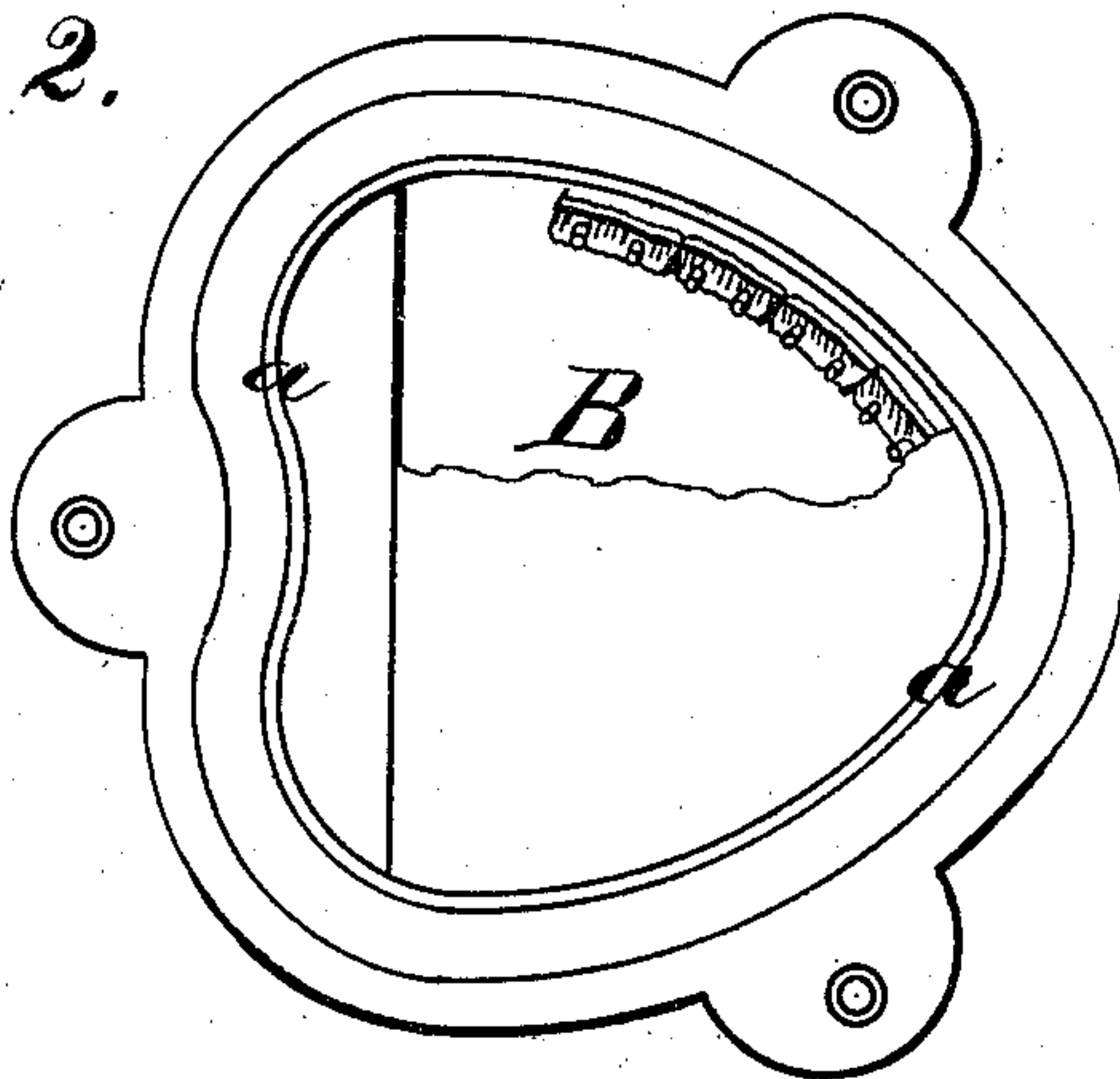


Fig. 2.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN DENTAL MOLDS.

Specification forming part of Letters Patent No. **173,647**, dated February 15, 1876; application filed December 31, 1875.

*To all whom it may concern:*

Be it known that I, ABRAM T. KEIGHTLEY, of Greencastle, in the county of Putnam and State of Indiana, have invented a new and valuable Improvement in Stamping Teeth on Celluloid Plates; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view of my stirrup, with the mold vertically sectioned; and Fig. 2 is a plan view of the mold.

This invention has relation to a preparatory process for securing teeth on celluloid plate, used by dentists in the manufacture of sets of teeth for practical use.

The nature of the invention consists in so securing the plaster of the upper mold, when placed in the flask, by a metal ring that expansion of the mold while under pressure is effectually prevented, as will be hereinafter more fully described.

In the preparation of artificial teeth, dentists often experience great trouble, and consequent loss of time and material, while stamping or securing teeth on the plate, by the expansion or bursting of the mold of plaster in which the teeth are held in position when inverted over the plate on application of pressure.

The process usually adopted for setting teeth on plate is briefly this: After a plaster cast of the upper gum and roof of the mouth is taken, this cast is covered with a thin plate of wax, which is made to conform properly to the surface. Upon this the selected teeth are placed in order, banked up with wax, to imitate, as nearly as possible, the fullness of the natural gum around the teeth. When this is completed, and while yet on the mold, a reverse cast is taken of teeth, wax, and all. The first mold underneath is now removed, leaving wax, plate, and teeth attached to the second or uppermost mold. The wax is now melted away, leaving the teeth clean, and embedded in this last mold in the required position for the next process, with the rivet ends,

or "roots," projecting above the molded surface. At this point the first cast is placed in the flask and secured. A blank of celluloid is then laid over it, the second mold containing the teeth is placed exactly upon this, the flask put in position, and all placed in the stirrup and in the heater. As the heat softens the celluloid blank, the upper mold is slowly and constantly brought down by a screw in the stirrup acting on the follower of the flask. This gradual pressure stamps or embeds the teeth in the celluloid so firmly that no ordinary usage can dislodge them. If the pressure is applied too rapidly or exceeds a certain limit, the upper mold expands, so as to break or utterly ruin the teeth. It is this frequently-recurring mischief which my invention is designed to prevent, and it is effected in the following manner:

Referring to the letters and figures of reference, A, Fig. 1, represents the lower and B the upper molds, between which the celluloid and teeth are pressed. When the wax and teeth are placed in position on the lower mold, they are secured in the flask by filling in with plaster, in the usual way. The metal ring or band *a*, preferably made of tin or zinc, the ends of which are usually joined by a lap-seam, is placed on, surrounding the teeth at a quarter of an inch, more or less, distant from them, and resting on the prepared surface of the mold at *b*, and nearly even with the lip of the lower flask *c*, as shown in Fig. 1. The upper flask *d* is now placed in position, with its cover *e* removed. The flask is then filled with plaster, in the usual way, made even at the top, and set aside to harden. The flasks are then separated, and the teeth, wax, and tin or zinc band are found attached to the upper mold B. A celluloid blank is now placed on the lower mold, the wax entirely removed from the upper mold and teeth, preparatory to subjecting the whole to heat and pressure.

It will now be seen that the metal ring or band, which is left embedded in the upper mold, becomes a protection to it, and prevents any expansion or lateral displacement, that often occurs by virtue of the wedge-like formation of the entire tooth-arch, as it gradually sinks by pressure into the celluloid, which itself must conform to the outwardly-inclined

angle of the lower mold, as shown at *f*. This ring or band is applicable to the protection of molds for lower as well as upper sets of teeth.

What I claim as new, and desire to secure by Letters Patent, is—

A metal band or ring embedded in the plaster around the teeth, to prevent expansion of the same when pressure is applied in stamping or setting the teeth in celluloid plate, sub-

stantially in the manner and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ABRAM TIMOTHY KEIGHTLEY.

Witnesses:

WM. HILL,

L. E. BOSWELL.