

A. A. Knowlton.

Mould for Artificial Teeth.

75027

PATENTED
MAR 3 1868

Fig 1

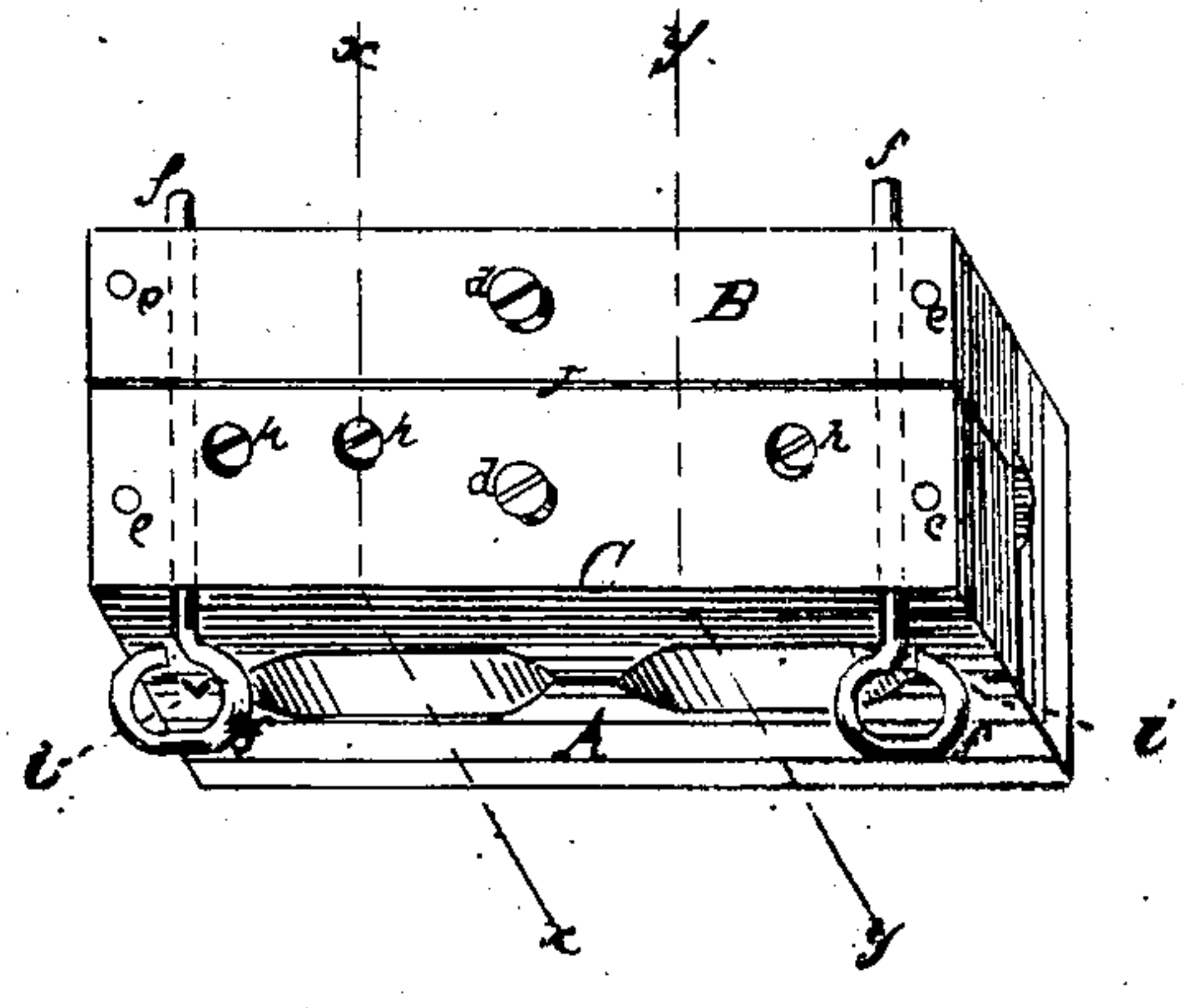


Fig 2

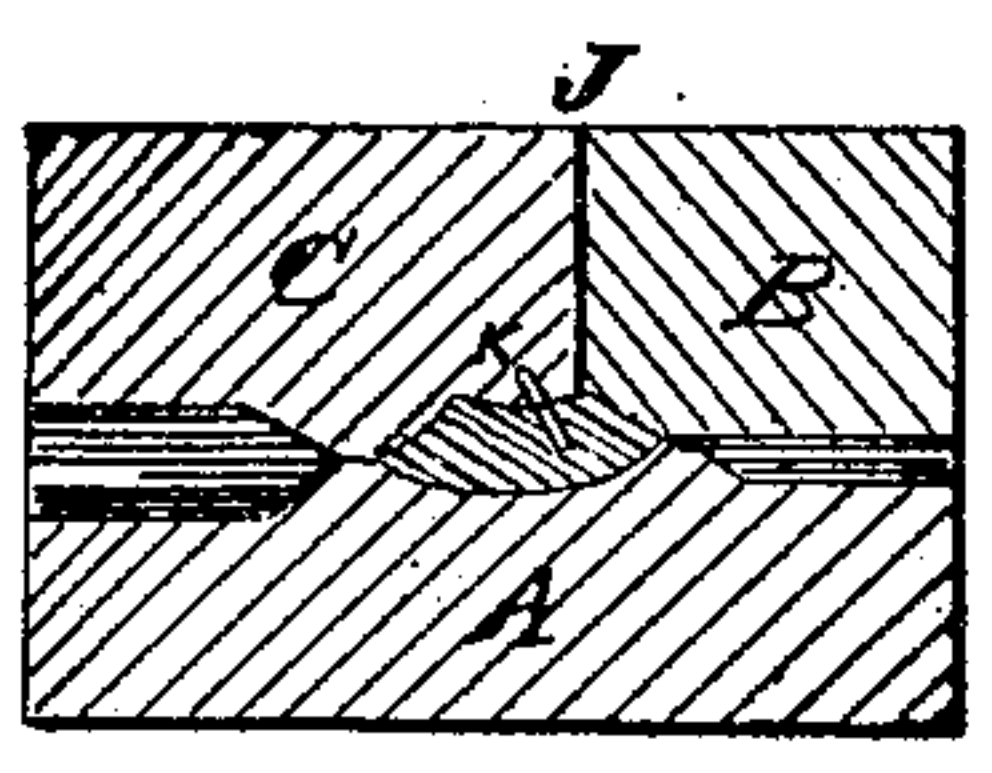
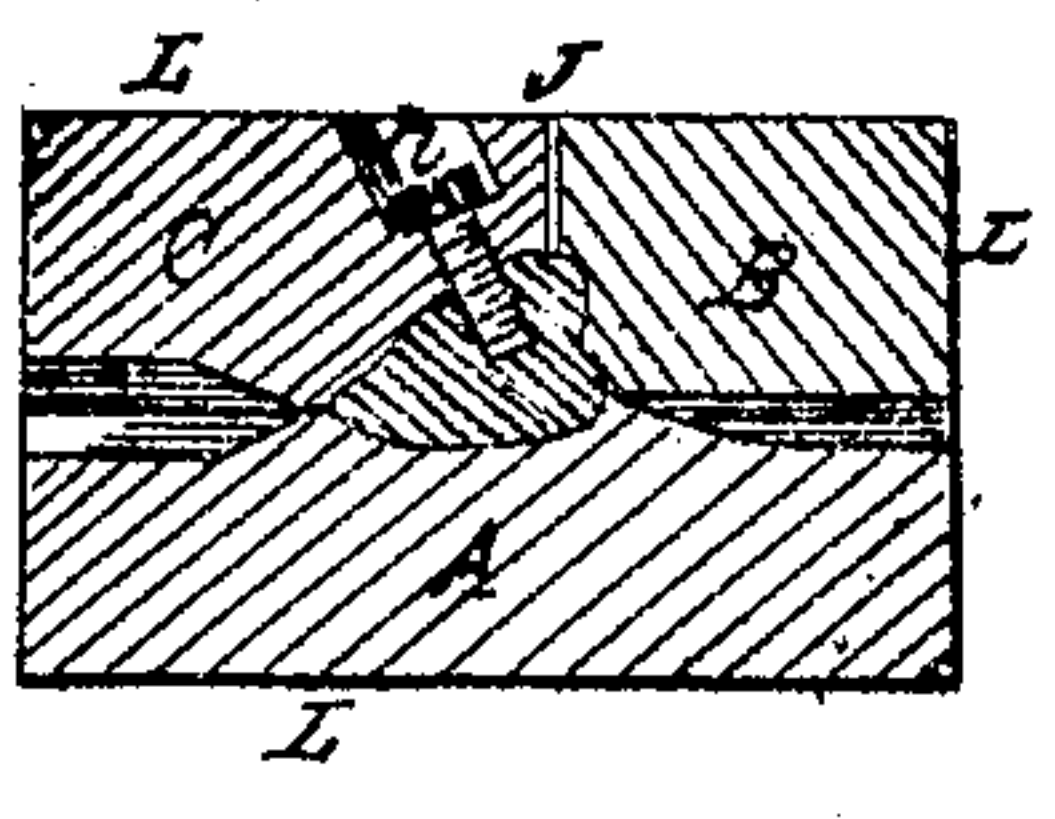


Fig 3



Witnesses.
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ALMAS A. KNOWLTON, OF ST. ALBANS, VERMONT.

Letters Patent No. 75,027, dated March 3, 1868.

IMPROVEMENT IN MOULD FOR ARTIFICIAL TEETH.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ALMAS A. KNOWLTON, of St. Albans, in the county of Franklin, and State of Vermont, have invented a new and improved Mould for Artificial Teeth; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a perspective view of my improved mould.

Figure 2 is a detail sectional view of the same, taken through the line *yy*, fig. 1.

Figure 3 is a detail sectional view of the same, taken through the line *xx*, fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved mould for forming artificial teeth, which shall be simple in construction, effective, and convenient in operation, and which will obviate the difficulties heretofore attending the moulding of artificial teeth; and it consists in dividing the back part of the mould into two parts, in the combination of screws with the back part of the mould, in the formation of holes for the platina pins, and in the combination of dowel-pins and screws with the parts of the mould, the whole being constructed and arranged as hereinafter more fully described.

A is the front part or half of the mould, which contains the forms of the labial and buccal sides of the teeth. B and C are the parts or pieces which together make up the back part or half of the mould, and which contain the forms of the lingual sides of the teeth. The pieces B and C are secured in place upon the front part A, when necessary, by the screws *d*, which pass through the said parts B and C, and screw into the said part A. *e* are dowel-pins to hold the pieces B and C in proper position upon the part A. *f* are pins which pass through the pieces B and C to hold them together when the mould is opened. *h* are screws which go through the part C into the inside of the mould to form the helical holes in the teeth.

The holes for the platina pins are formed in the bevelled edge of the piece C, as shown at the point K, in fig. 2, in such positions that the said platina pins when in the teeth may be at an angle of about twenty degrees or thirty degrees with the plane of the position of said teeth when in the mouth, so that the said pins may be set at such an angle as will increase the strength of the teeth. The screws *h* should be inserted in the piece C at an angle of about twenty degrees with the line of division J between the pieces B and C, and should enter the teeth about as far from the grinding-surface of said teeth as the platina pins are usually set. The screws *h* should have V-shaped threads formed upon them, making about twenty-five turns to an inch, should be about one-tenth of an inch in diameter for molars, and about one-twelfth of an inch for bicuspsids, and should penetrate the teeth about half way through. It is most convenient in practice to have two moulds for each set of teeth, one for the molars and bicuspsids, and the other for the canines and incisors. The division between the pieces or parts B and C should be about one-sixteenth of an inch from the grinding-surface of the molars, or about equally distant between the end of the tooth and the point where the screw *h* enters said tooth. The division between the parts B and C in the case of incisors should be about one-sixteenth of an inch from the holes for the platina pins, and on the side towards the points of said teeth. The hole in the part C, for the reception of the screws *h*, is bored through the part C from the inside of said piece; it is then reamed out or countersunk from the outside to within about an eighth of an inch from the inside, said countersink being of such a size as to receive the head of said screw. The remainder of said hole then has a screw-thread cut in it. The screws *d* go entirely through the mould, and are about one-sixth of an inch in diameter. The holes for the screws *d* are bored through the back pieces B and C, and about half through the part A. A smaller drill is then used, and a screw-thread is then cut in the smaller part of the holes. The pins *f* are made of wire, about one-eighth of an inch in diameter, pass horizontally through the pieces B and C near their ends, should closely fit the holes in which they are placed, and should have one of their ends bent to form a handle for convenience in handling them.

In using the mould, the back piece B is placed upon the front piece A, and secured in place by the screw *d*. The material for the point or crown of the tooth is put into the mould, then the yellow for the base, and lastly, the body. The piece C is then put on, pressed down, and secured in place without disturbing the material

for the crown and base of the teeth. The screws *h* are then turned forward until they penetrate the teeth to a sufficient depth, after which the pins *f* are put into their places to keep the pieces B and C in position when the mould is opened.

In taking teeth from the mould, the front part A is first removed, then the screws *h* are turned back out of the teeth, the pins *f* are then removed and the parts B and C separated: The teeth may then be removed with the fingers or by gently rapping the mould.

In making patterns for a mould, take patterns of such teeth as the mould is to contain, and arrange them upon softened wax with the crowns all in the same direction, with the lingual sides up, and so that a straight line will cross each tooth at the point where the line of separation between the pieces B and C is to be, which is near the point where the platina pins are usually set, and upon the side of said points towards the points or crowns of said teeth. The indentations in the crowns of the molars and bicuspid's should be covered over with wax, so that they may be removed from the back part of the pattern. The front and back patterns are then made in the same manner as for common moulds. The back piece or pattern is then removed, (leaving the teeth in the front pattern,) and the side in which the crowns of the teeth are is planed down to the line J of division between the parts B and C, thus forming the part C of the pattern. The part C is then returned to its place upon the front piece, the wax removed from the crowns of the molars and bicuspid's, the crowns of the teeth and the surface of the plaster are varnished to prevent adhesion, and the part planed away is again filled with plaster, thus forming the piece B. It is advisable to form V-shaped grooves or notches in the front part A, and have them filled from the back parts B and C, as seen at *i*, fig. 1, as it will assist in adjusting the pieces after they have been separated, and will also facilitate the finishing of the mould. The patterns should be so shaped that they can be drawn from the moulding-sand when the withdrawing-tool is inserted in the sides marked L in fig. 3.

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

1. Forming the back part of the mould in two pieces B and C, the division-line being located substantially as herein shown and described, and for the purpose set forth.

2. The combination of the screws *h* with the back part C of the mould; substantially as herein shown and described, and for the purposes set forth.

3. Forming the holes for the platina pins in plain incisors and canines in the bevelled edge of the part C, and at an angle of twenty degrees or thirty degrees with the plane of the position of said teeth when in the mouth, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the screws *d* with the parts B, C, and A, of the mould, substantially as herein shown and described, and for the purpose set forth.

5. The combination of the pins *f* with the parts B and C of the mould, substantially as herein shown and described, and for the purpose set forth.

ALMAS A. KNOWLTON.

Witnesses:

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J. H. LEONARD.