

A.A. Blandy.
Casting Plates for Artificial Teeth.
Nº 16708. *Patented Mar: 3. 1857.*

Fig: 5.

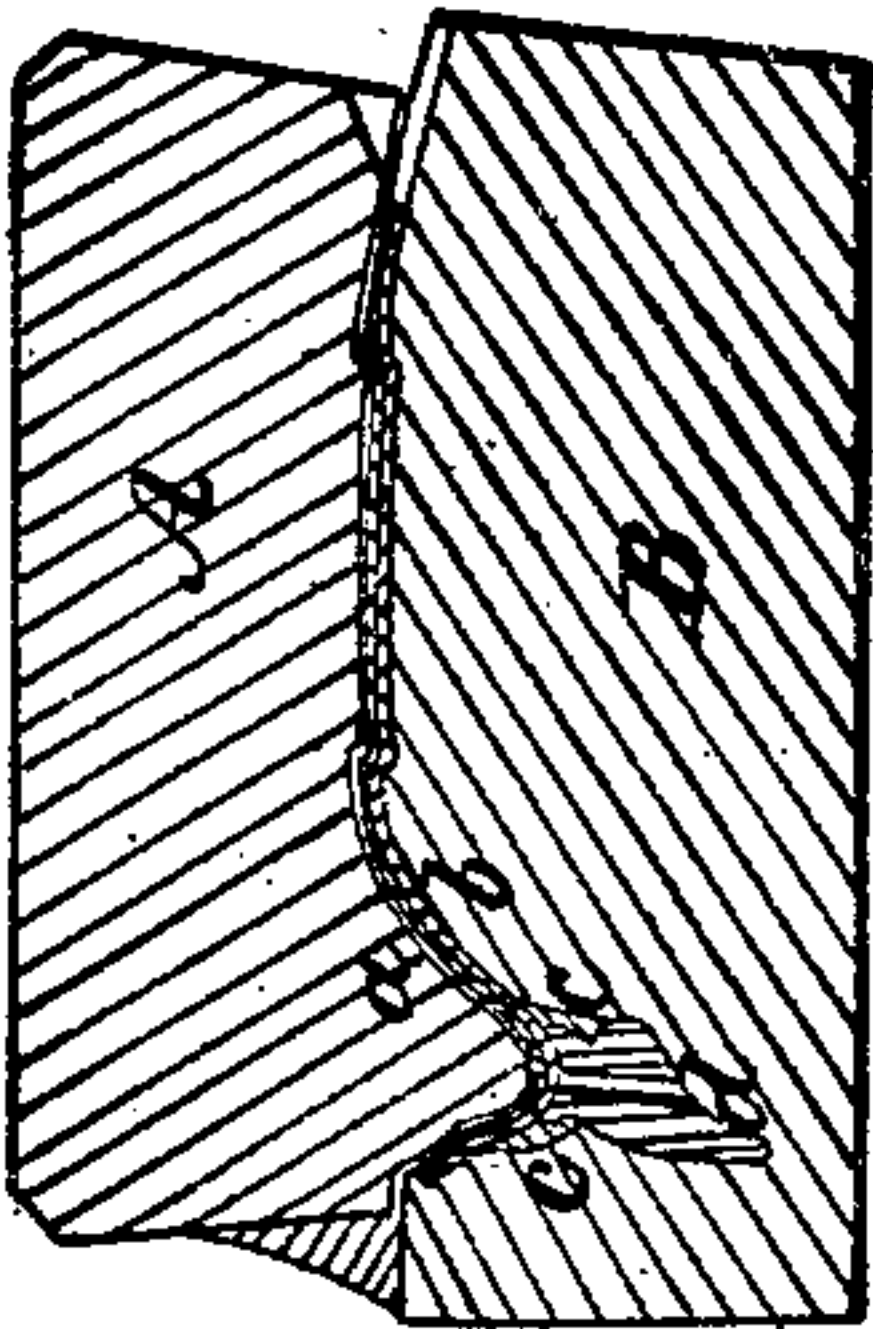


Fig: 3.

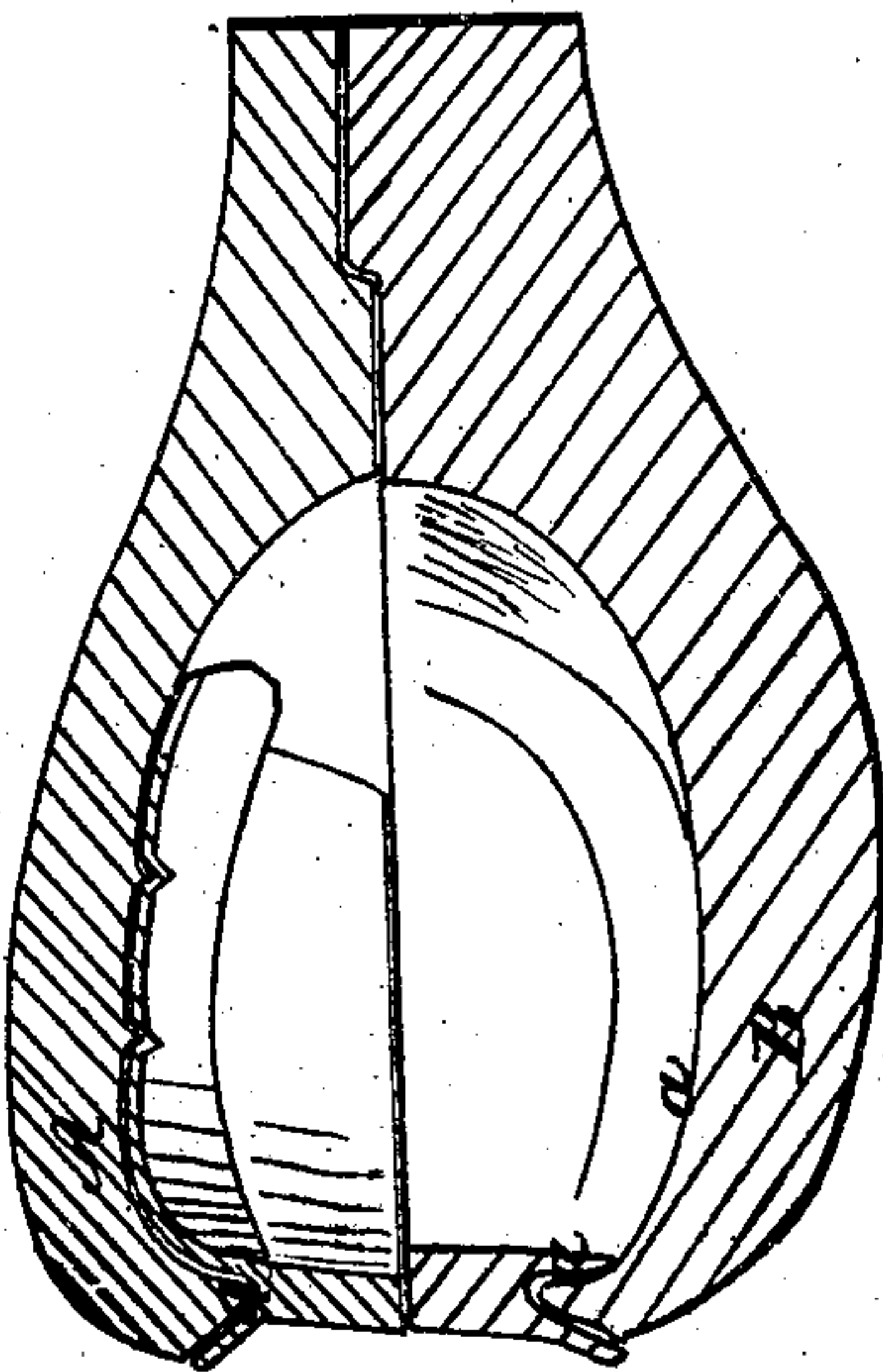


Fig: 6. w

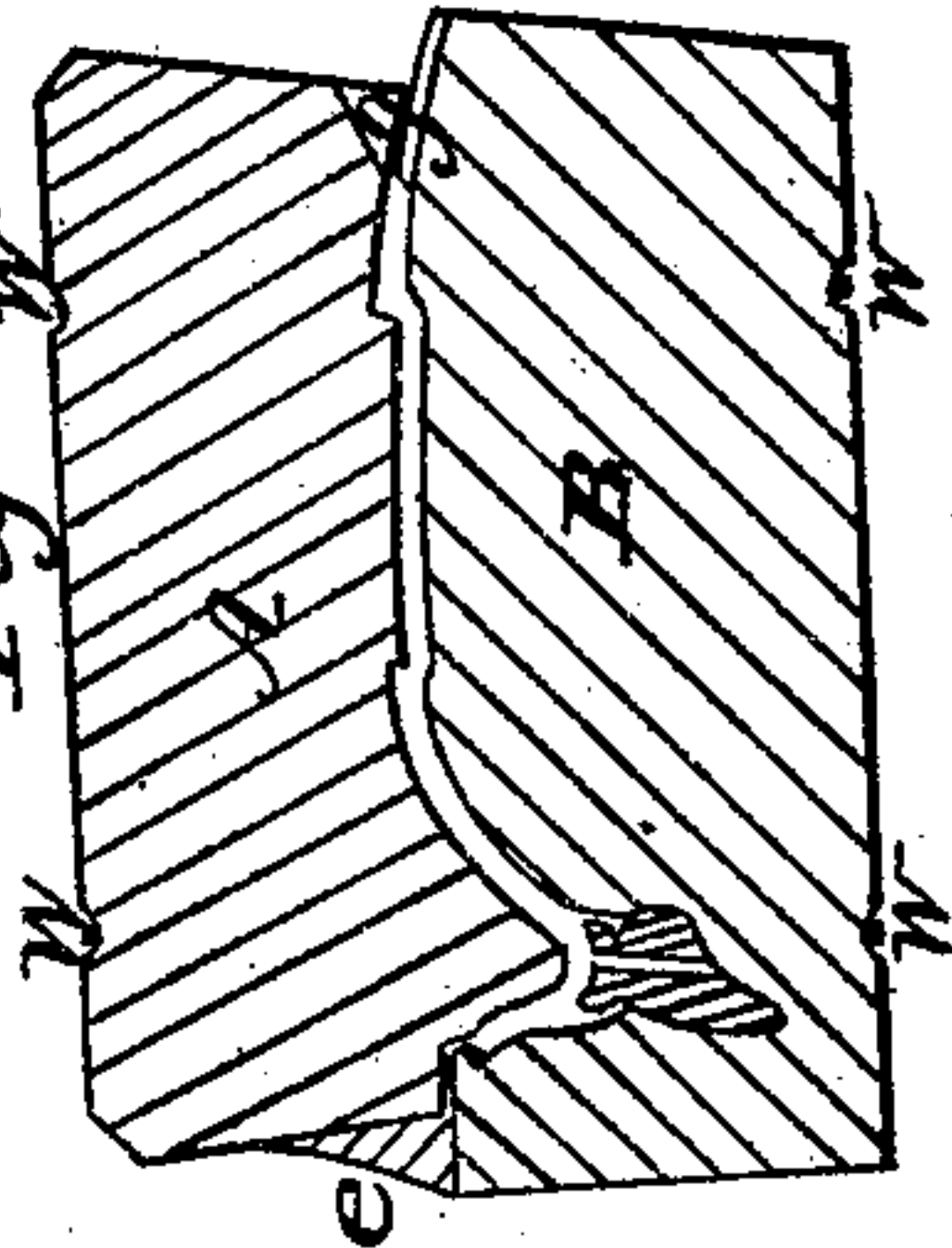


Fig: 2

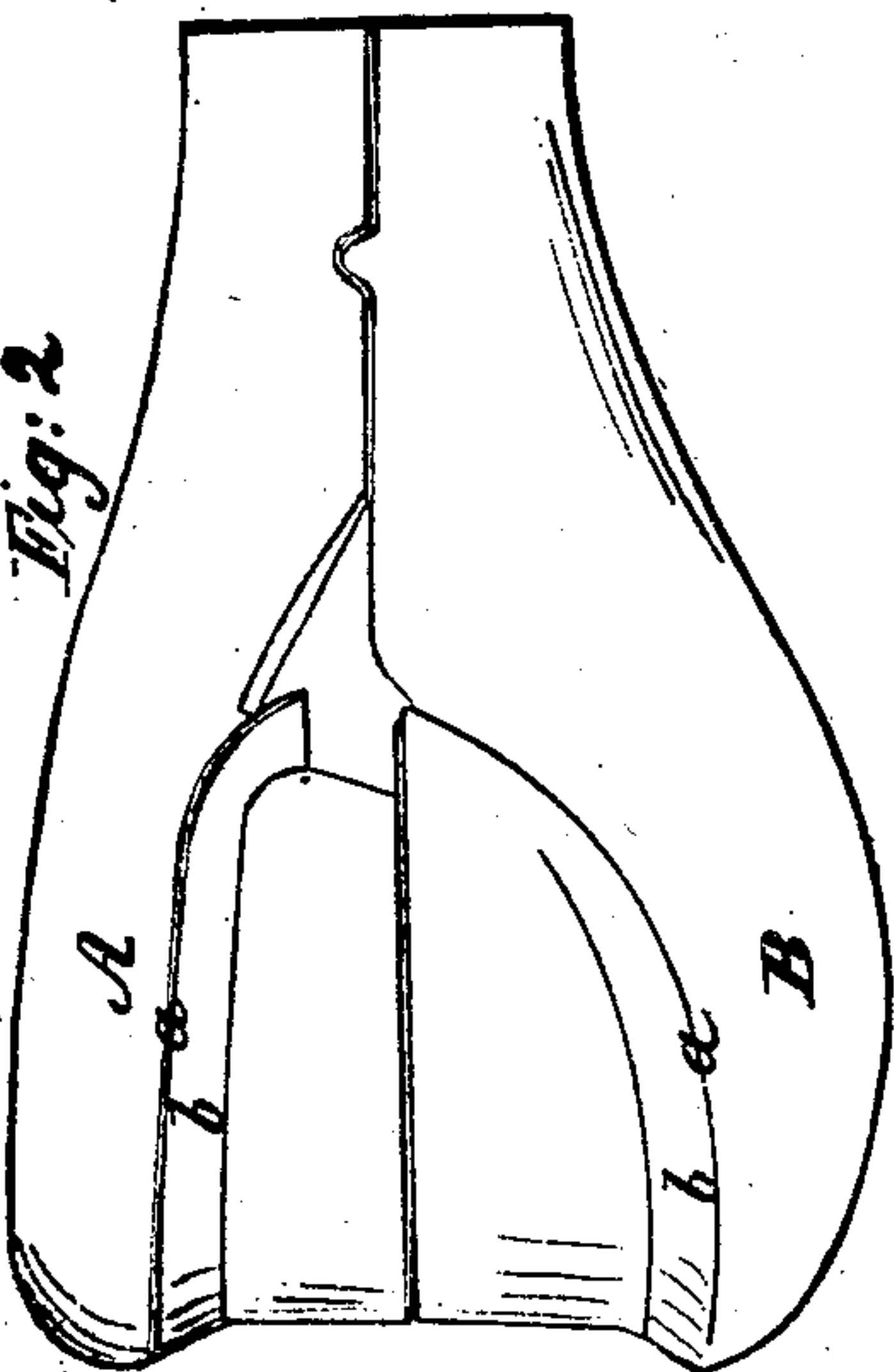


Fig: 1.

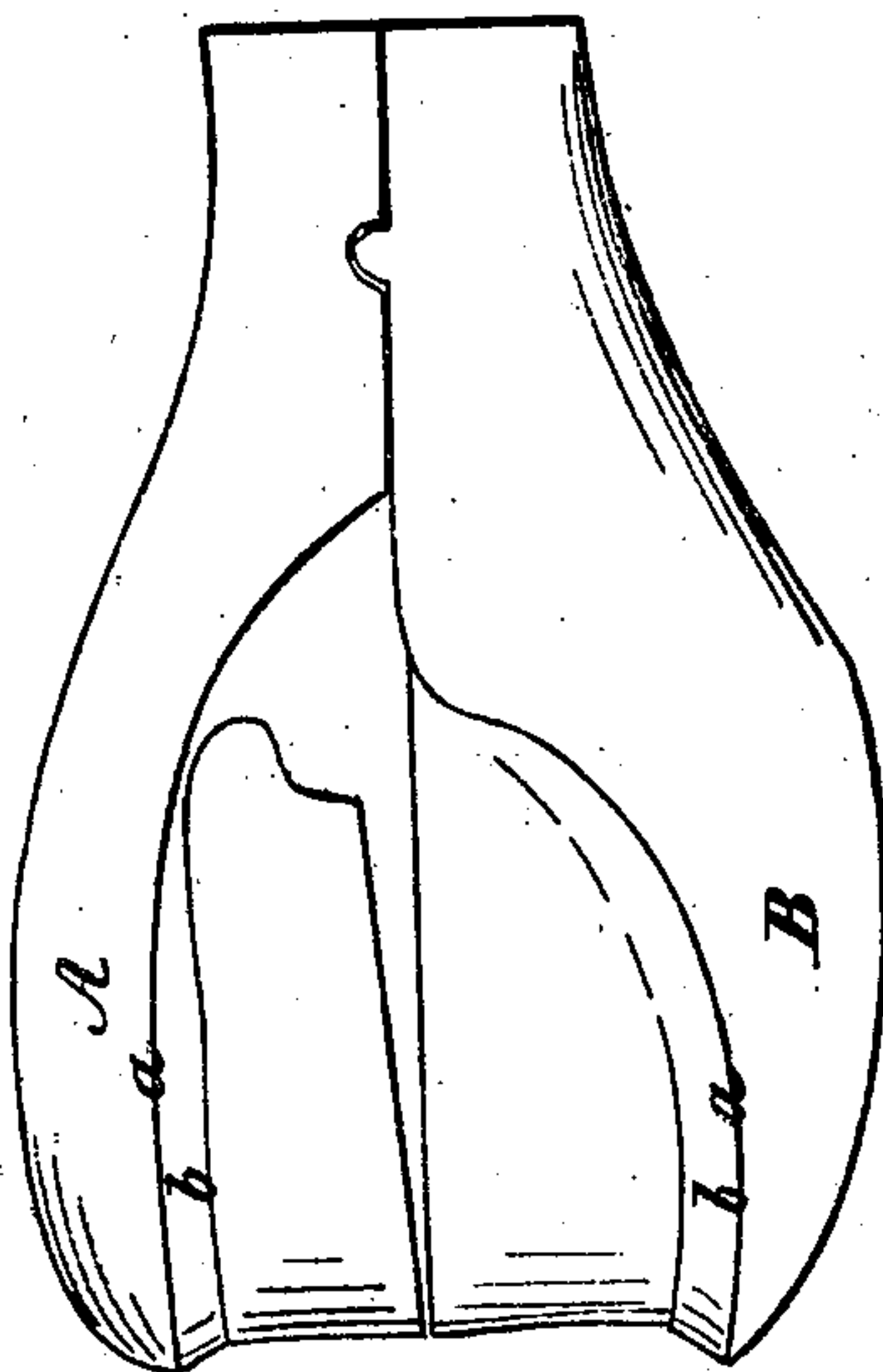


Fig: 4.



UNITED STATES PATENT OFFICE.

ALFRED A. BLANDY, OF BALTIMORE, MARYLAND.

CASTING PLATES FOR ARTIFICIAL TEETH.

Specification of Letters Patent No. 16,708, dated March 3, 1857.

To all whom it may concern:

Be it known that I, ALFRED A. BLANDY, of the city of Baltimore, in the State of Maryland, have invented a new and useful
5 Improvement in the Process of Molding the Plates of Artificial Teeth, of which the following is a full and accurate description, reference being had to the accompanying drawings, in which—

10 Figures 1 and 2 represent side elevations of a jointed plastic cast technically termed the "articulator", the front half of which may be taken to represent the upper and lower jaw during my process, preparatory to the adjustment of the teeth thereon.
15 In Fig. 1, the wax rim is represented as being too long in front and in Fig. 2, as properly trimmed. Fig. 3, represents a vertical longitudinal section of Fig. 2; and
20 Fig. 4, a similar view of the upper plate and upper half of the articulator, after the teeth have been adjusted and the wax reduced to the proper shape and thickness preparatory to molding. Fig. 5, represents a vertical
25 longitudinal section (through a central incisive tooth) of the molding flask, with the teeth and pattern plate inclosed; and Fig. 6, a similar view of the same with pattern plate removed and prepared for pouring the
30 metal.

The object of my invention is to obtain an accurate fit of the dental plate to the gums, and a correct articulation of the teeth, upon casting; by which the tedious, and laborious process heretofore used for this purpose are dispensed with.

To enable others skilled in the art to make and use my invention, I will now proceed to describe it in detail.

40 An "impression" of the mouth being obtained, as in other processes, a "cast" is taken therefrom which subsequently forms one half (A, Figs. 5 and 6,) of the molding flask. Upon this cast a pattern plate
45 *a, b* (made of rolled wax 1-30 to 1-50 of an inch thick and lined on the side next the cast with metallic foil 1-200 to 1-300 of an inch thick) is carefully pressed and trimmed to the required shape, and a rim (*c*) of wax
50 about $\frac{1}{4}$ of an inch wide placed upon the alveolar ridge of the same. The process is repeated for the lower jaw, in cases of entire loss of teeth; both plates, with their wax rims, are then introduced in the mouth
55 (Figs. 1,) and the wax trimmed until the two rims touch at all points (Fig. 2,) due

attention being had to the correct closure and proper spacing of the jaws—points essential to the natural appearance of the artificial teeth, as also to their comfort and
60 utility. The two plates, while thus in the mouth, are so marked upon their wax rims, that when withdrawn they may be replaced in precisely the same relation; the double
65 cast technically termed the "articulator" (Fig. 2,) is then formed upon them, preparatory to the adjustment and arrangement of the teeth upon the rim of wax (*c*), which adjustment will require the removal,
70 more or less completely of said wax rims; the plates being held meanwhile securely in proper position by the "articulator."

By this process the plate adapts itself with unerring accuracy to the teeth, whereby I am saved the great expenditure of time and
75 patience necessary in the articulation of teeth by other methods, where each tooth requires to be ground to fit the plate. The teeth having been arranged, they are, for greater security, again tried in the mouth,
80 and any slight changes necessary made. After which all superfluous wax is removed leaving only so much as is designed to be replaced by metal, to secure a plate of proper thickness and a firm retention of the
85 teeth.

Fig. 5, represents in section the upper pattern plate (*a—b*) which if made rightly at first and carefully handled, will require no further alteration. (*c—c*) same figure
90 shows the wax added around the teeth, which, when replaced by the metal will secure for them a strong attachment to the plate and give to teeth thus mounted a superior cleanliness. The wax having been
95 properly smoothed and the slightest change in the teeth carefully avoided, the pattern plate is placed upon the original cast (Fig. 5 A,) and the other half of the matrix made by pouring the composition over it; in doing
100 which, care must be had to fill every crevice between the teeth, not occupied by wax. When hardened, the two parts of the matrix are separated and the foil and wax removed, disregarding minute portions of the latter,
105 which the heated matrix will absorb. A gate (*g*, Fig. 6,) is then cut to give free access to the metal, with suitable vents whenever required for the escape of air during the act of casting; after which the matrix
110 (Fig. 6,) is closed and secured firmly with binding wire (*w*) and the joint luted with

composition (*e*) similar to the matrix, except on the end containing the gate. The matrix is then subjected for two or three hours to a dry heat ranging from 250° to 5 350° Fahrenheit, which drives off the moisture (which otherwise would interfere with the flow of the melted metal) and absorbs the small portions of wax which it may have been tedious or impossible to remove; 10 and by gradually heating the teeth, renders it impossible for the metal to fracture them as so often happens under other processes. The manipulations are substantially the same for the different varieties of artificial 15 work required, and do not demand any separate description.

It may here be observed that for the perfect development of my invention, there are two conditions requisite—first, a metal that

practically will not shrink or expand on 20 cooling after being cast. And second, a matrix formed of a composition that will not expand when heated or shrink when cooled, or vice versa.

Having thus described my improvement, 25 what I claim as new and desire to secure by Letters Patent is—

Molding the plates of artificial teeth in such manner as to obtain a perfect fit to the gums and a correct “articulation” of 30 the teeth upon the casting, as set forth.

In testimony whereof I hereunto set my hand this 11th day of Decr., 1857.

ALFRED A. BLANDY.

Witnesses:

P. HANNAY,
WM. R. SMITH.