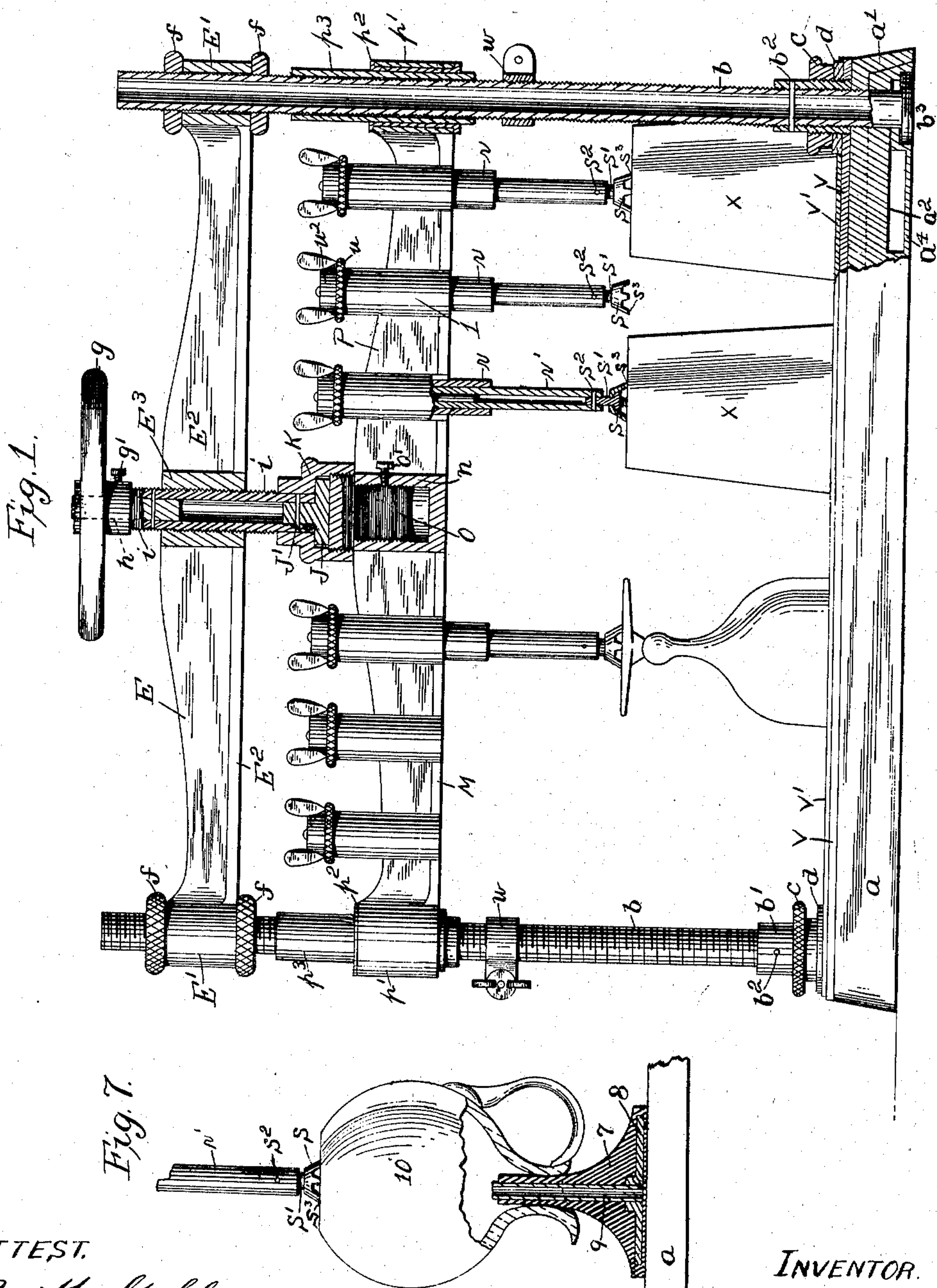


F. G. FARNHAM.  
 DEVICE FOR DIPPING OUT GLASS ARTICLES.  
 APPLICATION FILED FEB. 20, 1909.

967,119.

Patented Aug. 9, 1910.

3 SHEETS—SHEET 1.



ATTEST.  
 Bent M. Stahl  
 Edward H. Sartor

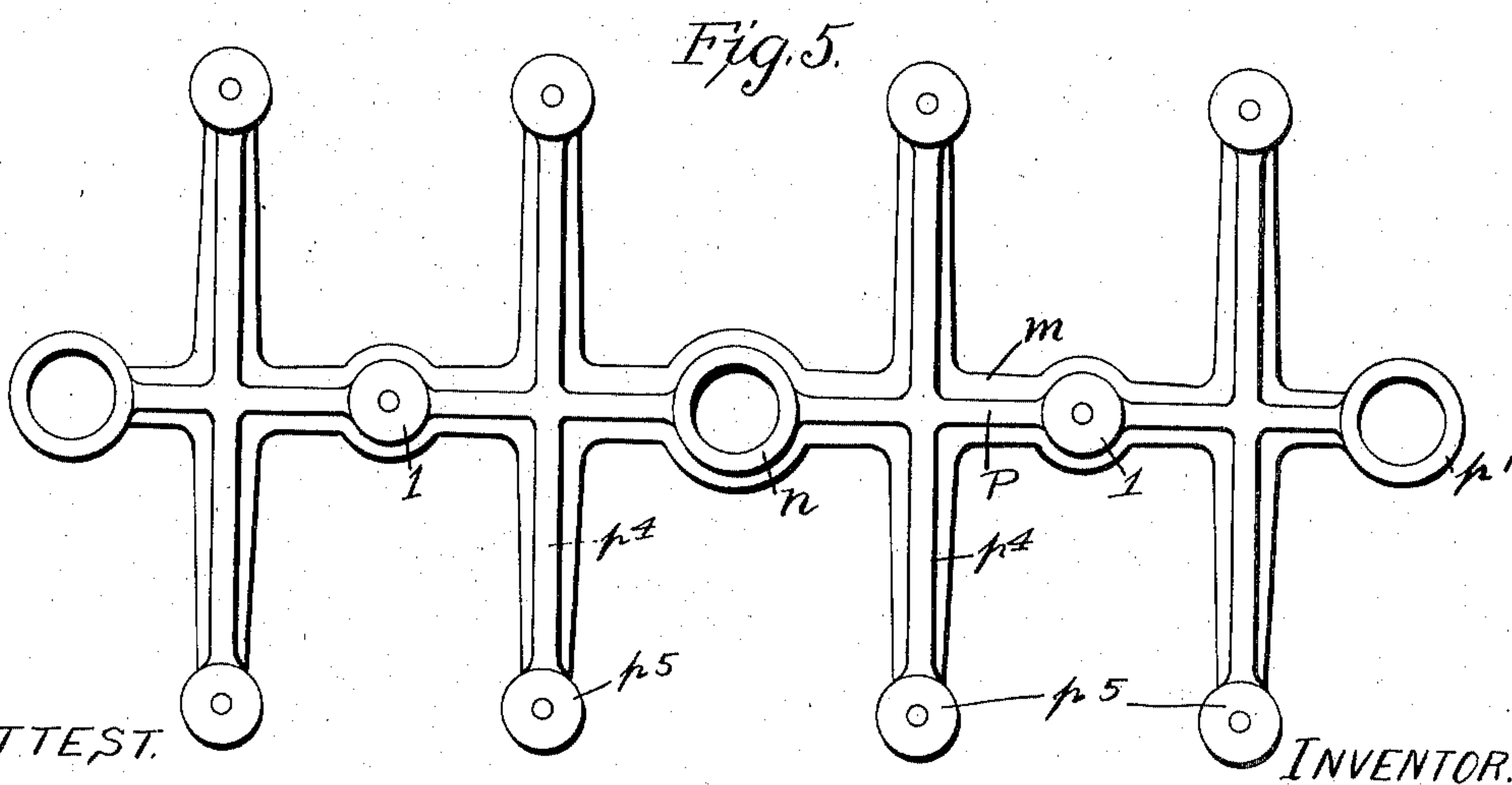
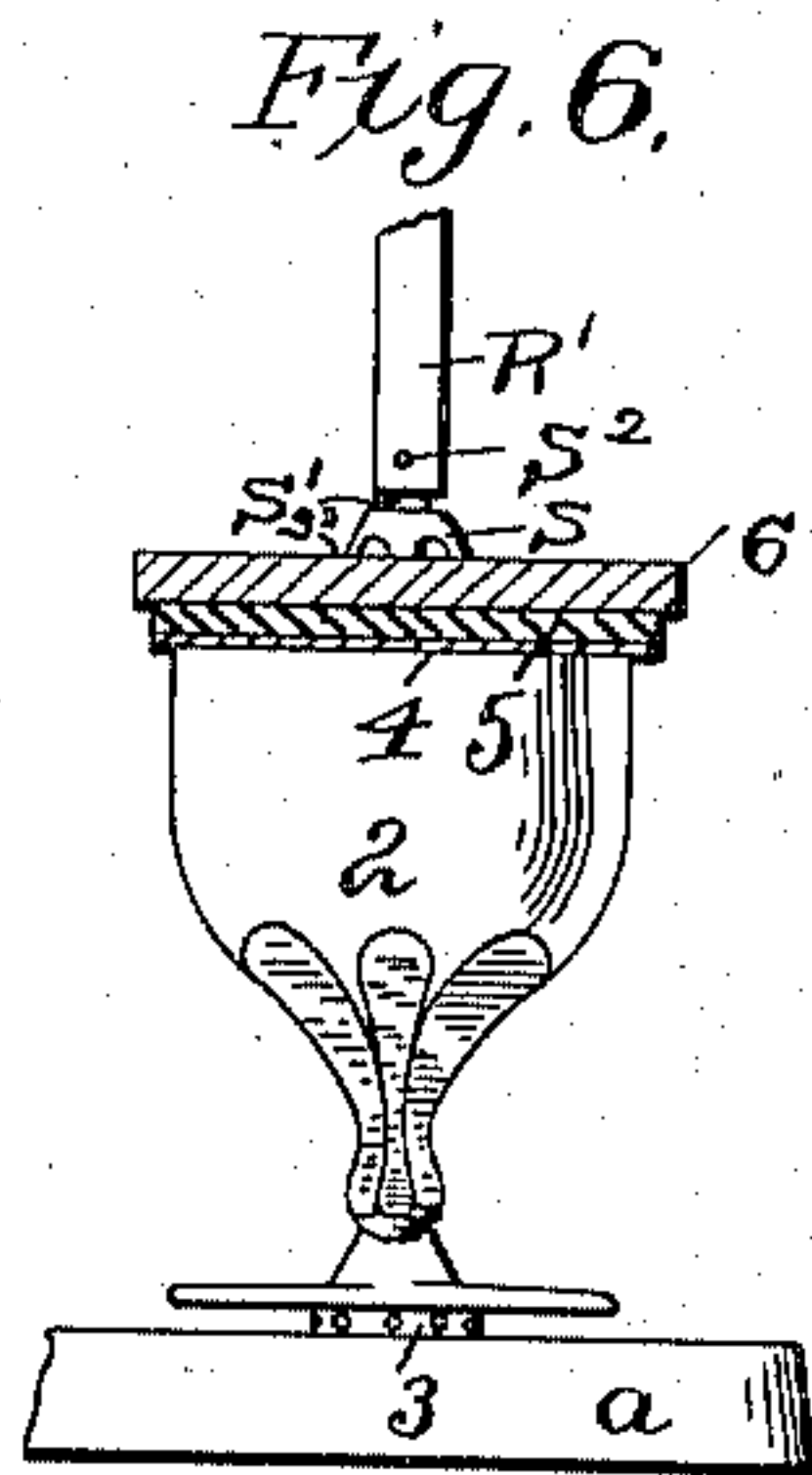
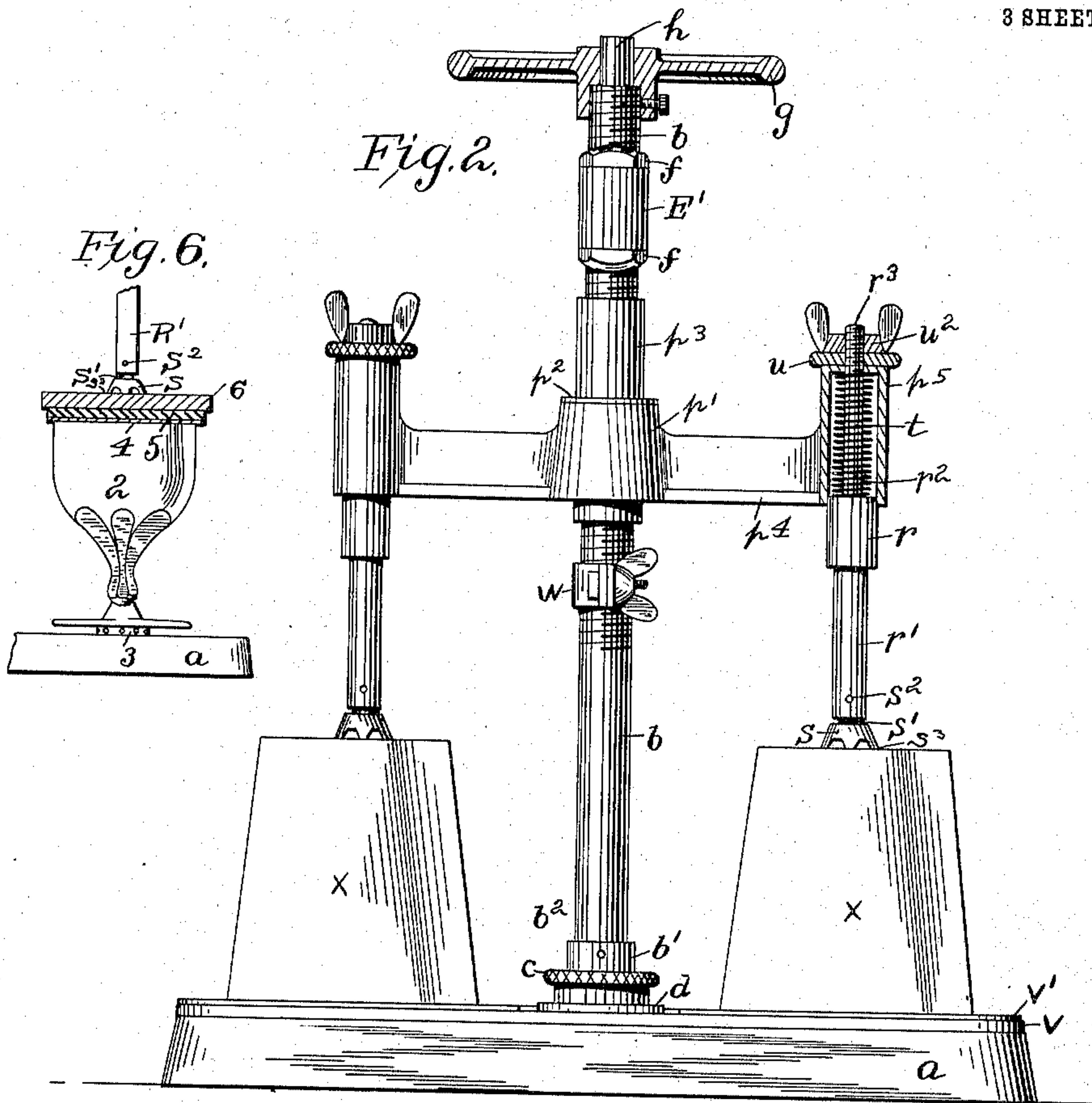
INVENTOR.  
 FRANK G. FARNHAM.  
 By *Officer Middleton Donaldson*  
 ATTYS.

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3 SHEETS—SHEET 2.



ATTEST.

Bent. M. Stahl.  
 Edward M. Sutton

INVENTOR.

FRANK G. FARNHAM.

By *John Middleton Donahoe* for  
 ATTY'S.



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3 SHEETS—SHEET 3.

Fig. 3.

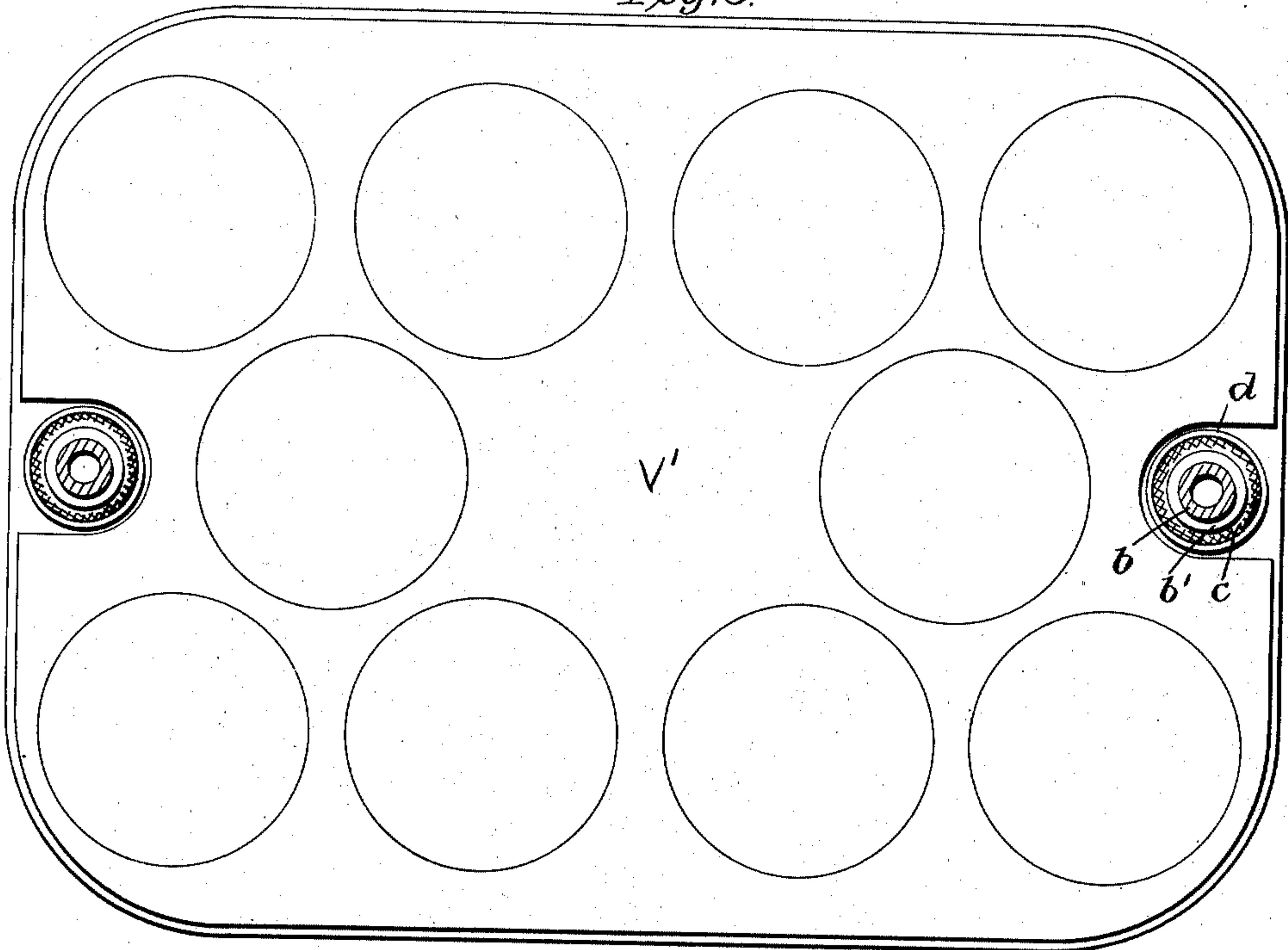
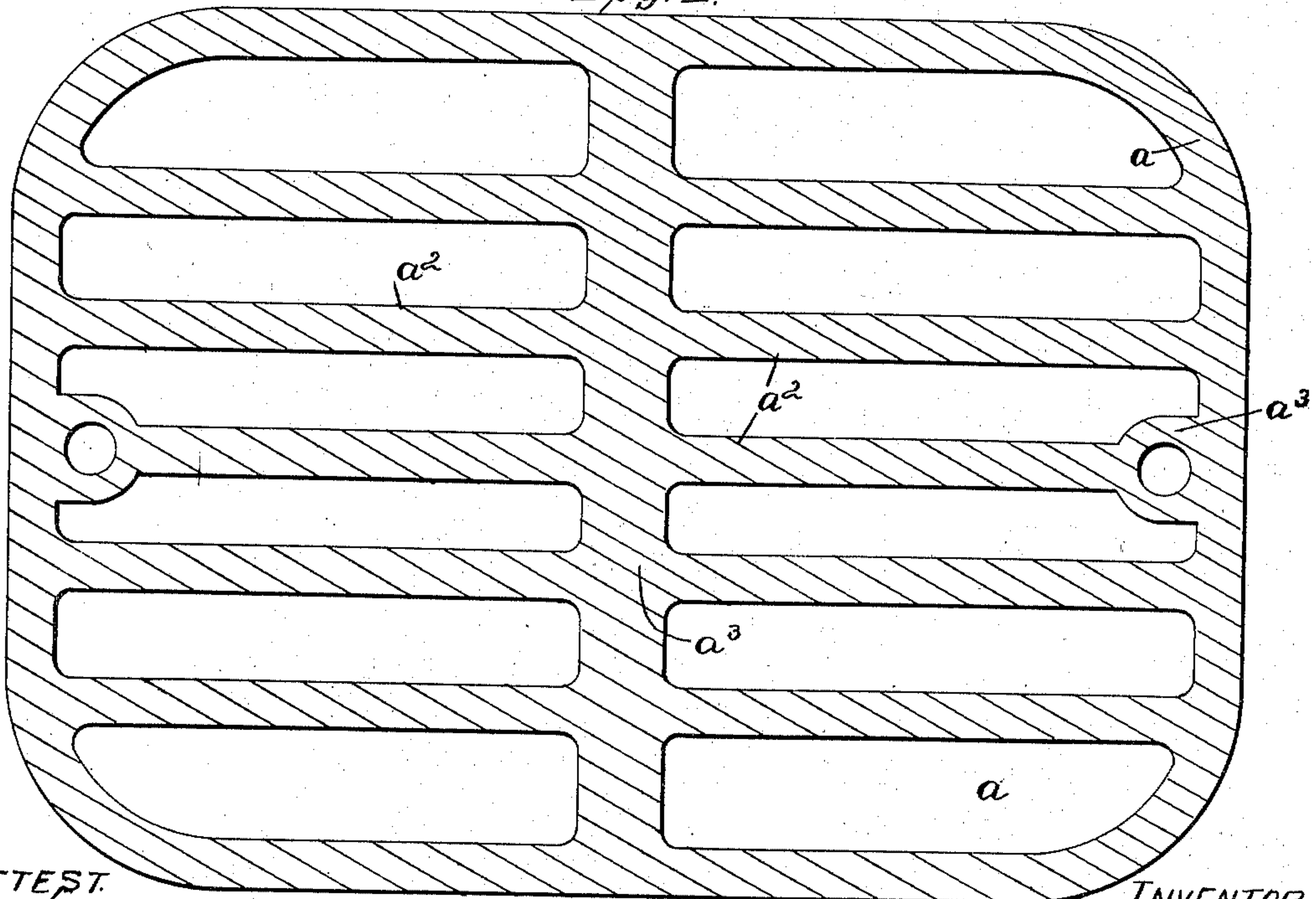


Fig. 4.



ATTEST.  
 Bent M. Stahl.  
 Edward H. Sutton

INVENTOR.  
 FRANK G. FARNHAM.  
 BY *John Middleton Donaldson*  
 ATTYS.



# UNITED STATES PATENT OFFICE.

FRANK GUNN FARNHAM, OF HONESDALE, PENNSYLVANIA.

DEVICE FOR DIPPING CUT-GLASS ARTICLES.

967,119.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed February 20, 1909. Serial No. 479,116.

*To all whom it may concern:*

Be it known that I, FRANK GUNN FARNHAM, citizen of the United States, residing at Honesdale, Pennsylvania, have invented certain new and useful Improvements in Devices for Dipping Cut-Glass Articles, of which the following is a specification.

My invention relates to devices for dipping cut glass articles in an acid bath, and is designed as an improvement upon the apparatus which forms the subject of Letters Patent of the United States granted to J. J. McCue, Jr., November 29, 1904, #776343.

In devising the present invention I have aimed to provide a simple and economical device which will handle a large number of articles at one time, in which all the articles for one dipping may be simultaneously clamped or released, the clamping and releasing quickly effected, and all necessary adjustments be either automatically or easily made.

The invention comprises the novel features of construction and arrangement and combination of parts hereinafter described and particularly set forth in the appended claims.

A device constructed in accordance with my invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation; Fig. 2 is an end elevation of same; Fig. 3 is a plan view of a hard rubber bed; Fig. 4 is a plan view of the under side of same; Fig. 5 is a plan view of a pressure bar for doing ten articles at one time 3 inches in diameter or under. Figs. 6 and 7 are detail views.

Referring to Fig. 1, *a* is a bed plate made preferably from hard rubber of suitable thickness with a rim or flange *a'*, and strengthened by ribs or flanges *a''*. As shown in Fig. 4, the central longitudinal rib is enlarged as shown at *a<sup>3</sup>* to receive at or near each end a hollow metal stud *b*. The ribs are preferably covered by a thin surface plate *a<sup>4</sup>* affording a smooth surface for the draining off of the acid. The bases of these studs are threaded into the bed and held by nuts *b<sup>3</sup>*. A collar *b'* is soldered to the lower end just above the threaded part and, as an added security, a pin *b<sup>2</sup>* is used. The lower end of tube *b* is closed by a plug not shown. The lower end of collar *b'* is threaded to receive a hand nut *c*, and below this is a washer *d*. A pad of soft rubber *v*

corresponding in size to the bed *a* is laid onto the upper face of the bed, the ends being slotted and punched to fit around the posts. The pressure at these two points of the washer *d* and the nut *c* retains this pad in position. When the articles are in position for dipping, the combined pressure keeps the acid from entering under the pad *v* excepting a very small quantity. The object is to prevent waste of acid by carrying an excess of acid out of the bath, and in washing off after dipping in carrying back into the bath an excess of water which would weaken the solution.

The tubular members *b b* are threaded for about one-half their length from the top, and adapted to slide up and down on these members is an aluminum fulcrum bar *E*. This bar is enlarged at each end *E'* to slide on the tubes *b b*, and is held in any fixed position determined by the requirements by the nuts *f f*. The center *E<sup>2</sup>* of the bar is strengthened by a lug or boss *E<sup>3</sup>* which is threaded to receive the threaded tubular member *i*. A solid plug *h* is soldered or otherwise secured into the upper end of the member *i*, and to this is fastened by the set screw *g'* the hand wheel *g*. To the lower end of the member *i* is soldered and pinned by pin *J'* the flanged lug *J*. A collar *K*, preferably of aluminum, is rotatably carried by the lower flanged part *J*, and the lower inside edge of the collar *K* is threaded to fit the metal screw plug *o* which is correspondingly threaded on its enlarged upper end. Between the fulcrum bar *E* and the bed *a* is another horizontal bar *P* also preferably made from cast aluminum. This bar is a pressure bar and is adapted to slide up and down on the tubular members *b b*. The ends *p'* are enlarged and are bushed with a harder metal bushing *p<sup>2</sup>* to which are secured other guiding bushings *p<sup>3</sup>* which prevents the bar from tilting or binding when being forced up and down. This bar *p* has a strengthening flange or rib *m* and an enlarged central part *n* into which is screwed the flanged headed screw plug *o*. This longitudinal pressure bar *p* is also widened at its center to gain strength where the pressure from the hand wheel *g* is applied. The screw *o*, after being screwed down, is held by a set screw *o'*. The cap *K* is then screwed down holding the tubular member *i* and the head of the lug *J* rotatably between it and



the head of  $o$ . The hand wheel both lifts and pushes the pressure bar  $p$  by actuating it either to the right or left.

On the bar  $p$  and preferably cast integral therewith is a series of cross bars  $p^4$ —see Figs. 2 and 5—and at each end of these is a lug  $p^5$  extending upward a suitable distance. These lugs are cored or bored from the bottom side to near the top end to allow a tubular member  $r$  to reciprocate therein. The member  $r$  carries another depending tubular member  $r'$  which is smaller in diameter. The lower end of the member  $r'$  is closed by a flanged headed plug  $s'$  and free to play on this plug is a concaved metal button  $s$ . The plug  $s'$  is soldered into the lower end of the member  $r'$  and additional security by the rivet  $s^2$ . The flange of the button  $s$  has openings sawed across its edge  $s^3$  to allow the free entrance of acid when pressing down the glass article. Into the upper end of  $r'$  is soldered the metal rod  $r^2$ , the upper end  $r^3$  passing through a hole in the top of the casting  $p^4$ . A nut  $u$  is threaded onto its upper end and an additional lock nut  $u^2$  is provided to hold it in position. A coiled spring  $t$  of sufficient strength and tension to force the rim of the article into the rubber pad hard enough to keep out the acid is provided, encircling the rod  $r^2$ , and this also allows for variation in the length of the articles. When the pressure plate  $p$  is intended to do ten pieces at one time, two of these hollow parts are formed along the central or main plate as at 11, see Fig. 5. A threaded split clamping collar  $w$  is provided on each upright, which may be set at the proper point on the tubular members  $b$   $b$ . These act as safety stops, and prevent an excess of pressure by the hand wheel on the articles when screwing down the pressure plate  $p$ . Two tumblers, for example, are shown in position  $x$   $x$  ready to be held by screwing down the hand wheel  $g$ . While the pad  $v$  is fixed in position for a day's use, in addition thereto I may provide a loose sheet of very thin flexible rubber  $v'$ , better known as dental dam, used by dentists. When I use one thick pad only I provide say ten or more of these thin loose sheets, removing the auxiliary sheet each time, one filling of say ten tumblers is finished. This thin auxiliary sheet is hung up to dry, and another substituted, thus always preventing the mouth of the article from coming in contact with anything but a dry and clean surface. I find these sheets will dry out in about twenty minutes in ordinary temperatures, 75° F. These auxiliary sheets range in size the same as the large thick pad  $v$ , but are notched out at the ends to lie freely over the washer  $d$ . The pressure plate  $p$  may be removed at any time and another one substituted having more or less spring fingers. The design herewith shown being

adapted to do 4—6—8 or ten pieces at one time 3 inches in diameter or under without change, see Fig. 5. The same bed will only do six pieces 4 1/2 inches in diameter, using a different pressure plate. Larger pieces may be manipulated or dipped by using a hard rubber bed adapted for this size.

When operating this device, the articles are placed in position with the thin rubber sheet intervening between them and the thick sheet, the pressure plate being set with the button on the spring fingers about one-quarter inch from the bottom of the inverted article to be dipped. The hand wheel  $g$  is then turned, the bar  $E$  acting as a fulcrum. This turns the threaded member  $i$  and the flanged plug  $J$ , forcing down the pressure plate  $p$  and with it the spring fingers. When the buttons  $s$  touch the bottom of the articles, the springs  $t$  are contracted, and since the springs are of sufficient power, the mouths of the articles are forced down onto the rubber sheet with sufficient strength to close them and prevent the ingress of any acid to the interior, the threaded wing clamps being previously set in the right position to insure against over pressure and the breaking of the glass. Reversing the hand wheel releases the articles; the auxiliary sheet  $v'$  is removed, and another one substituted, and the process is repeated.

I claim as my invention:—

1. A portable implement for dipping cut glass articles, comprising a supporting plate having a cushioned surface, a pressure bar adjustably carried above the plate, with means for operating the same, and a series of independently yieldable clamping members carried by the bar, substantially as described.

2. A portable implement for dipping cut glass articles, comprising a supporting plate, standards rising therefrom, a pressure bar movably guided by said standards, a stationary bar carried by the standards, independently yieldable clamping devices carried by the pressure bar, and means interposed between the stationary bar and pressure bar for moving the latter vertically, substantially as described.

3. A portable implement for dipping cut glass articles, comprising a supporting plate, standards rising therefrom, a pressure bar movably guided by said standards, a stationary bar carried by the standards, independently yieldable clamping devices carried by the pressure bar, means interposed between the stationary bar and pressure bar for moving the latter vertically, and adjustable stops on the standards for limiting the downward movement of the pressure bar, substantially as described.

4. In combination a base or supporting plate, standards rising therefrom, a vertically movable pressure bar guided by said



standards, a stationary bar carried by the standards, an operating screw journaled in the stationary bar and having swiveled connection with the pressure bar, and a series of  
5 independently yieldable clamping devices carried by the pressure bar, substantially as described.

10 5. In combination a base or supporting plate, standards rising therefrom, a pressure device carried by the standards and including clamping members for the articles to be carried, and a yielding surface against which the articles are to be clamped, comprising a main cushion pad and a relatively thin auxiliary cushion, substantially as described.

20 6. In combination a supporting plate having a cushion surface, standards rising therefrom, a vertically movable pressure plate guided by said standards, a normally stationary bar also carried by the standards, means whereby said normally stationary bar may be adjusted to different elevations, means carried by the normally stationary bar for imparting vertical movement to the  
25 pressure bar, and a plurality of yielding clamping devices carried by the pressure bar, substantially as described.

7. In combination a base or supporting plate, standards rising therefrom, a pressure

bar guided by said standards and having a 30 plurality of tubular sockets, clamping devices yieldably held in said sockets, and means for imparting vertical movement to said pressure bar, substantially as described.

8. In combination a base or supporting 35 plate, a pressure bar supported above said plate with means for moving it toward and from the same, means carried by the pressure bar for bearing against the bottom of a glass article, and a yielding pad for the support- 40 ing plate comprising a main cushion pad and a relatively thin easily removable auxiliary cushion pad, substantially as described.

9. In combination a base or supporting 45 plate, a pressure member with means for moving it toward and from the base to clamp a cut glass article therebetween, and a yielding pad between one of said elements and the article for closing the mouth of the article, said surface comprising a main relatively 50 thick cushion pad and a relatively thin auxiliary cushion pad, substantially as described.

In testimony whereof, I affix my signature in presence of two witnesses.

FRANK GUNN FARNHAM.

Witnesses:

ROBT. A. SMITH,  
M. J. HANLAN.