

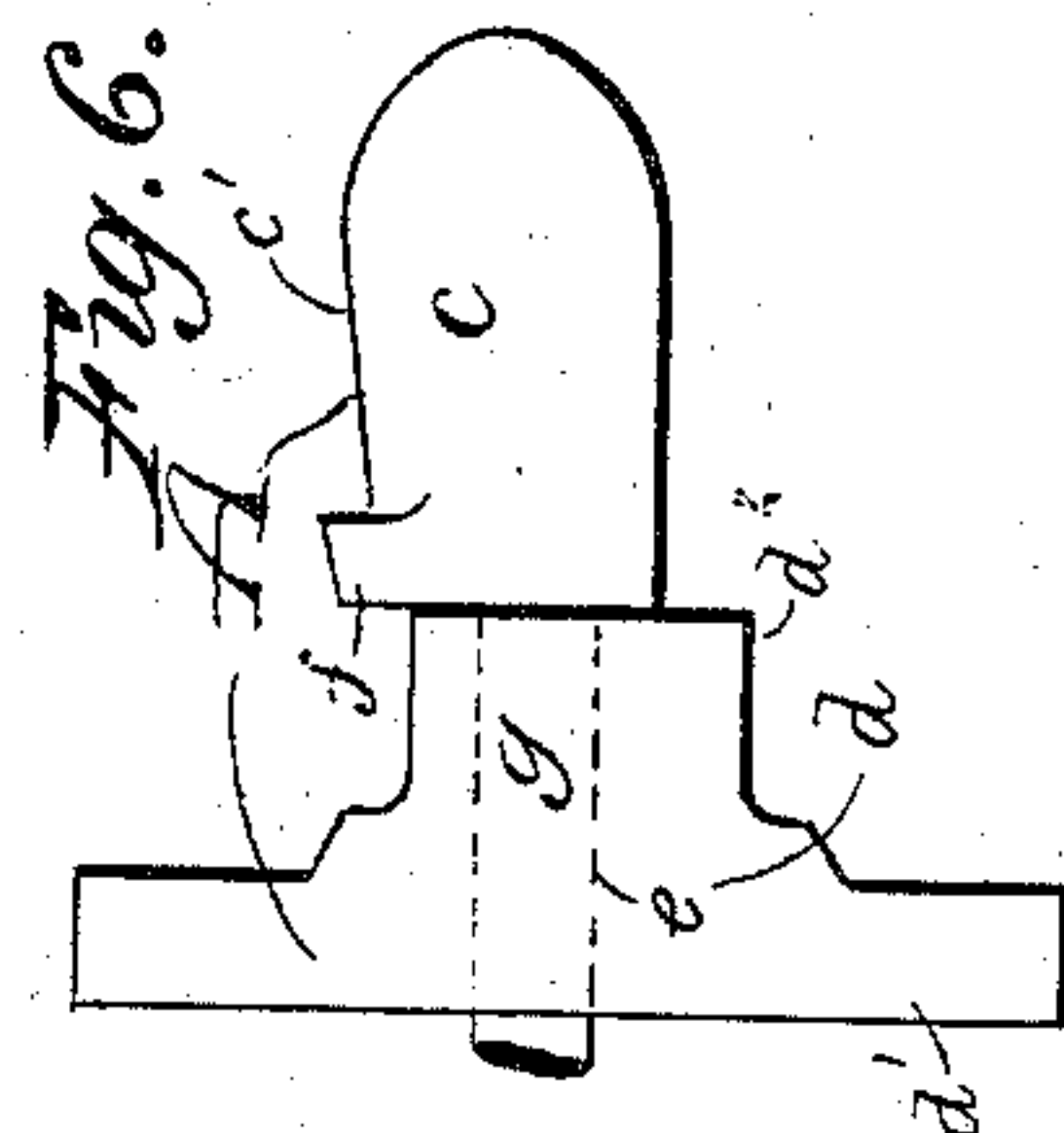
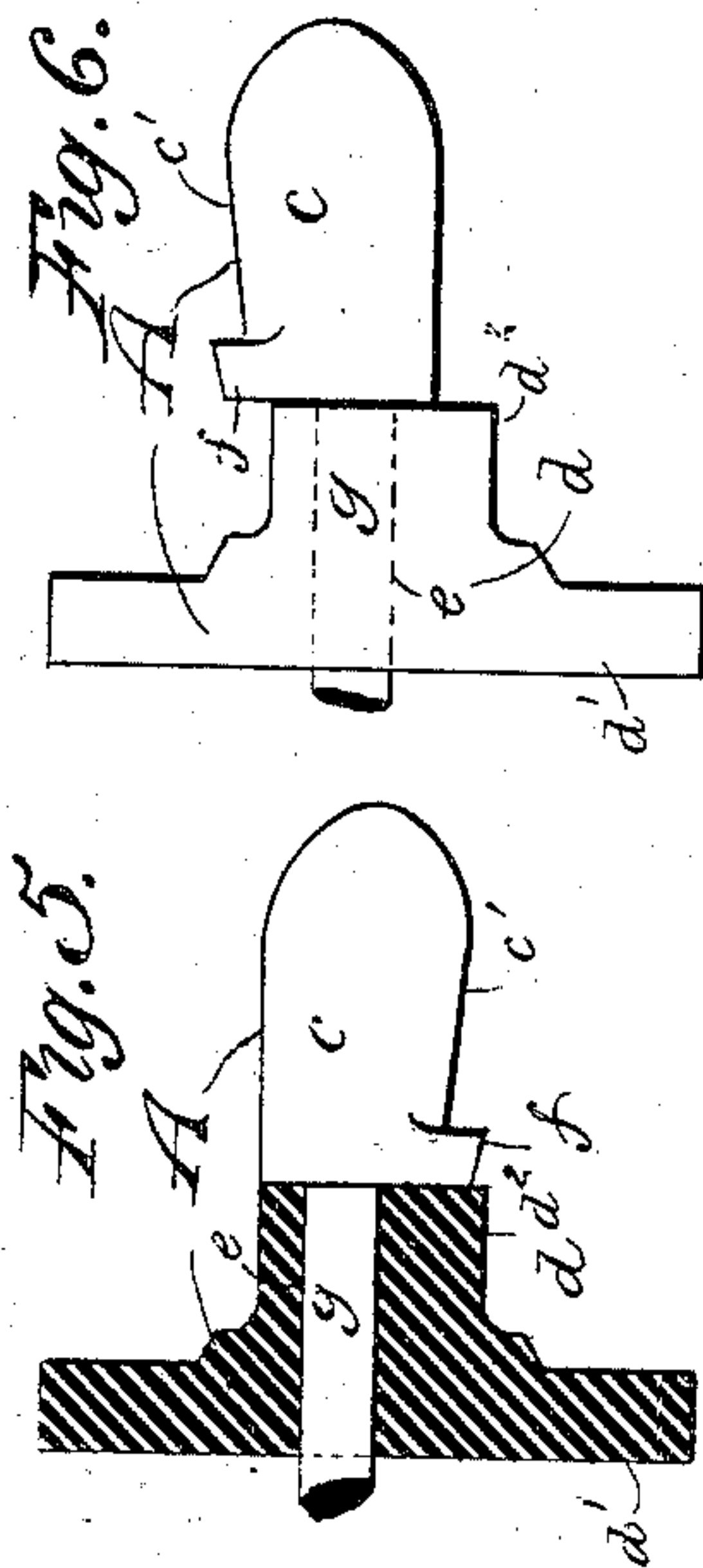
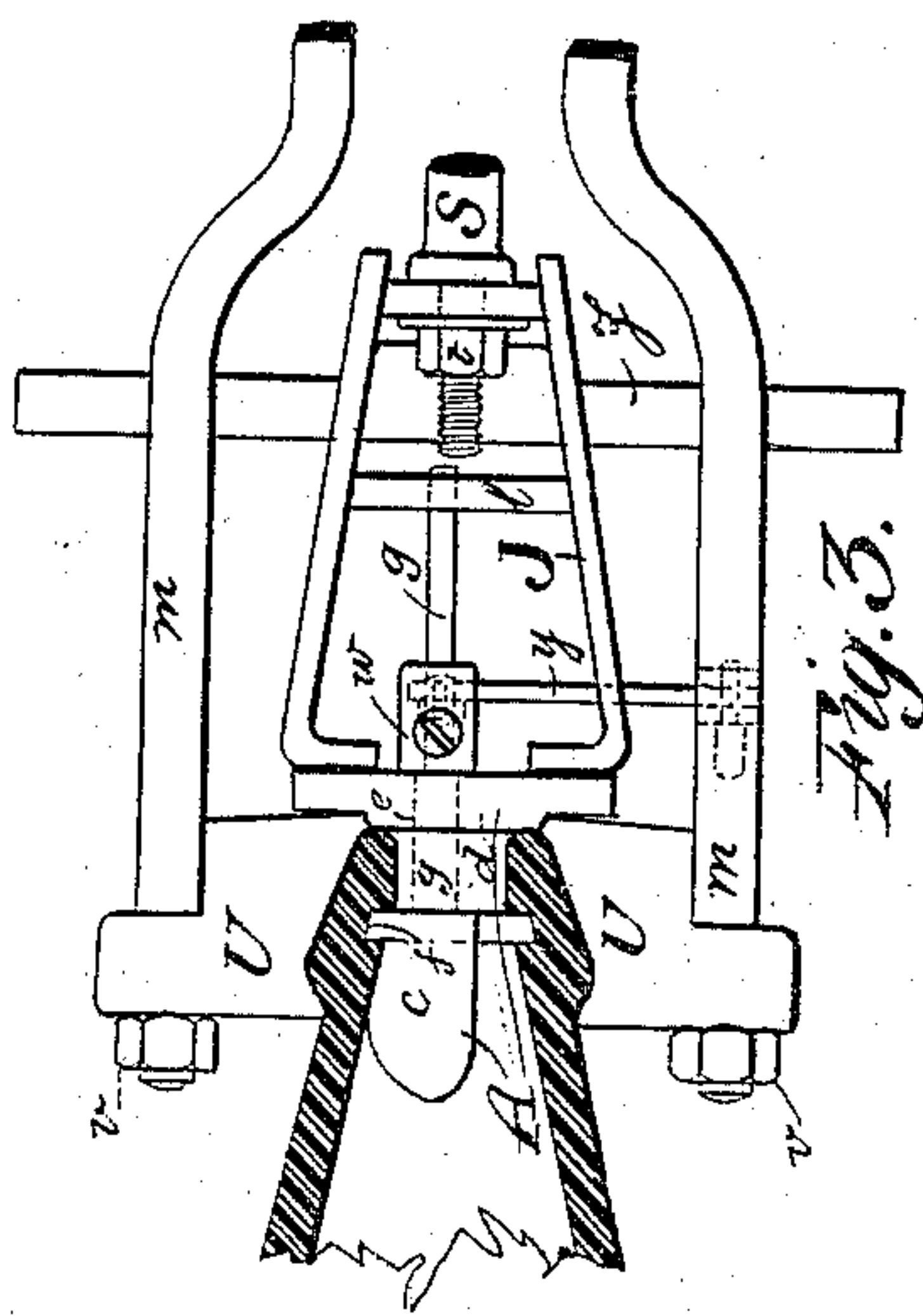
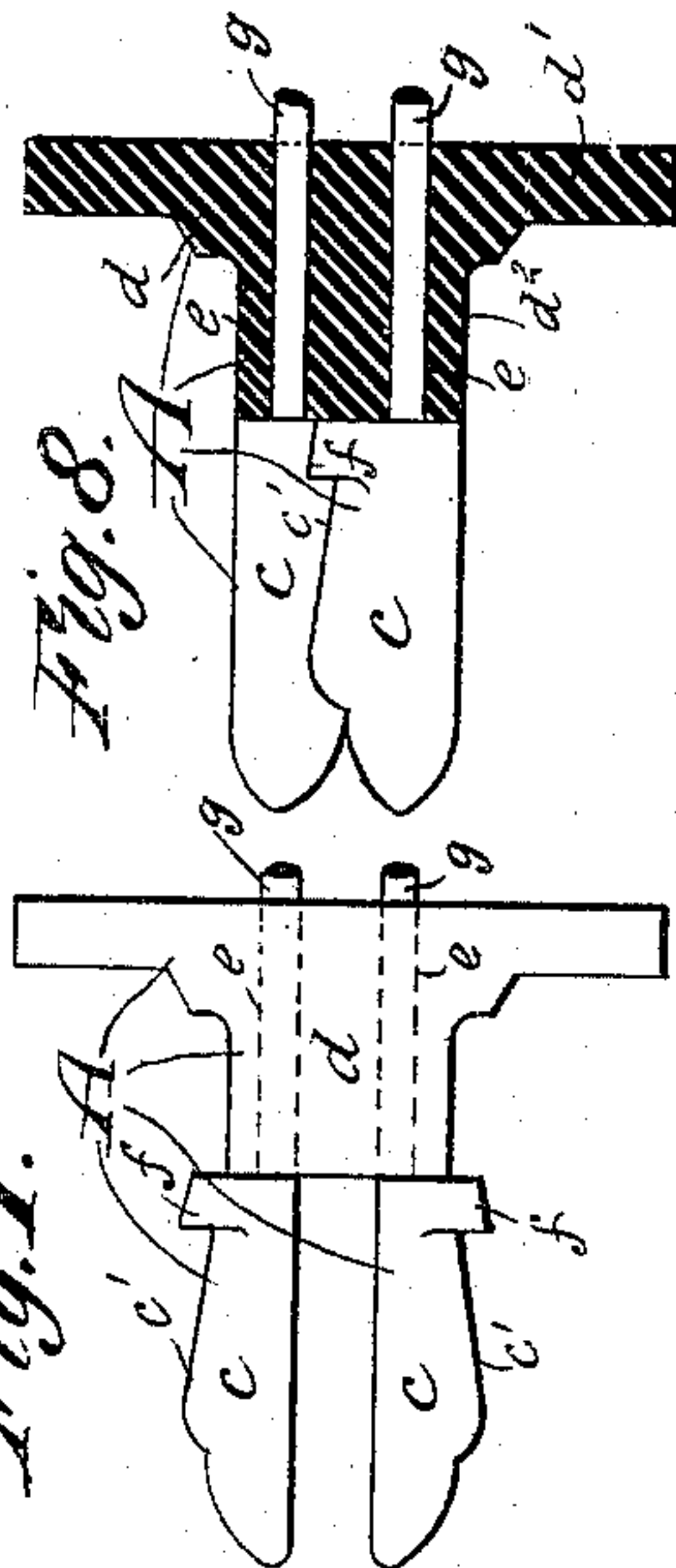
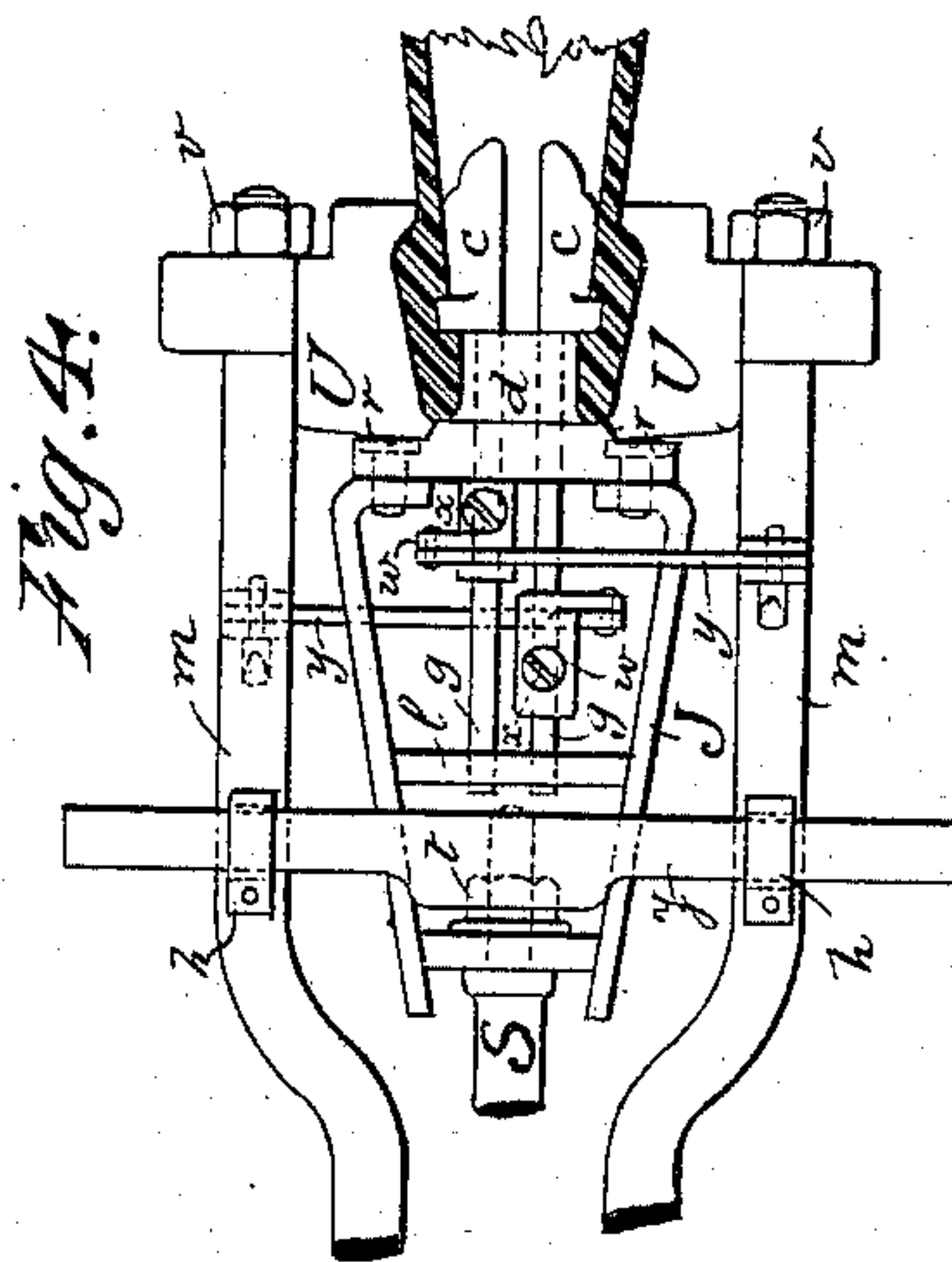
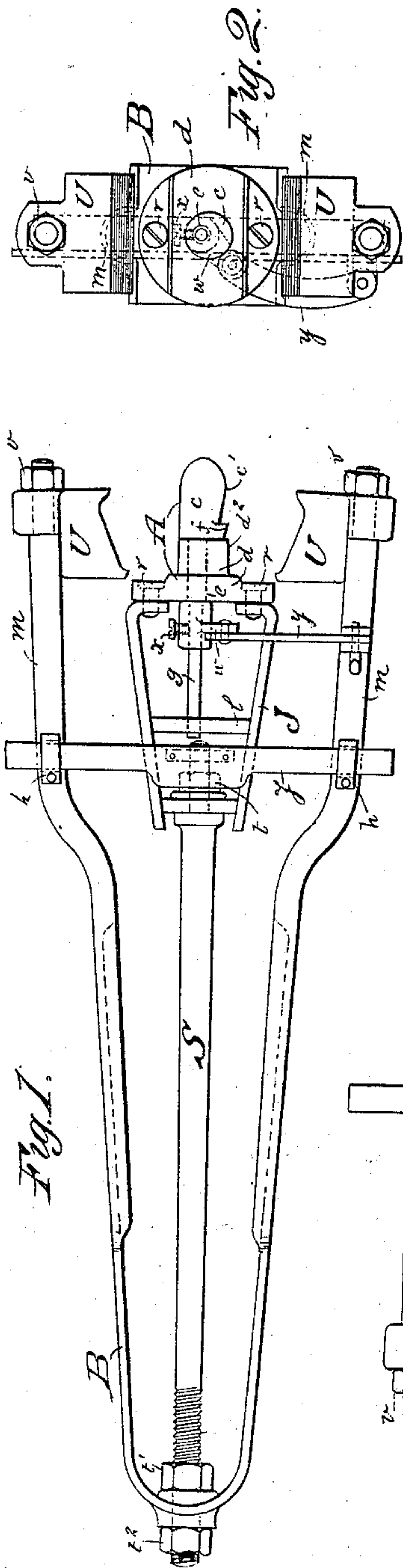
(No Model.)

B. STONER.

TOOL FOR FORMING GROOVES IN BOTTLE MOUTHS.

No. 369,890.

Patented Sept. 13, 1887.



Witnesses.

Henry Francis Boughton
Thomas Johnson.

Inventor.

Benjamin Stoner

UNITED STATES PATENT OFFICE.

BENJAMIN STONER, OF STAIRFOOT, NEAR BARNSELY, COUNTY OF YORK, ENGLAND, ASSIGNOR TO HIMSELF AND DAN RYLANDS, OF SAME PLACE.

TOOL FOR FORMING GROOVES IN BOTTLE-MOUTHS.

SPECIFICATION forming part of Letters Patent No. 369,890, dated September 13, 1887.

Application filed August 4, 1887. Serial No. 246,130. (No model.) Patented in England July 9, 1885, No. 8,299.

To all whom it may concern:

Be it known that I, BENJAMIN STONER, a subject of the Queen of Great Britain, residing at Stairfoot, near Barnsley, in the county of York, England, have invented new and useful Improvements in Tools for Forming Grooves in Bottle-Mouths, (for which I, in conjunction with Dan Rylands, have obtained a patent in Great Britain, No. 8,299, bearing date July 9, 1885,) of which the following is a specification.

My invention relates to improvements in tools for forming grooves in bottle-mouths; and the objects of my improvements are, first, to form that portion of the mouths of bottles which comes below the grooves of a uniform size, so that the internal stoppers of such bottles are never able to stick in the necks, and, second, to dispense with the ordinary presser and springs, so that the tool may be more simple in construction. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan of improved tool. Fig. 2 is a front elevation, and Fig. 3 is a plan, with a portion of handles and standard removed and a bottle-mouth shown in section on plug. Fig. 4 is a plan of modified form of improved tool having a portion of the standard and handles removed and a section of a bottle-mouth shown on plug. Fig. 5 is an enlarged part-sectional plan of plug with its movable part closed. Fig. 6 is a plan of same with its movable part open. Fig. 7 is an enlarged plan of modified form of plug having the movable portions apart, and Fig. 8 is a part-sectional plan of the same with the movable portions closed.

Similar letters indicate corresponding parts.

Referring to Figs. 1, 2, 3, 5, and 6, the plug or mandrel A is made in two parts, *c* and *d*. The part *d* consists of a swiller, *d'*, and a portion, *d''*. This portion *d''* forms the interior of bottle-mouth above the groove. The part *c* is movable and works on a spindle, *g*, which has a bearing in the hole *e*. The edge *c'* of the part *c* forms the interior of the bottle-mouth below the groove, and the cutter *f*, which may be either made with or attached to the part *c*, forms the groove in the bottle-mouth. The spindle

g, which is preferably made in one piece with the part *c*, is placed eccentric to or a little out of center of said part. It passes through the hole *e* and has a bearing in the cross-bar *l*.

A crank, *w*, is secured to the spindle *g* by means of a set-screw, *x*, and is connected to the handle *m* of tongs B by means of the rod *y*. The part *d* of the plug *a* is attached to the bridge J by means of the set-screws *r r*. The standard S and nuts *t t'* connect the bridge J to the tongs B. The dies *u u* are secured to the handles *m m* by means of the nuts *v v*.

Referring to Figs. 4, 7, and 8, the plug A has two movable parts, *c c*, which have spindles *g g*. These pass through the holes *e e*, formed in part *d*. The holes *e e* are arranged opposite each other and at a suitable distance from the center of the portion *d''*. Cranks *w w* are secured to the spindles *g g* by means of the screws *x x*. The rods *y y* connect the cranks *w w* to the handles *m m* of tongs B in manner shown at Fig. 4. The guard or stay *z*, which has bearings in the slots *h h*, prevents any lateral oscillation in the bridge R and standard S. When the handles *m m* are apart, as shown at Fig. 1, the movable part *c* of Figs. 1, 2, 3, 5, and 6, or parts *c c*, Figs. 4, 7, and 8, of plug A are closed, as shown at Figs. 1, 2, 5, and 8, in which position they, together with the portion *d''*, are pressed into the mouth of the bottle required to be formed. Then the handles *m m* are pressed to until they obtain the position shown at Figs. 3 and 4. This pressing to of the handles *m m* causes the rods *y y* to turn the cranks *w w*, which, being secured to the spindles *g g*, turn said spindles also, and the spindle or spindles *g g* being either attached to or made with the portion or portions *c c*, the said portion or portions *c c* necessarily turn also, thus bringing the cutter or cutters *f f* and edge or edges *c' c'* to the position shown at Figs. 3, 4, 6, and 7. The tongs are held in this position during the time the bottle is being formed in the ordinary manner.

After a satisfactory mouth has been formed, the handles *m m* are released, when the rod or rods *y y* draws or draw back the crank or cranks *w w*, and so brings or bring the movable portion or portions *c c* to positions shown at Figs. 1, 2, 5, and 8, in which position the plug A

may be withdrawn from the mouth of the bottle without interfering with the groove in interior of the bottle-mouth.

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

1. In combination with tools for forming grooves in bottle-mouths, the plug A, having a stationary part, *d*, and one or two movable parts, *c* or *c c*, working eccentrically to the said stationary part *d*, substantially as herein shown and described.

2. In combination with the plug A, or any

similar plug, the crank *w* or cranks *w w*, connected to and operating with the tools, substantially as shown and described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

BENJAMIN STONER. [L. S.]

Witnesses:

HENRY HORSFIELD,
Solicitor, Barnsley.

WILLIAM BROWN,
His Clerk.