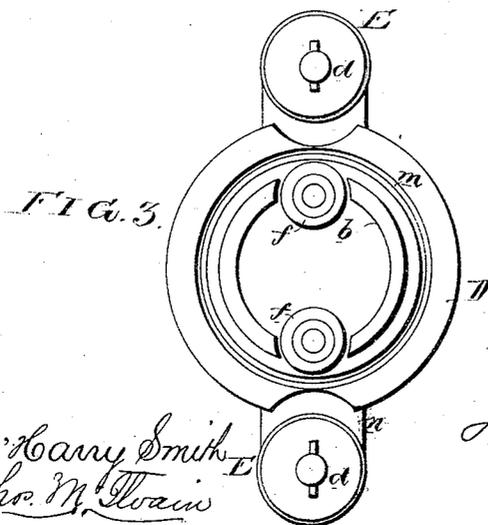
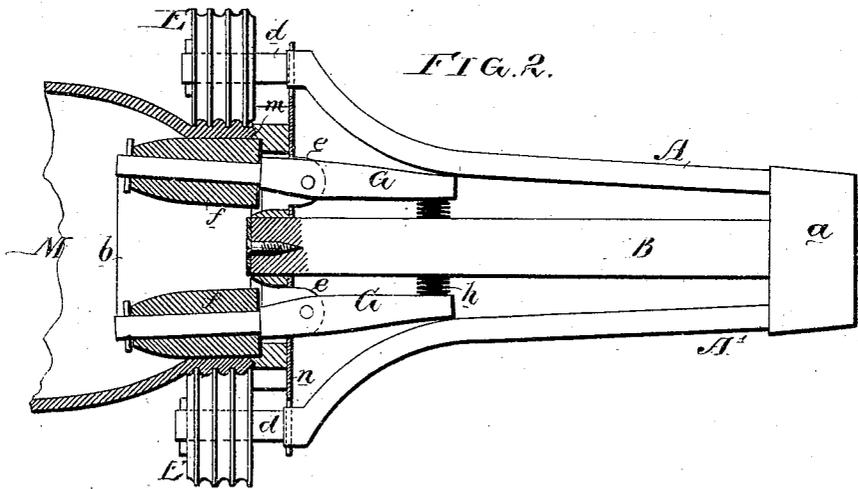
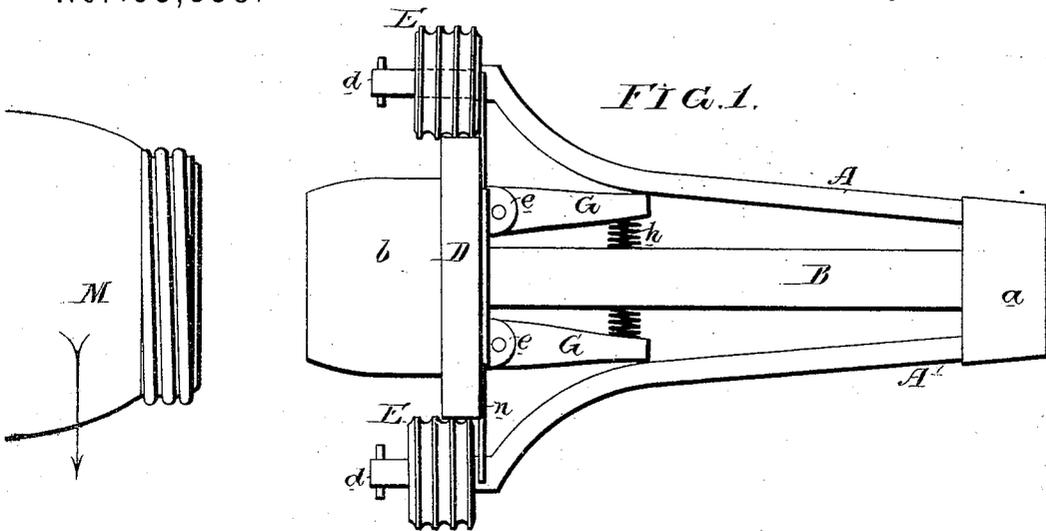


T. HIPWELL.

Tools for Forming the Necks of Fruit-Jars.

No. 153,338.

Patented July 21, 1874.



Witnesses, Harry Smith
Geo. M. Train

Thomas Hipwell
by his Atty.
Howson and Son.

UNITED STATES PATENT OFFICE.

THOMAS HIPWELL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
HENRY H. KENNEDY, OF SAME PLACE.

IMPROVEMENT IN TOOLS FOR FORMING THE NECKS OF FRUIT-JARS.

Specification forming part of Letters Patent No. **153,338**, dated July 21, 1874; application filed
January 20, 1874.

To all whom it may concern:

Be it known that I, THOMAS HIPWELL, of Philadelphia, Pennsylvania, have invented a Tool for Forming the Necks of Fruit-Jars, of which the following is a specification:

The object of my invention is to make a screw-necked fruit-jar with a perfectly smooth and true top without resorting to the usual operation of grinding; a further object of my invention being the formation of a perfectly round neck with a complete screw-thread free from ridges and other irregularities; and these objects I attain by means of the instrument shown in the exterior view, Figure 1, the sectional view, Fig. 2, and end view, Fig. 3, of the accompanying drawing.

It has heretofore been the practice to make screw-necked fruit-jars by blowing the glass in a mold conforming in shape to the exterior of the jar, the blow-over which projected from the mouth of the jar being struck off, and the ragged edges being ground down.

The necessary division of the mold into two parts hinged together caused a rib of more or less prominence on each jar, and this rib has always been a special source of annoyance, as it detracted from the truth of the neck and from the perfection of the thread, and interfered with the proper fitting of the screw-ring.

In order to obviate these objections, I rely upon the instrument which is illustrated in the drawing, and which consists of two arms, A and A', hinged to a cross-piece, *a*, at the outer end of the bar B, to the opposite end of which is secured a plate, D, having a hollow projection, *b*. At the outer end of each arm a cylindrical pin, *d*, is formed for the reception of a roller, E, in the periphery of which are cut parallel grooves conforming to the shape of the raised thread to be formed on the neck of the jar, the roller being at liberty to revolve freely, and slide to a limited extent on the said pin. On each side of the central bar B is a lever, G, passing through a slot in the plate D, and hinged to lugs *e* on the same, one arm of each lever carrying a roller, *f*, and the other arm being caused to bear against the inner edge of the adjoining main arm A by a spiral or other suitable spring, *h*. The

hollow projection *b*, above alluded to, is slotted, as best observed in the end view, Fig. 3, to permit the free play of the rollers *f*. The lateral yielding of the arms A A' is prevented by a bar, *n*, secured to the plate D, the said bar being slotted at each end for receiving an arm. The jar is, in the first instance, blown in a mold, as usual, the screw-thread being partially formed on the neck during this process. After the superfluous glass has been removed from the mouth of the jar, it is reheated in a furnace, after which it is ready for the following operations of the above-described instrument: The heated end of the jar M is first placed over the projection *b* while the arms A of the tool are open, and while the rollers E are in the position shown in Fig. 1, and the edge of the mouth of the jar is pressed with considerable force against the face of the plate D. The operator now presses the arms A A' toward each other, thereby causing the grooved rollers E to bear against opposite sides of the exterior of the neck of the jar, and the plain rollers *f* to bear against the interior of the neck, or, in other words, the glass of the neck is compressed at two points between the grooved rollers E and plain rollers *f*. The jar is then turned in the direction of the arrow, Fig. 1, until the grooved rollers E have traversed the pins *d* to the position shown in Fig. 2, when the operation will be complete, and the arms A may be relieved from pressure, thereby permitting the finished jar to be withdrawn from the tool and conveyed to the annealing-furnace. During this turning of the jar, while the edge of its mouth is pressed against the plate, this edge must necessarily be made perfectly true, the edge having, in the present instance, a U-shaped annular rib, owing to an annular recess, *m*, of corresponding shape being formed in the plate D. At the same time, and during the same operation of turning the jar, a perfectly true thread will be formed on the exterior of the neck by the rollers E, which, as the turning of the jar progresses, gradually traverses their pins *d* at the ends of the arms A. The screw thus formed on the exterior of the neck is much better adapted to the usual metallic screw cap or

ring than the screw which is produced by blowing only, and which is always more or less irregular, and the smooth and true U-shaped edge of the mouth, produced by turning and pressure against the plate D, forms a much better base for the usual rubber packing-ring than the ordinary ground edge.

It is not absolutely necessary, in carrying out my invention, to use traversing-rollers E with parallel grooves formed on their peripheries, as above described, as the same result may be attained by the use of rollers of the same diameter as the neck of the jar, arranged to simply turn upon without traversing the pins *d*, and each having a left-hand sunken screw-thread cut upon its periphery.

I claim as my invention—

The combination of the plate D, the rollers *f*, and grooved or threaded rollers E, and mechanism, whereby the said plate and rollers are caused to act simultaneously, the threaded rollers on the exterior, and the plain rollers on the interior of the neck of the jar, in the manner described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOS. HIPWELL.

Witnesses:

WM. A. STEEL,
HARRY SMITH.