No. 833,823. PATENTED OCT. 23, 1906.

F. E. BRENDEL.

BOTTLE TOOL.

APPLICATION FILED JULY 14, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

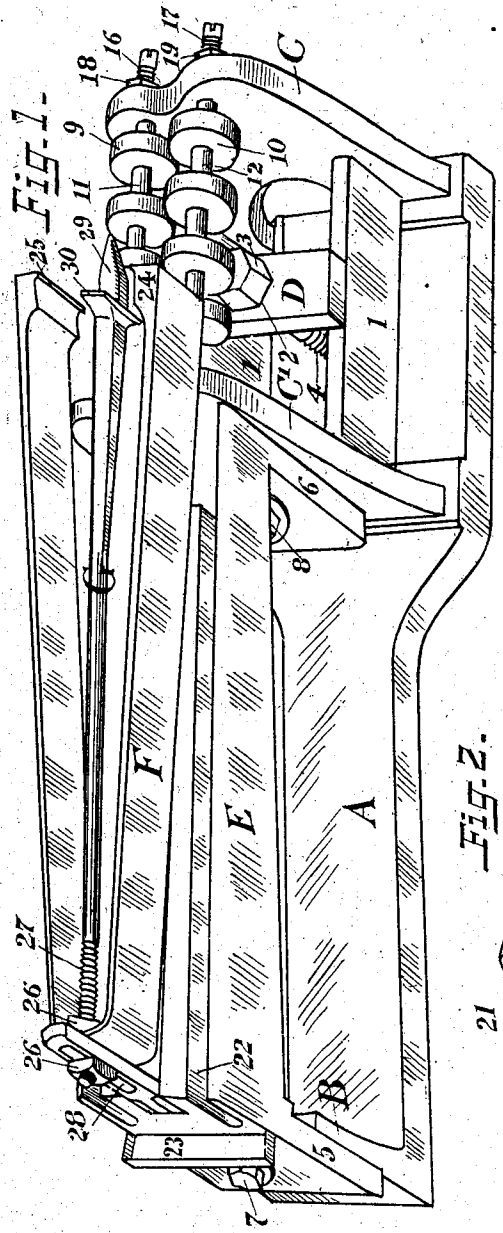


Fig. 3.

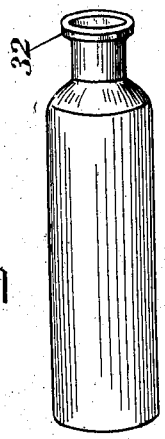
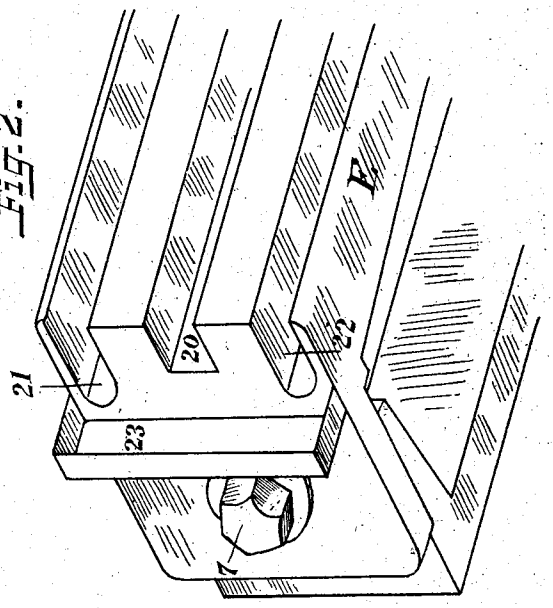


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

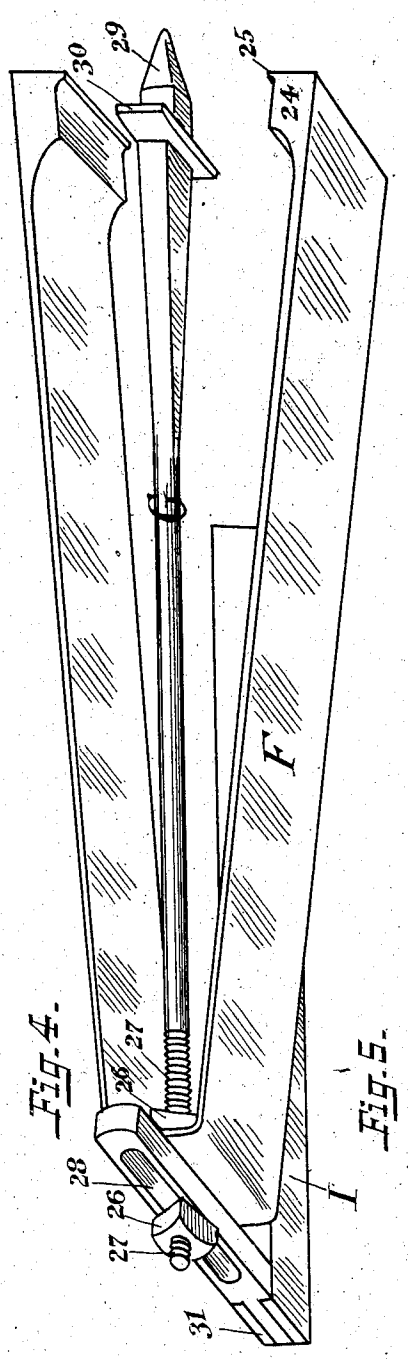

Fig. 4.

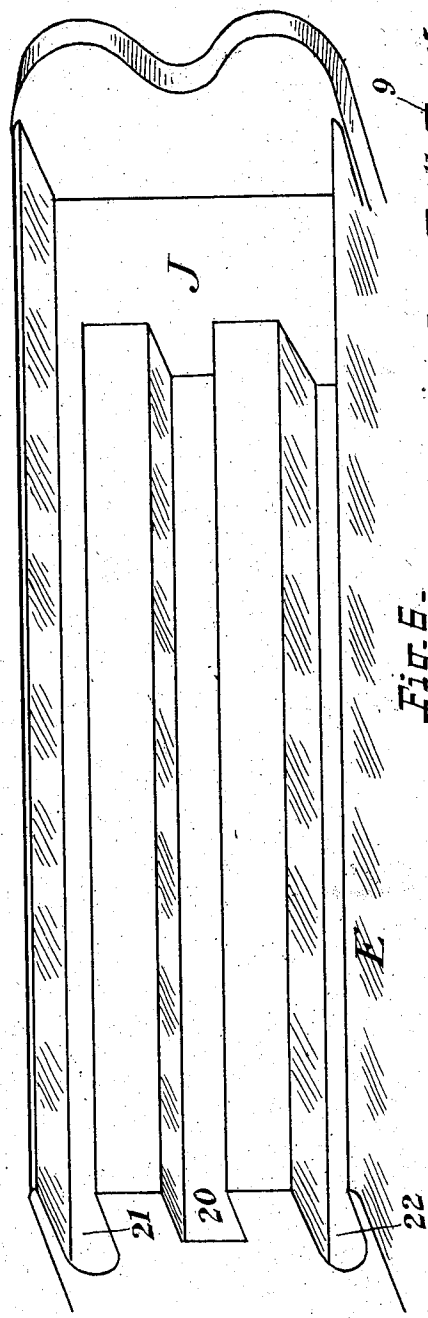

Fig. 5.

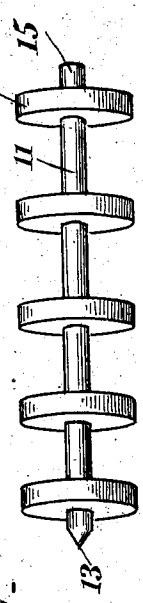

Fig. 6.

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BOTTLE-TOOL.

No. 833,823. Specification of Letters Patent. Patented Oct. 23, 1906.

Application filed July 14, 1906. Serial No. 326,228.

To all whom it may concern:

Be it known that I, FRANK E. BRENDEL, a citizen of the United States, residing at Baltimore city, State of Maryland, have invented certain new and useful Improvements in Bottle-Tools, of which the following is a specification.

My invention relates to an improvement in tools for making glass bottles or vials, and particularly the glass vial which is made from glass tubing.

By the use of my improved tool the vial can be quickly and accurately made and the percentage of loss by reason of breakage and imperfections is greatly reduced.

With these objects in view my invention consists in certain new and novel features, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the tool assembled. Fig. 2 is an end view. Fig. 3 is a view of a vial such as made on the machine. Fig. 4 is a view showing the shaping-tool. Fig. 5 is a view of table portion, and Fig. 6 is a view of a series of the rollers.

A is the base or bed plate, cast with the upright B.

C C′ are two cast uprights forming a part of the frame, and 1 1 are parallel rods cast to the uprights C C′, rendering them rigid and solid.

D is a cross-bar extended across the parallel rods 1 1. A hole 2 is drilled through the center thereof, through which is inserted the bolt 3. This bolt is threaded on its end portion, as indicated at 4, and the base or bed plate is drilled and threaded (not shown) to receive the bolt, and by this means the uprights forming the frame are secured to the base or bed plate.

E is the table, provided with the lower extensions 5 and 6 on each respective end.

7 and 8 are bolts by which the extensions 5 and 6 are respectively secured to the upright B of the base or bed plate and the upright C′ of the frame, which is secured on the end of the base or bed of the machine, as has been described.

9 and 10 are each a series of rollers turned on the respective rods 11 and 12. These rods are pivotally pointed at 13, as shown in Fig. 6, and are secured within the frame portion of the uprights C and C′ by means of the inner top portion of the upright C′ being pivotally journaled to receive the points 13 and the rods being each similarly journaled in the free ends thereof, (not shown, but designated by 15 in Fig. 6,) into which are fitted the pivotally-pointed set-screws 16 and 17, which are screwed through the top part of the upright C, which has been drilled and threaded for the purpose. These set-screws are adjustably secured by means of the lock-nuts 18 and 19. The rods 11 and 12 are each provided with a series of rollers 9 and 10, are thus secured parallel one with the other between the upright frames C and C′, and by reason of the means described are rendered free to turn and are capable of adjustment and by means of the set-screws and lock-nuts are secured in said adjustment.

Referring now to Fig. 5, the table E is provided with a groove 20 and gutters 21 and 22, which are formed by the side walls of the table and the flange of each side of the gutter 20. In the front end of the table, adjoining the frame formed by the uprights C and C′, is formed a bowl or basin J, which is cast into the end of the table E, at this point the bottom of said bowl or basin being of a greater depth and below the bottom of the gutters 21 and 22, which open into it. These gutters lead from the bowl or basin to the drip-pan 23, secured to the end of the table by any suitable means and shown in Figs. 1 and 2, the respective functions of which will be described farther on. F represents the jaws of the bottle-tool, which are made of spring-steel, having a tendency to spring open at 24. G is a rod secured between the jaws F by means of being threaded on the end thereof at 27 and lock-nuts 26, which secure the rod G within the slotted upward extension 28 of the guide-rod I. This extension is secured to the guide-rod I by means of the mortise-joint 31, the extension being secured perpendicular to the rod I, the extension being slotted for the purpose of adjusting the rod G. On the free end of the rod G are formed the pointed head 29 and the bumper 30, which in conjunction with the inner flange 25, formed on the end of each of the jaws F at 24, form the tool for making the head on the bottle-mouth, and the rod I is adapted to fit and slide in the slot 20 of the table E and is for the purpose of maintaining the tool in line of adjustment. At the same time if the tool becomes too

much heated to interfere with the use thereof it may be readily withdrawn, cooled, and again inserted without possibility of getting out of alinement.

My device is operative as follows: A glass tube of suitable size is heated to a proper degree by any suitable means, but preferably by means of a Bunsen burner located at or conveniently near the point 29 on the rod G, (but not shown here,) the tube placed horizontally on the rollers 9 and 10, and the point 29 of the rod G forced within the tube until resisted by the bumper 30. The spring-jaws F are squeezed together by the operator with one hand, while with the other hand he rolls the glass tube over the rollers 9 and 10, and by this means a head 32 is formed on the bottle, as shown in Fig. 3. As the glass cools it is withdrawn from the tool by releasing the spring-jaws F. At a measured distance from the head thus formed sufficient heat is again applied to the glass tube to melt the glass. It is pulled apart and the heated end set on a cool surface, thereby forming the bottom in and completing the vial. By reason of the series of rollers 9 and 10 the tube can be easily rolled and be maintained in line with the rod G. In the manufacture of bottles it is necessary to constantly steep the head of the tool in oil to facilitate the head turning in the tool when being formed, and I have supplied the basin or bowl J, which is adapted to be filled with oil for this purpose as the tool becomes heated, as it will by constant use. It will when steeped constantly in the oil heat the oil and cause it to expand. To prevent an overflow of the oil in such cases and at the same time to allow a quantity to cool, I have provided the gutters 21 and 22, which extend from the bowl or basin to the drip-pan 23, where the overflow will collect and cool.

Slight changes might be resorted to in the form and arrangement of the several parts as herein described without departing from the spirit and scope of my invention, and hence I do not desire to limit myself to the exact construction as herein set forth; but,

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

1. The combination of a bottle-tool, substantially as hereinbefore described, comprising a base provided with an upright extension, of a frame portion secured to the base, of two parallel rods carrying rollers thereon and secured within the upper part of the frame portion and means whereby the said rods are secured within the said frame portion, of a table secured to the base and frame portion and provided with a longitudinal groove in the top part thereof, of a bowl or basin cast within the top end portion of said table, of a drip-pan secured on the free end of the table, of one or more gutters cut longitudinally in the top of said table and connecting the basin with and emptying into the drip-pan, of a guide-rod adapted to fit and slide within the groove in the table, of an upright slotted extension secured on the end of the guide-rod, of a bottle-head tool secured to the slotted extension on the rod and means for securing and adjusting said bottle-head tool to the extension for the purpose as set forth.

2. The combination of a bottle-tool substantially as herein described comprising a base and a frame portion secured to the base, of two parallel rods carrying rollers thereon and secured within the upper part of the frame portion, and means whereby the said rods are secured within the said frame portion, of a table secured to the base and frame portion and provided with a longitudinal groove in the top part thereof, of a bowl or basin cast within the top end portion of said table, of a drip-pan secured on the free end of the table, of one or more gutters cut longitudinally in the top of said table and connecting the basin with and emptying into the drip-pan, of a guide-rod adapted to fit and slide within the groove in the table, of an upright slotted extension secured on the end of the guide-rod, of a bottle-head tool secured to the slotted extension on the rod and means for securing and adjusting said bottle-head tool to the extension for the purpose as set forth.

3. The combination of a bottle-tool substantially as hereinbefore described comprising a base and a table, of a frame portion secured to the base of two parallel rods carrying rollers thereon and secured within the upper part of the frame portion and means whereby said rods are secured within the frame portion, of a longitudinal groove within the top part of the table, of a bowl or basin cast within the top end portion of said table, of a drip-pan secured on the free end of the table, of gutters cut longitudinally in the top of said table and connecting the basin with and emptying into the drip-pan, of a guide-rod adapted to fit and slide within the groove in the table, of an upright slotted extension secured on the end of the guide-rod, of a bottle-head tool secured to the slotted extension on the rod and means for securing and adjusting said bottle-head tool to the extension of the guide-rod for the purpose as set forth.

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

FRANK E. BRENDEL.

Witnesses:
E. WALTON BREWINGTON,
MARY M. MAGRAW.