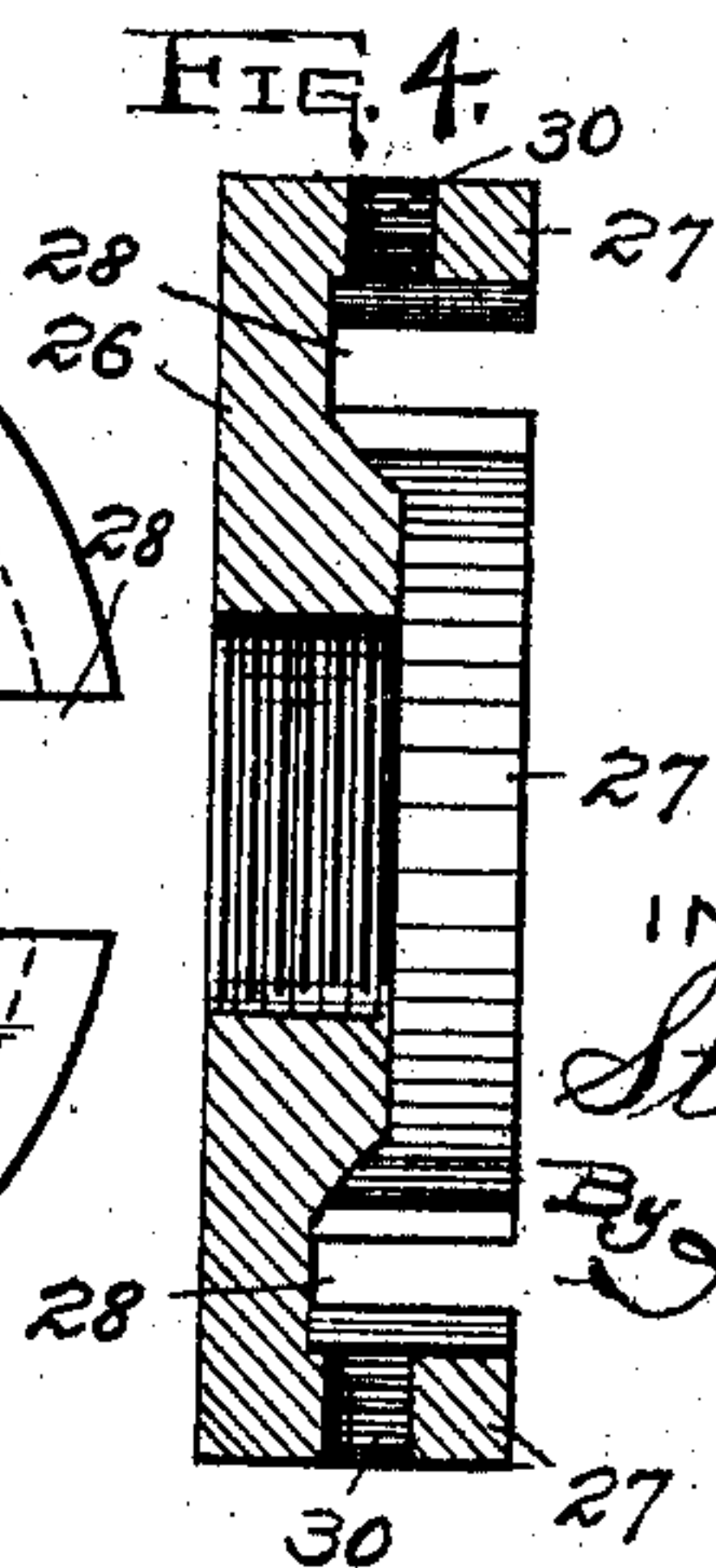
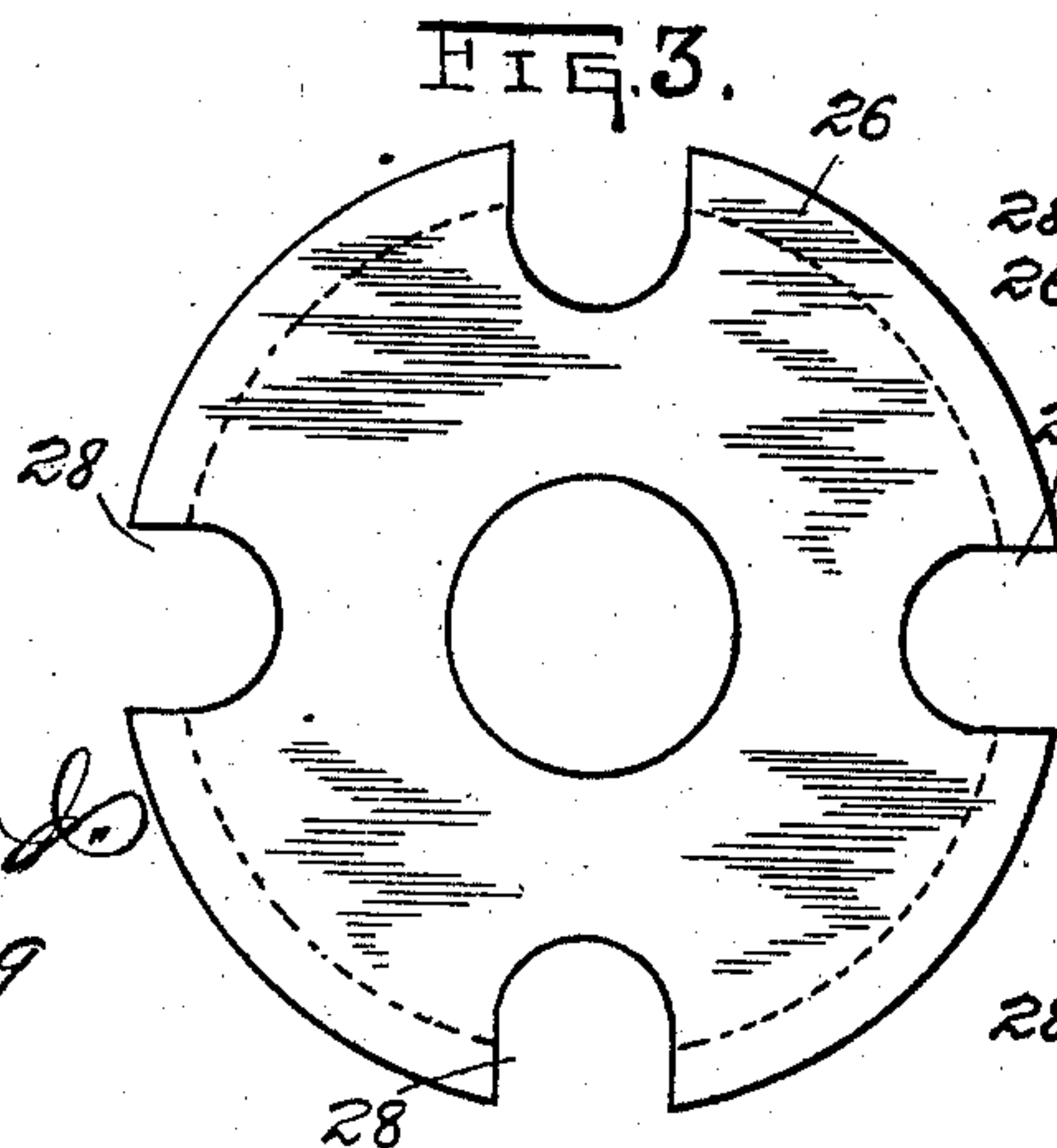
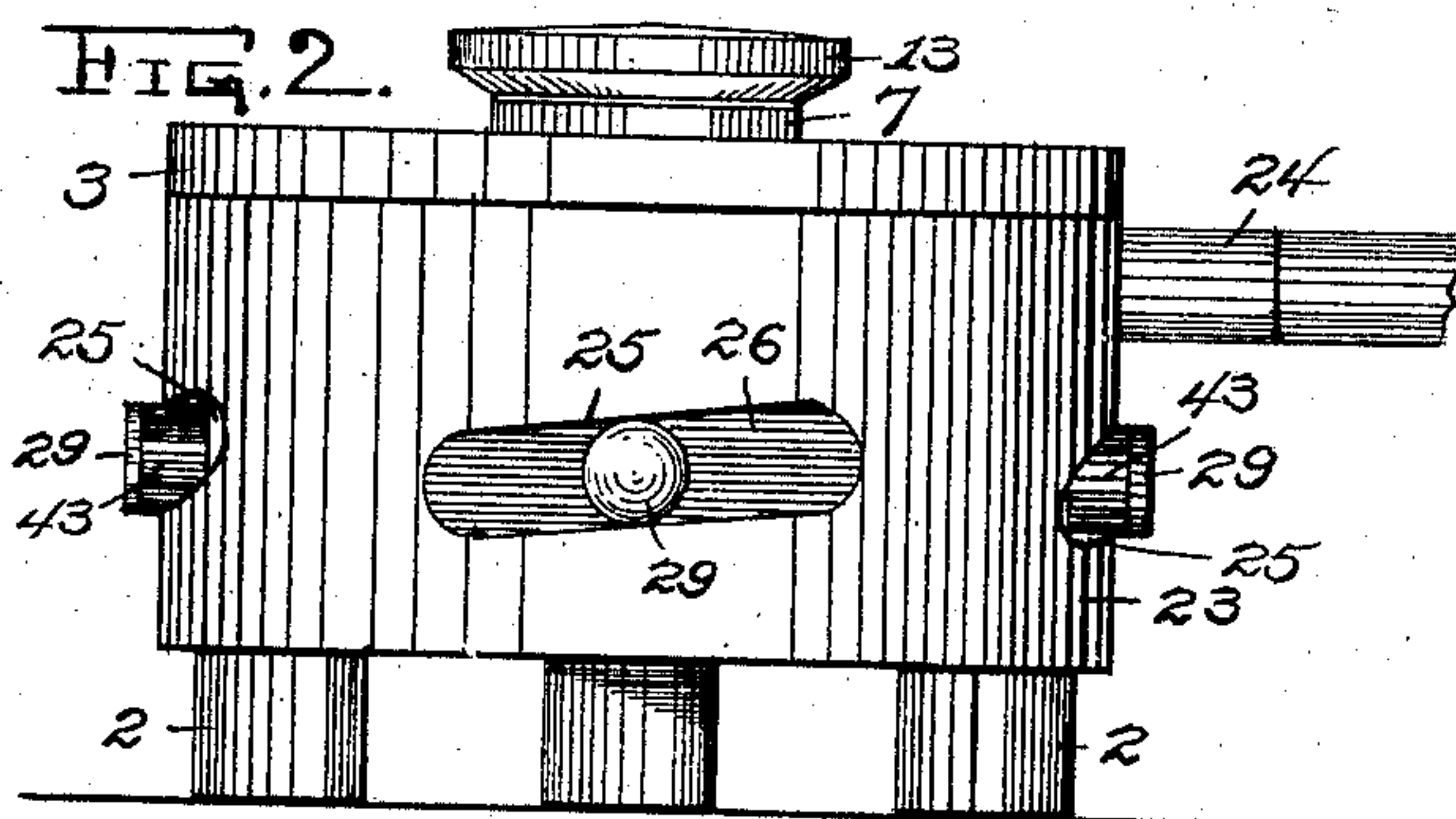
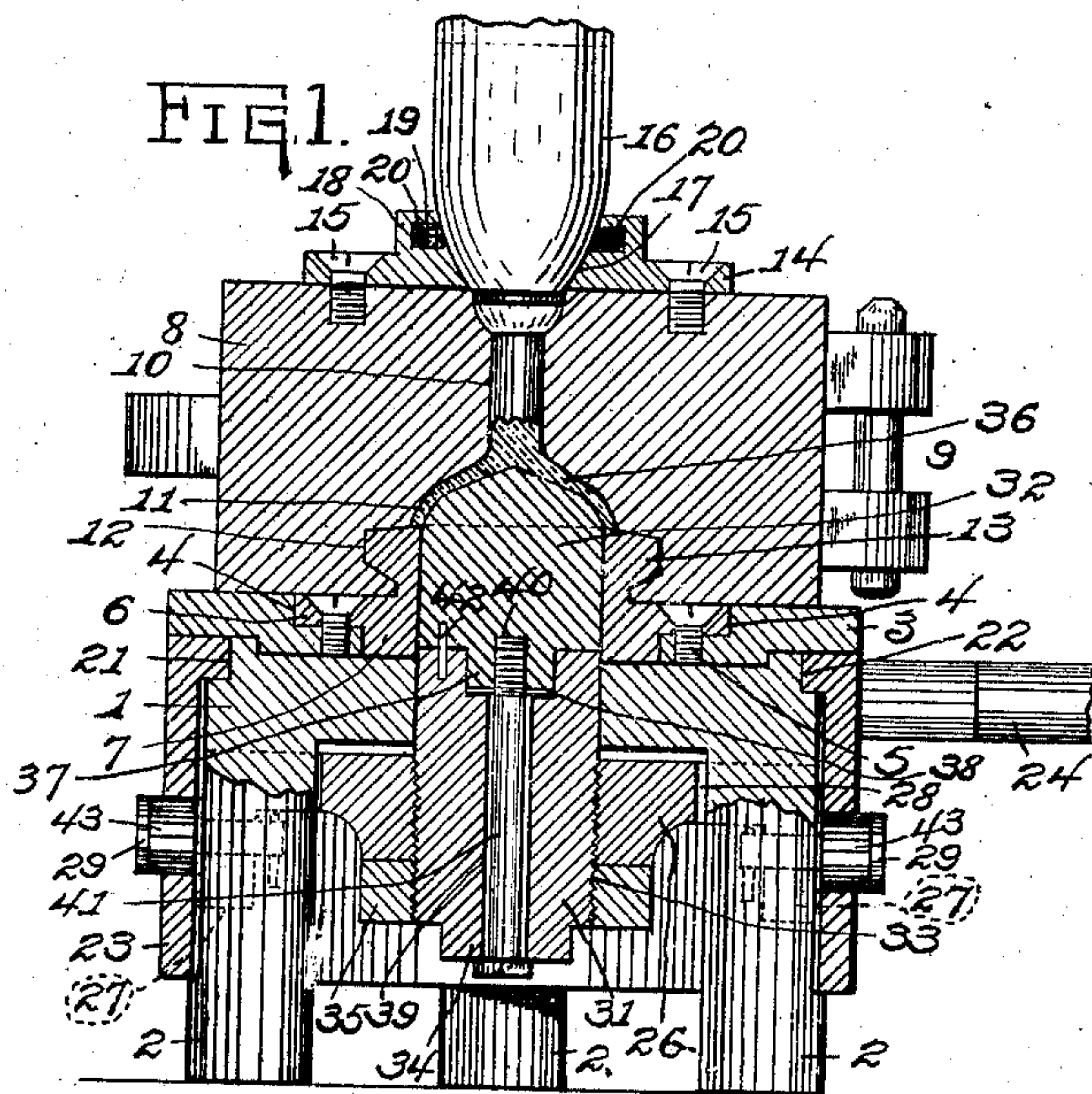


No. 850,577.

PATENTED APR. 16, 1907.

S. HIPKINS.  
GLASS MOLD.

APPLICATION FILED FEB. 27, 1907.



WITNESSES:

E. A. Knapp  
O. F. Young

INVENTOR:

Stephen Hopkins

By *H. E. Dumbleff*  
27 *Attorney*



# UNITED STATES PATENT OFFICE.

STEPHEN HIPKINS, OF MARTINS FERRY, OHIO.

## GLASS-MOLD.

No. 850,577.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed February 27, 1907. Serial No. 359,567.

*To all whom it may concern:*

Be it known that I, STEPHEN HIPKINS, a citizen of the United States of America, and a resident of Martins Ferry, county of Belmont, and State of Ohio, have invented certain new and useful Improvements in Glass-Molds, of which the following is a specification.

This invention relates to new and useful improvements in glass-molds, and more particularly to a mold wherein the stems and feet of blown-glass vessels are cast to the bodies or bowl portions of said vessels.

The chief object of the invention is to provide a mold wherein stems and feet for glass vessels are simultaneously formed and cast to the bowls or body portions of said vessels.

A further object is to provide a device of the character mentioned wherein a vertically-adjustable foot-forming plunger is provided, said plunger having a removable head which adapts it for the application thereto of other heads of different size or shape.

A still further object is to provide a mold of the character mentioned wherein removable and interchangeable guide-heads are employed which admit of the application thereto of interchangeable plungers for the formation of glass feet of varying sizes.

With these and other objects in view the invention finally consists in the particular construction, arrangement, and combination of parts which will hereinafter be fully described, reference being herein had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical section of the invention. Fig. 2 is a side elevation of the lower portion thereof. Fig. 3 is a top plan view of the plunger-support, and Fig. 4 is a cross-section of the same.

Referring to said drawings, in which like reference-numerals designate like parts throughout the several views, 1 indicates a centrally-apertured circular base having legs 2, and rigidly mounted upon said base is a centrally-apertured top plate 3, having a shouldered annular recess 4, in which is fitted and secured by means of screws 5 the flange extension 6 of a detachable guide-head 7.

Mounted upon the top plate 3 of the lower portion of the mold is the upper portion 8 of said mold, said upper portion consisting of two or more parts hinged together, as at 9. In said

upper portion 8 is a vertical central leg-aperture 10, which terminates at its lower end in a flared foot-recess 11. In said upper portion below said foot-recess is formed a flanged recess 12, in which fits the flange 13 of the guide-head 7, thus securing the bottom portion of the mold to the upper portion thereof when the latter is closed. Said upper portion consists, further, of a removable plate 14, composed of a number of sections corresponding to the number of sections of the part 8, which plate surmounts part 8, being secured thereto by screws 15. Said plate 14 has a central aperture therein for the reception of the lower part of the blown bowl 16, the walls 17 defining said aperture being shaped to form a seat for said bowl. An integral apertured head 18, carried by said plate 14, forms a part of said seat, said head preferably having an internal annular recess 19, filled with asbestos 20 for contacting with the bowl to prevent the cracking of the latter, which would be liable to occur were a whole metal seat employed. The plate 14 being readily removable, it will be seen that by employing interchangeable plates bowls of widely-varying sizes may be mounted on the mold.

Provided in the outer upper edge of the base 1 is an annular recess 21, which together with the overhanging rim of the top plate 3 forms an annular groove in which is movably held or supported the inturned flange 22 of an apron 23. Said apron has a handle 24, by means of which it may be partially revolved and is formed with inclined slots 25 at regular intervals. Inclosed by said apron is a vertically-movable disk 26, having an annular downturned flange 27 and provided with recesses 28 therein in which fit the legs 2. Said disk is supported by pins or bolts 29, mounted in holes 30 in said flange 28 and projected outward through the inclined slots 25 of the apron, said pins or bolts preferably having antifric-tion-rollers 43 thereon. Said disk has a central threaded aperture therein in register with the central aperture of the base 1, and extended through said apertures is the body portion of a cylindrical plunger 31, having an adjustable and removable head 32. The lower portion of the body portion of said plunger 31 is exteriorly threaded, as shown at 33, and is in threaded engagement with said disk 26, being thus vertically adjustable with



relation to said disk. Said plunger has a lower shouldered end 34, which admits of its being readily grasped by a wrench for rotating. A nut 35, threaded upon the plunger, serves to lock said plunger in adjusted position with relation to said disk.

The head 32 of the plunger, whose upper face may be of any preferred form adapted for shaping the foot 36 of the glass article, has a central stem 37 on its lower end adapted for fitting within a socket 38 in the upper end of the body portion, and extending upward through a central bore 39 in said body portion and threaded into a socket 40 in the stem 37 of the head 32 is a bolt 41. As is obvious, by manipulating said bolt said head may be adjusted slightly with relation to said body portion of the plunger. A dowel-pin 42, having its opposite ends fitted in sockets respectively provided in said head and said body portion, serves to prevent rotation of said head with respect to said body portion.

In operation the bowl 16 is placed in the seat provided therefor in the upper portion of the mold for casting a leg thereto or thereupon, a sufficient quantity of molten glass for said leg and its foot 36 having previously been placed in the mold upon the plunger-head 32 and the mold closed. Then the plunger having been previously lowered to substantially the level of the top of the guide-head 7 is raised by revolving the apron 23, which is vertically immovable, the pins or bolts 29, supporting the disk 26, being moved upward in the inclined slots 25. With the raising of the plunger the molten glass is forced up into the leg-aperture 10 and the foot-recess 11 and is therein cast in its proper shape and at the same time is made to adhere to the bowl 16. It will be noted that the formation of the foot-recess 11 is such that the foot 36 cast therein is substantially cup-shaped. When removed from the mold, said foot is flared or opened outward in a manner well understood.

The head 32 of the plunger is readily adjusted with relation to the guide-head 7 by means of the bolt 41 to regulate the thickness of the foot 36. Said head 32 being removable, provision is thereby made whereby a variety of formations of said head may be employed in connection with the mold for forming feet of varying shapes, and the guide-head being removable provision is made whereby plunger-heads of varying sizes may be employed.

It will be noted that the mold is so constructed that it is adapted for casting legs upon articles of ware having bowls of varying sizes and shapes, many of its parts being adjustable and interchangeable.

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

1. In a device of the character described, a circular base having supporting-legs, a top plate carried by said base, a removable guide-head mounted upon said top plate, said base and said guide-head having registering vertical centrally-located apertures therein, a revoluble apron having inclined slots therein at regular intervals depending from said base, a vertically-movable disk supported upon laterally-directed pins projected through said slots, said disk having a threaded hole therein in register with the central apertures of the base and top plate, a plunger adjustably mounted in the threaded hole of the disk and projected upward through said apertures, and a leg-molding portion fitted about said guide-head, said portion having a leg-aperture and a foot-recess therein.

2. In a device of the character described, a circular base having supporting-legs, a top plate carried by said base, a removable guide-head mounted upon said top plate, said base and said guide-head having registering vertical centrally-located apertures therein, a revoluble apron depending from said base, said apron having inclined slots therein at regular intervals, a vertically-movable disk supported upon pins directed outwardly through said slots, said disk having a threaded hole therein in register with the apertures of the base and top plate, a plunger adjustably mounted in the hole in said disk and projected upward through said apertures, said plunger comprising a body portion and a removable head carried by said body portion, and a leg-molding portion fitted about said guide-head.

3. In a device of the character described, a circular base having supporting-legs, a centrally-apertured top plate carried by said base, said top plate having an internal annular recess therein, a guide-head having an annular flange removably mounted in said annular recess, said base and said guide-head having registering centrally-located apertures therein, a revoluble apron depending from said base, said apron having inclined slots therein at regular intervals, a vertically-movable disk supported upon pins projected outwardly through said slots, said disk having a threaded hole therein in register with the apertures of the base and top plate, a plunger adjustably mounted in the hole in said disk and projected upward through said apertures, said plunger consisting of a threaded body portion and a removable head, said head being adjustable with relation to said body portion, and a leg-molding portion fitted about said guide-head.

4. In a device of the character described, a circular base having supporting-legs, a centrally-apertured top plate carried by said base, a guide-head mounted upon said top plate, said guide-head and top plate having



interfitting flanges, said base and said guide-head provided with registering centrally-located apertures therein, a revoluble apron depending from said base, said apron having inclined slots therein, a vertically-movable disk supported upon pins projected outwardly through said slots, said disk having a threaded hole therein in register with the apertures of the base and top plate, a plunger adjustably mounted in the hole of said disk and projected upward through said apertures, said plunger consisting of a threaded body portion, a removable head, and means for adjusting said removable head with respect to said body portion, and a leg and foot molding portion fitted about said guide-head.

5. In a device of the character described, a circular base having supporting-legs, a centrally-apertured top plate carried by said base, a guide-head mounted on said top plate, said top plate and said guide-head having interfitting flanges, said base and said guide-head having registering centrally-located apertures therein, a revoluble apron depending from said base, said apron having inclined slots therein, a vertically-movable disk supported upon pins projected outwardly through said slots, said disk having a threaded hole therein in register with the apertures of the base and the top plate, a plunger adjustably mounted in the hole of said disk and projected upward through said apertures in the base and the top plate, said plunger consisting of a threaded body portion having a shouldered lower end, a removable head carried by said body portion, and means for adjusting said head with respect to said body portion, and a leg and foot molding portion mounted on said top plate with which said plunger is adapted to cooperate.

6. In a device of the character described, a circular base having supporting-legs, a centrally-apertured top plate carried by said base, a guide-head mounted on said top plate, said top plate and said guide-head having interfitting flanges, said base and said guide-head having registering centrally-located apertures therein, a revoluble apron depending from said base, said apron having inclined slots therein, a vertically-movable disk supported upon pins projected outwardly through said slots, said disk having a threaded hole therein in register with the apertures of the base and the top plate, a plunger adjustably mounted in the hole of said disk and projected upward through said apertures, said plunger consisting of a threaded body portion having a shouldered lower end, a removable head carried by said body portion, and means for securing said head in fixed position with respect to said body portion, and a leg and foot molding

portion mounted on said top plate with which said plunger is adapted to cooperate, said leg and foot molding portion consisting of a body having a vertical leg-aperture therein which terminates at its lower end in a foot recess, and a removable plate surmounting said body and having a seat formed therein for the reception of a blown bowl.

7. In a device of the character described, the combination with a suitably-supported base, a guide-head carried thereby, said base and guide-head having registering apertures therein, and a leg and foot molding portion surmounting said base and inclosing said guide-head, of a revoluble, vertically-immovable apron carried by said base and having inclined slots therein, a vertically-movable disk inclosed by said apron and supported by pins projected through said slots, a vertically-adjustable plunger mounted in said disk and projected upward through and vertically movable in the apertures of said base and guide-head and adapted to cooperate with said leg and foot molding portion, said plunger consisting of a threaded body portion having a lower shouldered end and having a socket in its upper end, and a removable head surmounting said body portion and having a stem seated in said socket, and means for immovably holding said head in place on said body portion.

8. In a device of the character described, the combination with a suitably-supported base, a guide-head carried thereby, said base and guide-head having registering central apertures therein, and a leg and foot molding portion surmounting said base and inclosing said guide-head, of a revoluble, vertically-immovable apron carried by said base and having inclined slots therein, a vertically-movable disk inclosed by said apron and supported by pins projected through said slots, a vertically-adjustable plunger mounted in said disk and projected upward through and vertically movable in the apertures of said base and guide-head and adapted to cooperate with said leg and foot molding portion, said plunger consisting of a threaded body portion having a lower shouldered end and having a socket in its upper end, and a head having a stem removably mounted in said socket, said stem also having a threaded socket in its end, and a bolt directed upwardly through a central bore provided in said body portion and having its upper end threaded and in engagement with said threaded socket whereby the plunger held is retained in fixed position with respect to said body portion.

9. In a device of the character described, the combination with a plunger and means for operating the same, of a leg and foot mold for cooperating with said plunger for



molding stems and feet and casting the same to blown-glass bowls, said mold comprising a plurality of hinged sections having a leg-aperture therein which terminates at its  
5 lower end in a foot recess, and a removable sectional plate surmounting said hinged sections, said plate having a head and a bowl-seat formed therein, the latter being provided

with an internal annular asbestos-filled channel.

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

STEPHEN HIPKINS.

Witnesses:

H. E. DUNLAP,  
E. A. LENKARD.