

(No Model.)

H. M. ASHLEY.
MACHINE FOR MAKING GLASS BOTTLES.

No. 403,719.

Patented May 21 1889.

Fig. 1.

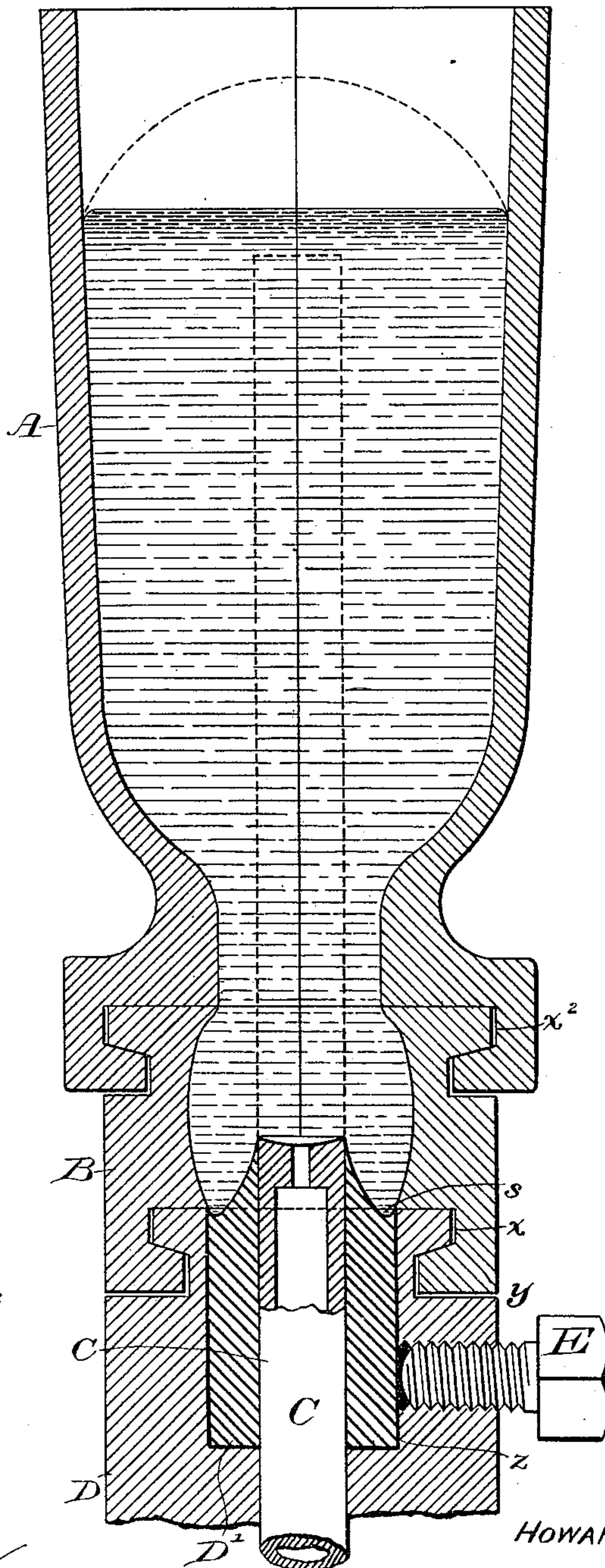


Fig. 2.

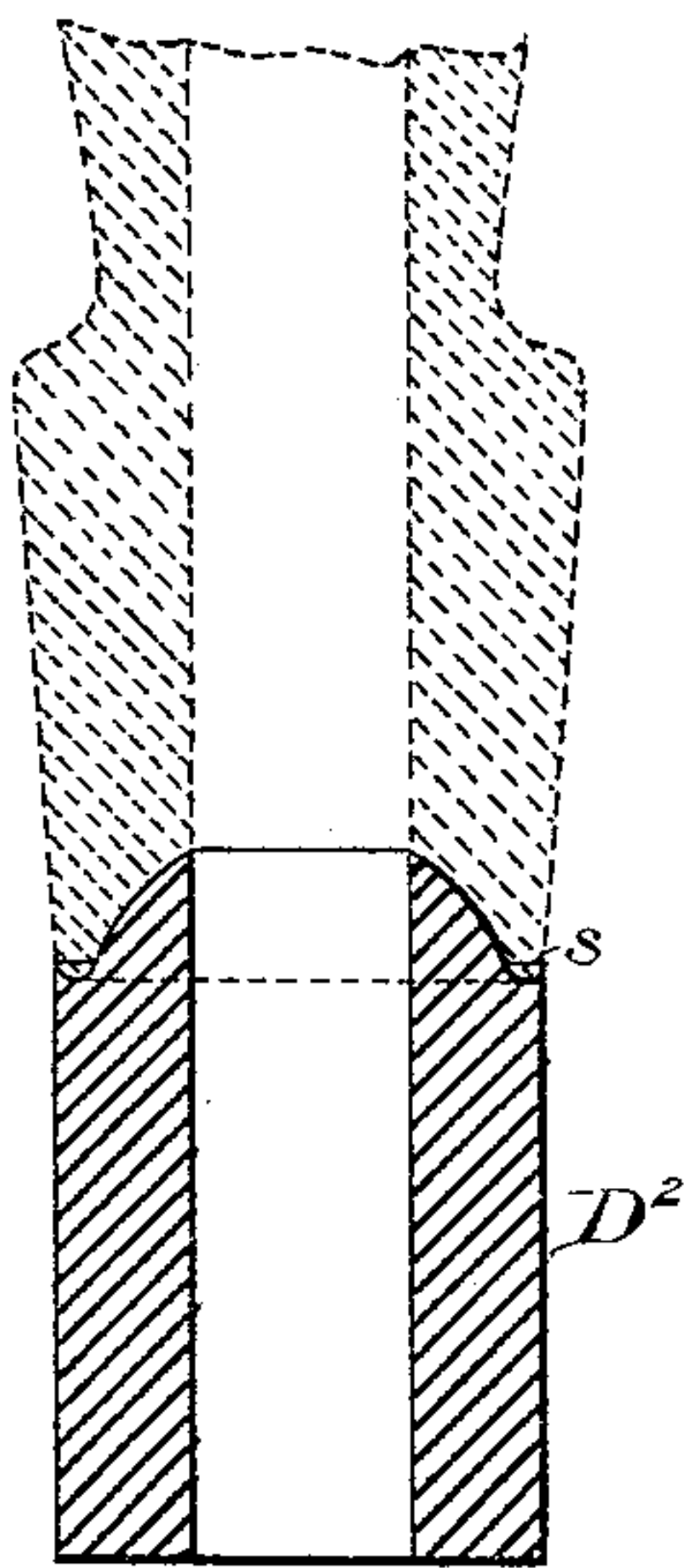
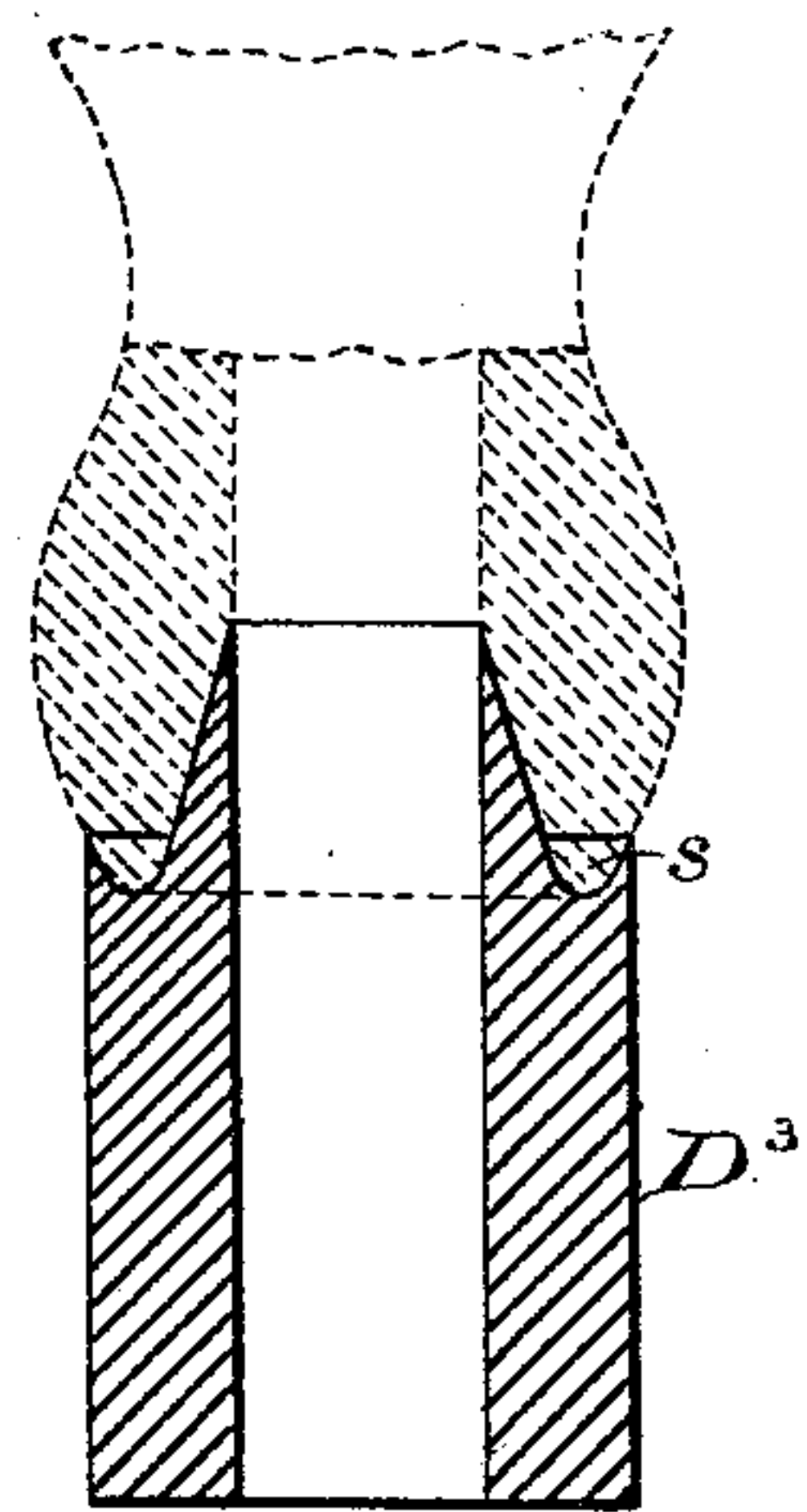


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

HOWARD M. ASHLEY, OF FERRYBRIDGE, COUNTY OF YORK, ENGLAND.

MACHINE FOR MAKING GLASS BOTTLES.

SPECIFICATION forming part of Letters Patent No. 403,719, dated May 21, 1889.

Application filed March 14, 1889. Serial No. 303,318. (No model.)

To all whom it may concern:

Be it known that I, HOWARD MATRAVERS ASHLEY, a subject of the Queen of Great Britain and Ireland, and a resident of Ferry-
5 bridge, in the county of York, England, have invented a new and useful Improvement in Machines for Making Glass Bottles, of which the following is a specification.

This invention is additional to a series of
10 improvements in processes and apparatus for making bottles and like hollow glassware by machinery which I have set forth in previous specifications forming part of an application for United States Letters Patent filed Septem-
15 ber 6, 1887, Serial No. 250,767, and divisions thereof, and of applications filed November 10, 1888, Serial No. 290,512, December 5, 1888, Serial No. 292,766, and January 23, 1889, Serial No. 297,189.

20 It relates more particularly to improvements on the lip-shaping and mouth-forming devices set forth in my divisional application No. 290,507, filed November 10, 1888, and in said applications Serial Nos. 290,512, 292,766, and
25 297,189, or, in other words, to improved means for carrying into effect the lip-shaping and mouth-forming parts of my parison-making process set forth in divisional application Serial No. 290,506, filed November 10, 1888.

30 The present invention consists in providing what I have termed the "nozzle" with interchangeable "nipples" of one or more shapes of face and degrees of protrusion, whereby bottles may be given any desired
35 shapes of mouth and lip and the nozzle may be renewed when worn or kept in working condition, or adapted to produce a different shape of mouth or lip by simply changing its nipple, as hereinafter more fully set forth.

40 A sheet of drawings accompanies this specification as part thereof.

Figure 1 of the drawings represents a vertical axial section, partly in elevation, of the main parts of an improved parison-making
45 apparatus, illustrating the present invention; and Figs. 2 and 3 represent axial sections of detached nipples interchangeable with the one shown in Fig. 1, together with dotted outlines of bottle-heads of other shapes, illustrating the fact that this invention is not con-
50 fined to any particular shape or relative proportions of mouth, lip, and head or ring.

Like letters of reference indicate corresponding parts in the several figures.

A may represent the diametrically-divided
55 parison-mold, B the correspondingly-divided head-mold or "collar," and C the hollow punch of a "single" bottle-making machine, such as is set forth in said application Serial No. 290,507, or of each initial mechanism of a
60 "repeating-machine," such as either of those set forth in said applications Serial Nos. 292,766 and 297,189.

According to the present invention a nozzle, D, is combined therewith having an axial
65 counterbore, *z*, and, if desired, one or more radial screw-holes, *y*, which are provided, respectively, with interchangeable nipples, as D' D² D³, and with a screw or screws, E, for fastening either nipple in place within the
70 nozzle, as represented in Fig. 1. Nipples, as D' D² D³, of different patterns preferably have in common a marginal shoulder, *s*, which at the perimeter of the nipple is flush with the face of the nozzle, and which may be more
75 or less concave to give the lip of the bottle any desired shape and thickness. Beyond this shoulder each nipple may extend to a greater or less length, such extension determining its protrusion beyond the face of the
80 nozzle and serving to form the outer or lip portion of the bottle-mouth. The nipple D' is adapted to form a thin-edged lip and a mouth of trumpet shape, as illustrated in Fig. 1. D² is adapted to form a thin-edged lip in
85 connection with a mouth having an abrupt seal enlargement at its lip, as illustrated in Fig. 2. D³ is adapted to form a thicker lip connected by a conical taper with the cylindrical interior of the head and neck, as illustrated in Fig. 3. Various other shapes adapted
90 to be produced in like manner will suggest themselves to those skilled in the art.

The external shape of the bottle-head and the form of its junction with the neck are de-
95 termined by the interior of the collar B, which may likewise be changed at will to produce any required shape and relative proportion of head, as illustrated by Figs. 2 and 3 in connection with Fig. 1. As heretofore, one end
100 of the collar B embraces and interlocks with a circumferentially-grooved coupling end, *x*, on the nozzle D, and the parison-mold A, interchangeable with a parison-mold of like

pattern to alternate therewith and with a suitable shaping-mold in which the bottles are finished, embraces and interlocks in like manner with a coupling end, x^2 , on the collar B.

The cylindrical interior of the head and neck beyond the lip portion of the mouth is formed, as heretofore, by the punch C, to which the nipples D' D^2 D^3 are fitted internally. It may otherwise be guided, and may be operated as set forth in either of my previous specifications forming part of the applications last referred to, or in any approved way. A single or one-part punch having a concave face is shown. For making the largest bottles or bottles with very large necks it is preferable to employ instead a "duplex" punch, such as is set forth in my specification forming part of said divisional application Serial No. 290,507, and the concave face of the punch is not considered essential.

In practice, the nozzle D being turned face upward, as shown in Fig. 1, and the punch C being retracted, as shown in full lines, a suitable nipple, as D' , is fastened within the nozzle, a suitable collar, as B, is next applied, and then a suitable parison-mold, as A. The glass in proper condition is then poured into the mold A and flows down upon the face of the nipple and around its protruding portion, so as to form the lip, as well as the exterior of the head and its junction with the neck, by a casting operation, as illustrated by Fig. 1. The punch C is then reciprocated, so as to complete the interior of the bottle-mouth and form an initial cavity in the body of the parison by a punching operation, as illustrated by dotted lines in Fig. 1, after which the parts shown in this figure are reverted, a suitable shaping-mold is substituted for the parison-mold, and so on, as in the bottle-making apparatus set forth in either of said applications Nos. 290,512, 292,766, and 297,189.

All patentable parts, combinations, and processes above described, apart from said interchangeable nipples and the combinations formed thereby, are set forth and claimed in my previous specifications forming part of said applications Serial Nos. 290,706, 290,707, and

290,512, and are hereby disclaimed as forming no part of the present invention. By means of said interchangeable nipples I am enabled to adapt a given apparatus to make bottles or parisons therefor with various shapes of lip, as called for by customers, without disturbing the nozzle.

Having thus described my said improved machine or apparatus, I claim as my invention and desire to patent under this specification—

1. In a machine for making glass bottles or parisons therefor in which the bottle-head is cast in inverted position, the combination, with a suitable head-mold or collar, of a nozzle provided with a loose nipple which shapes the lip of the bottle, substantially as hereinbefore specified

2. In a machine for making glass bottles or parisons therefor in which the bottle-head is cast in inverted position, the combination, with a suitable head-mold or collar, of a nozzle provided with interchangeable nipples and a punch to which they are all internally fitted, substantially as hereinbefore specified.

3. In a machine for making glass bottles or parisons therefor in which the bottle-head is cast in inverted position, the within-described interchangeable nipples of different patterns having at their face ends marginal shoulders of uniform height, and protruding portions to form the lip-surfaces of the bottle-mouths, in combination with a nozzle having a counter-bore to which all are fitted, substantially as hereinbefore specified.

4. The combination, with a suitable parison-mold, a suitable head-mold or collar interlocked therewith, and a suitable axial punch, of a nozzle interlocked with said collar and provided with a loose nipple fitted internally to said punch, and with suitable means, as a screw, for fastening the nipple in said nozzle, substantially as hereinbefore specified.

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Witnesses:

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