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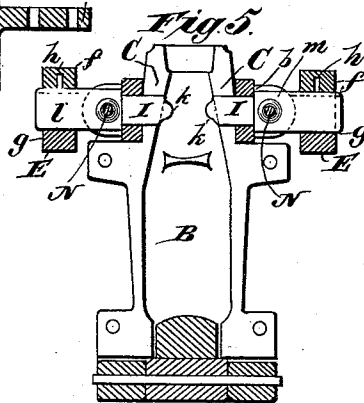
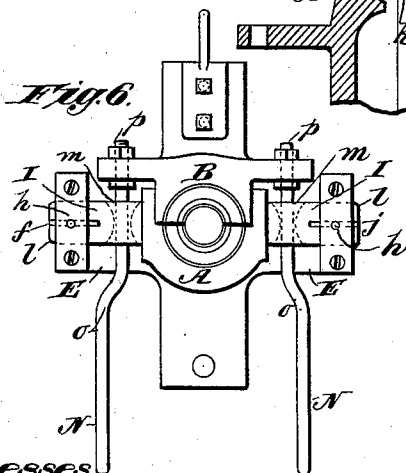
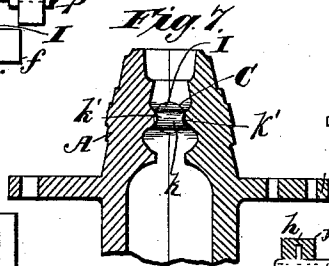
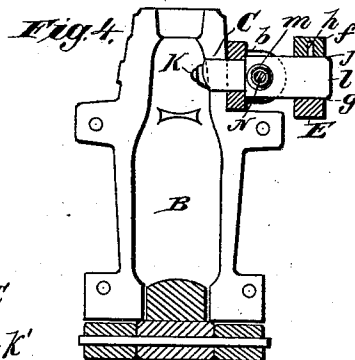
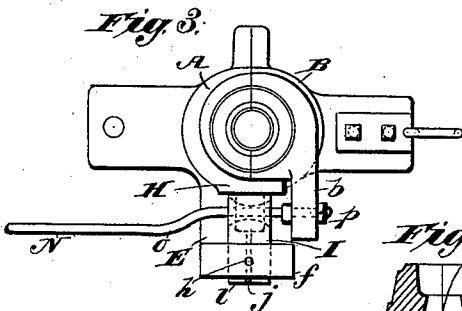
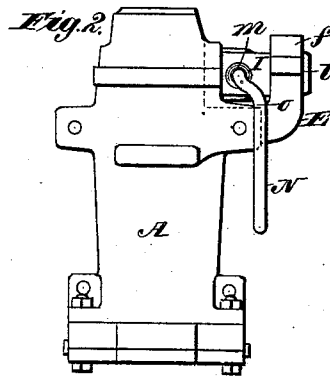
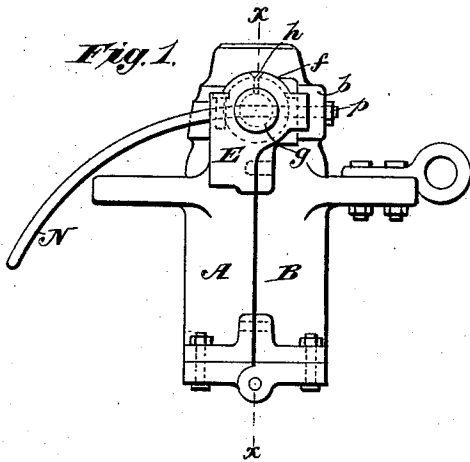
2 Sheets—Sheet 1.

D. RYLANDS.

MEANS FOR FORMING INDENTS IN GLASS BOTTLES.

No. 347,741.

Patented Aug. 17, 1886.



Witnesses  
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*J. L. Coombs*

Inventor:  
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By *Van Dantvoorn & Hauff*  
Attys.

(No Model.)

2 Sheets—Sheet 2.

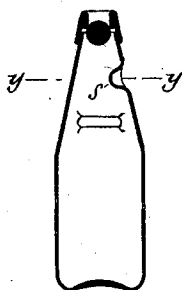
D. RYLANDS.

MEANS FOR FORMING INDENTS IN GLASS BOTTLES.

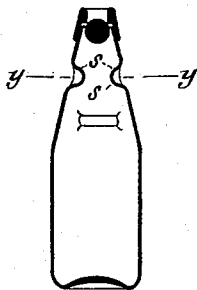
No. 347,741.

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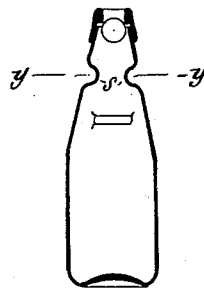
*Fig. 8.*



*Fig. 10.*



*Fig. 12.*



*Fig. 9.*



*Fig. 11.*



*Fig. 13.*



*Witnesses.*

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# UNITED STATES PATENT OFFICE.

DAN RYLANDS, OF STAIRFOOT, BARNSELY, COUNTY OF YORK, ENGLAND.

## MEANS FOR FORMING INDENTS IN GLASS BOTTLES.

SPECIFICATION forming part of Letters Patent No. 347,741, dated August 17, 1886.

Application filed July 23, 1885. Serial No. 172,446. (No model.) Patented in England January 10, 1885, No. 348.

*To all whom it may concern:*

Be it known that I, DAN RYLANDS, a subject of the Queen of Great Britain, residing at Stairfoot, Barnsley, in the county of York, England, have invented new and useful Improvements in Machines for Forming Indents in Glass Bottles, (for which I have obtained a patent in Great Britain, No. 348, dated January 10, 1885,) of which the following is a specification.

My invention relates to the forming of indents in glass bottles during the process of blowing the bottles in the mold. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, Fig. 2 a front elevation, Fig. 3 a plan, and Fig. 4, a transverse sectional elevation on line *x x* of Fig. 1, of an improved arrangement for forming one indent in each bottle during the process of blowing the bottle in the mold. Fig. 5 is a sectional elevation, and Fig. 6 a plan, of improved arrangement for forming two indents in each bottle during the process of blowing the bottle in the mold. Fig. 7 is a broken sectional elevation of improved arrangement for forming one annular indent or one indent which extends all round the bottle-neck during the process of blowing the bottle in the mold. Fig. 8 is a sectional elevation of a bottle, showing one indent formed in neck thereof; and Fig. 9 is a section taken on line *y y* of Fig. 8. Fig. 10 is a sectional elevation of a bottle and shows two indents formed in neck thereof, and Fig. 11 is a section taken on line *y y* of Fig. 10. Fig. 12 is a broken sectional elevation of a bottle, showing an annular indent or one indent which extends all round the neck thereof; and Fig. 13 is a section taken on line *y y* of Fig. 12.

Similar letters refer to similar parts throughout the several views.

Referring to Figs. 1, 2, 3, and 4, the halves A and B of mold have a hole, C, formed through them. The bracket E is either made with or attached to the stationary half A of mold. The stationary half A of mold is fixed to the mold-plate in the usual way. The bracket E has a cap, *f*, and bearing *g*. The guide or rest H is either made with or attached to the stationary half A of mold. The presser I works in the

guide H and through the hole C, and has its end *k* made in form to suit the required shape of indent. The portion *l* works in the bearing *g*. The slot *j* and rivet *h* are for preventing the presser I turning round. The presser I has a hole, *m*, formed through it. The rod or cam N is attached to the portion *b* of movable half B of mold by means of the nut *p* and works in the hole *m*. It is bent at *o*, so as to give the necessary travel or throw to the presser I, and so to cause the said presser I to be forced into mold and withdrawn simultaneously with the closing and opening of the mold. It is also bent in form shown at Fig. 1, to suit the radius of movable half B of mold.

When the molten glass which the blower has attached to the end of blow-pipe has been rolled into a suitable shape, it is placed in the mold in the ordinary manner, and the movable half B of mold closed up to the stationary or fixed half A, in which closed position the end *k* of presser I projects a suitable distance into mold, as shown at Fig. 4. Then the bottle is blown in the ordinary manner, after which the movable half B is pulled away from the stationary half A, during which operation the bent portion *o* of rod or cam N, causes the presser I with its portion *k* to withdraw from the interior of mold, and thus to leave a clear way for the blown bottle to be taken out of mold. The hereinbefore-described arrangement is for forming one indent in each bottle. Where it is required to form two indents in each bottle I use the hereinbefore-described arrangement in duplicate. (Clearly shown at Figs. 5 and 6.) It must be well understood that should more indents than two be required to be formed in bottle, the number of pressers I and cams N may be increased accordingly. Where it is required to form an annular indent, or one indent which will extend all around the neck of bottle, I use the duplicate arrangement shown at Figs. 5 and 6, but form suitable internal projections in the mold, as will be clearly understood by referring to Fig. 7. The internal projections, *k' k'*, are formed on the interior of each half of mold and extend from the portion *k* of one presser I to the portion *k* of the opposite presser I, so that when the mold is closed and the portions *k* of pressers I project a suitable

distance within the mold there is formed within the mold an annular internal projection or an internal projection extending all round the interior of neck of mold, and a bottle blown therein partakes of a corresponding annular indent or indent extending all round the neck thereof.

By means of the hereinbefore-described improvements suitable indents—such, for instance, as those shown at *s* in Figs. 8, 9, 10, 11, 12, 13—can be formed in glass bottles during the process of blowing the bottles in the mold. It will be readily understood that the indents may be of any desired shape, it only being necessary to make the portion *k* of presser I to suit the particular design or shape required, and with regard to the indent extending around the bottle-neck it is only necessary to make the shape of internal projections, *k' k'*, to suit the shape of indents required, and where it may be required to make the indent or indents formed in bottle by means of the presser or pressers I of one shape, and the indents formed in bottle by means of the internal projections, *k' k'*, of a different shape, or of a similar shape but less, or of a similar shape but larger, it will only be necessary to make the portion or portions *k* of presser or pressers I and the internal projections, *k'*, to suit the shapes and sizes required.

Having fully described my invention, what

I desire to claim and secure by Letters Patent is—

1. The combination, with a mold composed of two sections hinged together, of an indenting presser sliding through an opening in one mold-section, and a connection between the other mold-section and the presser, for withdrawing the latter when the mold-sections are separated, substantially as described.

2. The combination, with a mold composed of a movable section, B, and a stationary section, A, of a presser, I, carried by the stationary mold-section and sliding into the mold, and a connection between the movable mold-section and the presser, for withdrawing the latter when the movable mold-section is moved away from the stationary section, substantially as described.

3. The combination of a mold composed of a stationary and a movable section, a presser carried by the former and sliding into the mold, and a bent rod connected with the movable mold-section and acting to withdraw the presser when the movable section is moved away from the stationary section, substantially as described.

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Witnesses:

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THOMAS JOHNSON.