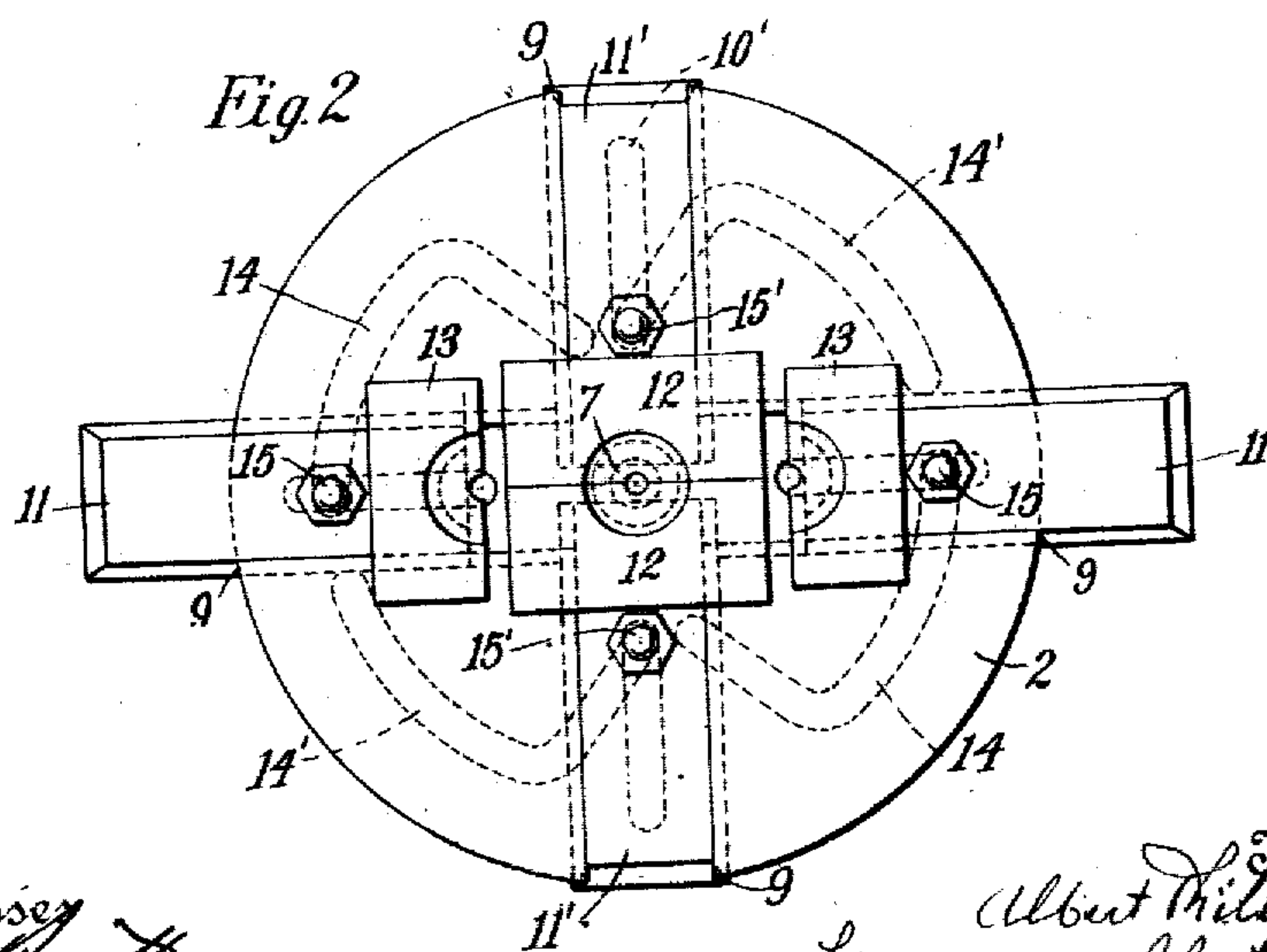
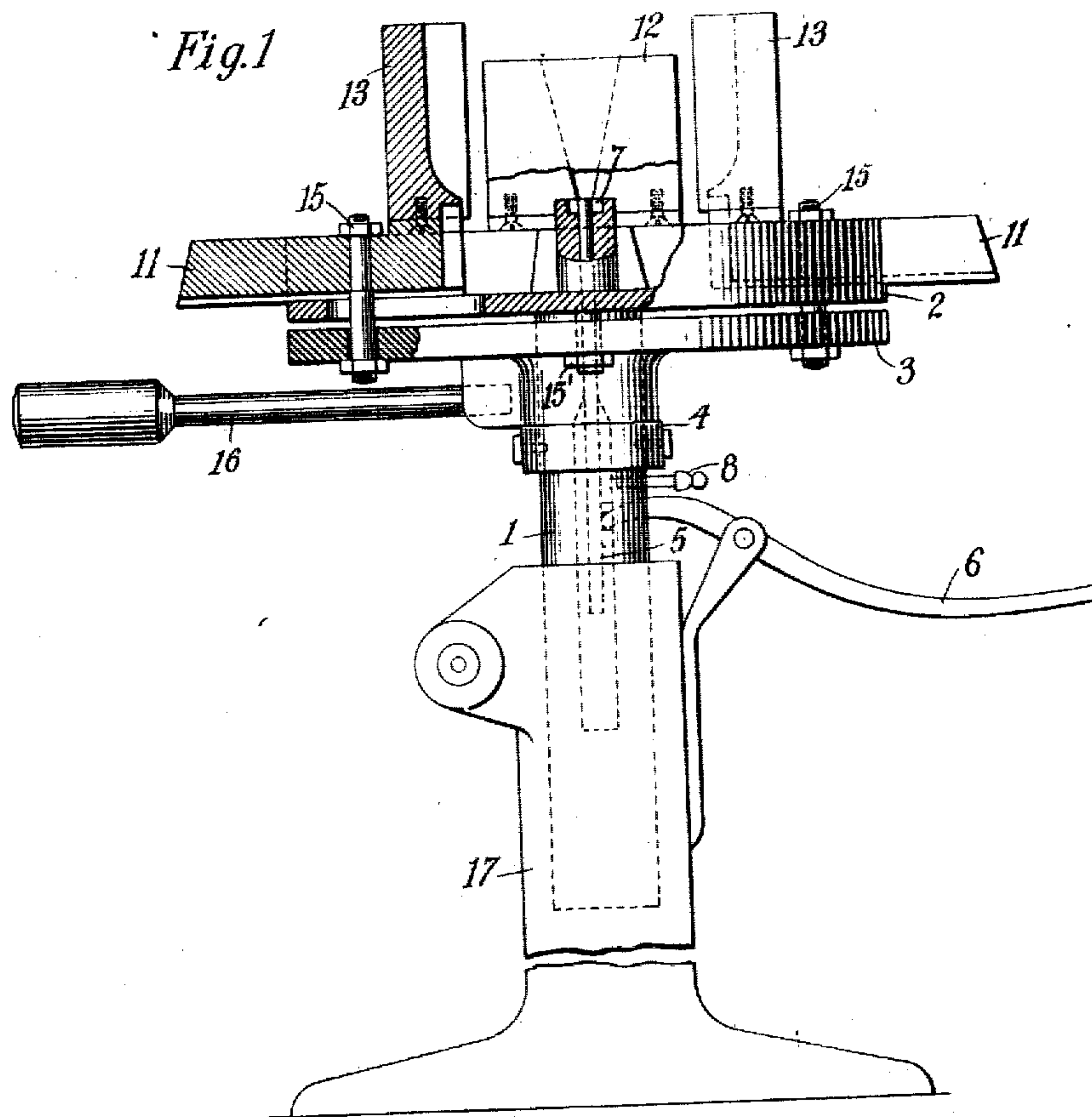


No. 814,800.

PATENTED MAR. 13, 1906.

A. PHILIPPOTEAUX.
BOTTLE MAKING DEVICE.
APPLICATION FILED JULY 22, 1905.

2 SHEETS—SHEET 1.



Witnesses
E. C. Schappert

Inventor
Albert Philippoteaux
By *His Attorney L. J. Laureau*

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Fig. 3

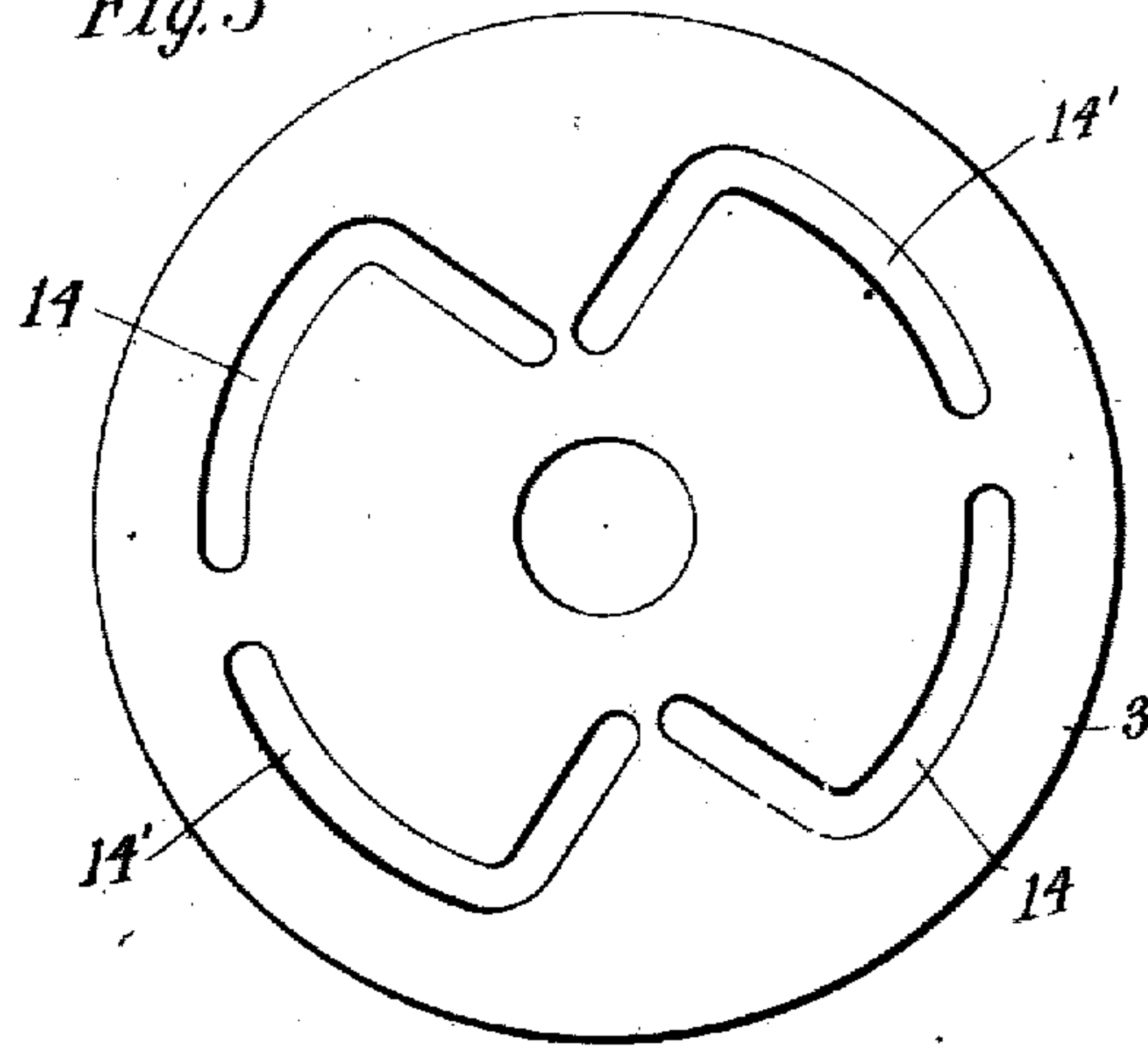
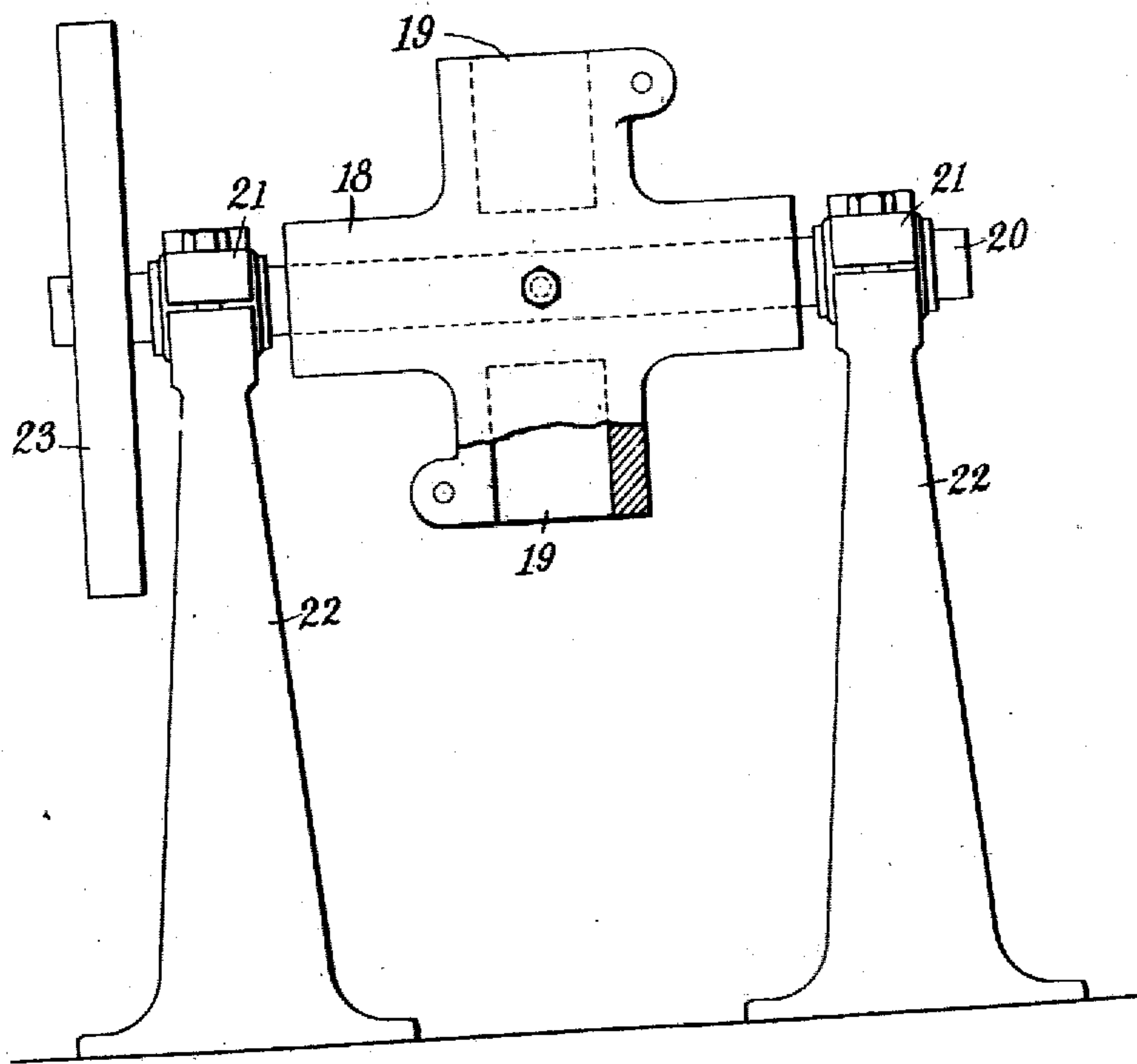


Fig. 4



Witnesses
E. C. Schoppert

Inventor
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By his Attorney *L. L. Laureau*

UNITED STATES PATENT OFFICE.

ALBERT PHILIPPOTEAUX, OF REIMS, FRANCE.

BOTTLE-MAKING DEVICE.

No. 814,800.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed July 22, 1905. Serial No. 270,886.

To all whom it may concern:

Be it known that I, ALBERT PHILIPPOTEAUX, a citizen of the Republic of France, residing at Reims, Department of Marne, France, have invented a new and useful Improvement in Bottle-Making Machines, of which the following is a specification.

This invention relates to a device for making bottles which by reason of its construction allows great rapidity of manipulation, and thus permits the continuous manufacture of small bottles and vials.

In the accompanying drawings, Figure 1 is a general elevation of a single machine, showing the organs in place at the time when the glass is cast into the measuring-mold, one of the half-molds being broken to show the neck-mold and mandrel. Fig. 2 is a plan view of the table carrying the molds. Fig. 3 is a plan view of the actuating-table, showing the guiding-slots. Fig. 4 is an elevation of an arrangement which permits the successive use of two bottle-making devices.

The bottle-making device proper consists of a tubular support 1, rigidly connected at its upper end with a table 2. A second table 3, placed underneath platform 2, revolves freely around support 1 and is maintained at its proper height by a collar 4, screwed to support 1. This support is made with a central cavity wherein a hollow mandrel 5 moves up and down by such means as the hand-lever 6. (Shown on Fig. 1.) The hollow mandrel pushes up into the neck-mold 7, fixed in the center of platform 2, and is used in forming the neck of the bottle. Air under pressure is admitted into the mandrel by means of cock 8. The bead is formed in the neck-mold 7. Table 2 is provided with four dovetail grooves 9 at right angles with each other and at the bottom of which are found four slots 10, cut through the table. Four dovetail pieces 11 11 11' 11' slide in the grooves, and on top of them are mounted the two halves of the measuring-mold 12 and of the finishing-mold 13. The revoluble guiding-table 3 is provided with slots 14 14', in which guide-pins 15 15' work freely. These guide-pins are rigidly connected with the sliding pieces 11 11'. In order to impart motion to the revoluble platform 3, a lever 16 is provided.

When one bottle-making device only is used, the support 1 is rigidly mounted in a column 17, provided with a suitable stationary base. When it is desired to use two bot-

tle-making devices in quick succession, the arrangement shown on Fig. 4 is brought into play. It consists of a heavy sleeve 18, bearing two diametrically-opposed sockets 19. This sleeve is keyed on a shaft 20, which revolves in pillow-blocks 21, mounted on standards 22, by means of pulley 23. The supports 1 of each respective bottle-making device are secured in sockets 19, so that after one of the devices has been in use it may be moved out of the way by a half-turn of the pulley 23 to be replaced by the second, when operations may at once be resumed while the first device is cooling.

The operation of the device is as follows: The two halves of the measuring-mold are at first brought to the center of the table 1 by means of the lever 16. This mold fits closely around the neck-mold 7, placed in the center of the table. The guide-pins 15' 15', which are connected to the sliding pieces 11' 11', carrying the two halves of the measuring-mold, are then at their extreme inner position. The guide-pins 15 15, connected to the sliding pieces 11 11, carrying the two halves of the finishing-mold, are at their extreme outer position, as shown on Fig. 2. The mandrel is pushed up into the neck-mold. The glass is at this moment cast into the measuring-mold, the mandrel is withdrawn, and the blast is admitted to punch the parison. When it has been so far blown that it fills the measuring-mold, table 3 is caused to revolve by means of lever 16. Guide-pins 15' 15' slide in slots 10' 10' of table 2 and 14' 14' of table 3, thus forcing sliding pieces 11' 11' away from the neck-mold and parison. Guide-pins 15 15 being at this moment engaged in the circular portion of slots 14 14 are motionless and allow the halves of the measuring-mold to recede from the center until both sets of guide-pins reach the bend in the slots of table 3. At this point guide-pins 15' 15' have reached their extreme outer limit and are about to enter the circular portion of slots 14' 14', where they remain radially stationary. Guide-pins 15 15, on the contrary, are forced forward in the rectilinear path of slots 10 10 in table 2 and by their travel bring sliding pieces 11 11 and the halves of the finishing-molds they carry to the center, closely encircling the neck-mold 7. Blast is again admitted and the parison is blown until it completely fills the finishing-mold, thus completing the bottle. A reverse motion of the lever causes the

mold to open, thus freeing the bottle, which may be withdrawn. A continuation of the same motion of the lever causes the half finishing-molds to return to their original extreme outer position, while the half measuring-molds assume again their original extreme inner position ready for a new operation.

For greater rapidity where using two bottle-making devices the two tables 3 may be connected so as to be put in motion by the same lever. An obvious reverse arrangement of the guide-pins on the respective tables will cause the measuring-mold on the table of the upper device to open simultaneously with the finishing-mold on the table of the lower device, thus causing the finished bottle to become free automatically.

By the use of my new bottle-making device the mechanical manufacture of small bottles and vials which was so difficult by reason of the small quantity of glass used and its consequent rapid cooling is easily realized. Moreover, the parts of the bottle-making not in use will be given time to cool between each operation.

What I claim is—

1. In a bottle-making device the combination of a fixed table, a measuring and a finishing mold carried by said table, the halves of said molds being radially movable, a revoluble table placed under the mold-table, slots in both tables, and guide-pins working in the slots and adapted to move each half-mold toward or from its complementary half so as to close and open the molds.

2. In a bottle-making device the combination of a fixed table, a measuring and a finishing mold, the halves of said molds being radially movable, a revoluble table placed under the mold-table, slots in both tables, guide-pins working in the slots and adapted to move each half-mold toward or from its complementary half so as to close and open the molds, a hollow support rigidly connected to the mold-table, a hollow mandrel inside of the support, means to supply air under pres-

sure to the inside of the mandrel and a neck-mold fixed in the mold-table into which the mandrel is adapted to move vertically.

3. In a bottle-making device the combination of a fixed table, a measuring and a finishing mold carried by said table, the halves of said molds being radially movable, a revoluble table placed under the mold-table, slots in both tables, guide-pins working in the slots and adapted to move each half-mold toward or from its complementary half so as to close or open the molds, a hollow support rigidly connected to the mold-table, a hollow mandrel inside of the support, means to supply air under pressure to the inside of the mandrel, a neck-mold fixed in the mold-table into which the mandrel is adapted to move vertically, and a base forming a socket in which the support for the mold-table is rigidly fixed.

4. The combination of two bottle-making devices consisting each of a fixed table, a measuring and finishing mold carried by said table, the halves of said molds being radially movable, a revoluble table placed under the mold-table, slots in both tables, guide-pins working in the slots and adapted to move each half-mold toward or from its complementary half so as to close or open the molds, a hollow support rigidly connected to the mold-table, a hollow mandrel inside of the support, means to supply air under pressure to the inside of the mandrel, and a neck-mold fixed in the mold-table into which the mandrel is adapted to move vertically, with two sockets adapted to revolve around an axis placed between them and into which the supports for the mold-table of the respective bottle-making devices are rigidly fixed, and means to revolve the sockets.

In witness whereof I have signed my name in the presence of two subscribing witnesses.

ALBERT PHILIPPOTEAUX.

Witnesses:

FELIX LAMBOTIN,
AUGUST DOUCE.