No. 631,589. Patented Aug. 22, 1899.

A. J. RUDOLPH.

MACHINE FOR FORMING BOTTLE NECKS.

(Application filed Aug. 8, 1898. Renewed May 3, 1899.)

(No Model.)

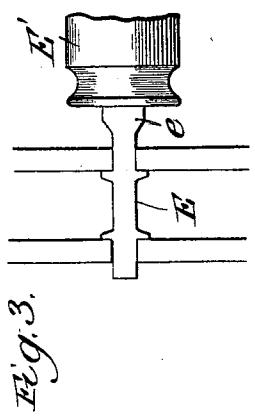


Fig. 3.

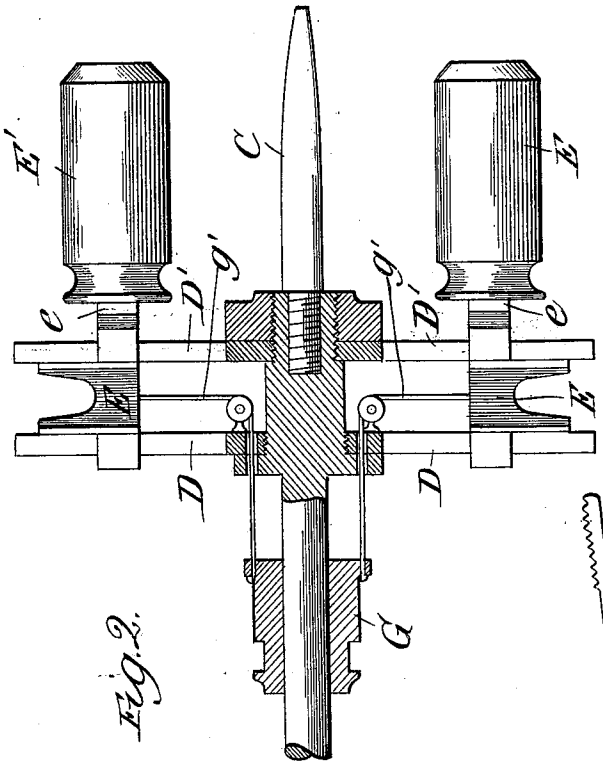


Fig. 2.

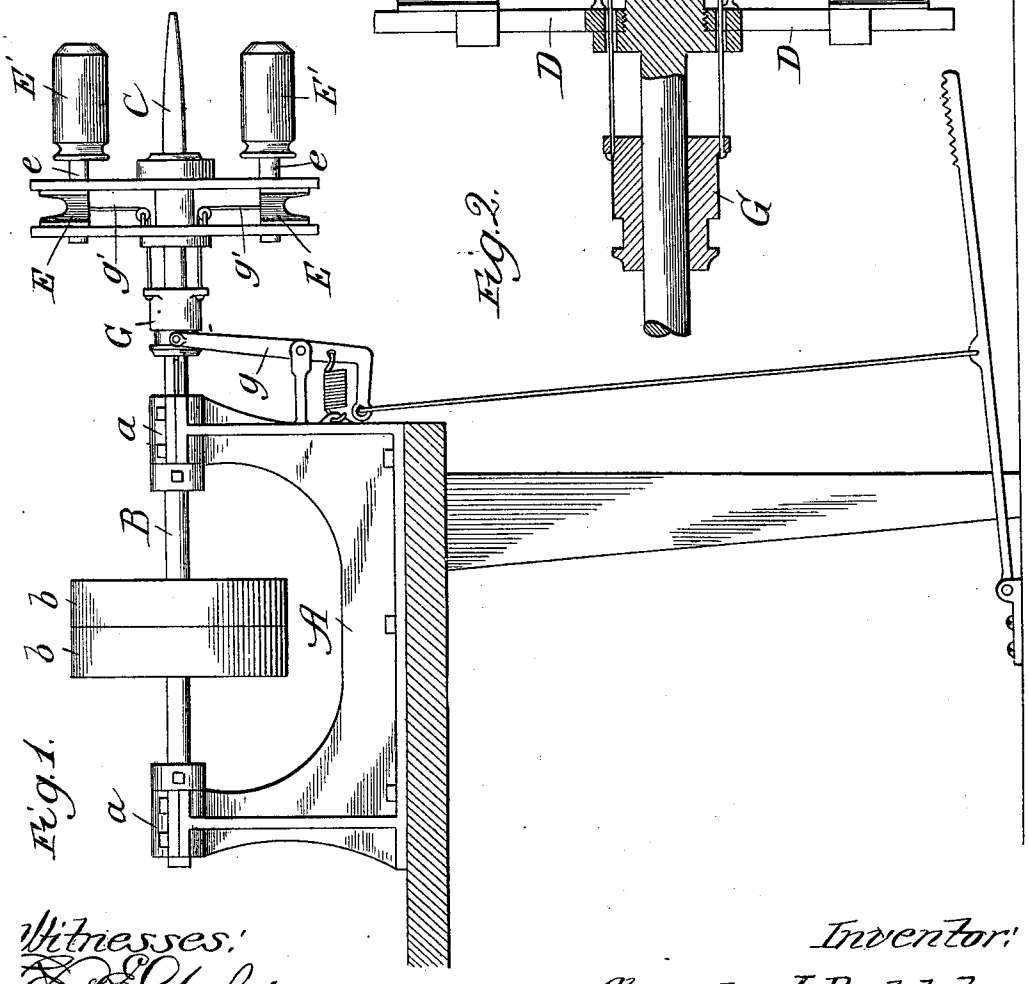


Fig. 1.

Witnesses:
Chas. E. Gaylord,
Luther S. Filler.

Inventor:
Alexander J. Rudolph,
By Banning & Banning & Sheridan
Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALEXANDER J. RUDOLPH, OF CHICAGO, ILLINOIS.

MACHINE FOR FORMING BOTTLE-NECKS.

SPECIFICATION forming part of Letters Patent No. 631,589, dated August 22, 1899.

Application filed August 8, 1898. Renewed May 3, 1899. Serial No. 715,477. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER J. RUDOLPH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Forming Bottle-Necks, of which the following is a specification.

My invention relates to that class of mechanisms for forming and finishing the necks of bottles and other open-ended tubular articles formed of glassware or similar material while such articles are in a heated, malleable, or ductile condition.

The principal object of my invention is to provide a simple, economical, and efficient machine for forming bottle-necks; and the invention consists in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a machine constructed in accordance with my improvements; Fig. 2, an enlarged sectional detail of the forming mechanism; and Fig. 3, a side elevation of a portion of the mechanism, as hereinafter more fully described.

In constructing a machine in accordance with my improvements I make a frame A of the desired size, shape, and strength to support the operative and other parts in their respective positions. Rotatably mounted in the bearings a and a' is a rotatable spindle and mandrel B, carrying the usual tight and loose pulleys b and b'.

To form and finish the bottle-neck, the front end of the spindle is provided with a forming-plug C, adapted to enter the opening of the bottle-neck and size, form, and finish the same. To finish the outside of the bottle-neck, the spindle is provided with a pair of parallel-arranged slotted disks or plates D and D', in and between which are mounted sliding blocks E, that carry the shafts e inwardly and outwardly in a parallel manner. On the shafts of the sliding blocks are rotatably mounted the forming and finishing rolls E and E', which are carried inwardly and outwardly to form and finish the bottle-neck or the exterior portion thereof. To move these sliding blocks with their parallel-moving rolls inwardly and outwardly in the desired manner, a longitudinally-movable operating-sleeve G is provided and reciprocatingly mounted on the spindle, so that it may be moved backwardly and forwardly by means of the operating-lever g. This sleeve is connected by means of cords, cables, or similar elements g' with the sliding block, so that as the operating-sleeve is moved backwardly the blocks are moved inwardly, thereby carrying the rolls inwardly in a parallel manner to form and finish the bottle-neck. During the rotations of the forming-spindle centrifugal force may be depended upon to move the rolls outwardly. If this is insufficient, helical springs may be interposed between the sliding blocks and the spindle or plates and serve to move the blocks back and hold them in their normal outer position.

I claim--

1. In a machine of the class described, the combination of a rotatable spindle, a forming-plug mounted in one end thereof, a plate or plates mounted thereon, sliding blocks mounted in the plate or plates and provided with forming-rolls, a longitudinally-movable operating-sleeve reciprocatingly mounted upon the spindle, and a cable, cord, or similar element connecting the movable sleeve with the sliding blocks to move the same inwardly in a parallel manner, substantially as described.

2. In a machine of the class described, the combination of a rotatable spindle, a forming-plug mounted in one end thereof, a pair of slotted plates mounted upon the spindle so as to rotate therewith, a sliding block or blocks mounted in and between the slotted plates each carrying a shaft upon which a forming-roll is rotatably mounted, a reciprocating operating-sleeve mounted upon the spindle, and a cable, cord, or similar element connecting the operating-sleeve with the sliding blocks to move such blocks and their sliding rolls inwardly and in a parallel manner, substantially as described.

ALEXANDER J. RUDOLPH.

Witnesses:

THOMAS F. SHERIDAN,

THOMAS B. MCGREGOR.