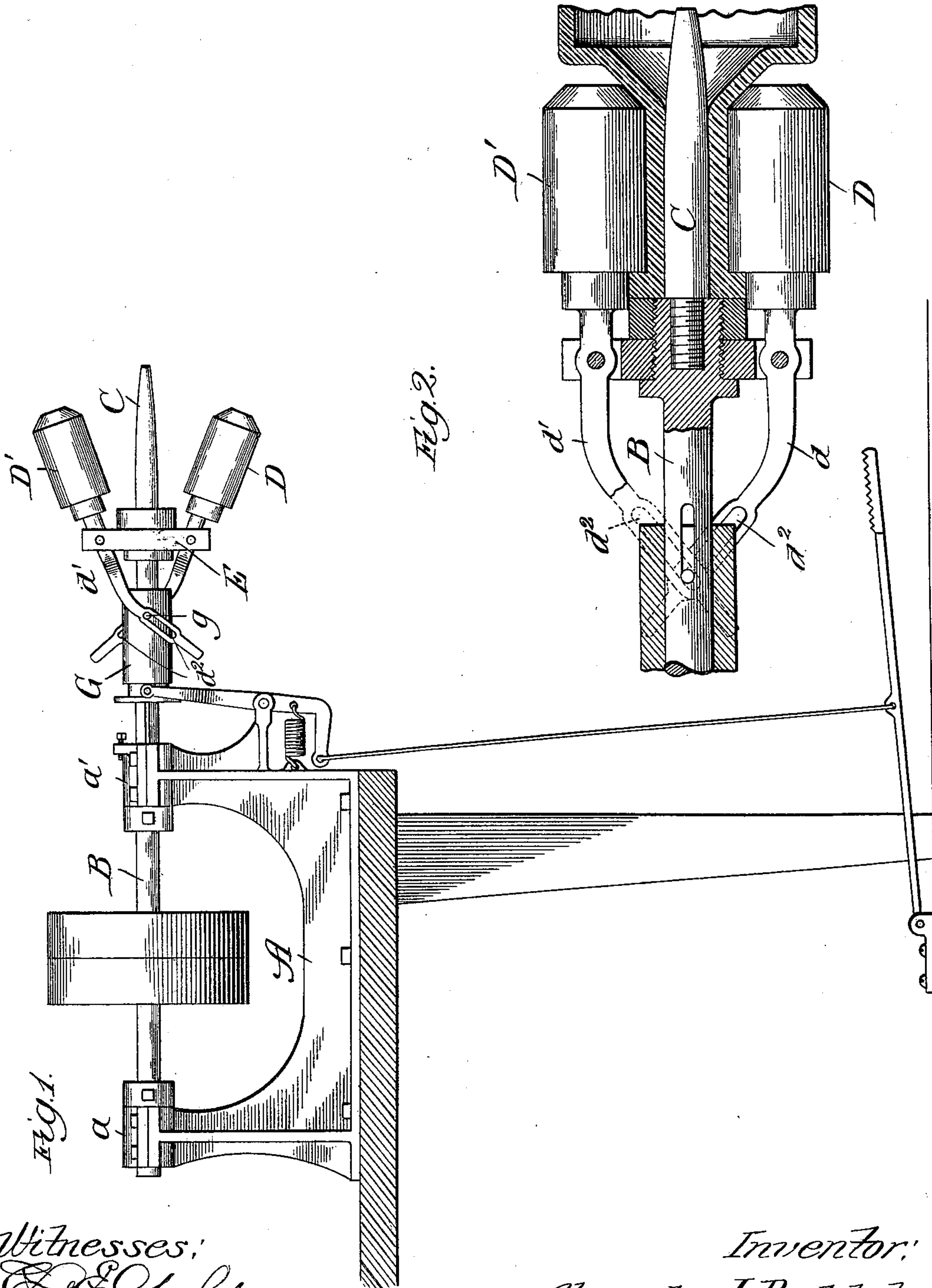


No. 631,590.

Patented Aug. 22, 1899.

A. J. RUDOLPH.  
MACHINE FOR FORMING BOTTLE NECKS.  
(Application filed Aug. 8, 1898. Renewed May 3, 1899.)

(No Model.)



Witnesses:  
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# UNITED STATES PATENT OFFICE.

ALEXANDER J. RUDOLPH, OF CHICAGO, ILLINOIS.

## MACHINE FOR FORMING BOTTLE-NECKS.

SPECIFICATION forming part of Letters Patent No. 631,590, dated August 22, 1899.

Application filed August 8, 1898. Renewed May 3, 1899. Serial No. 715,478. (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 mechanism 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, and Fig. 2 an enlarged sectional elevation of the bottle-forming mechanism.

In constructing a machine in accordance with my improvements I make a frame portion A of the desired size, shape, and strength to hold the operative and other parts in position. Rotatably mounted in bearings  $\alpha$  and  $\alpha'$  of the frame portion is the main spindle B, carrying a forming-plug C at the front part thereof, which forming-plug is adapted by its

rotation to form, size, and finish the interior of the bottle-neck.

To form, size, and finish the outside of the bottle-neck, I provide a pair of forming-rolls D and D' and rotatably mount them upon pivotal levers  $d$  and  $d'$ , preferably pivoted on a disk E. To operate these levers and thus move the forming-rolls inwardly and outwardly, I provide a reciprocating operating-sleeve G and mount it upon the main spindle. This operating-sleeve has pins  $g$  engaging with slots  $d^2$  in the operating-levers, so that as the sleeve is moved in one direction the rolls are moved outwardly and when the sleeves are moved in the opposite direction the rolls are moved inwardly to contact, form, and finish a bottle-neck.

I claim—

In a machine for forming bottle-necks, the combination of a rotatable spindle, a forming-plug mounted in one end thereof, a disk or similar element mounted upon the rotatable spindle, at least two levers pivotally engaged with the disk or similar element and carrying forming-rolls at their outer ends and slotted at their inner ends, a reciprocating sleeve engaging with the slotted levers so that its reciprocations move the forming-rolls inwardly and outwardly, substantially as described.

ALEXANDER J. RUDOLPH.

Witnesses:

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