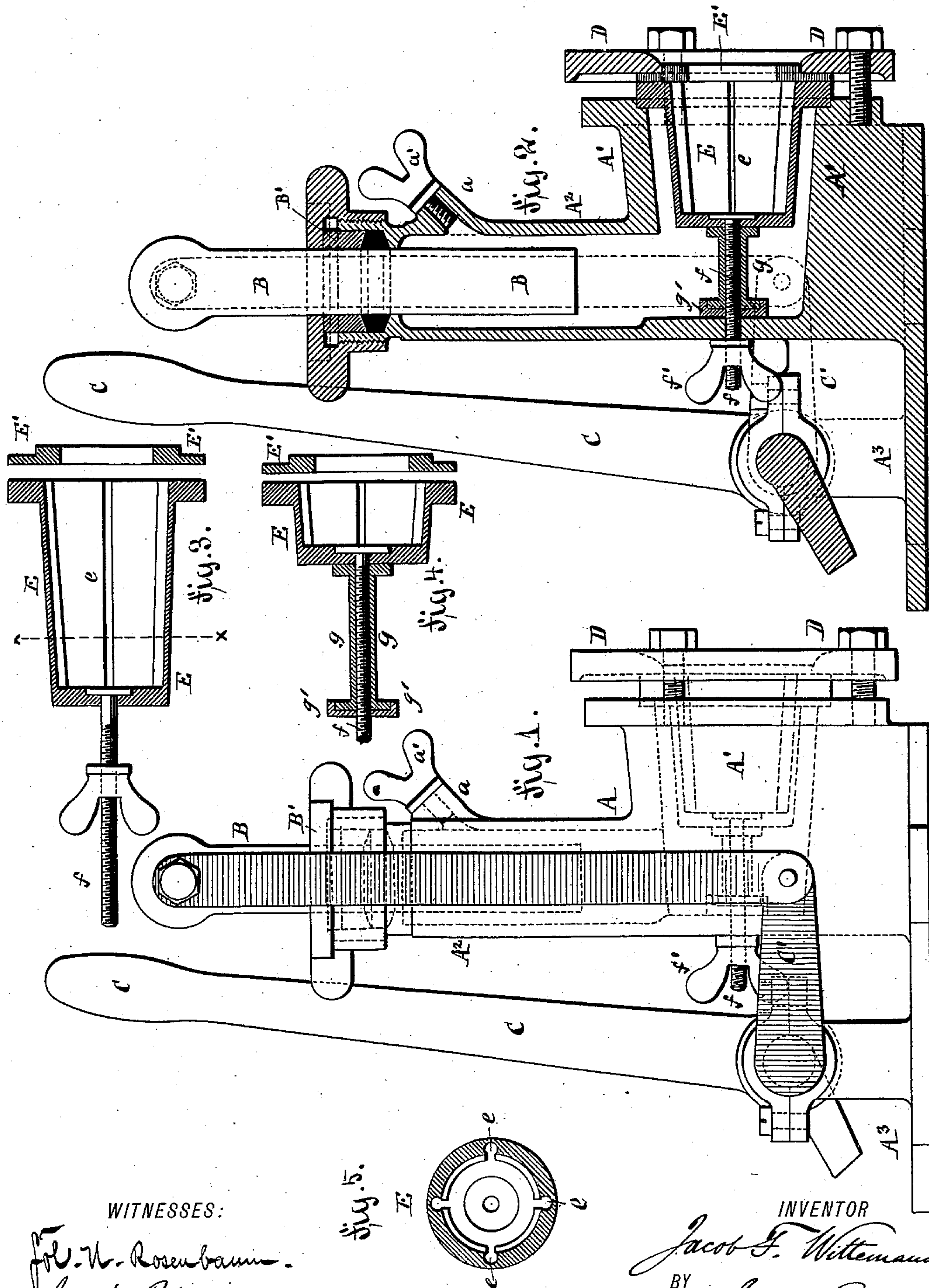


(No Model.)

J. F. WITTEMAN.
BOTTLE CAPPING MACHINE.

No. 351,554.

Patented Oct. 26, 1886.



WITNESSES:

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JACOB F. WITTEMANN, OF NEW YORK, N. Y.

BOTTLE-CAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 351,554, dated October 26, 1886.

Application filed February 27, 1886. Serial No. 193,456. (No model.)

To all whom it may concern:

Be it known that I, JACOB F. WITTEMANN, of the city, county, and State of New York, have invented certain new and useful Improvements in Bottle-Capping Machines, of which the following is a specification.

This invention relates to certain improvements in bottle-capping machines, whereby caps of different size can be applied to the bottle-heads; and the invention consists in the construction and combination of parts and details, as will appear more fully hereinafter, and finally be pointed out in the claim.

In the accompanying drawings, Figure 1 represents a side elevation of my improved bottle-capping machine; Fig. 2, a vertical longitudinal section of the same. Figs. 3 and 4 are detail vertical longitudinal sections of two different sizes of the interchangeable capping device used in the machine; and Fig. 5 is a vertical transverse section on line *x x*, Fig. 3.

Similar letters of reference indicate corresponding parts.

A in the drawings represents the body or casing of my improved bottle-capping machine, which is composed of a wider horizontal part, A', that is supported on a bed-plate, A³, cast integral therewith, and of a vertical part, A², of smaller diameter than the horizontal part A', said vertical part being located at the rear part of the horizontal part. The vertical part A² is provided with a stuffing-box, B', at the upper end, and a plunger, B, extending in the vertical part A² through the stuffing-box, said plunger being connected by a pivot link or links with a crank arm or arms, C', of an elbow-lever, C, which lever turns in bearings of the bed plate, and which is made in the shape of a handle at the upper end for operating the capping-machine. The horizontal part A' is provided with a ring-shaped clamping-plate, D, that is tightly screwed to the face of the part A', and provided with an opening large enough to permit the insertion of the bottle-head.

The capping device E is made in the shape of a tapering cup, of rubber or other suitable elastic material, and provided with an outwardly extending flange at its open end, by which the capping device E is clamped between the plate D and the flanged end of the

horizontal part A'. A ring-shaped washer, E', is interposed between the clamping-plate D and the flanged end of the capping device E, as shown in Fig. 2.

The elastic capping device E is provided at its inner surface with a number of longitudinal grooves, *e*, of semicircular cross-section, that serve to take up the folds formed in compressing the tin-foil cap on the neck of the bottle. The closed end of the capping device E is centrally connected by the enlarged end of a screw-bolt, *f*, that is passed through the rear wall of the horizontal part A' and retained thereon by a thumb-screw, *f'*. The enlarged end of the screw *f* has considerably less diameter than the closed end of the rubber cap, and is placed into a cavity in the said closed end of the cap, so that the outer surface of said enlargement is flush with the inner surface of the closed end of the cap, and when the liquid is forced against the said end of the cap it can press the rim parts thereof against the tin-foil cap on the bottle-head—that is, the end of the tin-foil cap rests against the enlargement of the screw—and the edge or rim parts of the closed end of the rubber cap can be pressed against the edge or rim parts of the end of the foil cap, whereby the end of the foil cap is pressed snugly on the bottle-head and cork about in the same manner as it would be pressed by grasping the tin-foil and bottle by means of the hand and exerting a pressure.

To permit the machine to be used for applying caps of different sizes, capping devices E of corresponding sizes are used in connection with flanged thimbles *g*, which are placed on the screw-bolt *f* intermediately between the closed end of the capping device E and the rear flange of the thimble *g* is provided with a rubber packing or facing, *g'*, so that the tight fitting of the thimble *g* to the rear wall of the casing A is obtained. To exchange the capping devices the ring-shaped head D and washer E' are detached; also the thumb-screw *f'*, upon which the capping device can be removed and a new one of different size inserted in connection with its corresponding thimble *g*. By this means the end web of the elastic capping device E is firmly held in position by the enlarged end of the fastening screw-bolt *f*,

while the sides of the capping device are free to press the cap closely around the head of the bottle. This is accomplished by the action of the plunger on the liquid in the casing A in the usual well-known manner in capping-machines. The elastic capping device presses thereby the cap smoothly around the head and folds up the surplus stock into the longitudinal grooves of the capping device, so that a uniform capping of the bottle-heads is produced.

For the purpose of excluding the air from the liquid in the casing A after the same has been filled, the vertical part A² is provided below the stuffing-box B' with a short inclined filling-tube, *a*, that is closed by a detachable screw-plug, *a'*. For filling the body A the plunger is lifted by the handle C', so that the lower end of the plunger is on a level with the upper part of the inclined tube *a*. The water or other liquid is then filled into the body A up to a level with the tube, and the screw-plug *a'* screwed in. No vent device is thereby required, and the body of the capping-machine can be filled with liquid in an easy and convenient manner.

I am aware that bottle-capping machines comprising a surrounding casing, an elastic diaphragm attached to said casing, and a plunger by which hydraulic pressure is applied to the elastic diaphragm, so as to press the cap around the mouth of the bottle, have been used heretofore. I am also aware that caps of different size have been applied to bottles by inter-

posing between the diaphragm and the casing on the connecting-bolt of the same a number of metallic washers, according to the size of the cap; and I therefore do not claim this feature, broadly. These machines, however, could only be used for comparatively small differences in size of caps, while in my machine, by means of the flanged interchangeable thimble, any size of cap from the smallest to the largest can be applied to the bottle-neck.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

In a bottle-capping machine, the combination, with a casing consisting of a horizontal lower part and a vertical upper part, of an elastic cap secured by a ring-shaped head within the horizontal part, a screw-rod attached to the closed end of the cap, and having an enlargement of much less diameter than said end and fitting into a recess of the said closed end, which screw-rod passes through the rear wall of the casing, an exterior thumb-nut on the end of said screw-rod, and a thimble mounted on the screw-rod between the closed end of the rubber cap and the side wall of the casing, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JACOB F. WITTEMANN.

Witnesses:

PAUL GOEPEL,
SIDNEY MANN.