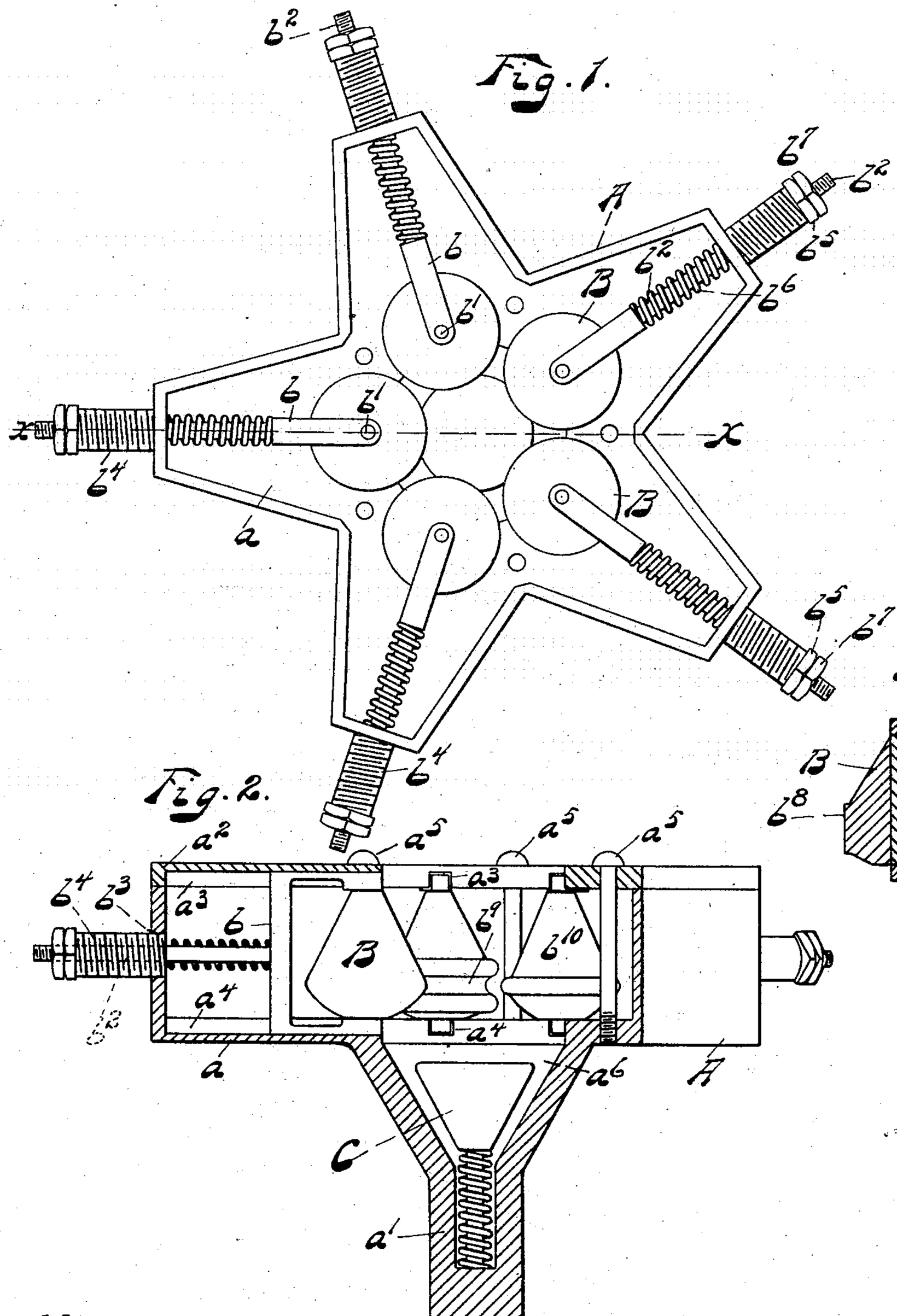
No. 720,175. PATENTED FEB. 10, 1903.

M. E. NOYES.

BOTTLE CAPPING MACHINE.

APPLICATION FILED SEPT. 27, 1900. RENEWED NOV. 15, 1902.

NO MODEL.



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UNITED STATES PATENT OFFICE.

MAYHEW E. NOYES, OF CINCINNATI, OHIO, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO JAMES M. DOUGHERTY, OF CINCINNATI, OHIO, AND WILLIAM COOPER, OF NORWOOD, OHIO.

BOTTLE-CAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 720,175, dated February 10, 1903.

Application filed September 27, 1900. Renewed November 15, 1902. Serial No. 131,596. (No model.)

To all whom it may concern:

Be it known that I, MAYHEW E. NOYES, a citizen of the United States of America, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Bottle-Capping Machines, of which the following is a specification.

The object of my invention is a bottle-capping machine which puts a cap on a bottle evenly without marring the finish of the metal, which polishes and finishes the top of the cap without marring the lettering, which automatically releases the bottle when capped, and which automatically adjusts itself to different-sized bottles. This object is attained by the means described in the annexed specification and illustrated in the accompanying drawings, in which—

Figure 1 is a view in front elevation of a bottle-capping machine embodying my invention, the cap of the casing being removed to expose the interior thereof. Fig. 2 is a central sectional view of the same, taken upon line $x\,x$ of Fig. 1, but showing the cap secured upon the case. Fig. 3 is a central sectional detail view of one of the revoluble spinners.

Referring to the parts, the head of my bottle-capping machine consists of a case A, the bottom a of which is formed integral with or secured to a shaft a', which may be rotated by any suitable mechanism, and the cap a^2 of which has a central perforation, through which the neck of a bottle carrying a cap to be secured thereon may be inserted. Cap a^2 and bottom a of the case have radial slots a^3 a^4 formed upon their inner faces, forming ways to guide frames b, which support revoluble spindles b', upon which are mounted conical spinners B. Cap a^2 is secured upon the case by long screws a^5, passing down into bottom a. Secured to frames b are radially-divergent arms b^2, which extend through perforations b^3 in the walls of the case and are screw-threaded upon their ends. Perforations b^3 are also screw-tapped to receive a screw-threaded cylinder b^4, within which the arms b^2 are free to move and against the ends of which nuts b^5 bear to regulate the position at which frames b stand. Upon arms b^2, between frames b and cylinder b^4, are placed coiled springs b^6, the tension of which may be regulated by screwing said cylinder farther in or out of the case. It is seen that by screwing nuts b^5 up on arms b^2 they may be drawn away from the center of the case. Lock-nuts b^7 hold them in the position desired.

Spinners B are made of india-rubber or material of a similar hard and elastic character, are preferably pear-shaped, and are each so mounted that the parts of the largest diameter are substantially equidistant from bottom a. At the greatest diameter the surfaces of the spinners are made of different shapes. One has a broad flat band b^8, as shown in Fig. 3. Another two rings with an annular depression b^9 between them, and another a single ring b^{10}, as shown in Fig. 2. The purpose of this construction is that these various forms press the cap into the grooves and fit it snugly about the raised portions of the bottle-neck. Bottom a and shaft a' have an axial recess a^6, within which is seated a spring-pressed button or polisher C, likewise made, preferably, of india-rubber for polishing the top of the cap.

In operation a cap of thin metal, such as is in common use for capping bottles, is set loosely over the end of the neck. The neck of the bottle is then inserted through the opening in the cap of the case, which is kept in constant rapid rotation and pushed in between the spinners until the top of the cap bears against the polisher. The tapering ends of the spinners allow the bottle-neck to be inserted readily and to be withdrawn from the machine without loosening the cap. The independent rotation of the spinners prevents them from abrading the metal, an effect which is heightened by making them of india-rubber, while the polisher finishes the top of the cap without marring any of the lettering upon it.

What I claim is—

1. A case having radial slots in the bottom and perforations in the walls thereof, a perforated cap for the case having slots similar to those in the case, frames to slide in the ways formed by the slots in the bottom and

the cap of the case and having radial rods projecting through the perforations in the walls of the case, nuts upon the ends of the rods, spinners mounted in the frames and springs surrounding the rods between the frames and the case-walls, substantially as shown and described.

2. A case having radial slots in the bottom and screw-threaded perforations in the walls thereof, externally-screw-threaded cylinders in said perforations, a perforated cap for the case having slots similar to those in the bottom of the case, frames to slide in the ways formed by the slots in the bottom and the cap of the case and having radial rods projecting through the cylinders in the walls of the case, nuts upon the ends of the rods, spinners mounted in the frames and springs surrounding the rods between the frames and the cylinders, substantially as shown and described.

MAYHEW E. NOYES.

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