

No. 805,966.

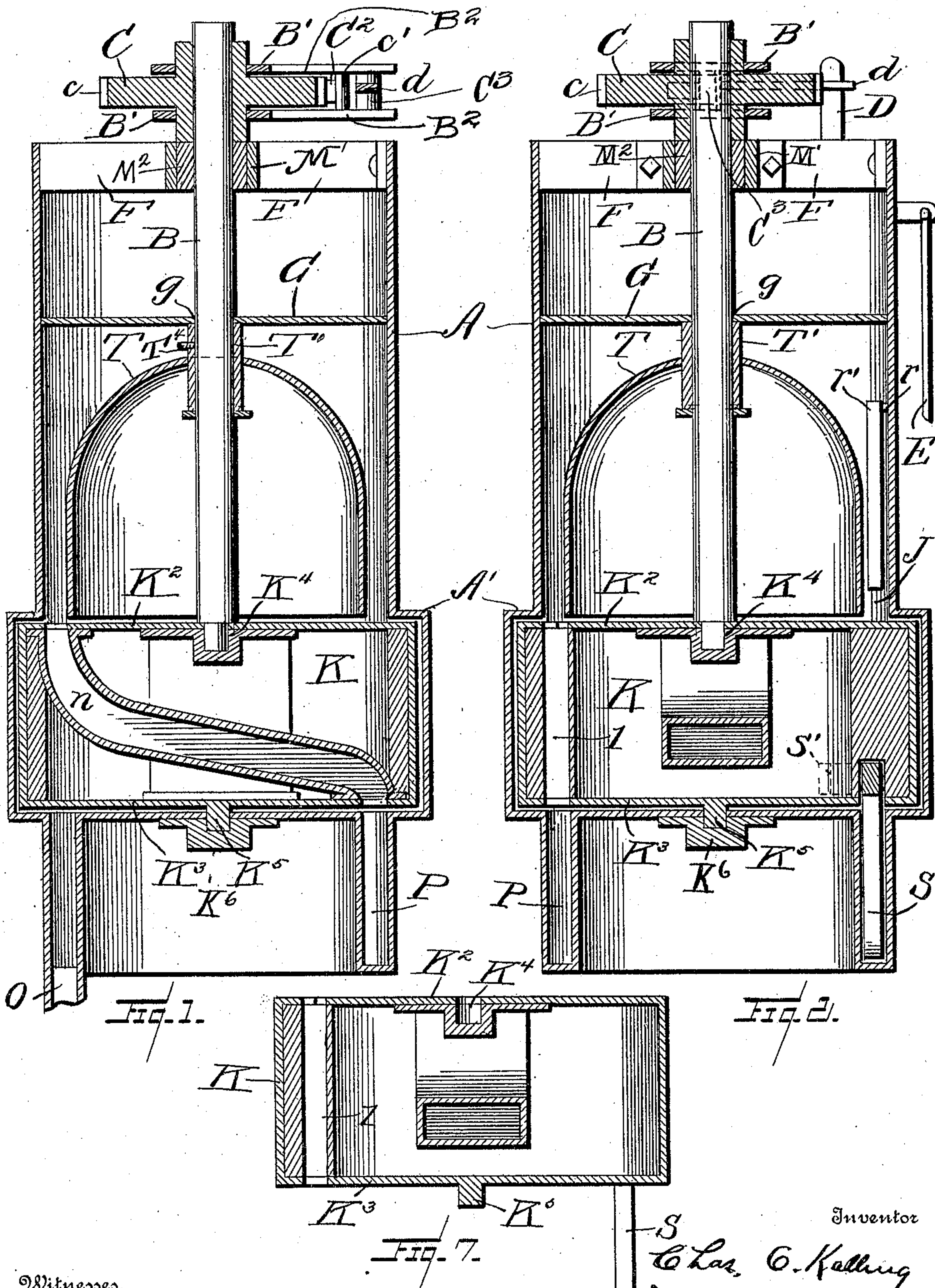
PATENTED NOV. 28, 1905.

C. O. KALLING.

AUTOMATIC BOTTLE CAP FEEDING MACHINE.

APPLICATION FILED AUG. 12, 1904.

2 SHEETS—SHEET 1.



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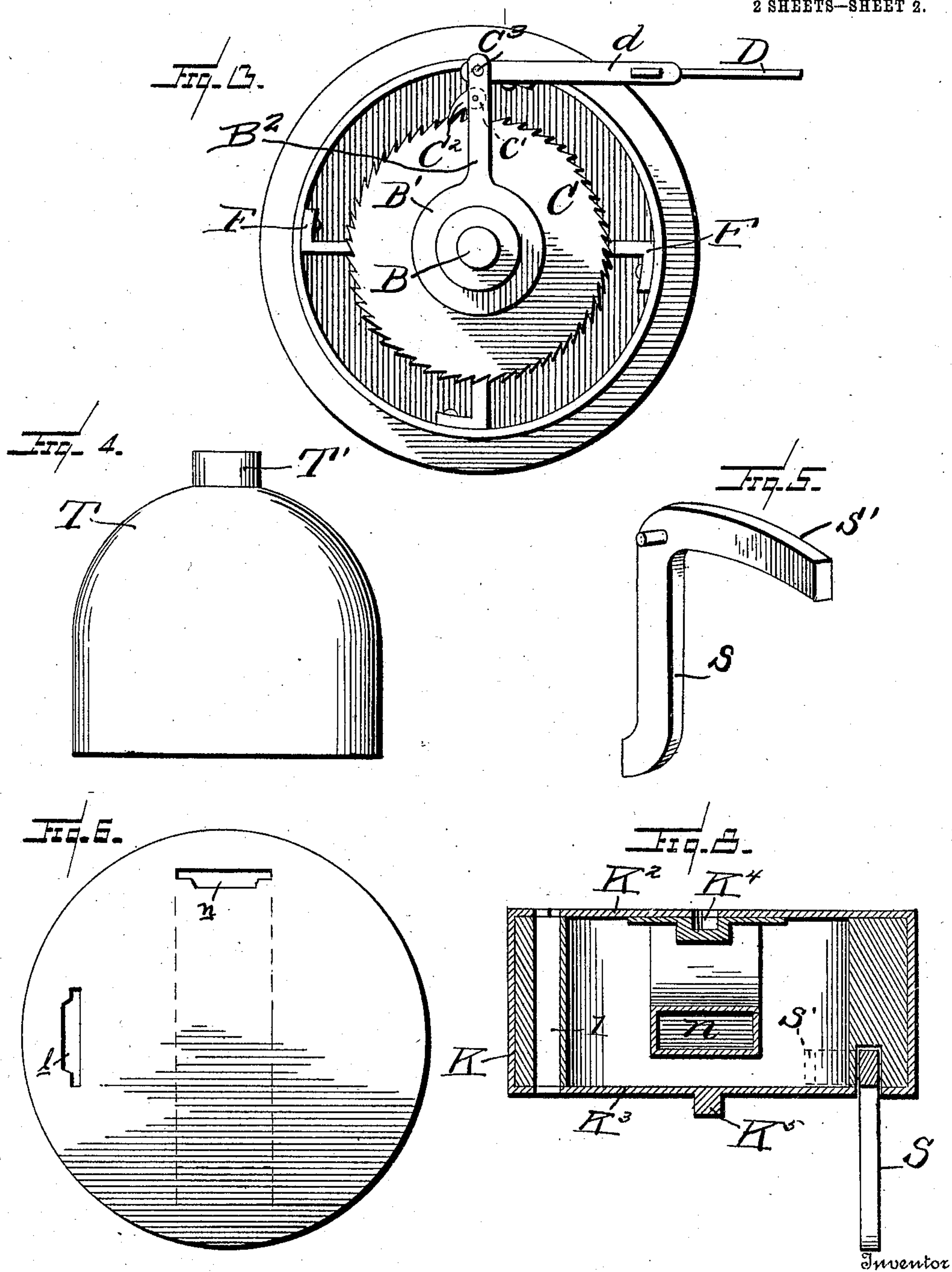
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Witnesses  
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# UNITED STATES PATENT OFFICE.

CHARLES O. KALLING, OF BALTIMORE, MARYLAND.

## AUTOMATIC BOTTLE-CAP-FEEDING MACHINE.

No. 805,966.

Specification of Letters Patent.

Patented Nov. 28, 1905.

Application filed August 12, 1904. Serial No. 220,560.

*To all whom it may concern:*

Be it known that I, CHARLES O. KALLING, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Automatic Bottle-Cap-Feeding Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in apparatus for feeding bottle tops or caps to sealing-heads; and the object of the invention is to produce a simple and efficient device whereby a gravity method is employed; and in carrying out my invention I aim to produce means whereby caps of various forms, and especially those without liners of the nature of the Kalling cap, covered by Letters Patent No. 697,493 of the United States, may be conveniently and quickly fed.

My invention consists, further, in various details of construction and in combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claims.

My invention is illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this application, and in which—

Figure 1 is a vertical central sectional view of my improved apparatus. Fig. 2 is a similar view at right angles to the plane in which Fig. 1 is taken. Fig. 3 is a top plan view. Fig. 4 is a detail view of a dome-shaped shell forming a part of my invention. Fig. 5 is a detail view showing a tilting angled arm forming a part of my invention. Fig. 6 is a top plan view of a cap-feeding drum. Fig. 7 is a sectional view through the cap-feeding drum or member. Fig. 8 is a detailed view of the drum, showing the cap-moving member pivoted.

Reference now being had to the details of the drawings by letter, A designates a casing which may be of any suitable size and supported in any manner, and G is a disk transversely disposed within said casing and provided with a central aperture *g*, in which a vertically-disposed shaft B has a rotary movement. Mounted in the enlarged chambered portion (designated by A') is a drum K,

having a top  $K^2$  and a bottom  $K^3$ , which drum is of a suitable size to fit and rotate within said chambered portion A', as is shown clearly in the drawings. The lower end of the shaft B is fitted into a socket  $K^4$  in the upper end of the drum, and the lower head of the latter is provided with a stub-shaft  $K^5$ , which is seated in a socket member  $K^6$ , which is secured to the bottom of the wall of the chambered portion of said casing. Said drum is provided with two passage-ways, (designated in the drawings by letters *l* and *n*), the former of which, *l*, is a vertical slot leading from one head of the drum to the other and communicating through the top and bottom of the drum, while the other passage-way *n* is of an undulating shape, having an opening through the top of the drum and an exit end leading through the bottom of the drum, which openings communicate with a circular passage-way P below the drum, and which passage-way P is provided with an exit-pipe O leading therefrom, as shown clearly in Fig. 1 of the drawings. Fixed to the other end of the shaft B is a ratchet-wheel C, having ratchet-teeth *c* about its circumference, and B' B' designate two disks having arms  $B^2$  B<sup>2</sup> projecting therefrom, between which arms a stud *c'* is mounted and to which stud a pawl  $C^2$  is pivoted, which is adapted to engage said ratchet-teeth, as clearly shown in Fig. 3 of the drawings. The upper portion of the shaft B is guided and rotates in a bearing  $M^2$ , carried by the collar  $M'$ , having spider-arms F radiating therefrom, and the outer ends of said arms are fixed to the interior wall of said casing. A stud  $C^3$ , carried by said arms  $B^2$ , has secured thereto a bar *d*, which is apertured to receive the upper end of an angle-lever D. Connected to one end of said lever D is a rod E, which is designed to be connected to and driven by reciprocating mechanism (not shown) and whereby an intermittent rotary movement may be imparted to the ratchet-wheel and the shaft carrying the same. T designates a dome-shaped shell with open bottom, and T' designates a hollow cylindrical portion thereof, through which said shaft B passes and to which the latter is fixed in any suitable manner, as by means of a set-screw  $T^4$ , whereby it may be rotated with the shaft. Pivotaly mounted upon a pin *r*, projecting from the inner face of the casing A, is a cap-releasing finger *r'*, or said finger may be fixed, if preferred, and which finger is positioned in a passage-way J intermediate the outer cir-



cumference of the shell T and the surrounding casing and through which passage-way the caps for the bottles are fed to an inlet-opening into the passage-ways *l* and *n*.

5 A finger S is pivotally mounted in a recess in the lower portion of the drum and is provided with a counterbalancing part S', extending within said recess. The depending part of said finger extends down in said circular  
10 passage-way P and is provided for the purpose of pushing the caps that may fall in the circular passage-way about in the same until they reach the exit-pipe O, leading therefrom and from which they are allowed to fall  
15 by gravity to a sealing-head. (Not shown.)

Referring to Fig. 6 in the drawings, it will be observed that the contours of the walls of the said inlet-apertures in the two passage-ways *l* and *n* are adapted to conform to the  
20 shape in cross-section of a top or cap; but the two openings are reversely arranged to each other for the purpose of expediting the feeding of the caps when the latter are fed against the top of the drum with their faces in opposite directions. For instance, if a cap comes  
25 in contact with the opening into the passage-way *l* and is reversed it will not pass into the passage-way *l*, but in the rotary movement of the drum will be pushed away from the opening of said passage-way by means of the finger  
30 *n'*, and coming into contact with the opening leading into the passage-way *n* the cap will pass through the passage-way *n* and into the circular passage-way P, where it passes  
35 by gravity through the exit-pipe O. It will be understood that the caps which are placed over the shell T will be directed by the latter toward the outer circumference of the drum and in readiness to be fed through the passage-  
40 ways in the latter.

By the mechanism shown and described it will be observed that all caps which are fed into the circular passage-way P will face in the same direction and will be in position to  
45 be sealed to the neck of a bottle when the caps reach the sealing mechanism, which latter is not illustrated, as it forms no part of the present invention.

While I have shown a particular form of  
50 apparatus illustrating my means for feeding caps, it will be understood that I may vary the details of the construction of the machine, if desired, without in any way departing from the spirit of my invention.

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

1. An automatic bottle-cap-feeding machine, comprising a casing, a shaft, a rotatable  
60 member mounted within the casing and rotating with said shaft, passage-ways leading through said member, a circular passage-way depending from the bottom of the casing and provided with an exit-pipe, the exit ends of  
65 said passage-ways being adapted to continu-

ously register with said circular passage-way, a dome-shaped shell rotating with said shaft within said casing and above said member, and adapted to direct caps toward the circumference of said member to be fed into the pas- 70 sage-ways of the latter, and means for rotating said shaft, as set forth.

2. An automatic bottle-cap-feeding machine, comprising a casing, a shaft, a rotatable member mounted within the casing and rotating with said shaft, passage-ways leading 75 through said member, a circular passage-way depending from the bottom of the casing and provided with an exit-pipe, the exit ends of said passage-ways being adapted to continuously register with said circular passage-way, a shell rotating with said shaft within said casing and above said member, and direct caps toward the circumference of said member to be fed into the passage-ways of the latter, 85 means for rotating said shaft, and a pivotal finger mounted intermediate the wall of said feeding-shell and the surrounding wall of the casing, as set forth.

3. An automatic bottle-cap-feeding machine, comprising a casing, a shaft, a rotatable member mounted within the casing and rotating with said shaft, passage-ways opening 90 through the top of said member at right angles to each other and leading through said member, a circular passage-way depending from said casing and provided with an exit-pipe, means actuated by said member for moving caps in said circular passage-way which is adapted to continuously register 100 with the exit ends of passage-ways leading through said member, and means for feeding the caps over the openings into the passage-ways of said member, as set forth.

4. An automatic bottle-cap-feeding machine, comprising a casing, a shaft, a rotatable member mounted within the casing and rotating with said shaft, passage-ways opening 105 through the top of said member at right angles to each other, and leading through said member, a circular passage-way depending from said casing and provided with an exit-pipe, means actuated by said member for moving caps in said circular passage-way, which is adapted to continuously register 115 with the exit ends of passage-ways leading through said member, means for feeding the caps over the openings into the passage-ways of said member and a mechanism for moving any caps, which might rest in the openings 120 of said passage-ways, as set forth.

5. An automatic bottle-cap-feeding machine, comprising a casing, a shaft, a rotatable member mounted within the casing and rotating with said shaft, passage-ways leading 125 through said member, a circular passage-way depending from the bottom of the casing and provided with an exit-pipe, a finger depending from the bottom of said member and traveling in said circular passage-way and 130



means for feeding caps contained within said casing to the opening in the passage-ways through said member, as set forth.

5 6. An automatic bottle-cap-feeding machine, comprising a casing, a shaft, a rotatable member mounted within the casing and rotating with said shaft, passage-ways leading through said member, a circular passage-way depending from the bottom of the casing and provided with an exit-pipe, a finger depending from the bottom of said member and traveling in said circular passage-way and adapted to move caps which rest in said circular passage-way toward said exit-pipe, and  
10 means for rotating said shaft, as set forth.

7. An automatic bottle-cap-feeding machine, comprising a casing, a shaft, a rotatable drum mounted within the casing and rotating with said shaft, passage-ways having  
20 openings leading through the top of the drum at right angles with each other, one of said passage-ways being vertical, and the other undulating, and having an exit end through the bottom of the drum, a circular passage-way depending from said casing and adapted to continuously register with the exit ends, and  
25 means, connected to said drum, for moving caps in said circular passage-way, a dome-shaped shell fixed to said shaft and positioned within the casing and over said drum, means for rotating the shaft, and a finger carried by said casing and positioned intermediate said shell and surrounding casing, as set forth.

8. An automatic bottle-cap-feeding machine, comprising a casing, a shaft, a rotatable drum mounted within the casing and rotating with said shaft, passage-ways, having  
35 openings leading through the top of the drum at right angles with each other, one of said passage-ways being vertical and the other undulating and having an end exit through the bottom of the drum, a circular passage-way depending from said casing and adapted to continuously register with the exit ends, the con-  
40 tinuously register with the exit ends, the contour of the openings into said passage-ways being reversely arranged to receive caps facing in one direction or the other, a dome-shaped shell fixed to said shaft and positioned within the casing over said drum, means for rotating said shaft, and a finger positioned in-  
45 termediate said shell and the surrounding casing, as set forth.

9. An automatic bottle-cap-feeding machine, comprising a casing, a shaft, a rotatable member mounted within the casing and rotating with said shaft, passage-ways leading through said member, a circular passage-way depending from the bottom of the casing and provided with an exit-pipe, the exit ends of said passage-ways being adapted to continuously register with said circular passage-way, a dome-shaped shell rotating with said shaft within said casing and above said member, means, carried by said member for moving caps in said circular passage-way, a finger  
55 intermediate said dome-shaped shell and the surrounding casing and means for rotating said shaft, as set forth.

In testimony whereof I hereunto affix my signature in presence of two witnesses.  
60  
65

CHARLES O. KALLING.

Witnesses:-

DANIEL FISHER, Jr.,  
DANIEL FISHER, Sr.