

No. 652,581.

Patented June 26, 1900.

C. H. AYARS.
CAN TOPPING AND WIPING MACHINE.

(Application filed Mar. 1, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

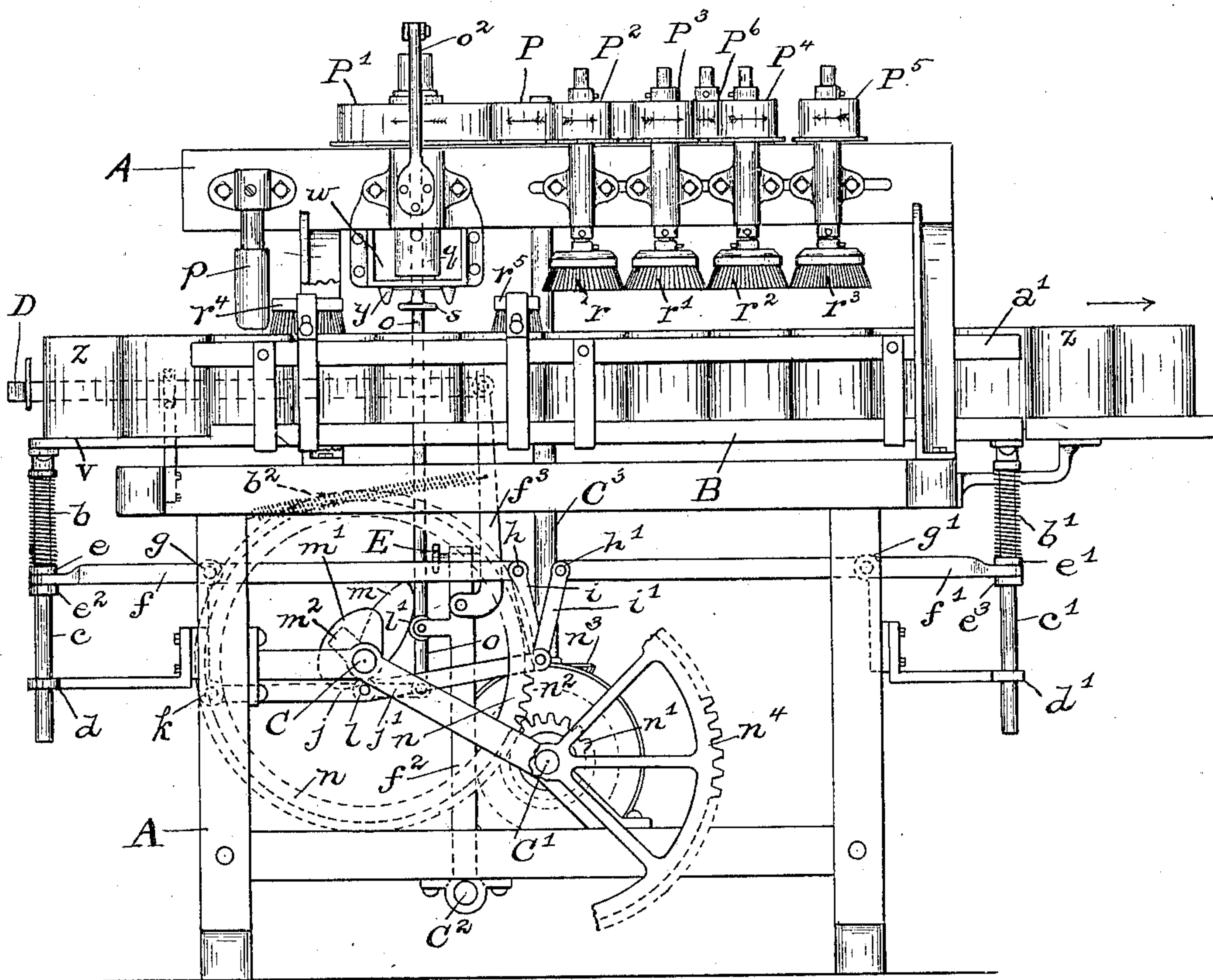
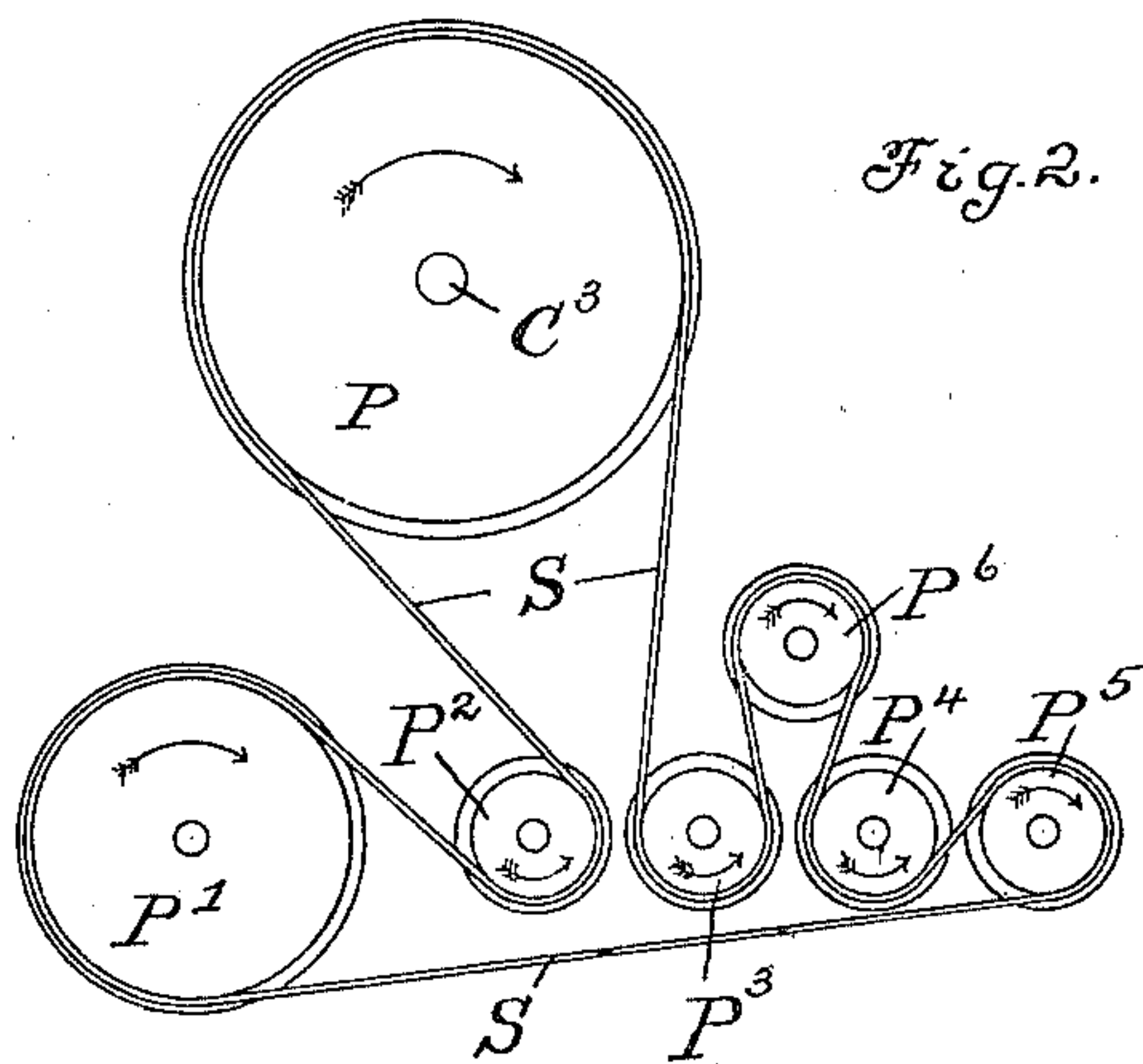


Fig. 2.



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Fig. 3.

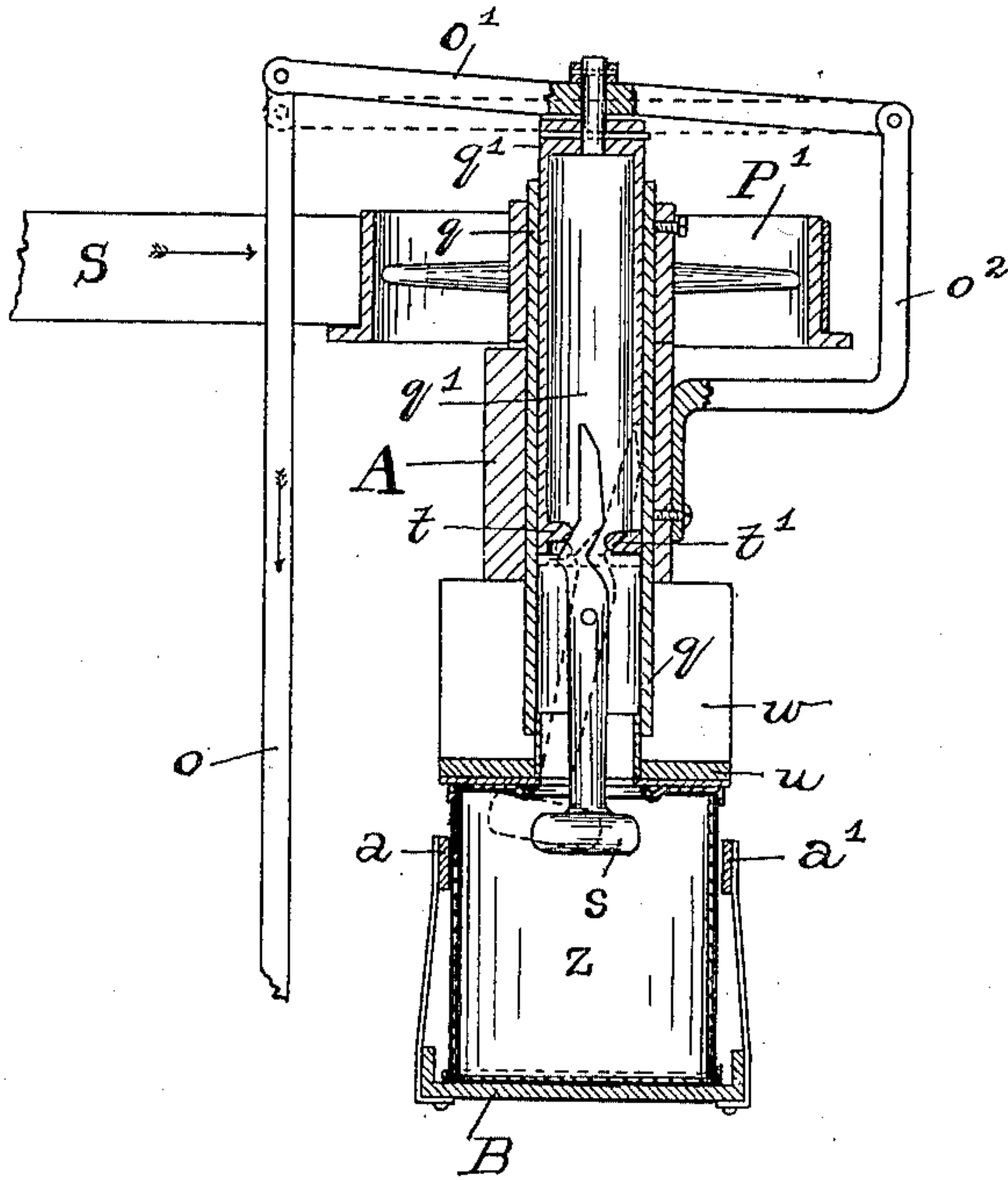
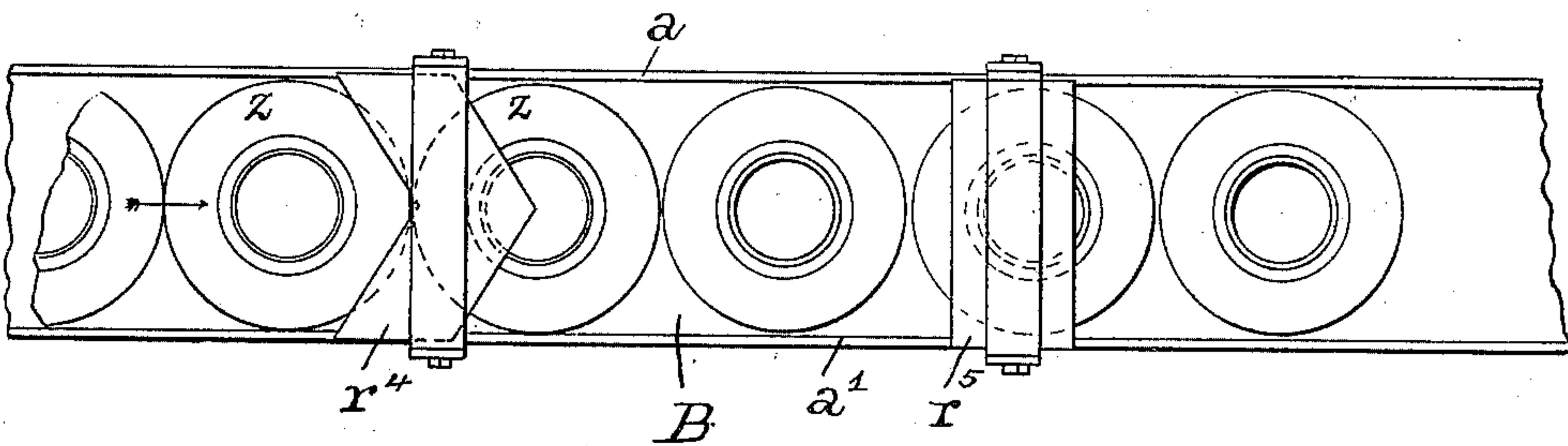


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CAN TOPPING AND WIPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 652,581, dated June 26, 1900.

Application filed March 1, 1900. Serial No. 6,965. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. AYARS, a citizen of the United States, residing at Salem, in the county of Salem and State of New Jersey, have invented certain new and useful Improvements in Can Topping and Wiping Machines, of which the following is a specification.

My invention relates to certain improvements in can topping and wiping machinery, the object of the invention being to provide automatic mechanism for intermittently conveying unsealed cans previously filled with vegetables or fruit to a "plugger," which pushes the contents down from the mouth of the can. The can is then moved beneath a brush, which has its front edge recessed or hollowed out and which brushes any of the contents which may have been forced by the plugger out and upon the can's top back into the can, and then to a reamer or topper, which removes the contents of the can from contact with the edge of the can's mouth to prevent chilling of the solder by which the cap is secured. The can then passes successively beneath one stationary and four revolving brushes, which wipe all moisture from the top of the can and dry it preparatory to applying the cap.

Referring to the accompanying drawings, Figure 1 is a side elevation of the machine. Fig. 2 is a plan view of the belt-driven pulleys at the top of the machine. Fig. 3 is an enlarged sectional view of my reamer. Fig. 4 is an enlarged plan view of the recessed brush and several cans beneath.

A is the frame of the machine, which frame is provided with suitable bearings and guides for the moving parts.

B is a vertically-movable table with horizontal guide-rails $a a'$ along each side and supported by two spiral springs $b b'$, through which pass vertical guide-rods $c c'$, said rods having their upper ends fastened to the under side of the table B, their lower ends being free to move vertically in the guides $d d'$, which are fastened to the frame A. A loose collar (designated on one rod e and on the other e') is placed upon each guide-rod below the said spiral spring and over the forked ends of the two levers $f f'$, extending from the center in opposite directions, and a col-

lar $e^2 e^3$ is securely fastened to each of said rods just below the forked end of said lever. The said two levers $f f'$ are pivoted at $g g'$, their other ends at the center being hinged at $h h'$ to two short links $i i'$, which are in turn hinged to one end of the lever j , whose other end is hinged at k to a bracket on the frame. The said lever has a roller l mounted near its center, upon which the cam m' bears.

The horizontal shaft C supports and rotates the three cams $m m' m^2$ and is driven by the gear n , which in turn is driven by the pinion n' , mounted upon the shaft C' , which shaft also drives the bevel-gears $n^2 n^3$ and is driven by the wheel n^4 . The shaft C^2 supports the lever f^2 , which is vibrated by the cam m coming in contact with the roller l' and spring b^2 , transmitting an intermittent lateral motion to the horizontally-guided can-pusher bar D through the lever f^3 and adjusting-screw E. The cam m^2 acts upon a bar j' , which at one end is hinged to the bracket k on the frame and at the other end to the vertical rod o , which operates the reamer, as will presently be described. The vertical shaft C^3 , driven by the said bevel-gear n^3 , drives a pulley P at the top of the machine, from which an endless belt S drives all the other pulleys $P' P^2 P^3 P^4 P^5 P^6$, the belt being wound in the direction shown in Fig. 2. The pulley P' drives the reamer. Pulleys $P^2 P^3 P^4 P^5$ drive revolving brushes $r r' r^2 r^3$. Pulley P^6 is an idle pulley for tightening the belt.

r^4 is a stationary brush whose front edge is recessed, preferably into V shape, and which is supported by adjustable brackets fastened to the table B, and r^5 is another stationary brush similarly supported.

p is a plugger fastened to the top part of the frame of the machine and depending downward.

Referring to Fig. 3, the reamer consists of a vertical tube q , driven by the pulley P' , which tube supports and rotates the pivoted plug s , projecting from the bottom. A second tube q' is within the upper part of the tube q and is revolved with the tube q by engaging with the upper end of the plug s , which projects upward between the lugs $t t'$ within said inner tube. The inner tube is vertically movable and is depressed by the action of the cam m^2 through the bar j' , vertical rod o ,

and lever o' , which is pivoted to the bracket o^2 . A rigid bracket w depends from the top of the frame and has on its bottom a disk u , preferably of rubber, with a central hole. It also has four small tapered lugs or pins y to center the can-top. The reamer s projects down through the disk u , against which the top of the can z presses while the operation of reaming is going on.

10 The operation is as follows: Unsealed cans, filled with fruit or vegetables, being placed upon the table B at the end v are shoved along the table at each revolution of shaft C a distance equal to the diameter of the can.

15 Cans are placed upon the table at the rate of one can for every revolution of shaft C by means of the shover D. To make the operation clear, take the case of a single can and follow the successive operations: The shaft

20 C, revolving right handed the cam m' , first acts, causing the can-pusher bar to shove the can forward. Supposing the can to be now under the plugger p , the cam m' , acting in its turn, raises the table B and can, causing the plug-

25 ger to compress the contents of the can, forcing the contents down from the mouth. It is to be understood that while the table is in its elevated position other cans which have preceded the one under discussion are being reamed and brushed at the same time

30 that the one under consideration is being plugged. After a can has been plugged the table is lowered by the cam m' having completed its operation. By the continuous rotation of shaft C cam m is again brought into

35 operation, and after two cycles of operation the can, having passed under the recessed brush r^4 , arrives under the reamer s . Then as the table again rises by the action of cam m'

40 the can is pressed up in contact with the rubber disk u . The cam m^2 now acts, depressing the inner tube q' of the reamer through the medium of the bar j' , rod o , and lever o' . The lugs t t' being part of the inner tube q'

45 descend, and one of them, t' , bears upon the inclined surface of the reamer s , forcing it to swing to one side and take the position shown in dotted lines. As this reamer is continuously rotating, it removes the contents of

50 the can from contact with the top of the same around the edge of the mouth. Cam m^2 having now passed by, the inner tube q' rises, and the reamer resumes its normal position. The can next passes by successive stages be-

55 neath the stationary brush r^5 and each rotating brush in turn. The distance between each rotating brush and the plugger and reamer is a multiple of the diameter of the can and is also adjustable to suit cans of different diameters. The action of the springs

60 b b' is chiefly to allow for inequality in height of cans, thus compressing the springs instead of crushing the can.

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

1. In a canning-machine the combination

of the frame; revoluble brushes turning in fixed bearings; a vertically-movable can-supporting table below said brushes; means on 70 the frame to raise and lower the said table, and springs interposed between the raising means and the table, whereby allowance is made for inequality in the height of cans resting on the table. 75

2. In a canning-machine, the combination of a frame; a vertically-movable table; two vertical rods, c , c' , movable in guides and having their upper ends attached to said table and each rod having a loose collar; a 80 spiral spring around each of said vertical rods and its lower end resting on said loose collar; and two levers, f , f' , below the table, each lever having one end below a different one of said loose collars. 85

3. In a canning-machine, the combination of a frame, revoluble brushes mounted in said frame, a vertically-movable can-supporting table underneath said brushes, means for raising said table, and a yielding connection be- 90 tween said means and the table.

4. In a canning-machine, the combination of a frame; a vertically-movable table; a stationary plugger, p , fastened to the top part of the frame and depending downward; a brush, 95 r^4 , having a recessed front edge and supported above the table by brackets attached thereto; and means for raising and lowering the table.

5. In a canning-machine, the combination of a frame; a vertically-movable table; a stationary plugger, p , fastened to the top part of the frame and depending downward; a revol- 100 utable reamer also depending down from the top of said frame; and a brush, r^4 , having a recessed front edge and supported from the 105 vertically-movable table and in position between the said plugger and reamer, whereby any liquids forced out of the can by the plugger will be brushed back again before the can reaches the reamer. 110

6. In a canning-machine, the combination of a frame, a can-mouth reamer in said frame, a vertically-movable can-supporting table, and a brush secured to and supported above 115 the table high enough to allow a can sliding along the table to pass below the said brush.

7. In a canning-machine, the combination of a frame; a vertically-movable table; a horizontal top bar of the frame above the table; a stationary plugger depending from said top 120 bar; a revoluble reamer depending from said top bar; revoluble brushes also depending from said top bar; means to impart intermittent sliding movement to the cans resting on said table; and means to raise and lower the 125 table.

8. A canning-machine having the herein-described reamer comprising an outer vertical revoluble tube, q ; a vertically-movable tube, q' , within the outer tube and provided 130 near its lower end with two inward-projecting lugs, t , t' ; a plug, s , pivoted within the outer tube and projecting from the bottom thereof and having an upper end provided

with an inclined side—said upper end projecting up between the said two lugs on the inner tube; and means to raise and lower the inner tube.

5 9. A canning-machine having the herein-described reamer, comprising an outer vertical revoluble tube, an inner vertically-movable tube formed with lugs, a plug pivoted within the outer tube and arranged for engagement by one of the said lugs when the
10 inner tube is depressed; and means for depressing the inner tube.

10 10. In a canning-machine, the combination of a frame, a stationary plugger, revoluble
15 brushes, a vertically-movable can-supporting table beneath the plugger and brushes, means for raising said table as a whole, and means for sliding the cans along the table.

20 11. In a canning-machine, the combination of a frame, a stationary plugger, a reamer, and

revoluble brushes all carried by said frame, a vertically-movable table along which the cans are adapted to slide underneath the plugger, reamer, and revoluble brushes, and vertically-adjustable brushes carried by and supported above said table. 25

12. In a canning-machine, the combination of a frame, a can-supporting table vertically movable in said frame, a bracket depending from the top part of the frame and having a
30 flexible disk formed with a central opening, and a reamer also depending from the top part of the frame and projecting down through the central opening in the flexible disk.

In testimony whereof I affix my signature 35 in the presence of two witnesses.

CHARLES H. AYARS.

Witnesses:

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I. O. ACTON.