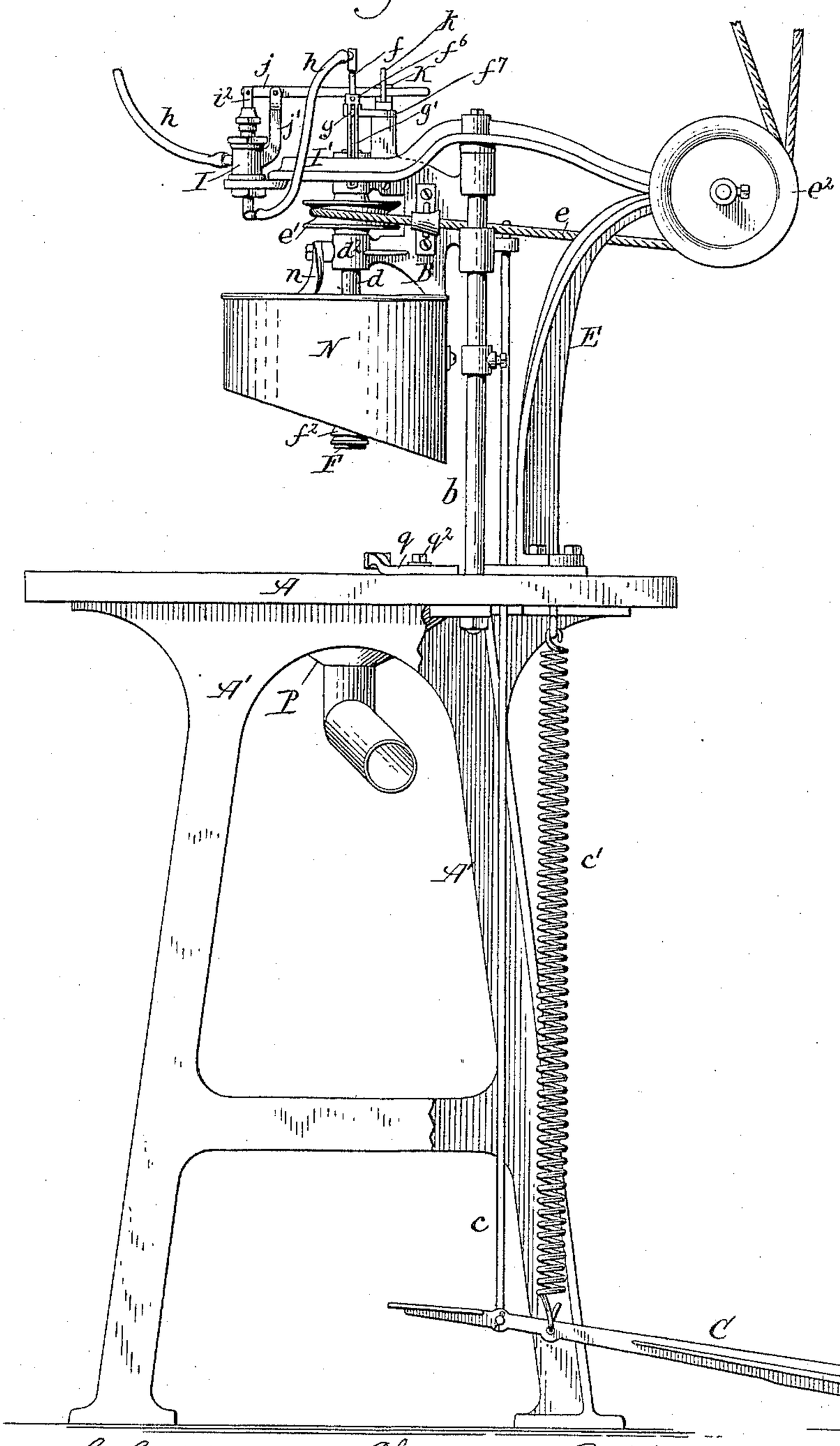
(No Model.) 5 Sheets—Sheet 1.

C. A. BURT.

MACHINE FOR WIPING CANS.

No. 413,168. Patented Oct. 22, 1889.

Fig. 1.



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N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 5 Sheets—Sheet 2.

C. A. BURT.

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No. 413,168. Patented Oct. 22, 1889.

Fig. 2.

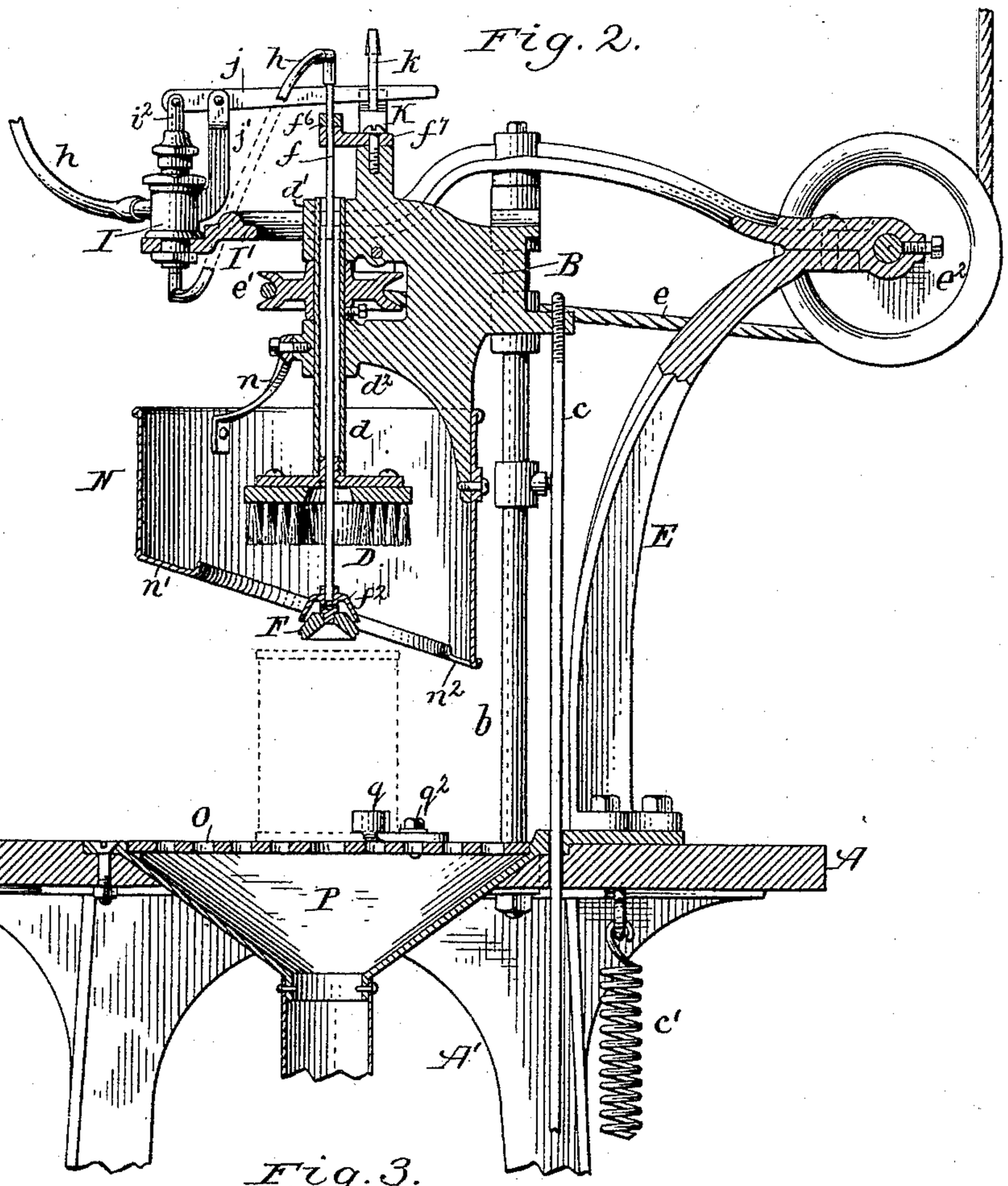
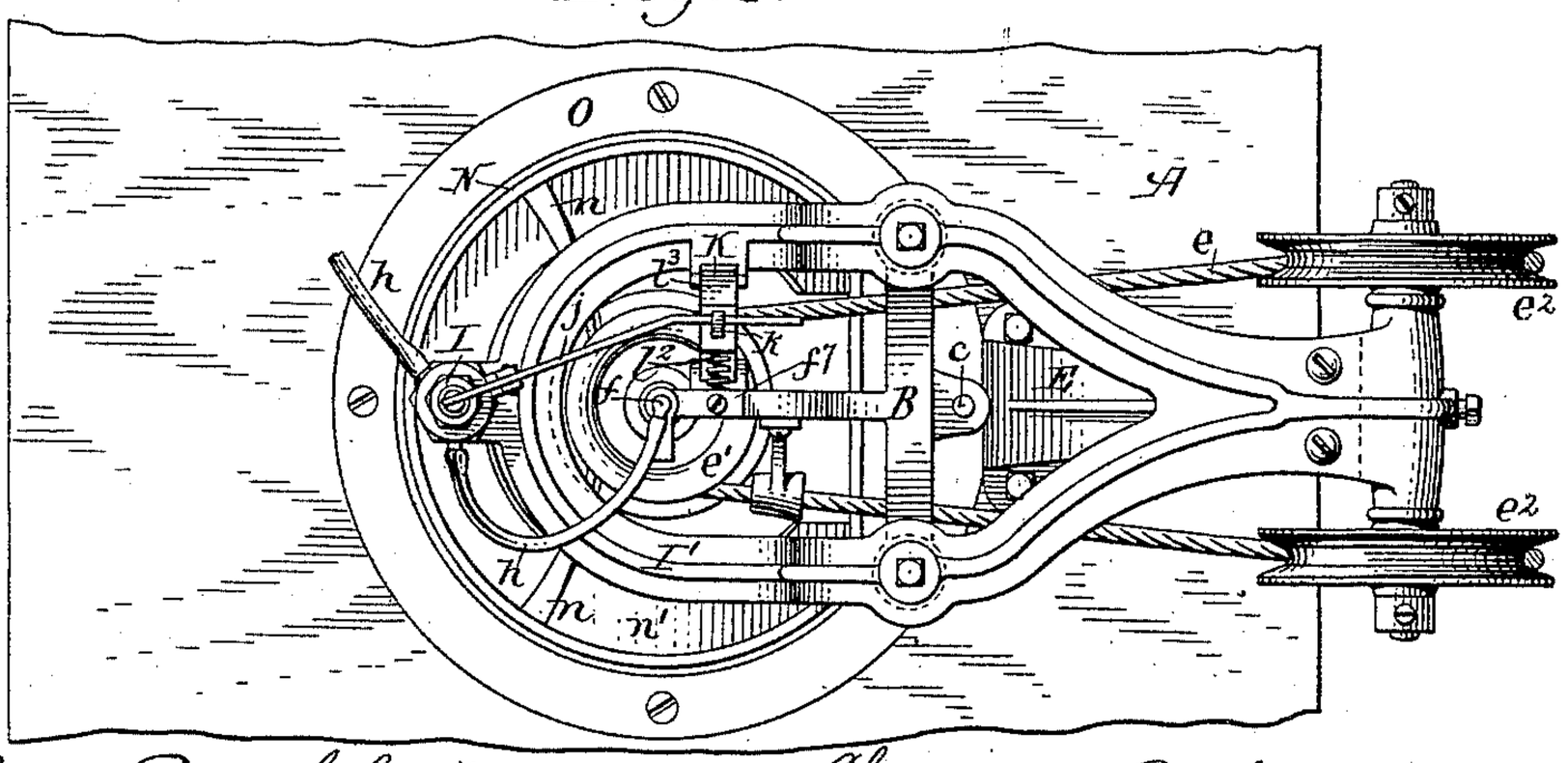


Fig. 3.



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(No Model.) 5 Sheets—Sheet 3.

C. A. BURT.

MACHINE FOR WIPING CANS.

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Fig. 4.

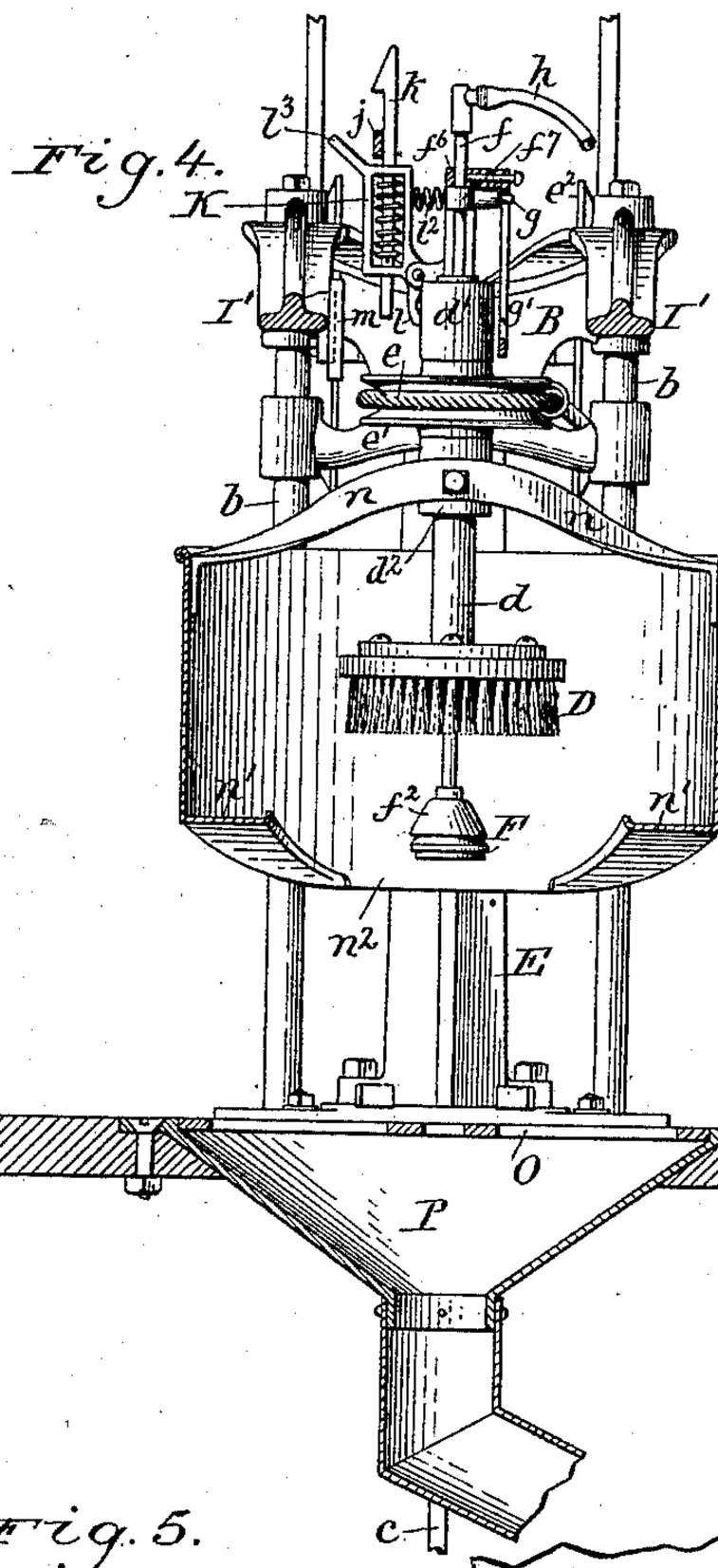


Fig. 5.

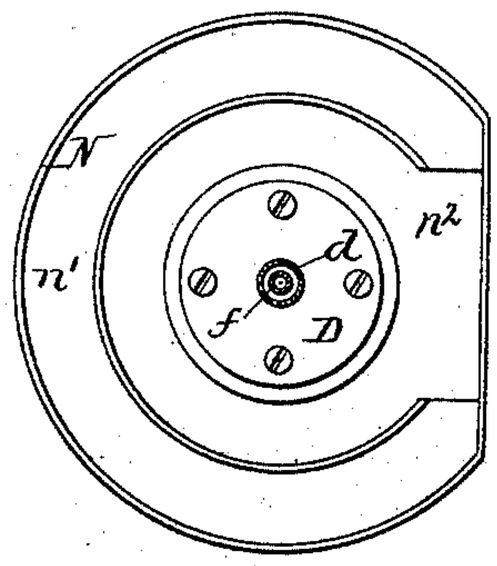
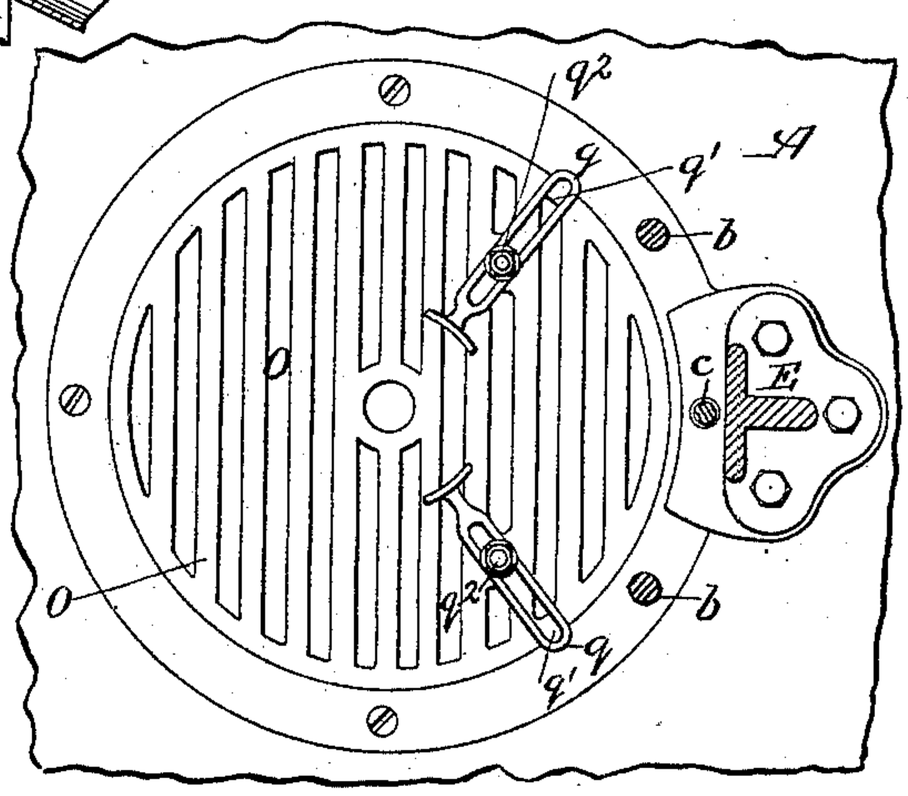


Fig. 6.



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(No Model.) 5 Sheets—Sheet 4.

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Fig. 7.

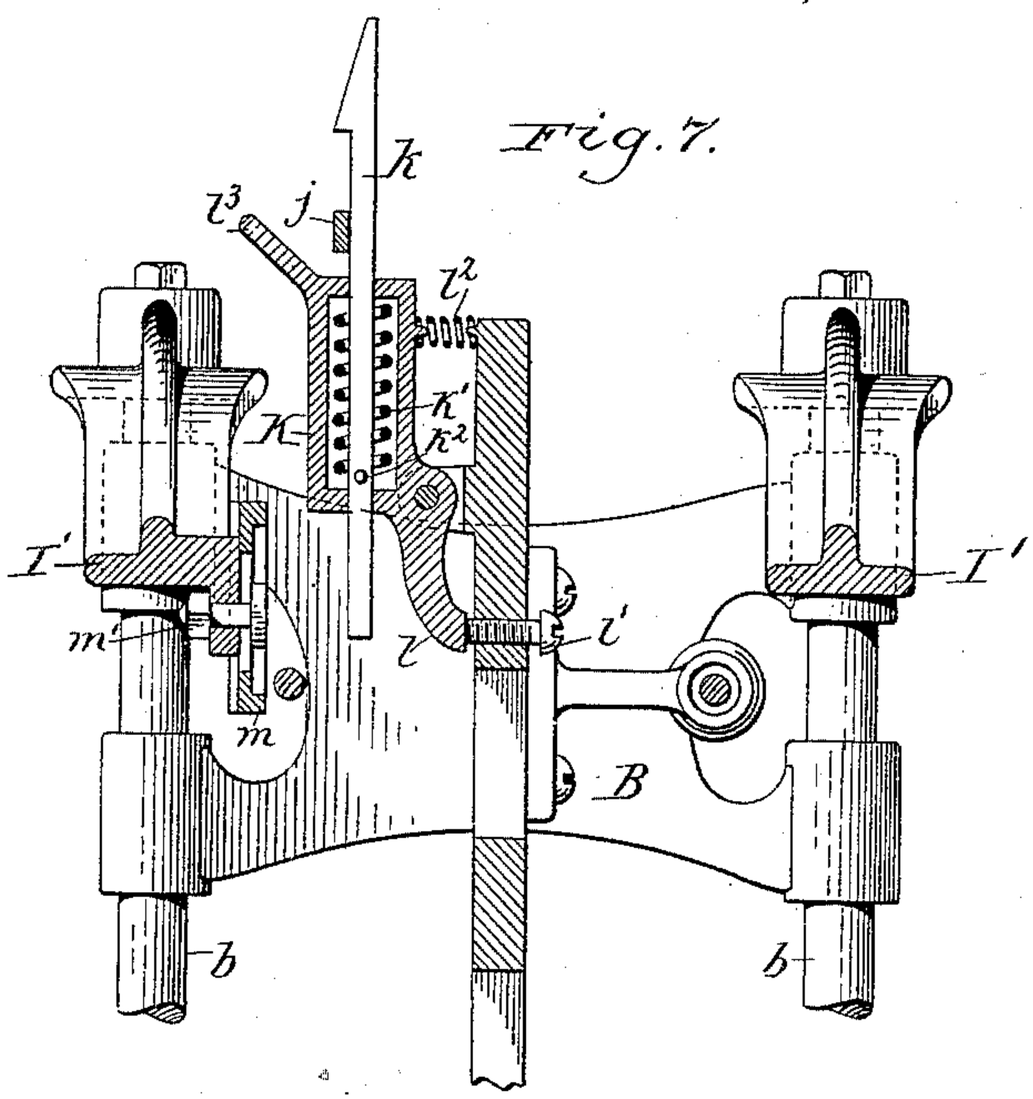


Fig. 9.

Fig. 8.

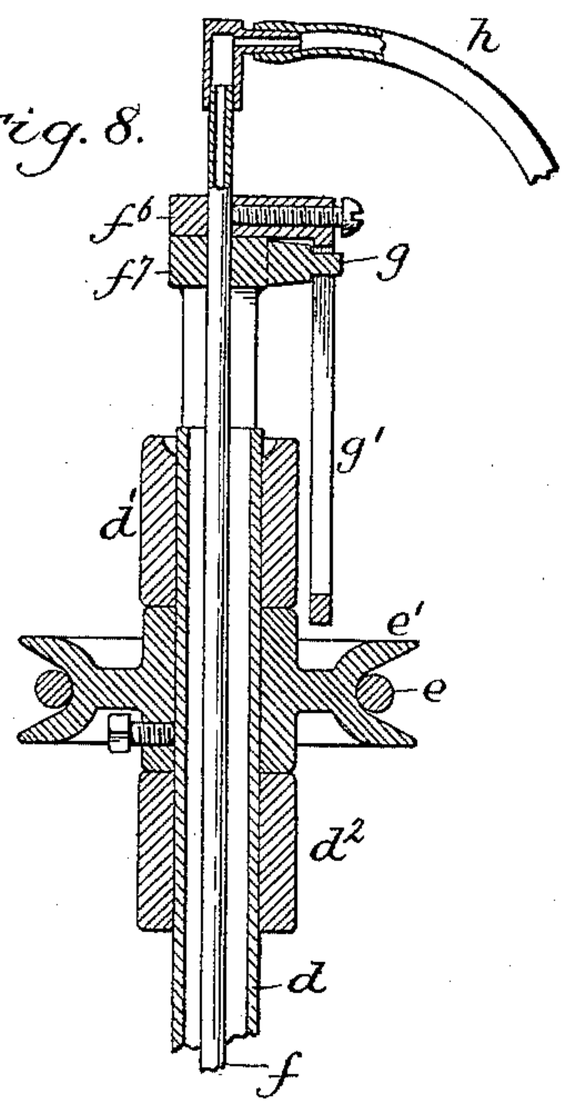


Fig. 11

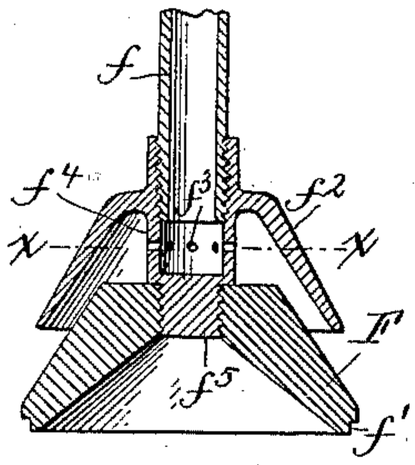
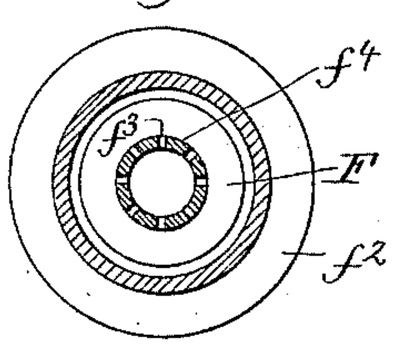
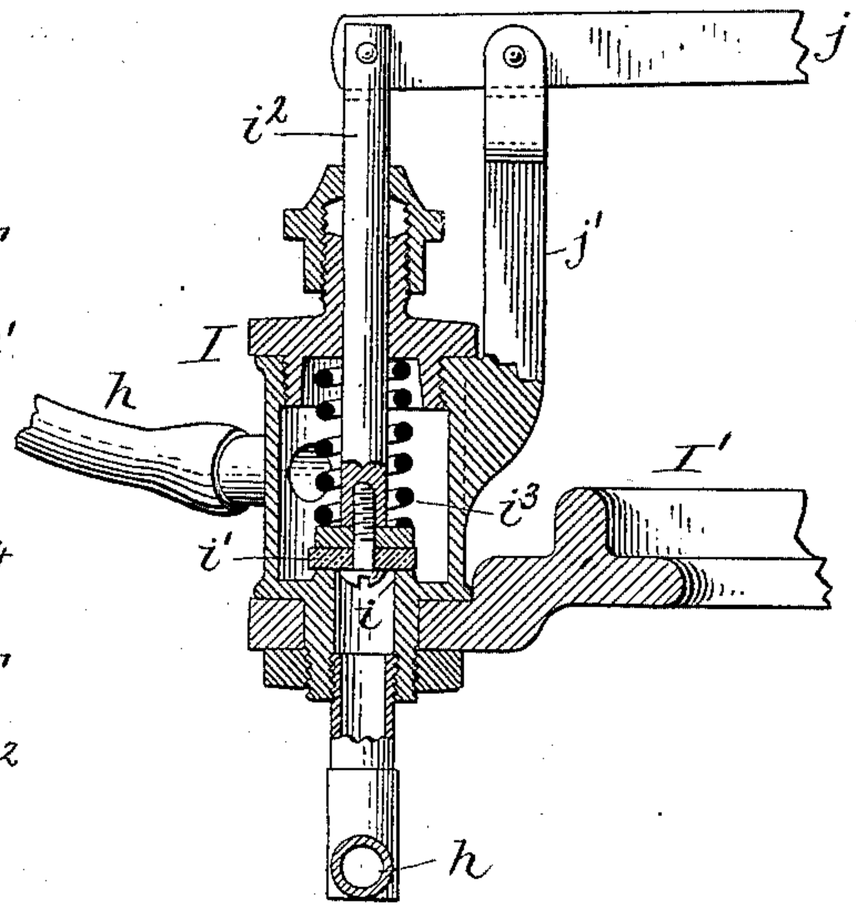


Fig. 10.





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C. A. BURT.

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Fig. 12.

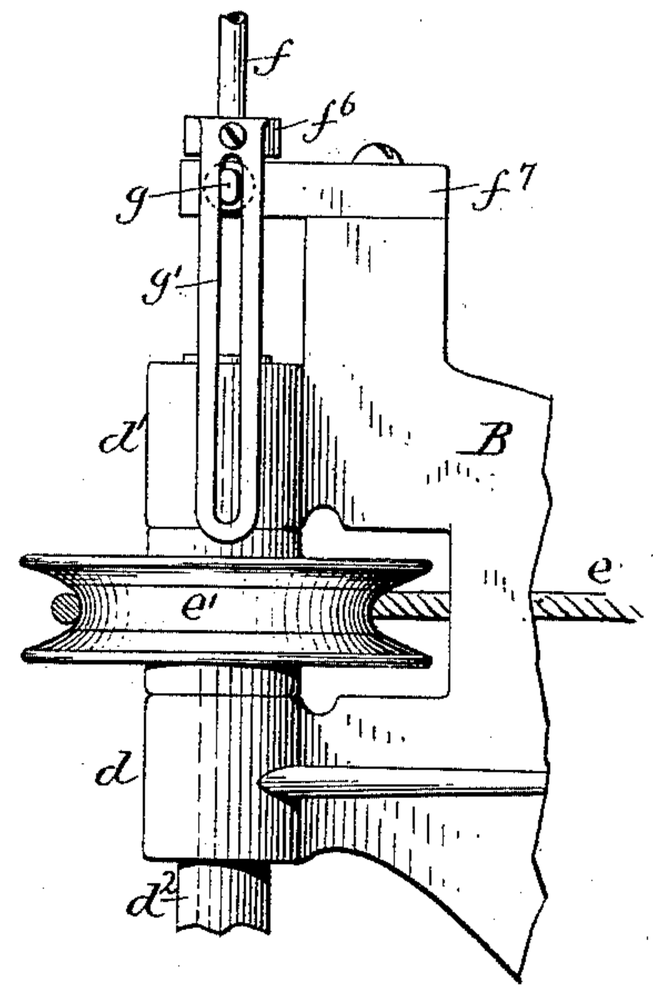


Fig. 13.

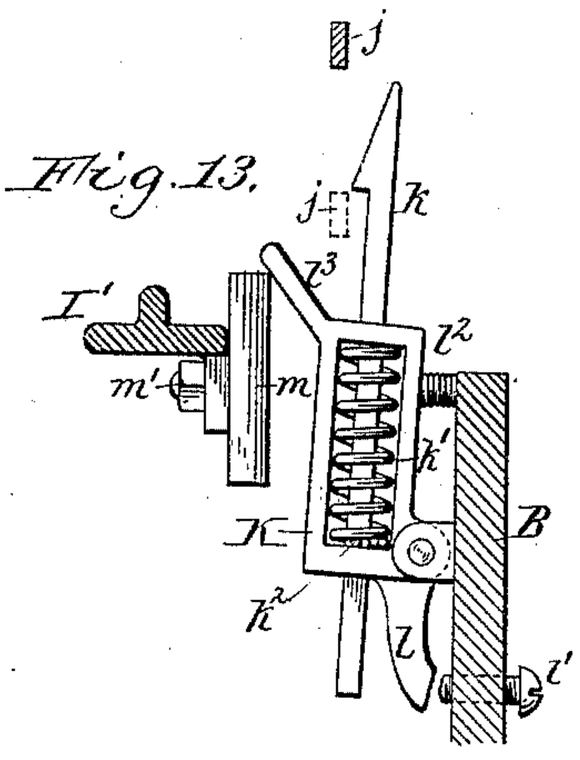
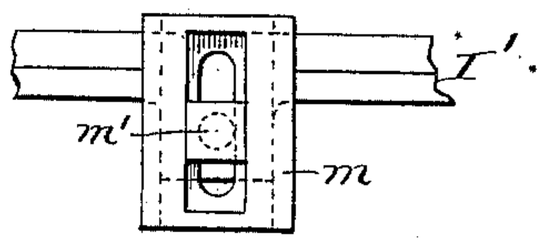


Fig. 14.



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UNITED STATES PATENT OFFICE.

CHARLES A. BURT, OF ROCHESTER, NEW YORK.

MACHINE FOR WIPING CANS.

SPECIFICATION forming part of Letters Patent No. 413,168, dated October 22, 1889.

Application filed October 16, 1888. Serial No. 288,262. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. BURT, of the city of Rochester, in the county of Monroe and State of New York, have invented new and useful Improvements in Machines for Wiping Cans, of which the following is a specification.

This invention relates to the machines which are employed in canning for wiping or cleaning the upper ends of the cans after the same have been filled with the fruit, vegetables, or other substance to be preserved, and before applying the caps to the openings in the tops of the cans.

The object of my invention is to construct a simple machine whereby the tops of the cans are cleaned in a thorough and expeditious manner preparatory to soldering the caps thereto.

The invention consists of the improvements which will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, consisting of five sheets, Figure 1 is a side elevation of my improved wiping-machine, with a portion of the supporting-frame broken away. Fig. 2 is a sectional elevation of the upper portion thereof. Fig. 3 is a top plan view of the same. Fig. 4 is a sectional elevation of the upper portion of the machine at right angles to Fig. 2. Fig. 5 is a horizontal section of the guard or casing surrounding the revolving brush. Fig. 6 is a top plan view of the grate or slotted plate upon which the cans rest. Fig. 7 is a sectional front view of the trip mechanism of the water-valve on an enlarged scale. Fig. 8 is a vertical section of the upper portion of the brush-spindle, plug-supporting rod, and adjacent parts, on an enlarged scale. Fig. 9 is a vertical section of the plug which closes the opening in the top of the cans, on an enlarged scale. Fig. 10 is a horizontal section thereof in line X X, Fig. 9. Fig. 11 is a vertical section of the water-cut-off valve, on an enlarged scale. Fig. 12 is an elevation of the upper portion of the spindle and connecting parts at right angles to Fig. 8. Fig. 13 is a front elevation of the trip mechanism of the valve, showing the pawl released. Fig. 14 is a view of the stop of the trip mechanism at right angles to Fig. 7.

Like letters of reference refer to like parts in the several figures.

A represents the horizontal table of the machine, which is supported upon legs or frames A′.

B represents a vertically-movable frame or head, which is arranged above the table A and slides upon two upright guide-rods *b b*, which are secured with their lower ends to the table. The frame B is depressed by means of a treadle C, pivoted to the floor and connected with the movable frame by a rod *c* passing through an opening in the table.

c′ represents a spiral spring, secured at its lower end to the treadle C, and at its upper end to the under side of the table A, and whereby the movable frame is elevated when the treadle is released.

D represents the revolving brush, which is mounted in the movable frame B, and secured to the lower end of a hollow spindle *d*, turning in bearings *d′ d²*, formed at the front portion of the movable frame B. The brush-spindle *d* is driven by a belt *e*, running around a horizontal grooved pulley *e′*, secured to the brush-spindle between the bearings *d′ d²*, and around vertical guide-pulleys *e² e²*, journaled at the upper end of a rearwardly-curved arm or standard E, secured to the table A in rear of the guide-rods *b*.

F represents the plug or stopper which closes the opening in the top of the can while the latter is being cleaned by the revolving brush, and *f* is a hollow supporting rod passing through the hollow brush-spindle *d*, and through a central opening in the brush, and carrying the plug F at its lower end. The plug-supporting rod *f* is made of such a length that the plug depends a short distance below the brush D, and comes in contact with the can in advance of the brush when the frame B is depressed. The plug F is preferably conical in form, and is provided at its lower end with a shoulder *f′*, as represented in Fig. 9, which bears against the top of the can around the edge of its opening.

f² is a conical shell or deflector secured to the hollow supporting-rod *f* at a short distance above the plug, so as to form an annular downwardly-flaring space or passage between the shell and the plug.

f³ represents water-passages or outlet-open-

ings formed in the hollow rod f, between the plug F and shell f^2. The conical shell f^2 is preferably attached to the lower end of the hollow supporting-rod f by a screw-thread, and is provided with a short tube f^4, in which the outlet-openings f^3 are formed. The lower end of this tube terminates in a screw-stem f^5, upon which the plug F is screwed. The supporting-rod f is suspended within the hollow brush-spindle d by a collar or stop f^6, secured to the supporting-rod near its upper end and resting upon a forwardly-projecting bracket f^7, secured to the upper portion of the sliding frame B, as represented in Figs. 1, 2, and 8. The supporting-rod f is prevented from turning with the brush-spindle d by a laterally-projecting pin g, formed on the bracket f^7, and passing through a vertically-slotted plate or guide g', formed on the collar f^6, as represented in Figs. 1, 8, and 12.

h represents a flexible water-supply pipe, connected to the upper end of the hollow supporting-rod f, and through which water is supplied to the interior of said rod from any suitable source. The water issuing from the outlet-openings f^3 is deflected outwardly upon the can below by the conical shell f^2 and the conical surface of the plug F.

I represents a water-cut-off valve arranged in the supply pipe or tube h, and whereby the water is admitted to and shut off from the hollow rod f. The valve I is supported upon the front end of a yoke or horizontal frame I′, which surrounds the movable frame B. The yoke I′ is secured to the upper end of the standard E and also to the upper ends of the guide-rods b b. This yoke serves not only to support the valve, but also to stiffen the upper portion of the machine, and prevents trembling of the same.

i, Fig. 11, represents the seat of the valve I; i', the valve-disk; and i^2, the stem of the valve, passing upwardly through the valve-casing. The disk i' is held against its seat by a spiral spring i^3, surrounding the stem i^2 and interposed between the valve-disk and the upper end of the valve-casing.

j represents the actuating-lever of the valve I, pivoted to a standard j', formed on the valve-casing and attached at one end to the upper end of the valve-stem i^2.

The valve I is operated by trip mechanism, which consists of a laterally movable or yielding frame K, pivoted at its inner lower end to the upper portion of the movable brush-frame B, and having an upright dog or pawl k, adapted to engage with the free arm of the valve-lever j and depress the same, when the brush-frame B is lowered, thereby opening the valve. The movable pawl-frame K swings in a vertical plane at right angles to the valve-lever j. The movement of the pawl-frame on its pivot is limited in one direction by a downwardly-projecting arm l, formed at the lower end of the frame K, and bearing against an adjusting-screw l', attached to said frame, as shown in Fig. 7.

l^2 represents a spiral spring arranged between the upper end of the pawl-frame K and the adjacent portion of the brush-frame B, and which tends to move the upper end of the frame K and its pawl toward the valve-lever j.

l^3 represents an inclined tripping-cam formed at the upper end of the pawl-frame K and projecting from the outer side thereof. The cam l^3 strikes during the downward movement of the pawl-frame a stop or projection m, secured to the adjacent branch of the yoke I′, when the frame B is depressed and swings the pawl-frame K away from the valve-lever j, so as to disengage the pawl k from the latter, as represented in Fig. 13. The valve-lever being now released, the spring i^3 forces the valve-disk i' against its seat, thus closing the valve and shutting off the supply of water to the hollow rod f. As soon as the tripping-cam l^3 has passed the projection m the pawl-frame K is returned to its normal position by the reaction of the spring l^2. At the next upward movement of the sliding brush-frame B the inclined head of the pawl k comes in contact with the valve-lever j, and swings the pawl-frame on its pivot until the abrupt shoulder of the pawl has cleared the lever, when the pawl-frame is returned to its normal position by the spring l^2, and the parts are ready for the next downward movement. The stop m is preferably made vertically adjustable on the yoke I′ by means of a set-screw m', as shown in Figs. 7 and 14, so that the point at which the pawl k is tripped may be regulated to properly time the closing of the valve I. The adjusting-screw l' also permits the adjustment of the point at which the valve-lever is released by adjusting the pawl and frame toward and from the valve-lever and toward and from the stop m. The pawl k is capable of sliding in the frame K, and is carried by a spring k' and a pin k^2, the spring being interposed between the pin and the upper part of the frame. When the head of the pawl strikes upon the valve-lever as the frame descends, the spring is compressed, allowing the frame to descend, while the pawl holds the valve-lever down, thereby increasing the period of time during which the valve is held open compared with what it would be if the pawl were unyieldingly attached to the frame.

N is an annular guard or casing surrounding the brush D, and whereby the water is prevented from being splashed or scattered. The guard N is secured at its rear side to the lower end of the sliding frame B, and its front portion is supported by arms n, secured to the front side of the frame B.

n' represents an interior trough or channel extending around the front and sides of the guard N, and terminating at the rear side of the guard, so as to form a discharge opening or passage n^2, as shown in Fig. 5. This trough receives the water which is thrown against the inner side of the guard N by the revolv-

ing brush D, and is inclined toward the rear side of the guard, so as to discharge the water through the opening n^2. The table A is provided directly below the guard N with an opening in which is arranged a grate or slotted plate O, through which the waste-water may pass. Below this grate is arranged a trough or sink P, which receives the water draining through the grate O and from which the water is conducted to any desired point.

q q represent gages secured to the grate O, and against which the cans are placed for properly centering the same, so as to bring their openings underneath the plug F. These gages are preferably made adjustable by slots q' and set-screws q^2, or other suitable means, so that they can be adjusted to the size of the can.

The can to be wiped is placed upon the grate O against the gages q q. The treadle C is then depressed, which movement lowers the brush-frame B and connecting parts, and causes the plug F, which is in advance of the brush D, to enter the opening in the can and close the same, so as to prevent water from entering the can. This downward movement of the brush-frame causes the pawl k to depress the valve-lever j and open the valve, thereby admitting water to the hollow rod f of the plug F, and ejecting the same through the outlet openings or passages f^3 upon the top of the can, the water being deflected outwardly by the conical shell f^2 and the conical upper surface of the plug as it passes through said outlet-openings. Just before the treadle reaches the end of its downward stroke and before the brush D has come in contact with the top of the can the trip-cam l^3 strikes the stop m, causing the valve I to be closed and shutting off the water from the hollow rod f. As soon as the water has been thus shut off the rotating brush comes in contact with the top of the can and cleans the same, the treadle being held in a depressed position long enough to insure the proper wiping of the can. Upon releasing the treadle the spring c' raises the treadle, with the brush-frame B, and lifts the brush and the plug F away from the can, permitting the latter to be removed and another can to be put in its place. The plug F is held down upon the can by its own weight and that of its connecting parts, and is free to rise in the hollow brush-spindle d. The stop-collar f^6 is so arranged upon the plug-supporting rod f that the latter will be raised by the bracket f^7 striking said collar and the plug F be lifted out of the opening in the can by the upward stroke of the treadle.

In my improved machine the water is delivered directly upon the top of the can before the brush comes in contact with the can, thus insuring a proper supply of water upon the same to effect a thorough wiping thereof. The outlet-holes f^3 and the bore of the hollow plug-supporting rod f are comparatively small, so that the rod will not be emptied of water when the valve I is closed, but will remain filled, which causes the water to issue from the outlet-holes f^3 immediately upon opening the valve I.

In my improved machine the cans are placed upon a stationary support formed by the grate, and the rotating brush is lowered and pressed against the can, and the water-valve is actuated by the movement of the treadle, leaving the hands of the operator free to manipulate the cans and rendering the machine very convenient in use.

I claim as my invention—

1. The combination, with a stationary support upon which the cans are placed, of a vertically-movable frame arranged above said support, and a revolving brush and a plug mounted in said frame and moving therewith toward and from the can-support, substantially as set forth.

2. The combination, with a stationary support upon which the cans are placed, of a vertically-movable frame arranged above said support, a revolving brush and plug mounted in said frame and moving therewith toward and from the can-support, a water-supply pipe and valve, and a trip mechanism mounted on said movable frame, whereby said valve is opened and closed, substantially as set forth.

3. The combination, with the stationary can-support and the vertically-movable frame, of the hollow brush-spindle journaled in said frame, the brush attached to said spindle, a plug or stopper, and a rod carrying said plug or stopper and arranged within the bore of the brush-spindle, substantially as set forth.

4. The combination, with the hollow brush or wiper spindle and the brush attached thereto, of a plug or stopper closing the opening in the can, a hollow supporting-rod arranged within the hollow brush-spindle, carrying said plug and provided with water-escape openings, and a water-pipe connected with said hollow supporting-rod, substantially as set forth.

5. The combination, with the hollow brush-spindle and the brush attached thereto, of a plug or stopper closing the opening in the cans, a hollow plug-supporting rod arranged within the hollow brush-spindle, and provided with water-escape openings above said plug, a deflector arranged above said escape-openings, and a water-supply pipe connected with said hollow supporting-rod, substantially as set forth.

6. The combination, with the vertically-movable frame, of the hollow brush-spindle journaled in said frame, the brush attached to said spindle, a plug or stopper, and a hollow rod carrying said plug and arranged to move independently within the brush-spindle, substantially as set forth.

7. The combination, with the vertically-movable frame and the hollow brush-spindle journaled in said frame, of a plug or stopper, a hollow rod carrying said plug and arranged

within the brush-spindle, a water-supply pipe connected with said hollow rod, and a cut-off valve arranged in said supply-pipe and operated by the vertically-movable frame, substantially as set forth.

8. The combination, with the vertically-movable frame and the hollow brush-spindle journaled in said frame, of a plug or stopper, a hollow rod carrying said plug and arranged within the brush-spindle, a water-supply pipe connected with said hollow rod, a cut-off valve arranged in said supply-pipe and provided with an actuating-lever, and a trip mechanism attached to said movable frame, whereby said actuating-lever is operated and released, substantially as set forth.

9. The combination, with the vertically-movable frame and the hollow brush-spindle journaled in said frame, of a plug or stopper, a hollow rod carrying said plug and arranged within the brush-spindle, a water-supply pipe connected with said hollow rod, a cut-off valve arranged in said supply-pipe and provided with an actuating-lever, and a movable pawl-frame attached to said vertically-movable frame and provided with a pawl engaging with said actuating-lever and with a trip-cam which engages against a stationary part of the machine, substantially as set forth.

10. The combination, with the supply-pipe *h* and the cut-off valve I, provided with an actuating-lever, of the movable brush-frame B, the yielding pawl-frame K, pivoted to said movable frame and provided with a pawl *k* and a tripping-cam l^3, and an adjustable stop against which said tripping-cam engages, substantially as set forth.

11. The combination, with the fixed stop and the vertically-movable brush-frame, the water-supply valve, and its lever, of the movable pawl-frame attached to the movable brush-frame, a pawl made vertically movable in the pawl-frame, and a spring interposed between the pawl and its frame, substantially as set forth.

12. The combination, with the vertically-movable brush-frame, the revolving brush and the plug mounted in said frame, and a water-supply pipe, of a table provided with an opening underneath the brush-frame, a grate arranged in said opening for supporting the cans, and a sink arranged below said grate, substantially as set forth.

Witness my hand this 30th day of August, 1888.

CHARLES A. BURT.

Witnesses:
A. M. SMITH,
SOL. WILE.