

C. A. BURT.
CAN WIPING MACHINE.

No. 467,397.

Patented Jan. 19, 1892.

Fig. 1.

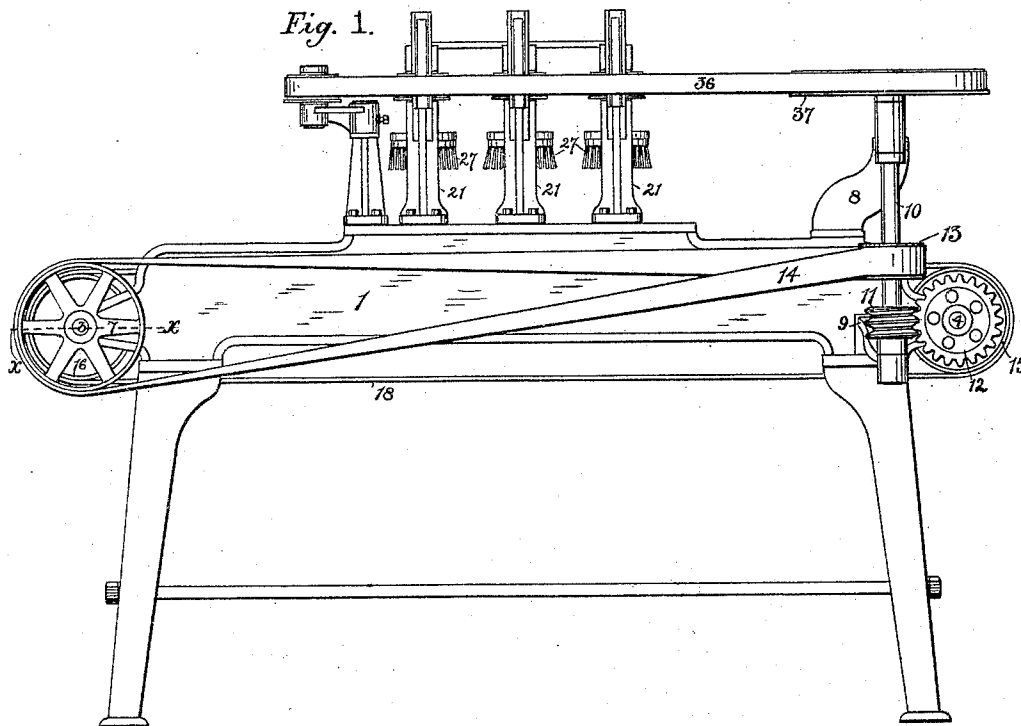
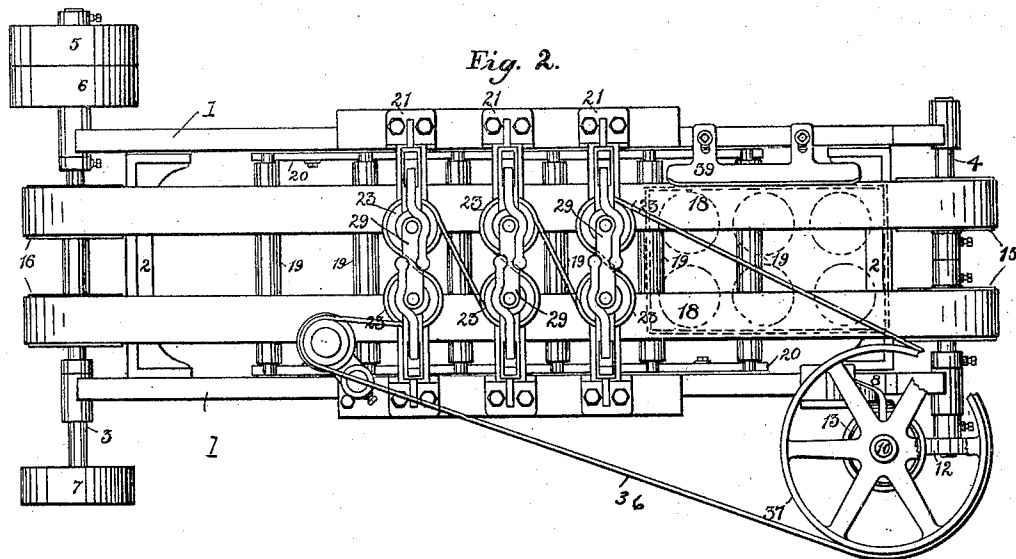


Fig. 2.



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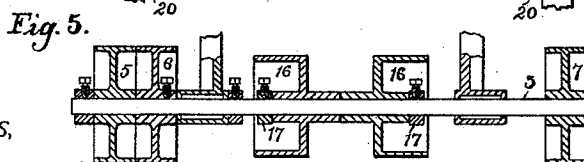
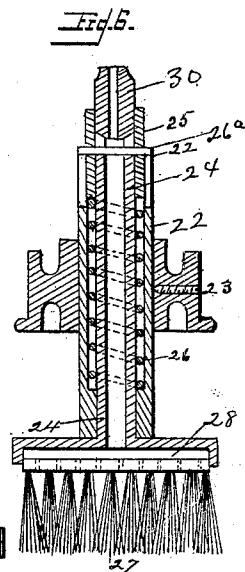
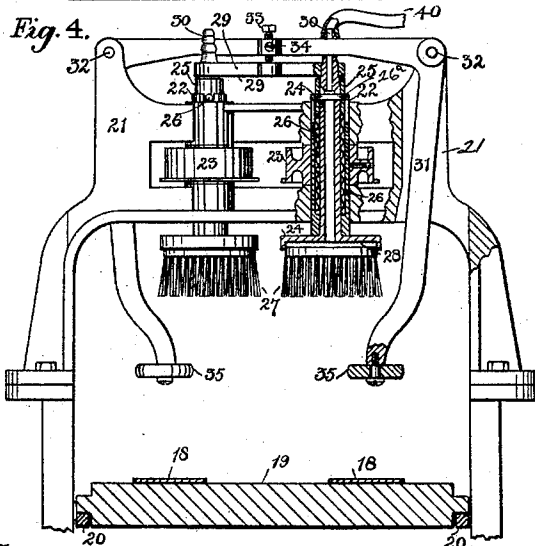
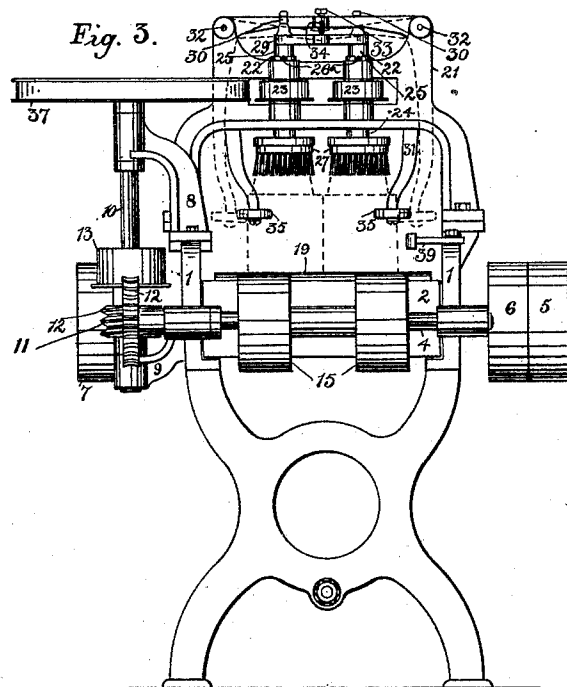
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UNITED STATES PATENT OFFICE.

CHARLES A. BURT, OF ROCHESTER, NEW YORK, ASSIGNOR TO THE BURT MANUFACTURING COMPANY, OF SAME PLACE.

CAN-WIPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 467,397, dated January 19, 1892.

Application filed May 18, 1891. Serial No. 393,114. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. BURT, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Can-Wiping Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures of reference marked thereon.

My present invention relates to that class of machines employed for wiping or cleansing the ends of cans after they are filled, preparatory to soldering or securing the tops or caps thereon.

Heretofore in machines of this class the construction has been such that not only was there liability of the cans being tipped over during the cleansing operation by their edges coming in contact with a rapidly-moving brush, but the operation could not be performed well except by special manipulation by the operator, which is not only expensive by reason of the requirement of the services of a skilled operator, but also considerable time is consumed, and therefore such machines are not economical.

My invention, however, has for its object to provide a machine into which the cans are fed and automatically and positively operated upon and are fed out in condition for the immediate capping or closing operation; and to these ends it consists in certain novelties of construction and combinations of parts, all as will be hereinafter described, and the novel features pointed out in the claims at the end of this specification.

In the drawings, Figure 1 is a side elevation of a machine constructed in accordance with my invention; Fig. 2, a plan view of the same; Fig. 3, an end view; Fig. 4, a cross-sectional view of the machine, showing a pair of brushes in section. Fig. 5 is a sectional view on the line *xx* of Fig. 1. Fig. 6 is an enlarged section of one of the brush-spindles.

Similar numerals of reference indicate similar parts.

The main frame of the machine is composed in the present instance of the side pieces 1,

having the legs formed with or connected thereto, said pieces being connected at the ends by cross-pieces 2; and mounted in bearings at the end of the frame are shafts 3 and 4, the former preferably at the rear end of the machine and having near one end the usual driving-pulleys 5 and 6 and at the other end a pulley 7. Secured to the main frame near the front end are brackets 8 9, constituting bearings for a vertical shaft 10, provided on its lower end with a worm 11, engaging a worm-wheel 12 on the end of shaft 4, and upon said shaft, in the present instance between its bearings, is secured a pulley 13, connected by a quarter-turn belt 14 with pulley 7 on the driving-shaft and adapted to be driven therefrom. Upon shaft 4 are rigidly secured two pulleys 15 15, preferably made separate, though they might be connected, if desired, and mounted on shaft 3 are two corresponding pulleys 16, which, however, turn independently of said shaft, but are prevented from longitudinal movement thereon by collars 17, secured to the shaft. These pulleys, also, could, if desired, be secured together, forming a drum; but I prefer to construct them independent, as shown. Passing around pulleys 15 and 16 are two belts 18, being sustained with their upper portions horizontal upon a series of loose rollers 19, journaled in the main frame, or plates 20, secured to the inner sides thereof, as shown.

It will be seen that motion transmitted to the shaft 3 will be communicated to the vertical shaft, thence through the worm to shaft 4 and to the belts, which constitute the feeding devices for moving the cans or trays placed upon them through the machine, the movement of said belts being, by reason of the gearing employed, much slower than that of shaft 3, and by means of the idlers on the driving-shaft, I am enabled, while having the latter running at a high rate of speed, to cause a comparatively slow movement of the driving-belts without the necessity of employing an extra counter-shaft.

The parts so far described constitute one form of feeding device, and while I prefer this form, it will be understood that as far as the

operation of the wiping devices is concerned any other could be employed.

Mounted upon the sides of the main frame is a series of frames or castings 21, in the present construction three being employed, each frame extending over the feeding-belts and having bearings formed therein, in which operate two vertical sleeves 22, provided with belt-pulleys 23, secured rigidly to them and operating in a recess in the frames, whereby vertical movement is prevented. Within each of these sleeves is arranged a vertical spindle 24, preferably hollow, and having a bearing in the sleeve at the bottom, as shown in Fig. 4, and at the top provided with a sleeve or collar 25, having a cross-pin 26* therein engaging a slot in the top of sleeve 22 and also a slot in the spindle 24, whereby the shaft and sleeve will be rotated together. Between shoulders formed in the interior of sleeve 22 and the lower side of the collar 25 is arranged a spiral spring 26, the tendency of which is to press the latter and the shaft 24 upward. A brush 27 is secured to the lower end of spindle 24, adapted to operate on the can end, and in the one shown in section, which is the first of the series of brushes, a small chamber 28 is formed above it for containing water, which trickles through the brush and keeps the bristles thereof moist, so as to enable the brush to more readily remove glutinous deposits on the ends of the can, water being supplied through a pipe 40 or otherwise.

Upon the upper ends of the spindles 24, which, as stated, are arranged in pairs in the frames, are placed plates 29, provided with apertures in the ends, through which pass hollow nipples 30, or, if desired, solid pins or plugs enter loosely the ends of the spindles, said plates operating, when moved down, to carry the spindles, so that the brushes may operate on the ends of the cans beneath.

The springs 26 hold the spindles and brushes normally above the level of the cans, which latter are placed upon trays on the carrier or feeding-belts, and it is desirable that devices be provided for depressing the brushes on the cans when and not until the cans are beneath them, so that there will be no liability of their being tipped over by having their edges coming in contact with the rapidly-revolving brushes, and while this could of course be accomplished by means of cams suitably timed with relation to the movement of the feeding devices, I prefer to cause it by the cams themselves or projections on the carrier corresponding to them, and to this end provide recesses in the castings 21, in which operate the long arms of bell-crank levers 31, pivoted at 32, the upper short arms having an adjustable screw 33 thereon secured by set-screws 34, which rest upon the plates 29 at the top, the screws of adjacent levers being preferably in a longitudinal plane for securing uniformity of movement when either lever is operated. On the lower ends of said levers 31 are placed

friction-rollers 35, preferably with slightly-rounded faces. The sleeves 22, to which the brush-carrying spindles are connected, are rotated by means of a belt 36, passing around the pulley 37 on vertical shaft 10 and the pulleys 23 on the sleeves, all the operating connections being such that while the feeding devices move comparatively slowly, the brushes are rotated at great speed, greater even than that of the driving-shaft.

In the present embodiment of the invention I have shown three frames over the feeding-belts, and six brushes; but it is evident that a greater or less number could be employed, and also instead of operating the brushes in pairs they could be arranged in a single line; but by this arrangement, as the cans abut against each other and their outer sides cause the depression of the brushes, friction is lessened and the cans mutually support each other.

The operation will now be understood. The cans being located on a tray, preferably containing twelve, as in dotted lines, Fig. 2, in which they are placed while being filled or subsequently, said tray is placed on the traveling belts with its edge against a gage 39 for properly guiding it and by means of the belts moved through the machine under the brushes. As the first pair of cans strike the lower arms of levers 31 said levers are gradually turned on their pivots and the spindles and brushes brought down onto the tops of the cans, as in Fig. 3, cleansing them of any deposit left thereon by the filling-machine, brushing thoroughly the small groove around the opening, and, as water is preferably supplied to the first brushes through pipes 40, removing any glutinous deposit. When the first pair of cans have passed the first brushes, the latter are returned to normal position by their springs and are ready to be depressed again by the next pair of cans, which immediately engage the levers, while the first pair of cans are being operated upon by the next pair of brushes, and so on through the machine, the cans after leaving the last brushes being found to be thoroughly cleansed and ready for the application of the caps, the operation being performed without removing the cans from the trays.

It will be seen that by means of the set-screws 33 on the top of the bell-crank levers the position of the said levers can be readily adjusted so as to adapt the machine to operate on cans of any size, the lower ends of the levers being thrown over the feeding-belts to a greater or less amount.

While I have described and prefer to moisten only the first pair of brushes, it is evident that they could all be moistened by substantially the same means, if desired. It will also be noticed that the brushes are brought squarely down on the tops of the cans when they are in proper position beneath them, thereby obviating the objection, present in

other similar machines, of bringing the edges of the cans against revolving brushes, which have a tendency to tip the cans over.

It will be noted that the sides of the cans constitute, as it were, a series of projections coinciding with the can-centers and carried by the feeding devices, operating to bring the cans and brushes into contact, and I therefore regard as equivalents of this feature, broadly, mechanism that accomplishes this result irrespective of the details of construction.

I claim as my invention—

1. The combination, with can-feeding devices, of a rotary and vertically-movable brush held normally elevated and a brush-depressing device actuated by a can, substantially as described.

2. The combination, with a rotary and vertically-movable brush and a spring for elevating it, of a lever adapted to be actuated by a can beneath the brush, operating to depress the latter, substantially as described.

3. The combination, with a rotary brush, of a can-support and feeding device, said parts being capable of movement toward each other to secure contact between the brush and can, and mechanism to secure such contact operated mediately from the can-feeding device, substantially as described.

4. The combination, with the vertical spindle constructed in two sections, one mounted rigidly in a frame and adapted to be rotated and the other movable vertically thereon, and a brush carried by the latter, of a lever projecting beneath the brush and connected with the movable shaft-section, whereby upon placing a can beneath the brush the latter will be depressed, substantially as described.

5. The combination, with the sleeve journaled in a frame, the spindle operating inside the sleeve, and the spring between them, of the brush connected to said spindle, and the

bell-crank lever having one arm projecting beneath the brush and the other connected to the spindle, substantially as described.

6. The combination, with the frame, the two vertically-movable rotary spindles mounted therein, and the plate engaging their upper ends, of the levers having one of their ends projecting beneath the spindles and the other operating on said plate, substantially as described.

7. The combination, with the main frame, the shaft having the worm-wheel and the pulley thereon, the loose pulley, and the conveying-belt connecting them, the shaft having the worm and a belt-pulley thereon, of a series of vertical spindles adapted to carry brushes arranged over the conveying-belt, and a belt connecting the pulley on the worm-shaft and the spindles, substantially as described.

8. The combination, with a way and can-feeding devices for moving cans along said way, of a series of vertically-movable spindles adapted to carry brushes arranged along the way, and a series of bell-crank levers projecting in the path of the cans and connected to the spindles, whereby the latter will be depressed by the movement of the cans, substantially as described.

9. The combination, with the main frame, the driving-shaft having the loose pulley thereon, the shaft having the worm and tight pulley, the conveying-belt connecting the two pulleys, the short shaft having the worm, and the pulley thereon, of the vertical spindles adapted to carry brushes, arranged over the conveying-belt, and a belt connecting the worm-shaft and spindles, substantially as described.

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Witnesses:

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