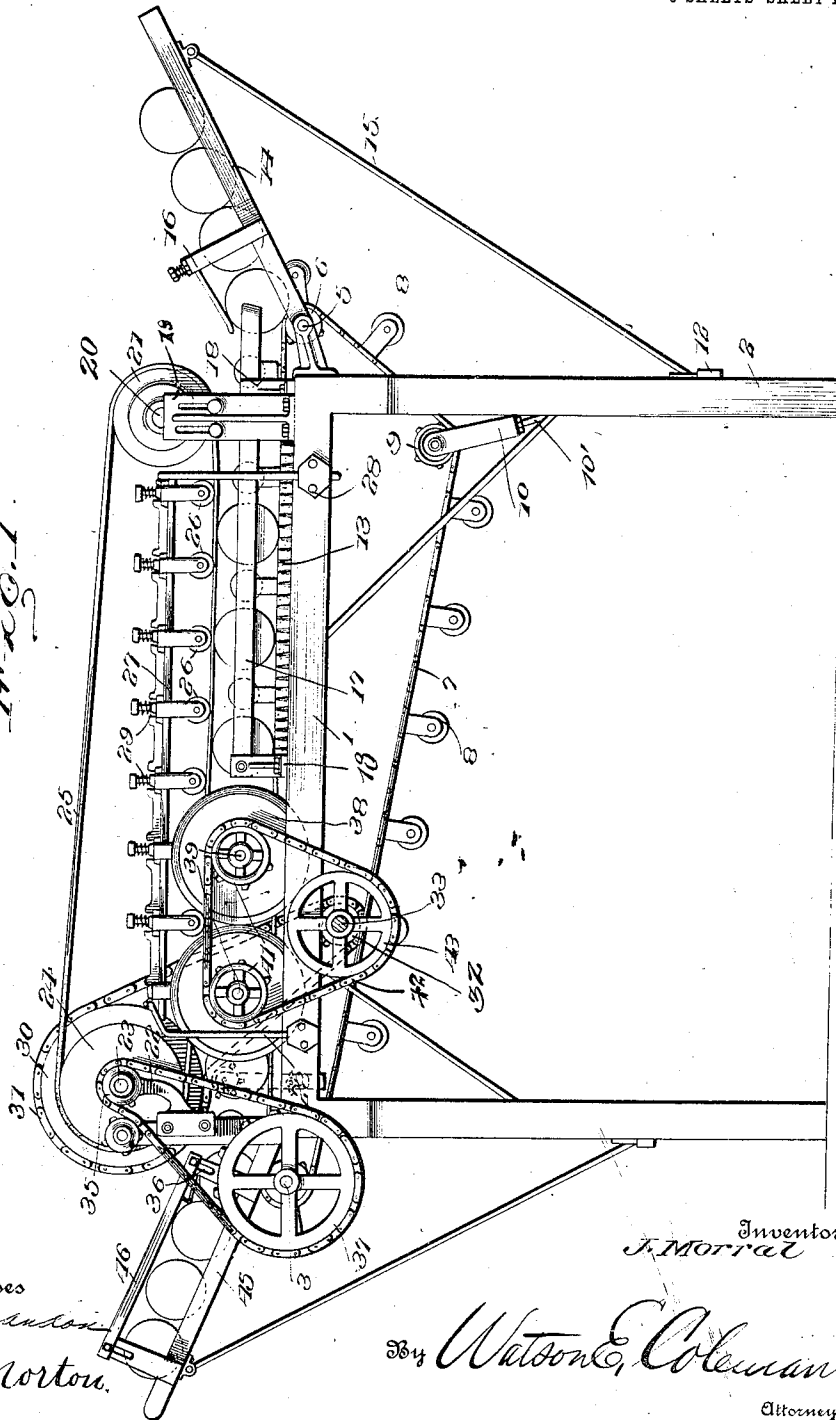


J. MORRAL.
MACHINE FOR CLEANING CANS AND THE LIKE.
APPLICATION FILED MAR. 14, 1912.

1,053,130.

Patented Feb. 11, 1913.

5 SHEETS-SHEET 1.



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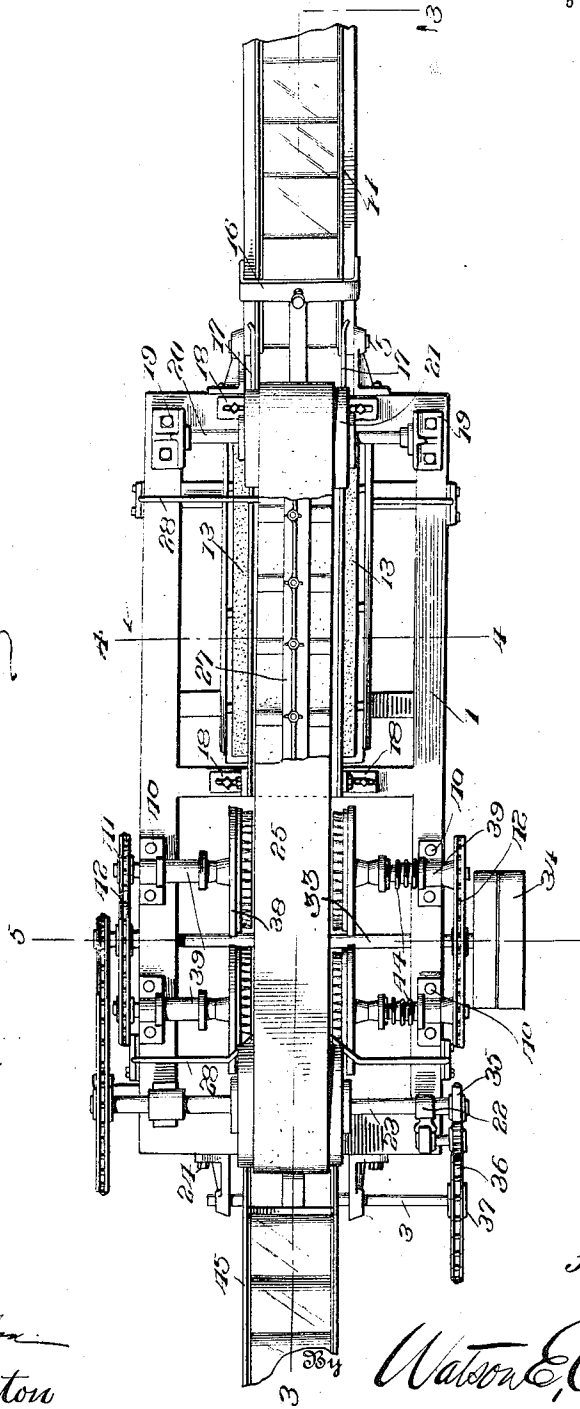
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5 SHEETS—SHEET 2.

Fig. 2.



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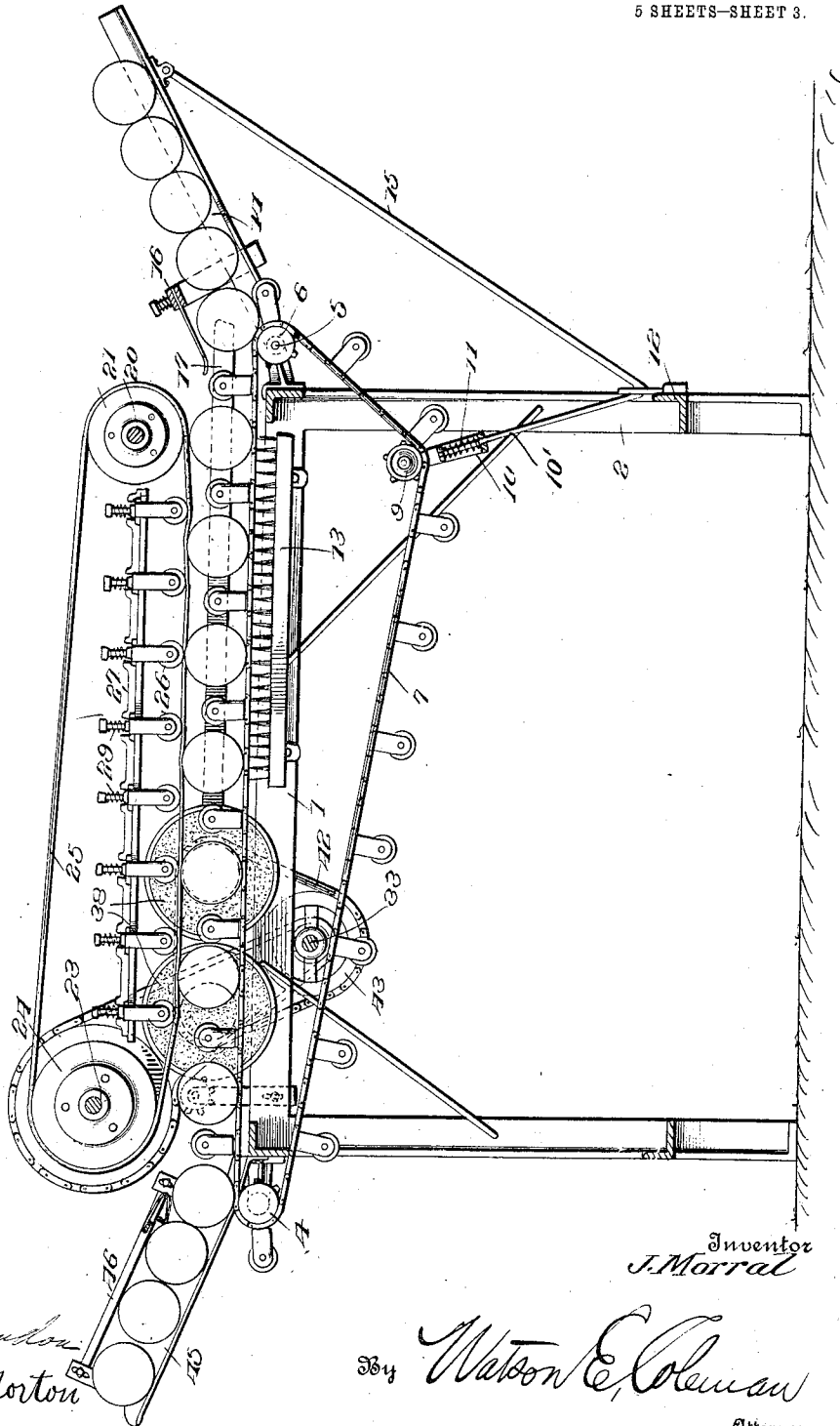
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5 SHEETS—SHEET 4.

FIG. 4.

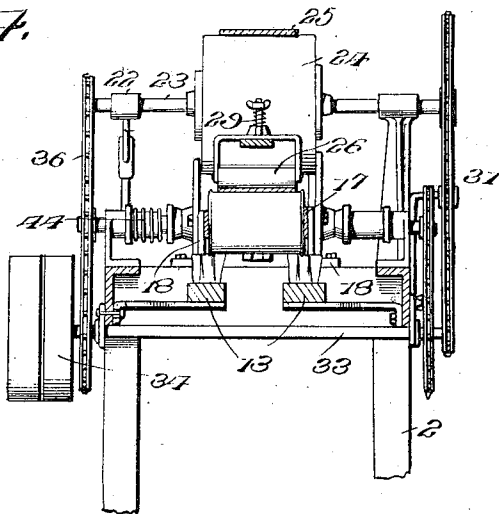
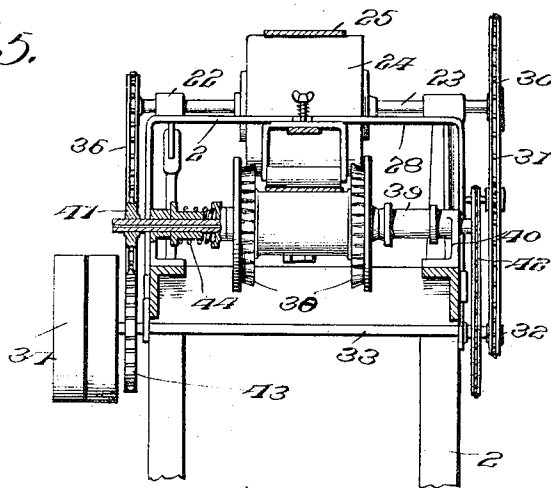


FIG. 5.



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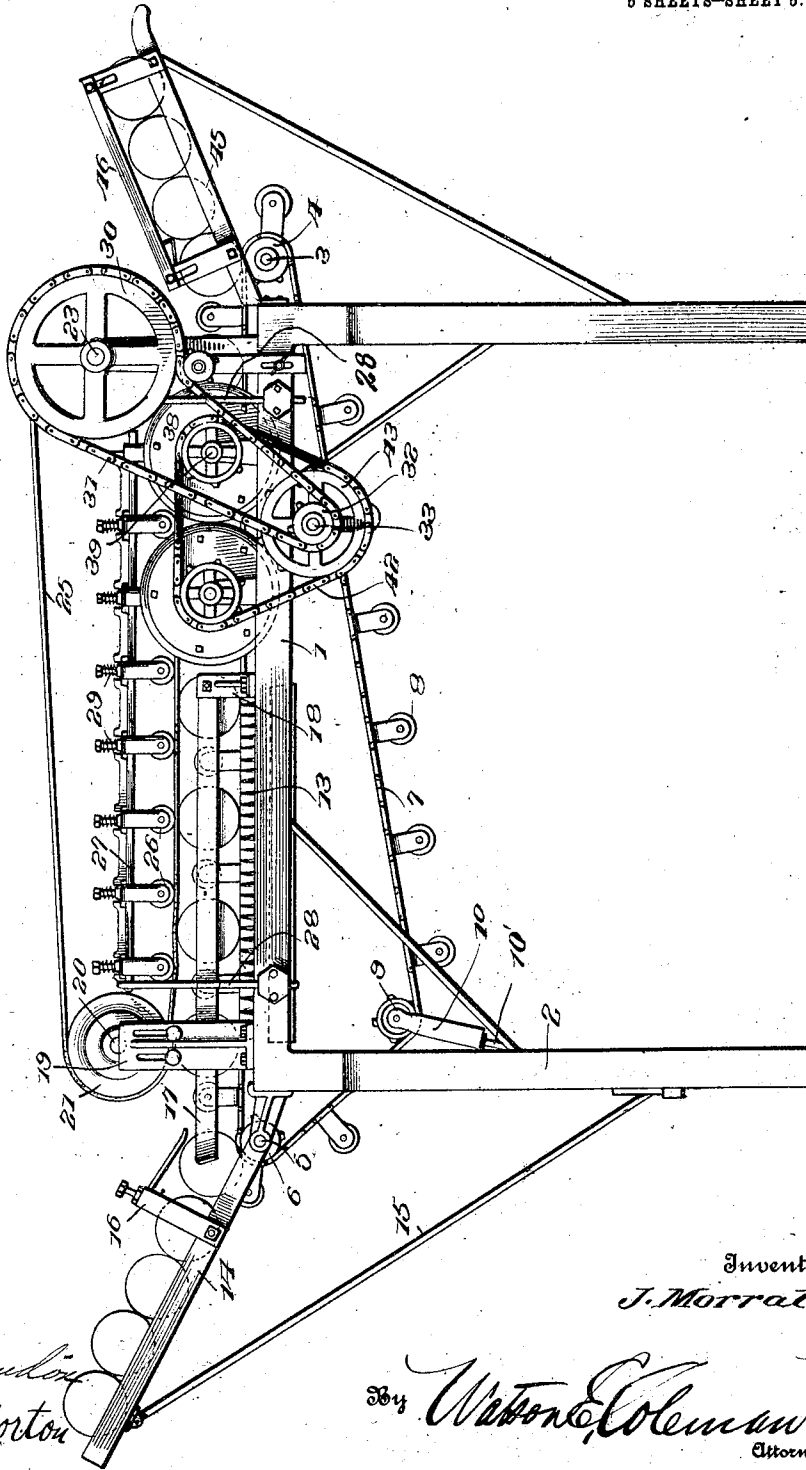
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5 SHEETS-SHEET 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR CLEANING CANS AND THE LIKE.

1,053,130.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed March 14, 1912. Serial No. 683,841.

To all whom it may concern:

Be it known that I, JOHN MORRAL, a citizen of the United States, residing at Larue, in the county of Marion and State of Ohio, have invented certain new and useful Improvements in Machines for Cleaning Cans and the Like, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to new and useful improvements in can cleaning machines and more particularly to a machine for cleaning the outside of the can, after being filled and previous to labeling and my object is to provide a device of this character which will effectively and positively remove all dirt, rust, and the like from the bodies and the heads or ends of the cans.

A further object of the invention is to provide a brushing means to remove dirt and the like from the cans as the same are passed through the machine and another object is to provide means for conducting the cans through the machine, and retaining the same in contact with said brushing means.

With these and other objects in view, my invention consists in the novel features of construction, combination and arrangement of parts, as will be hereinafter referred to and more particularly pointed out in the specification and claims.

In the accompanying drawings forming a part of this application, Figure 1 is a side elevation of the device; Fig. 2 is a top plan view thereof, partly broken away; Fig. 3 is a longitudinal section through the same, as seen on line 3—3, Fig. 2; Fig. 4 is a transverse section as seen on line 4—4, Fig. 2; Fig. 5 is an additional transverse section as seen on line 5—5, Fig. 2; and Fig. 6 is a side elevation of the machine opposed to that disclosed in Fig. 1.

In carrying out my invention, I shall refer to the drawings, in which similar reference characters designate corresponding parts throughout the several views and in which—

1 indicates the bed or main frame of the machine carried on the supporting legs 2, said frame having rotatably mounted at the one end thereof, a transverse shaft 3, which carries thereon the sprocket 4 and an additional shaft 5 is rigidly carried on the

opposite end of said main frame 1 having 55 rotatably mounted thereon an additional sprocket 6 in alinement with the sprocket 4. Extending over these sprockets 4 and 6 is an endless chain carrier 7, the reaches of which extend above and below the main 60 frame 1, said carrier being provided with a plurality of rollers 8, which are spaced at regular intervals throughout the length thereof, forming means by which articles may be carried with the carrier and in order 65 to retain the upper reach of the carrier taut, I provide a sprocket 9, which engages the links of the lower reach of the carrier. This sprocket is carried on one end of a U-shaped bracket 10 which has slidably disposed 70 through the intermediate portion thereof the rod 10' and encircling said rod between the free end thereof and said intermediate portion of the bracket is a coil spring 11. The opposite end of this rod 10' is engaged with 75 one of the transverse bars connecting the pairs of supporting legs 2 and from this construction it will be seen that all slack in the carrier 7 will be taken up by the means described. This carrier 7 extends centrally 80 and longitudinally of the main frame 1 and also extending longitudinally of the frame 1, on opposite sides of the upper reach of the carrier 7 are the longitudinal brushes 13 which are securely held in said frame 1 and 85 have the wire bristles thereof disposed upwardly to extend above the links of said carrier 7. The carrier 7, as the same is operated, is adapted to receive in the spaces between the rollers 8, cans from a feed trough 90 or chute 14, which is pivotally mounted on the shaft 5, at the one end of said frame 1 and held in an inclined position, as shown in Fig. 1, by means of a supporting rod 15. These cans are fed by hand to this chute or 95 trough 14, the lowermost can, that is the one nearest the frame 1, being adapted to be engaged by a roller on the carrier 7, as the latter is operated, whereby the can will be carried on with the carrier and in order to 100 prevent the downward rush of cans on the chute 14, after the lowermost one has been removed, the retaining mechanism 16 is provided on the chute. This retaining mechanism is merely spring held and sufficient to 105 retain the cans from rolling downwardly by gravity, but under pressure by the operator the action of this retaining mechanism will

be overcome and the lowermost can again placed in position to be received by the next roller of the carrier.

From this construction, above described, it will be seen that as the cans are removed, one by one, from the feed trough 14, as the carrier is rotated, the same will be conducted over the wire brushes 13, which extend for a considerable length of the frame 1. The guide rails 17 are provided and carried on the angular brackets 18, which are secured to the frame 1, said brackets being adjustably mounted thereon in order to space these guide rails 17 any distance desired and as said rails may be spaced the exact or substantially the exact length of the cans being cleaned, it will be seen that the same will readily receive said cans therebetween and guide the same the length of the longitudinal brushes 13.

Mounted on the sides of the frame 1, at the end thereof at which the feed trough is disposed, is a pair of supporting brackets 19, between which is rotatably mounted a shaft 20, said shaft being capable of vertical adjustment with respect to the brackets 19 and provided with a pulley 21, while an additional pair of supporting brackets 22 is similarly mounted at the opposite ends of the sides of said frame 1, having rotatably mounted therebetween an additional transverse shaft 23, said latter shaft being also capable of vertical movement with respect to the brackets 22 and having mounted thereon an additional pulley 24. These pulleys 21 and 24 are disposed in longitudinal alignment and have extending thereover, an endless belt 25, the lower reach of which is adapted to be held in contact with the cans, as the same are passed over the brushes 13 by means of a plurality of rollers 26, said rollers being adjustably carried on a bar 27 extending longitudinally of the frame and carried above the brushes 13, by means of the supporting arms 28. As stated, the lower reach of the belt 25 is adapted to be forced into contact with the cans, as the same are passed over the brushes 13 by means of these rollers 26, said rollers being adjustable and held by means of the coil springs 29, the purpose of this belt 25 being to cause said cans to be revolved as the same are carried over these brushes. In order to cause this belt 25 to travel at a greater rate of speed than the carrier 7, the shaft 23 is provided with an enlarged sprocket 30, over which extends a chain 31, said chain 31 also passing over a small sprocket 32, carried on a main drive shaft 33. This main drive shaft 33 is rotatably suspended from the main frame 1 adjacent the end thereof opposite that having the feed trough thereon, the same having mounted thereon the drive pulleys 34, with which may be connected belts from any source of power (not shown)

and the shaft 23 has carried thereon, at the end opposite that carrying the sprocket 30, an additional but smaller sprocket 35. This latter sprocket 35 is engaged by an endless chain 36, which also extends over an enlarged sprocket 37, which is carried on the shaft 3 and from this construction it will be seen that as the shaft 23 is caused to rotate, said shaft 3 will also be rotated therewith, but in view of the particular form of gearing used, said shaft 23 will be rotated at a greater rate of speed than the shaft 3, thereby causing the belt 25 to travel at a greater rate of speed than the carrier 7. It will be seen, however, that said belt and carrier will be operated in the same direction, so that the cans carried on the upper reach of the carrier will be caused to revolve as the same are carried over the longitudinal brushes 13, whereby all rust, dirt, and the like on the body of the cans will be removed. The space between the brushes 13, which is taken up by the links of the carrier 7, will, of course, permit a space on each can to remain uncleaned, but as this space is usually covered by the label which is applied later, it will be appreciated that the remaining of this unclassified space is in no way detrimental.

From the foregoing description it will be understood that the bodies of the cans will be readily cleaned upon the operation of the carrier, but I have also provided means for the cleaning of the ends or heads of the cans and to this end I provide a plurality of disk brushes 38, arranged in pairs on the opposite sides of the carrier 7, said brushes being disposed adjacent the one end of the frame 1 just beyond the ends of the longitudinal brushes 13. These disk brushes 38 are carried on the inner ends of the transverse shafts 39, which are rotatably supported in bearings 40, mounted on the frame 1, the outer ends of said shafts 39 having mounted thereon the sprockets 41, over which extend the endless chains 42 and additional sprockets 43 carried on the main drive shaft 33 also have extending thereover, the chains 42, whereby as said main shaft is rotated, the stub shafts 39 will be caused to rotate and correspondingly rotate the disk brushes 38. The disks 38 are so disposed on the shafts 39 as to position the bristles thereof inwardly so as to contact with the ends or heads of the cans, as the same pass therebetween and one pair of said disk brushes, that is, the pair which is disposed on the side of the frame nearest the observer in Fig. 1, is slidably arranged on the respective shafts 39. The shafts carrying the last referred to pair of brushes have encircling the same, coil springs 44, which so act on said pair of disk brushes as to force the same normally inwardly and from this construction it will be appreciated that the pairs of disk brushes may readily yield laterally with respect to one

another to accommodate cans of various lengths, but which brushes will always be in position to engage the ends or heads of said cans.

From this construction it will be seen that after the cans have been conducted over the longitudinal brushes 13, by the carrier 7, the same will be moved past the disk brushes 38, which latter brushes are caused to rotate simultaneously with the operation of the carrier, whereby the ends of the cans will be cleaned, as well as the body portions thereof and as each can on the carrier is brought to the rear end of the frame 1, the same is thrown on the delivery chute 45. While I have not so shown the same, an elevator of any desired form may be provided in connection with this chute to conduct the cleaned cans to any other device, such as a labeling machine (not shown) but in the drawings it will be noted that I have provided a pair of longitudinal bars or rods 46 which are adjustably supported above the chute 45 and under which the cans are adapted to be received after being deposited on the chute from the carrier. As each can is thrown on the chute 45, it will be appreciated that the uppermost can in the row will be forced from the chute 45 and the remaining cans will be prevented from rolling downwardly on the chute by means of these retaining bars 46.

From the foregoing it will be seen that I have provided a simple, inexpensive and efficient device for carrying out the objects of the invention and while I have particularly described the elements most well adapted to perform the functions set forth, it is obvious that various changes in form, proportion and in the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the principles of the invention.

It must be here stated that the stud shafts 39 upon which the disk brushes 38 are carried, are tubular, as particularly shown in Fig. 5 of the drawings, whereby any form of liquid such as oil or water may be supplied therethrough to the brushes, for obvious purposes.

Having thus described my invention, what I claim is:

1. A device of the class described comprising a main frame, a pair of longitudinal brushes secured within said frame and spaced one from the other, pairs of rotatable brushes also carried by said frame and spaced from one another in alinement with the aforesaid brushes, an endless carrier extending through the space between said brushes, and means to cause articles on the carrier to be revolved as the same are conducted over and through said brushes.

2. A device of the class described comprising a main frame, a plurality of spaced

brushes carried thereon, an endless carrier disposed in the space between said brushes, said carrier being provided with a plurality of rollers disposed at regular intervals throughout the length thereof, the spaces between said rollers being adapted to receive cans to conduct the same over said brushes, and means adapted to cooperate with said rollers to cause the cans to be revolved as the same are carried over the brushes.

3. A device of the class described comprising a frame, a plurality of brushes carried thereon and spaced one from the other, an endless carrier disposed between said brushes, a feed trough carried by the main frame through which said carrier also extends, said carrier being provided with a plurality of rollers spaced at regular intervals throughout the length thereof and adapted to receive therebetween articles from the feed trough, and means adapted to cooperate with said rollers to cause the articles therebetween to be revolved as the same are conducted over the brushes.

4. A device of the class described comprising a frame, a pair of longitudinal brushes adjustably secured therewithin and spaced one from the other, pairs of disk brushes rotatably mounted on said frame, and also spaced from one another, certain of said latter brushes being yieldingly supported in position, and means to conduct a plurality of cans over said longitudinal brushes and between said rotatable brushes.

5. A device of the class described comprising a main frame, a pair of spaced longitudinal brushes mounted therewithin, pairs of rotatable brushes disposed in substantial alinement with said longitudinal brushes, one pair of said brushes being yieldingly supported in position, means whereby a fluid may be supplied to said rotatable brushes, and means to conduct articles over said longitudinal brushes and between said rotatable brushes.

6. A device of the class described comprising a main frame, a pair of longitudinal brushes adjustably secured therewithin and spaced in alinement with one another, pairs of rotatable brushes mounted within said frame in alinement with said longitudinal brushes, one pair of said brushes being yieldingly supported in position, an endless carrier operatively mounted on said frame and disposed in the space between said brushes, and guide rails adjustably mounted in the frame above the longitudinal brushes, said guide rails being adapted to receive therebetween the articles conducted over the brushes by the conveyer.

7. A device of the class described comprising a main frame, longitudinal brushes spaced one from the other, pairs of rotatable brushes mounted in the frame in alinement with said longitudinal brushes, an endless

conveyer mounted on said frame and extending in the space between said brushes, an endless belt supported above said conveyer, said belt being adapted to contact
5 with articles conveyed through the frame by the conveyer, and means to rotate said conveyer and belt.

8. A device of the class described comprising a main frame, longitudinal brushes
10 mounted therewithin and spaced one from the other, rotatable brushes carried on said frame in alinement with said longitudinal brushes, an endless conveyer mounted on the frame and disposed between said
15 brushes, an endless belt supported on the frame above said conveyer, means to retain said belt in contact with articles conducted through the frame by the conveyer, and means to rotate said conveyer and belt.

20 9. A device of the class described comprising a main frame, longitudinal brushes

mounted therewithin and spaced one from the other, pairs of rotatable brushes mounted on said frame in alinement with said longitudinal brushes, an endless conveyer carried
25 on the frame and extending between said brushes, means on the frame to guide the articles conducted over the longitudinal brushes by the conveyer, an endless belt supported on the frame above said conveyer,
30 yieldingly supported means to force one reach of the belt in contact with the articles conducted through the frame by said conveyer, and means to rotate said belt and conveyer.

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

JOHN MORRAL.

Witnesses:

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