A. NESEN.

MACHINE FOR POLISHING CANS, PAILS, AND THE LIKE.

APPLICATION FILED AUG. 2, 1920.

Patented Jan. 18, 1921.

2 SHEETS—SHEET 2.

Inventor:

[Signature]

By: Bond Wilson.

F. L. Y. S.
MACHINE FOR POLISHING CANS, PAILS, AND THE LIKE.

ANDREW NELSEN, OF CHICAGO, ILLINOIS.

1,365,717.


To all whom it may concern:

Be it known that I, Andrew Nelsen, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Polishing Cans, Pails, and the like, of which the following is a specification.

This invention relates to machines for buffing and polishing the exterior surfaces of metal cans and pails, being adapted to handle the latter either with or without the usual balls.

The principal object of the invention is to provide a simple and efficient machine for the purpose stated, wherein all the operations, except feeding the cans or pails to the machine, are automatic. Another object is to provide a machine of the character stated capable, with slight adjustment, of handling cans and pails of considerably varying sizes.

Still other objects and advantages of the machine will be apparent to those skilled in the art as the same becomes better understood by reference to the following description, taken in connection with the accompanying drawings, wherein I have illustrated one practical embodiment of the invention and in which—

Figure 1 is a delivery end elevation of the machine as viewed from the right of Fig. 2, with the supporting legs of the frame broken off;

Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1;

Fig. 3 is a longitudinal section, broken out between its ends and more particularly showing the feed conveyer and the means for guiding and controlling the conveyer flights.

Referring to the drawings, 5 designates as an entirety the upper frame work of the machine which is of generally rectangular form and is supported on four legs 6. 7 designates each of a pair of horizontal cross-bars at the two ends of the frame, these cross-bars supporting bearings 8 in which are journaled a pair of horizontal rollers 9 that extend the full length of the machine, as clearly shown in Fig. 2. Two of the corner uprights of the frame 5 are grooved on their inner sides as shown in Fig. 2, and between the ends of the frame are a similar pair of uprights 5 that are similarly grooved on their inner sides. Fitted to slide in and between the uprights of each pair are cross-heads 10, in and between which are journaled a pair of shafts 11 on which are keyed a pair of opposed buffing or polishing rolls 12. The cross heads 10 are centrally apertured in a vertical direction to receive adjusting bolts 13 swiveled therein, said bolts extending upwardly through similar apertures in a pair of cross-bars 5 and provided on their upper threaded portions with adjusting nuts 14. By turning the nuts 14 in one direction or the other the heads 10 carrying the buffing and polishing rolls can be adjusted up and down in an obvious manner. The two rolls 12 are driven in opposite directions, as indicated by the arrows in Figs. 1 and 2, for which purpose the shaft 11 of one of the rolls is provided with a driving pulley 15, while the same shaft, at its opposite end, is geared to the companion shaft 11 by a train of gears 16, 17, 18, and 19, as shown in Fig. 1, the intermediate gears 17 and 18 being journaled in the adjustable head 10 so as to partake of the vertical adjustments of the rolls themselves.

Secured to one end of the head 10 is a forwardly extending bearing bracket 20, in which is journaled a hollow shaft section 21 carrying at its upper end a worm gear 22 that meshes with and is driven by a worm 23 fast on the outer end of one of the shafts 11. The tubular shaft section 21 has a splined telescoping engagement with another shaft section 24, which latter is journaled in a bracket 25, secured to one of the corner uprights of the frame. On the lower end of shaft section 24 is keyed a bevel gear 26 which meshes with and drives a mating gear 27 fast on one end of a horizontal shaft 28, which latter is supported in bearings 29 secured to the cross-bar 7. Keyed on the shaft 28 are a pair of spiral gears 30 which are drivingly engaged with mating spiral gears 31 keyed on the ends of the spindles of the rollers 9, whereby said rollers are both driven in the same direction and at equal speeds.

At the opposite or receiving end of the machine is a horizontal shaft 28, (Fig. 3) supported in bearings 29, and fast on the shafts 28 and 28 are a pair of conveyer sprockets 32, on which is mounted a horizontal conveyer chain 33. 34 designates each of a series of flights that are pivoted to the conveyer chain 33 at uniform
intervals lengthwise of the latter, and each of said flights is formed with a tail-piece 34° carrying at its free end a laterally extending pin 35. This pin 35 engages with a guide groove or channel 36 that extends parallel with and slightly below the upper lap of the conveyer chain 33. The guide groove 36 extends around the axis of the conveyer sprocket at the receiving end of the machine, as shown in Fig. 3, and is formed with a widened flaring mouth 36° adapted to receive the pin 35 as the downwardly hanging flight on the lower lap of the conveyer rounds the sprocket at the receiving end, and thereby guide the flight into its working position to push the cans or pails through the machine, as shown in the upper portion of Fig. 3. The guide groove or channel 36 terminates abruptly at the delivery end of the machine at a point approximately in the vertical plane of the shaft 28, as shown at 36° in Fig. 3.

In the operation of the machine the attendant stands at the rear or receiving end, which is the left end as shown in Fig. 2, and places the cans or pails, indicated at "C" in Fig. 1 successively on the long rollers 9. The can is at once rotated on its own axis by friction with the rotating rollers 9, and as soon as the upper end of the flight 34 engages with the rear end of the can it is pushed endwise, while still rotating, into the field of action of the buffing rolls 12 by which its exterior surface is polished. It will be observed that since the buffing rollers turn in opposite directions, their rotating effects are neutralized, and the can or pail continues to turn while passing through the field of action of the rolls, so that it is polished throughout its entire circumference. After passing the buffing rolls, the can or pail is pushed off the delivery end of the conveyer into any suitable receptacle.

By elevating the buffing rolls 12, larger cans or pails than the one herein shown may be handled and similarly by lowering the buffing rolls, smaller cans or pails may be handled. The machine is thus adapted to handle varying sizes within comparatively wide limits.

I claim:
1. In a machine of the character described, the combination of a frame, a pair of parallel horizontal rollers journaled on said frame, a pair of buffing rolls journaled on said frame above said rollers, means for turning said rollers in the same direction of rotation, means for turning said buffing rolls in opposite directions of rotation, and a conveyer between said rollers operative to push the articles to be polished endwise along said rollers past said buffing rolls.

2. In a machine of the character described, the combination of a frame, a pair of parallel horizontal rollers journaled on said frame, a pair of buffing rolls journaled on said frame above said rollers on axes parallel with the axes of the latter, means for turning said rollers in the same direction of rotation, means for turning said buffing rolls in opposite directions of rotation, and a conveyer between said rollers operative to push the articles to be polished endwise along said rollers past said buffing rolls.

3. In a machine of the character described, the combination of a frame, a pair of parallel horizontal rollers journaled on said frame, a pair of buffing rolls journaled on said frame above said rollers on axes parallel with the axes of the latter, means for adjusting said buffing rolls bodily toward and from said rollers, means for turning said rollers in the same direction of rotation, means for turning said buffing rolls in opposite directions of rotation, and means for pushing the articles to be polished endwise along said rollers past said buffing rolls.

4. In a machine of the character described, the combination of a frame, a pair of parallel horizontal rollers journaled on said frame, a pair of buffing rolls journaled on said frame above said rollers on axes parallel with the axes of the latter, means for adjusting said buffing rolls bodily toward and from said rollers, means for driving said rollers in the same direction, means for driving said buffing rolls in opposite directions, and an endless conveyer chain extending between said rollers and carrying, means for driving said buffing rolls.

5. In a machine of the character described, the combination of a frame, a pair of parallel horizontal rollers journaled on said frame, means for driving said rollers in the same direction, said rollers constituting both a support and a rotating agent for a cylindrical article to be polished, means for pushing said article endwise along said rollers, a pair of vertically adjustable cross-heads slidably engaged with vertical members of said frame, and a pair of parallel buffing rolls journaled in and between said cross-heads, means for driving said buffing rolls in opposite directions of rotation.

6. In a machine of the character described, the combination of a substantially rectangular upright frame, a pair of parallel horizontal rollers journaled on and lengthwise of said frame, said rollers turning in the same direction and constituting both a support and a rotating agent for a cylindrical object to be polished, a pair of vertically adjustable cross-heads slidably engaged with vertical members of said frame, means for suspending and bodily adjusting said cross-heads from top members of said frame, and a pair of parallel buffing rolls journaled in and
between said cross-heads, means for driving said buffing rolls in opposite directions of rotation, and means for advancing the articles to be polished endwise on said rollers and past said buffing rolls.

7. In a machine of the character described, the combination of a substantially rectangular upright frame, a pair of parallel horizontal rollers journaled on and lengthwise of said frame and constituting both a supporting and a rotating agent for a cylindrical object to be polished, a pair of vertically adjustable cross-heads slidably engaged with vertical members of said frame, a pair of screw-bolts swiveled in said cross-heads and extending through apertures in top members of said frame, adjusting nuts on the upper ends of said screw-bolts, a pair of parallel buffing rolls journaled in and between said cross-heads, means for driving said buffing rolls in opposite directions of rotation, means for driving said rollers in the same direction of rotation, and means for advancing the articles to be polished endwise on said rollers and past said buffing rolls.

8. In a machine of the character described, the combination of a substantially rectangular upright frame, a pair of parallel horizontal rollers journaled on and lengthwise of said frame and constituting both a supporting and a rotating agent for a cylindrical object to be polished, a pair of parallel buffing rolls journaled in said frame above said rollers, means for adjusting said buffing rolls bodily toward and from said rollers, and driving connections from one of said buffing rolls to said rollers, said driving connections being extensible to permit vertical adjustment of said buffing rolls.

9. In a machine of the character described, the combination of a substantially rectangular upright frame, a pair of parallel horizontal rollers journaled on and lengthwise of said frame and constituting both a supporting and rotating agent for a cylindrical object to be polished, a conveyor extending between said rollers equipped with pusher-fingers adapted to force articles to be polished lengthwise of said rollers, a pair of parallel buffing rolls journaled in said frame above said rollers, means for adjusting said buffing rolls bodily toward and from said rollers, and gearing connecting one of said buffing rolls to said rollers and conveyor, said gearing including a pair of extensible telescoping shaft sections, whereby to permit vertical adjustment of said buffing rolls.

ANDREW NEILSEN.