O. L. STEVENS.

APPARATUS FOR LABELING, WRAPPING, OR THE LIKE.

APPLICATION FILED SEPT. 15, 1920.

1,410,845.

Patented Mar. 28, 1922.

4 SHEETS—SHEET 1.

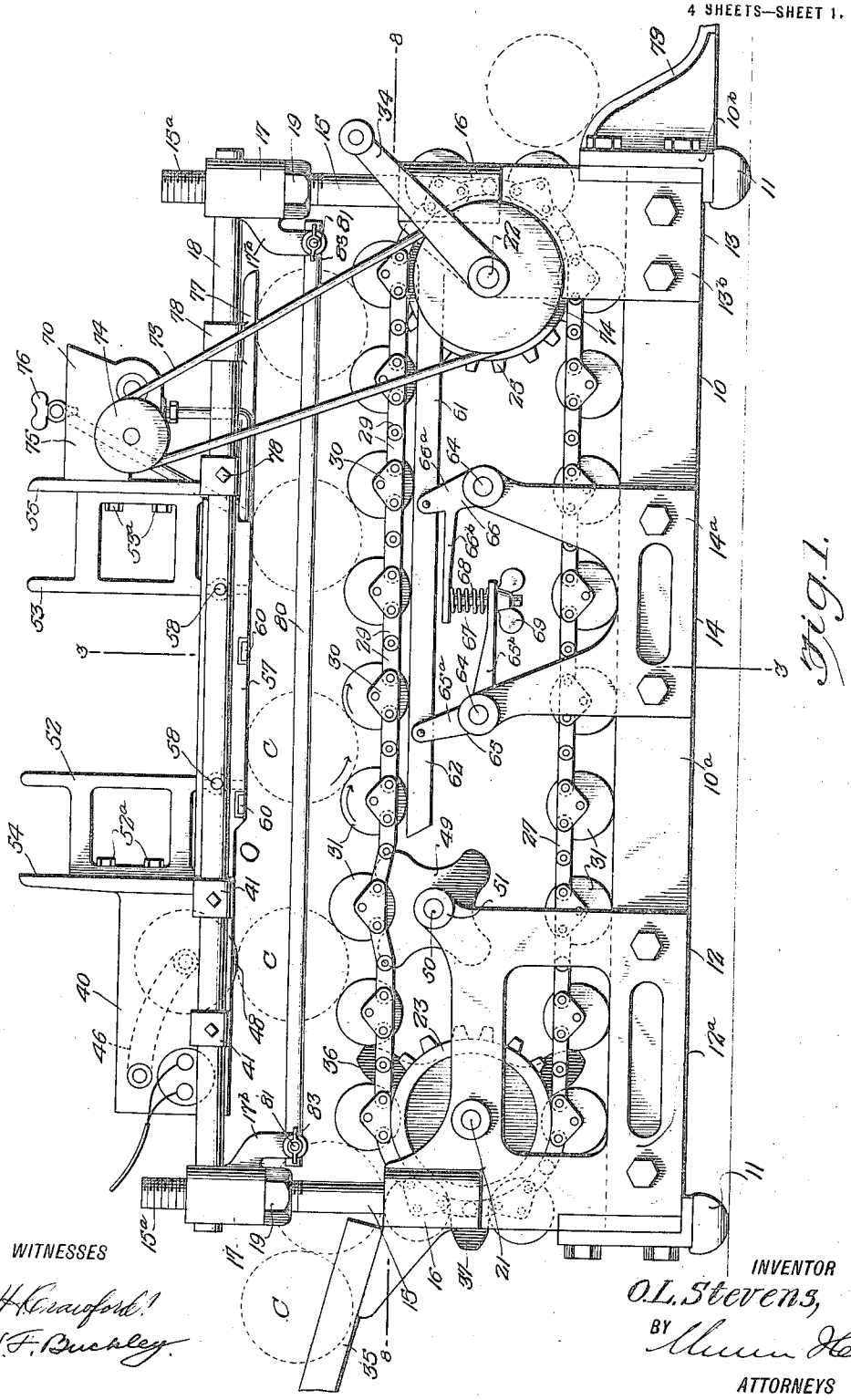


Fig. 1.

WITNESSES

J. H. Crawford.

W. F. Buckley.

INVENTOR

O. L. Stevens,

BY Munn & Co.,

ATTORNEYS

O. L. STEVENS.

APPARATUS FOR LABELING, WRAPPING, OR THE LIKE.

APPLICATION FILED SEPT. 15, 1920.

1,410,845.

Patented Mar. 28, 1922.

4 SHEETS—SHEET 2.

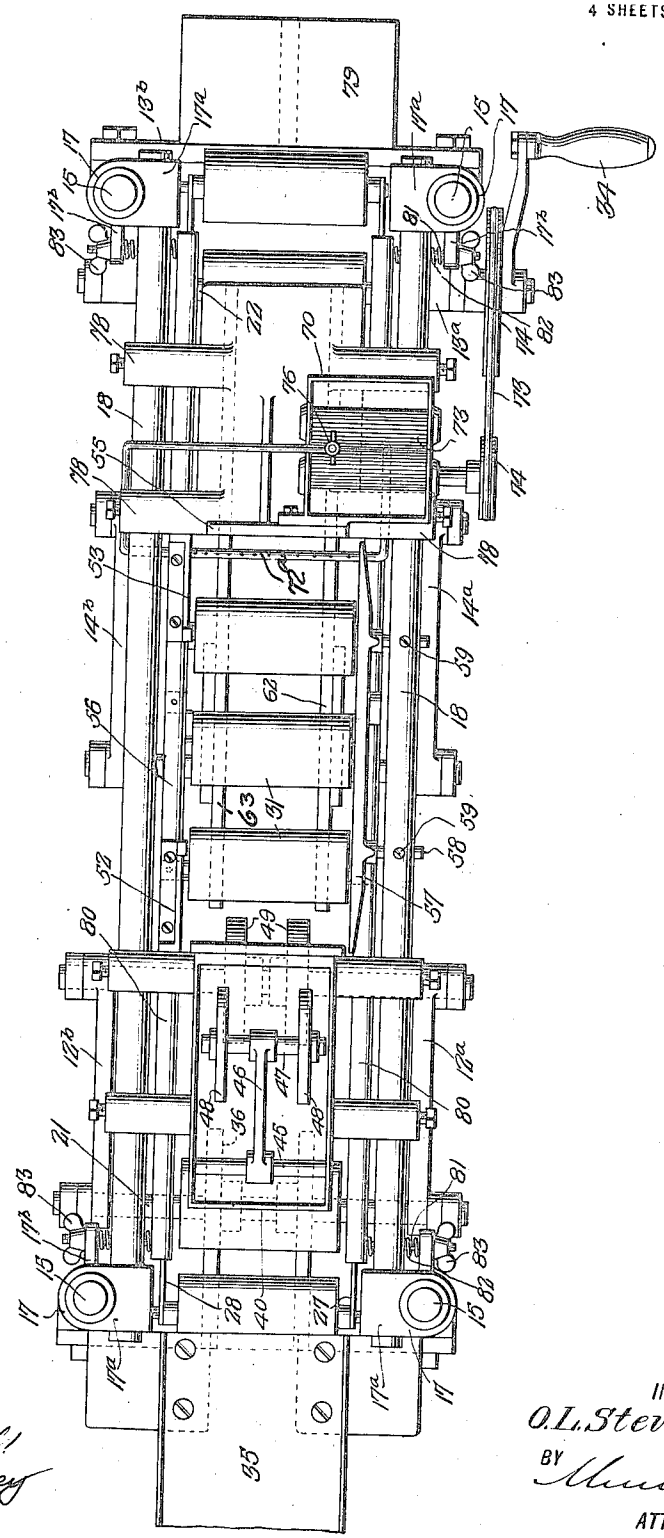


Fig. 2.

WITNESSES

J. H. Crawford

W. F. Buckley

INVENTOR

O. L. Stevens,

BY Munn & Co.

ATTORNEYS

O. L. STEVENS.

APPARATUS FOR LABELING, WRAPPING, OR THE LIKE.

APPLICATION FILED SEPT. 15, 1920.

1,410,845. Patented Mar. 28, 1922.

4 SHEETS—SHEET 3.

Fig. 3.

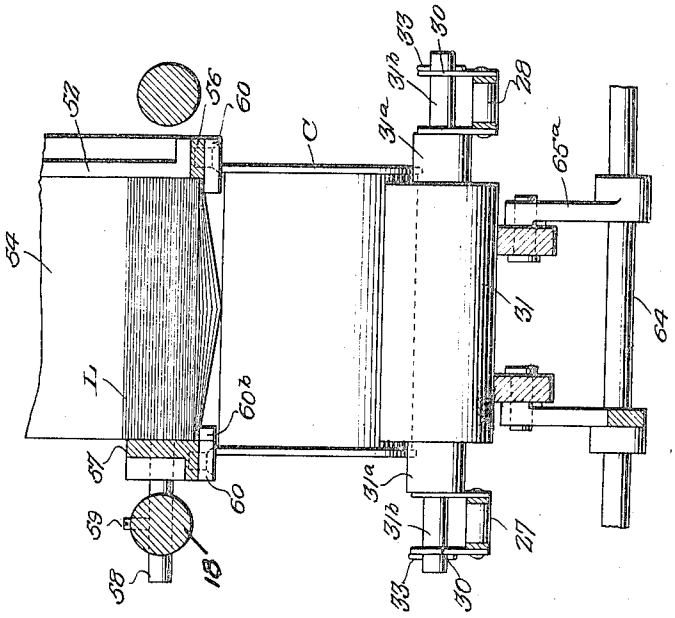


Fig. 4.

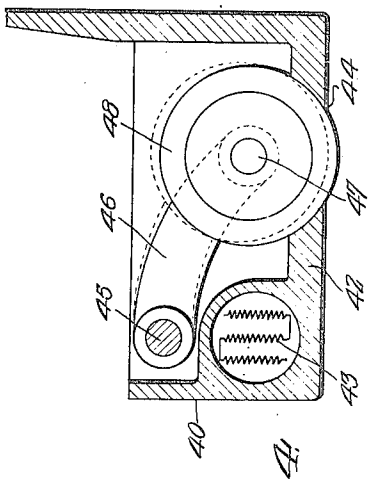


Fig. 7.

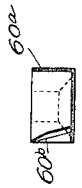


Fig. 5.

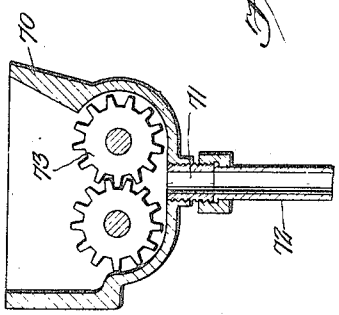
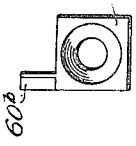


Fig. 6.



WITNESSES

J. H. Crawford

W. F. Buckley

INVENTOR

O. L. Stevens,

BY Munn & Co

ATTORNEYS

O. L. STEVENS.

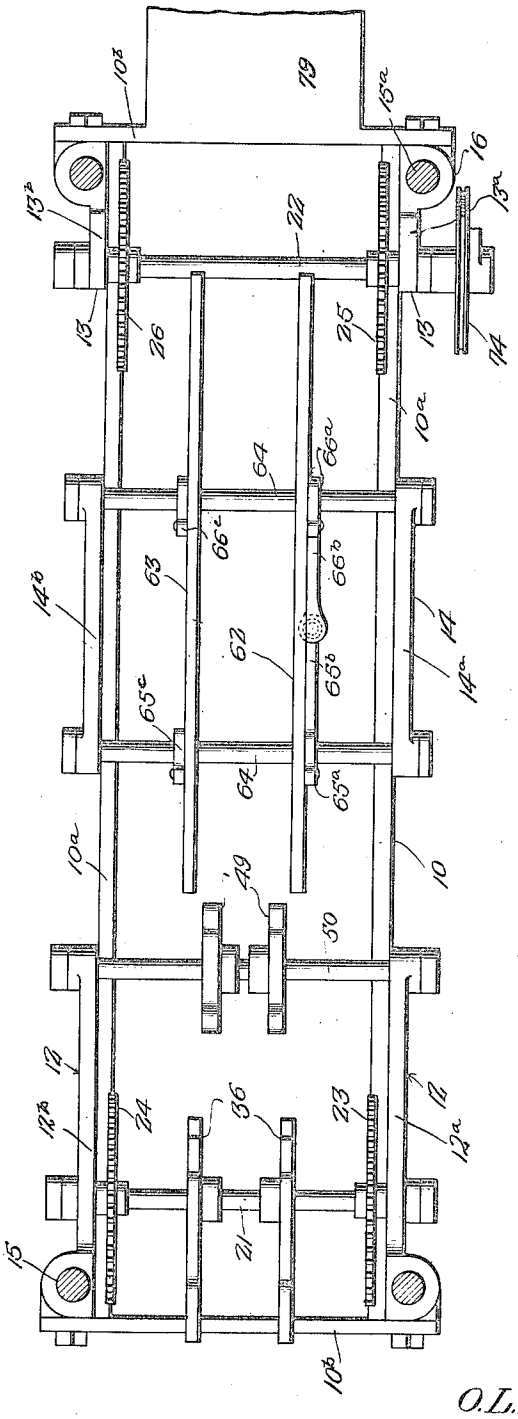
APPARATUS FOR LABELING, WRAPPING, OR THE LIKE.

APPLICATION FILED SEPT. 15, 1920.

1,410,845. Patented Mar. 28, 1922.

4 SHEETS—SHEET 4.

Fig. 8



WITNESSES

J. H. Crawford.
W. F. Buckley

INVENTOR

O. L. Stevens,

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

OLIVER LOUIS STEVENS, OF ROANOKE, VIRGINIA.

APPARATUS FOR LABELING, WRAPPING, OR THE LIKE.

1,410,845. Specification of Letters Patent. Patented Mar. 28, 1922.

Application filed September 15, 1920. Serial No. 410,413.

To all whom it may concern:

Be it known that I, OLIVER L. STEVENS, a citizen of the United States, and a resident of Roanoke, in the county of Roanoke and State of Virginia, have invented certain new and useful Improvements in Apparatus for Labeling, Wrapping, or the like, of which the following is a specification.

The present invention relates in general to apparatus or machines for labeling, wrapping or the like, and more particularly to a machine of this character especially adapted to carry out the operation of labeling or wrapping cylindrical articles such as can, cartons, bottles, et cetera.

The object of the invention is to provide a machine which automatically applies and secures a label or a wrapping to a can or similar article, which is continuous in its operation, and which is simple, compact and durable in construction, reliable in operation and easy and inexpensive to manufacture and operate.

Another object is to provide a labeling or wrapping machine of this character in which the necessity of employing complicated and elaborate feeding mechanism for the labels or wrappings is obviated and in which the cement and paste pots are above the line of travel of the cans and clear so as to be easy of access and free from foreign matter which would otherwise find its way thereto.

Other objects and advantages of the invention reside in certain novel features of construction, combination and arrangement of parts as will be hereinafter more fully described and particularly pointed out in the appended claims, reference being had to the accompanying drawings forming part of this specification, and in which—

Figure 1 is a side elevational view of the apparatus or machine employing my invention;

Figure 2 is a plan view thereof;

Figure 3 is a transverse vertical sectional view, on line 3—3 of Figure 1;

Figure 4 is a detail view in section of the cement pot;

Figure 5 is a detail view in transverse section of the paste pot;

Figure 6 is a detail view in plan of one of the cutters;

Figure 7 is a similar view in side elevation; and

Figure 8 is a horizontal sectional view, on line 8—8 of Figure 1.

Referring to the drawings wherein is shown the preferred embodiment of the invention it will be seen that the machine includes a base 10 which embodies side bars 10^a and end bars 10^b. The base is mounted preferably by means of feet 11 upon any suitable support. End frames 12 and 13, respectively, and an intermediate frame 14 are arranged upon the base 10. The frames 12, 13 and 14 each include a pair of frame members, designated at 12^a and 12^b, 13^a and 13^b and 14^a and 14^b. The frame members 12^a, 13^a and 14^a are bolted to one side bar 10^a of the base 10 and the frame members 12^b, 13^b and 14^b are bolted to the opposite side bar 10^a of the base.

A vertical post 15 is provided at each corner of the machine. These posts are four in number, and each of them is carried by suitable sockets or the like 16 which are preferably integrally formed with the end frames, as shown in the drawings. The upper ends of the posts are threaded, as shown at 15^a. A bracket 17 is loosely received upon the threaded end of each of the posts 15 and preferably consists of a casting. A pair of bed rods 18 are arranged longitudinally of the machine, and are supported at their ends in lateral extensions 17^a formed on each of the brackets 17. A nut 19 is threaded on each of the posts 15 and engages the lower end of the bracket 17 carried thereby and supports the bracket in desired position. Adjustment of the nuts 19 effects adjustment of the bed rods 18 and the instrumentalities carried thereby to be hereinafter more fully described.

A shaft 21 is journaled in suitable bearings provided therefor in the end frame 12 and a shaft 22 is journaled in suitable bearings provided therefor in the opposite end frame 13. The shaft 21 has fixed thereto a pair of spaced sprocket wheels, designated at 23 and 24, respectively, and the shaft 22

has fixed thereto a pair of spaced sprocket wheels, designated at 25 and 26, the sprocket wheels 23 and 25 and the sprocket wheels 24 and 26 being alined. An endless sprocket chain 27 is trained over the sprockets 23 and 25 and an endless sprocket chain 28 is trained over the sprockets 24 and 26. The sprocket chains are of identical construction and comprise a plurality of pairs of plain links 29 coupled together by a triangularly shaped link 30. All of the links are pivoted together and have their bases alined. A plurality of cylindrical rollers 31, preferably one for each triangularly shaped link 30 of the sprocket chains, is provided. As shown in Figure 3, each of the cylindrical rollers 31 is provided at its ends with reduced extensions 31^a and the extremities of the reduced extensions are provided with stub shafts 31^b. The stub shafts of the cylindrical rollers are pivotally connected to the apex portion of the adjacent triangularly shaped links 30 and these parts are retained against disassociation by cotter pins 33. The endless chains and rollers constitute a carrier for the cans or other suitable articles which are designated at C. Motion is imparted to the can carrier in any suitable manner and from any suitable source of power but in the present embodiment a hand crank 34 is fixed to one extremity of the shaft 22 for this purpose.

The cams C are fed to the can carrier through a delivery chute 35 arranged at one end of the machine and they are received in the space between alternate pairs of the cylindrical rollers 31, as shown in Figure 1. Means is provided for regulating the feed of the cans to the alternate pairs of rollers and consists of a double tri-arm feeder 36 fixed to the shaft 21 and having arms 37 adapted to project in the alternate spaces between the rollers to prevent delivery of the cans C from the chute 35 to such spaces and thus control the delivery so that the cans are received only between alternate pairs of rollers.

A cement pot 40 is slidably carried at 41 on the bed rods 18 at the end of the machine adjacent the delivery chute 35 and above the can carrier. As shown especially in Figure 4 the cement pot comprises a receptacle 42 having electric heating means 43 and provided in its bottom with cement discharge openings 44. A shaft 45 is journaled in the side walls of the receptacle and carries an oscillating arm 46 which has fixed to its outer end a shaft 47 on which the cement wheels 48 are rotatably mounted. The cement wheels 48 are ground or otherwise machined to conform to the contour of the discharge openings 44 and they are normally seated in these openings and seal the same to prevent the discharge of cement from the receptacle.

As the cans C are carried along by the can carrier they are adapted to engage the wheels 48 and lift the same out of the openings 44, as indicated by dotted lines in Figure 4. Preferably the cans C are elevated when they arrive adjacent the cement pot by means of cams 49 carried on the cam shaft 50 mounted in suitable journals 51 provided in the end frame 12. The rollers 31 engage the cams 49 and rotate the same and the rollers themselves are elevated by the cams so as to positively lift the cans up into engagement with the cement wheels and displace the same from the discharge openings and permit the cement to flow through the openings onto the periphery of the cans.

The means for containing the labels or wrappings for the cans consists of vertical guides 52 and 53, end guides 54 and 55, a fixed longitudinal side guide 56 and an adjustable longitudinal side guide 57. The end guide 54 consists of an extension formed on the wall of the cement pot and the wall of the pot proper. The vertical guide 52 is bolted, as at 52^a to the wall of the cement pot. The end of the vertical guide 53 is bolted, as at 53^a to the end guide 55 which in turn is supported upon the bed rods 18. The longitudinal side guide 56 is fastened to the vertical guides 52 and 53 and the adjustable longitudinal side guide 57 is carried by pins 58 which slidably extend through the adjacent bed rod 18 and which are secured in adjusted position by means of set screws 59. A plurality of cutters 60 are arranged upon the side guides and each of the cutters comprises rectangular body portions 60^a having inclined cutters 60^b preferably formed integrally with the body portions of the cutters. As more especially shown in Figure 3, the labels or wrappings which are designated at L, are disposed in quantity in the container defined by the guides and are releasably supported at the bottom thereof by the blades 60^b of the cutters. The weight of the labels or wrappings belly them downward along their longitudinal center line, as shown.

As the cans leave the cement wheels and the cam 49 which has elevated them into positive engagement therewith they are adapted to pick up a label or wrapping at the point O at which point the longitudinal side guides are cut away so that the cemented cans contact with the lower label or wrapping which adheres thereto.

A track 61 is arranged beneath the can carrier and extends from under the label or wrapping container to the discharge end of the machine. The track 61 consists of a pair of rails, designated at 62 and 63, respectively, upon which the rollers 31 travel.

The means for supporting the track 61 consists of a pair of rock shafts 64 suitably

journaled in the intermediate frame 14. The rock shafts have fixed thereto bell crank levers 65 and 66, respectively. The arm 65^a of the bell crank lever 65 is pivotally connected to the track rail 62 and the arm 66^a of the bell crank lever 66 is also pivotally connected to the track rail 62 and these arms have their axes parallel. The other arms 65^b and 66^b of the bell crank levers extend toward each other and have their outer ends overlapping each other, as shown in Figure 1. The arm 66^b carries a depending rod 67 which slidably extends through a suitable opening formed in the underlying arm 65^b. A compression coil spring 68 encircles the rod 67 and bears at its opposite ends against the arms 65^b and 66^b. A winged nut 69 is threaded on the lower end of each rod 67 to regulate the tension of the coil spring 68 and to limit the relative movement of the bell crank. The rock shafts 64 have also fixed thereto links 65^c and 66^c which swing parallel to and which are identical in construction and arrangement with the arms 65^a and 66^a of the bell crank levers 65 and 66 and which are pivoted at their outer ends to the track rail 63. It is obvious that the coil spring 68 is effective to throw both track rails upwardly and to resiliently oppose downward movement thereof.

Immediately after the cans C carried by the pairs of rollers pick up the label or wrapping at O the rollers which carry them are received upon and travel along the track 61. The spring 68 elevates the track, and the rollers and the cans carried thereby so that the cans snugly engage the guides 56 and 57. The rectilinear movement of the rollers and the engagement of the rollers with the track and of the cans with the rollers and with the guides induces rotary motion of the rollers and of the cans so that each can rotates in the direction indicated by the arrow and winds the label or wrapping upon its periphery.

A paste pot 70 is arranged upon the bed rods adjacent the discharge end of the machine. As shown in detail in Figure 5, the paste pot 70 is provided with a discharge outlet 71 which leads by means of a pipe 72 to a perforated distributor pipe 72^a which is arranged transversely of the machine at the end of the container for the labels or wrappings so as to apply paste to the label or wrapping at the point where the ends of the label or wrapping overlap each other. A pump 73 is provided in the paste receptacle and as shown in Figure 5, is preferably of the gear type. The pump provides for the proper feed of the paste to the distributor pipe and is actuated by means of a belt 73 and pulleys 74 from the shaft 22. A return pipe 75 leads from the distributor pipe back to the paste pot and is provided with a valve 76 which may be controlled to vary the amount of paste flowing through the return pipe thus varying the pressure in the distributor pipe and the amount of the paste forced through the perforations thereof. A pressure plate 77 is slidably mounted, as at 78, on the bed rods 18 adjacent the discharge end of the machine and against the under surface of this pressure plate the cans roll after they leave the guides 57 and 58. Immediately before the cans reach the end of the pressure plate the overlap of the label or wrapper has been rotated into engagement with the roller 31 which firmly irons the same out and completes the labeling or wrapping operation. The cans are then fed to the discharge chute 79. It is to be noted that as shown in the drawing the slidable pressure plate 77 carries as an integral part thereof the end guide 55 and that the paste pot 70 is bolted to the end guide to be in this manner slidably arranged on the bed rods 18. During the entire time that the cans are under the control of the can carrier the ends thereof are engaged by the rods 80 which extend longitudinally of the machine on the opposite sides thereof. Pins 81 fixed to each end of each of the rods are each slidably mounted in an extension 17^b formed on each of the brackets 17. A coil spring 82 encircles each of the pins 81 and bears on one end against the adjacent portion of the rod and the other end against the associated extension 17^b. A wing nut 83 is threaded upon the outer end of each pin 81 and regulates the tension of the coil spring and the position of the guide rod. The rods and the associated instrumentalities hereinabove described constitute end guides for the cans while they are on the carrier.

In practice the machine may be adapted to operate upon various sizes of cylindrical articles by simple adjustment of the nut 19 and may be adapted to the other characteristics by an adjustment of the wing nut 69 to vary the tension of the coil spring 68. The machine when set in operation is entirely automatic and completely wraps or labels the articles without manual aid or assistance. The cement pot and paste pot being disposed above the cans are not in a position to be impaired by admixture with foreign matter incident to the operation of the machine or accidental discharge from the cans. The labels or wrappings are cemented and pasted and carefully rolled or ironed upon the periphery of the cans and when the cans are discharged from the machine the entire operation has been completed.

I claim:

1. In a machine of the character described, a can carrier, a delivery chute for feeding the cans thereto, means for controlling the feed, means for applying the cement to the periphery of the can, a container for labels

or wrappings arranged whereby the cemented cans contact with and adhere to the lowermost label or wrapping of the container, means for rotating the can to wind the label thereon, means for applying paste to the overlapping ends of said label, a presser plate coacting with the rollers of the carrier for ironing out the label on the can, and a discharge chute for delivering the cans from the machine.

2. In a machine of the character described, a can carrier, means for applying cement to the periphery of the can, a container for labels or wrappings arranged whereby the cemented can contacts with and adheres to the lowermost label of the container, means for rotating the cans to wind the label on the periphery thereof, means for applying paste to the overlapping ends of the label or wrapping, and means for ironing out the label or wrapping on the periphery of the can.

3. In a machine of the character described, frames, a can carrier arranged upon said frames, adjustable bed rods overlapping said frames, means for applying cement to the can carried by said bed rods, a container for said labels or wrappings carried by said bed rods, means for applying paste to the overlapping ends of the label or wrapping carried by said bed rods, and a presser plate for ironing out the label or wrapping on the can carried by said bed rods.

4. In a machine of the character described, a base, frames mounted on said base, a plurality of vertical posts carried by said frames, each of said posts having their upper ends threaded, a nut carried by the threaded end of each of said posts, brackets supported upon each of said nuts, each of said brackets having a lateral extension, a pair of longitudinally extending bed rods carried by the lateral extensions of said brackets, a can carrier mounted upon said frames, means carried by said bed rods for applying cement to the periphery of the cans, a container for labels or wrappings carried by said bed rods, means for rotating the cans for winding the labels or wrappings thereon, and means carried by said bed rods for applying paste to the overlapping ends of the labels or wrappings, and means coacting with the can carrier for ironing out the labels or wrappings on the can.

5. In a machine of the character described, a base, frames mounted on said base, a plurality of vertical posts carried by said frames, each of said posts having their upper ends threaded, a nut carried by the threaded end of each of said posts, brackets supported upon each of said nuts, each of said brackets having a lateral extension, a pair of longitudinally extending bed rods carried by the lateral extensions of said brackets, a can carrier mounted upon said frames, means carried by said bed rods for applying cement to the periphery of the cans, a container for labels or wrappings carried by said bed rods, means for rotating the cans for winding the labels or wrappings thereon, and means for applying paste to the overlapping ends of the labels or wrappings carried by said bed rods.

6. In a machine of the character described, frames, a can carrier arranged upon said frames including endless chains and rotatable rollers carried by said chains, adjustable bed rods arranged above said frame, a cement pot carried by said adjustable bed rods and having discharge openings in the bottom thereof and movable cement wheels normally closing said discharge openings, means carried by said frames for lifting the cans into engagement with said cement wheels to displace them from the openings of the cement pot to permit the cement to flow upon the periphery of the cans, a container for the labels or wrappings carried by the adjustable bed rods adjacent the cement pot whereby the cemented cans successively contact with and adhere to the lowermost label or wrapping of the container, and means for rotating the can to wind the label thereon including a spring supported track.

7. In a machine of the character described, a base, end frames mounted upon said base, a vertical post carried by the said end frames, each of said vertical posts having their upper end threaded, a nut carried by the threaded end of each of said posts, a bracket supported upon each of said nuts, each of said brackets having a lateral extension, a pair of longitudinally extending bed rods carried by the lateral extensions of said brackets, a can carrier including rotatable shafts carried by said end frames, sprocket wheels on said shafts, sprocket chains on said sprocket wheels and rollers carried by said sprocket chains, a delivery chute for feeding the cans to said can carrier, a cement pot carried by said bed rods, means for elevating the rollers of said carrier to raise the cans to said cement pot, a container for labels or wrappings adjacent said cement pot whereby the cemented cans contact with and adhere to the lowermost label, means for rotating the cans to wind the label or wrapping thereon including a spring supported track upon which the rollers of the carrier travel, a paste pot arranged upon said bed rods having a perforated distributor pipe adapted to apply the paste to the overlapping ends of the label or wrapping, a presser plate for ironing the label upon the can, and a discharge chute for delivering the cans from the machine.

8. In a machine of the character described, a can carrier, means for applying cement to the cans, a container for labels or wrappings arranged adjacent said last-mentioned

means whereby the cemented cans contact with and adhere to the lowermost label or wrapping, means for rotating the can so as to wind the label or wrapping thereon, a paste pot for appyling paste to the overlapping ends of the label or wrapping, means for ironing out the label or wrapping on the can, and a guide for the can while on the can carrier consisting of two longitudinally extending rods engaging the cans.

9. In a machine of the character described, a can carrier including an endless chain and rotatable rollers carried by said chain, means for applying cement to the periphery of the can, a container for labels or wrappings arranged adjacent said last-mentioned means whereby the cemented can contacts with and adheres to the lowermost label or wrapping of said container, and means for rotating said cans so as to wind the label or wrapping thereon including a track having spaced rails and means for supporting said track including rock shafts, bell crank levers fixed to said rock shafts having parallel arms pivotally connected to said track rails and arms extending toward and overlapping each other, a depending rod carried by one of said last-mentioned arms and extending through the other, a coil spring carried by said rod and bearing at its opposite end against said arms, and a winged nut threaded upon the outer end of said rod.

10. In a machine of the character described, a can carrier including rotatable rollers receiving and engaging the can, a container for labels or wrappings having side guides along which the cans travel, and means for rotating the cans to wind the labels thereon including a track over which the rollers of the can carrier travel, and means for supporting the track and throwing it toward the side guides of the label container whereby the rotation of the rollers rotates the can.

11. In a machine of the character described, a can carrier including rotatable rollers receiving and engaging the can, a container for labels or wrappings having side guides along which the cans travel, and means for rotating the cans to wind the labels thereon including a track over which the rollers of the can carrier travel.

12. In a machine of the character described, a can carrier including rotatable rollers receiving and engaging the can, and means for winding the labels or wrappings upon the periphery of the can including a spring supported track over which the rollers travel.

13. In a machine of the character described, a can carrier including rotatable rollers receiving and engaging the can, adjustable bed rods overlying the can carrier, a container for labels or wrappings arranged upon the adjustable bed rods and having side guides along which the cans travel, and means for rotating the cans to wind the labels thereon including a track over which the rollers of the can carrier travel.

14. In an apparatus of the character described, a can carrier including endless chains comprising pairs of plain links and triangularly shaped links coupling said pairs of plain links, all of said links being pivotally connected, and rollers rotatably carried by said triangularly shaped links, adjustable bed rods mounted above said can carrier, a cement pot carried by said bed rods and adapted to apply cement to the periphery of said cans, a label or wrapping container adjacent said cement pot whereby the cemented can contacts with and adheres to the lowermost label or wrapping, means for winding the label or wrapping upon the can, a paste pot for applying paste to the overlapping ends, and means for ironing out the label on said can.

15. In a machine of the character described, a can carrier, a cement pot arranged above said can carrier having can operated discharge valves, a label or wrapping container adjacent the cement pot whereby the cemented cans contact with and adhere to the lowermost label or wrapping, means for rotating the cans whereby the label or wrapping is wound on the can, means for applying paste to the overlapping ends, and means for ironing out the labels on the can.

16. In a machine of the character described, frames, a can carrier carried by said frames, vertical posts carried by said frames and having their upper ends threaded, nuts carried by the threaded ends of said posts, brackets supported upon said nuts, a pair of bed rods carried by said brackets, and means carried by said bed rods for applying cement to the periphery of the cans.

17. In a machine of the character described, frames, a can carrier arranged upon said frames, adjustable bed rods overlapping said frames, means carried by said bed rods for applying cement to the can, a container for said labels or wrappings carried by said bed rods, and means carried by said bed rods for applying paste to the overlapping ends of the label or wrapping.

18. In a machine of the character described, a can carrier including endless chains and rotatable rollers, a cement pot arranged above said can carrier having discharge openings in the bottom thereof, rotatable cement wheels normally disposed in said discharge openings and closing the same and adapted to be engaged by and lifted therefrom by the cans to permit the cement to flow upon the periphery of the can.

19. In a machine of the character described, frames, a can carrier arranged upon said frames, adjustable bed rods overlying said frames, means for applying cement to

the periphery of the can and a container for said labels or wrappings carried by said bed rods.

20. In a machine of the character described, a can carrier including endless chains comprising pairs of plain links and triangularly shaped links coupling said pairs of plain links, all of said links being pivotally connected and rollers rotatably carried by said triangularly shaped links, adjustable bed rods above said can carrier, and means carried by said adjustable bed rods for applying cement to the periphery of the cans.

OLIVER LOUIS STEVENS.