A. LAFATA.

GRAVITY LABELING MACHINE.

APPLICATION FILED AUG. 23, 1920.

1,394,744.

Patented Oct. 25, 1921.

2 SHEETS—SHEET 1.

Fig. 1

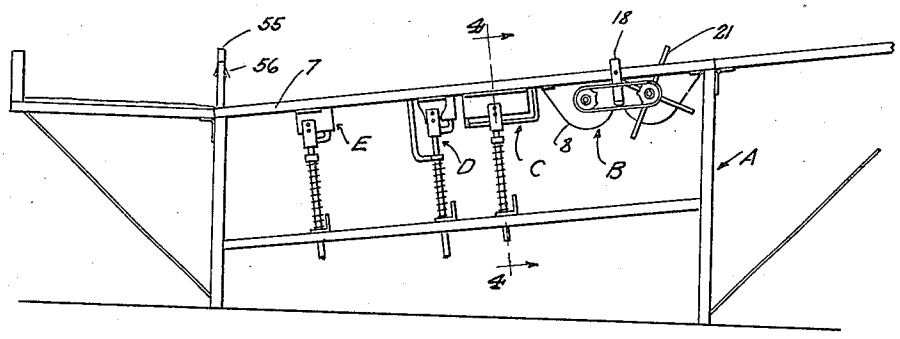


Fig. 2

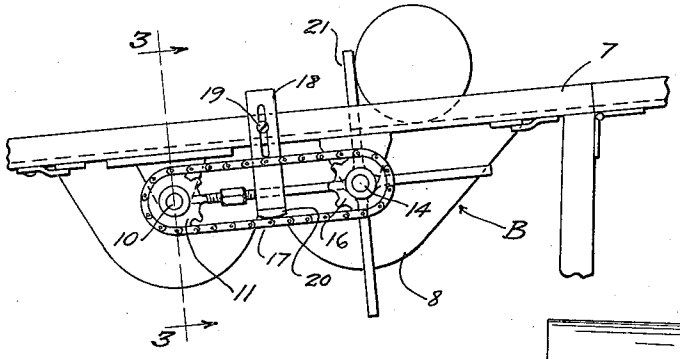


Fig. 3

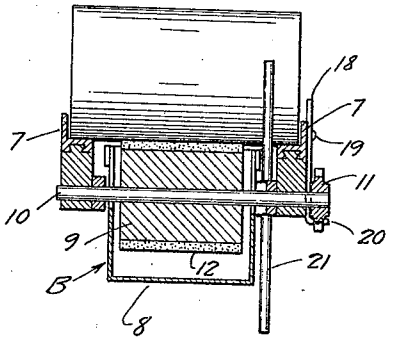
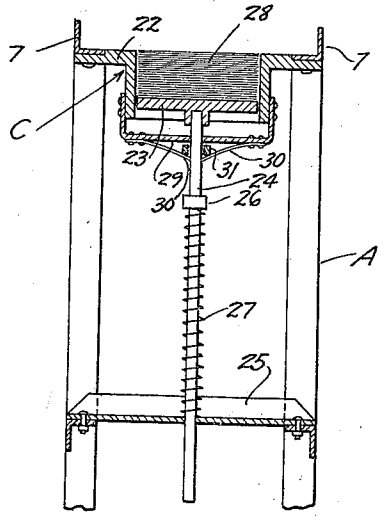


Fig. 4



Inventor
Antonio Lafata
by Nesbitt and Wallace
his Attorneys

A. LAFATA.

GRAVITY LABELING MACHINE.

APPLICATION FILED AUG. 23, 1920.

1,394,744.

Patented Oct. 25, 1921.

2 SHEETS—SHEET 2.

Fig. 5

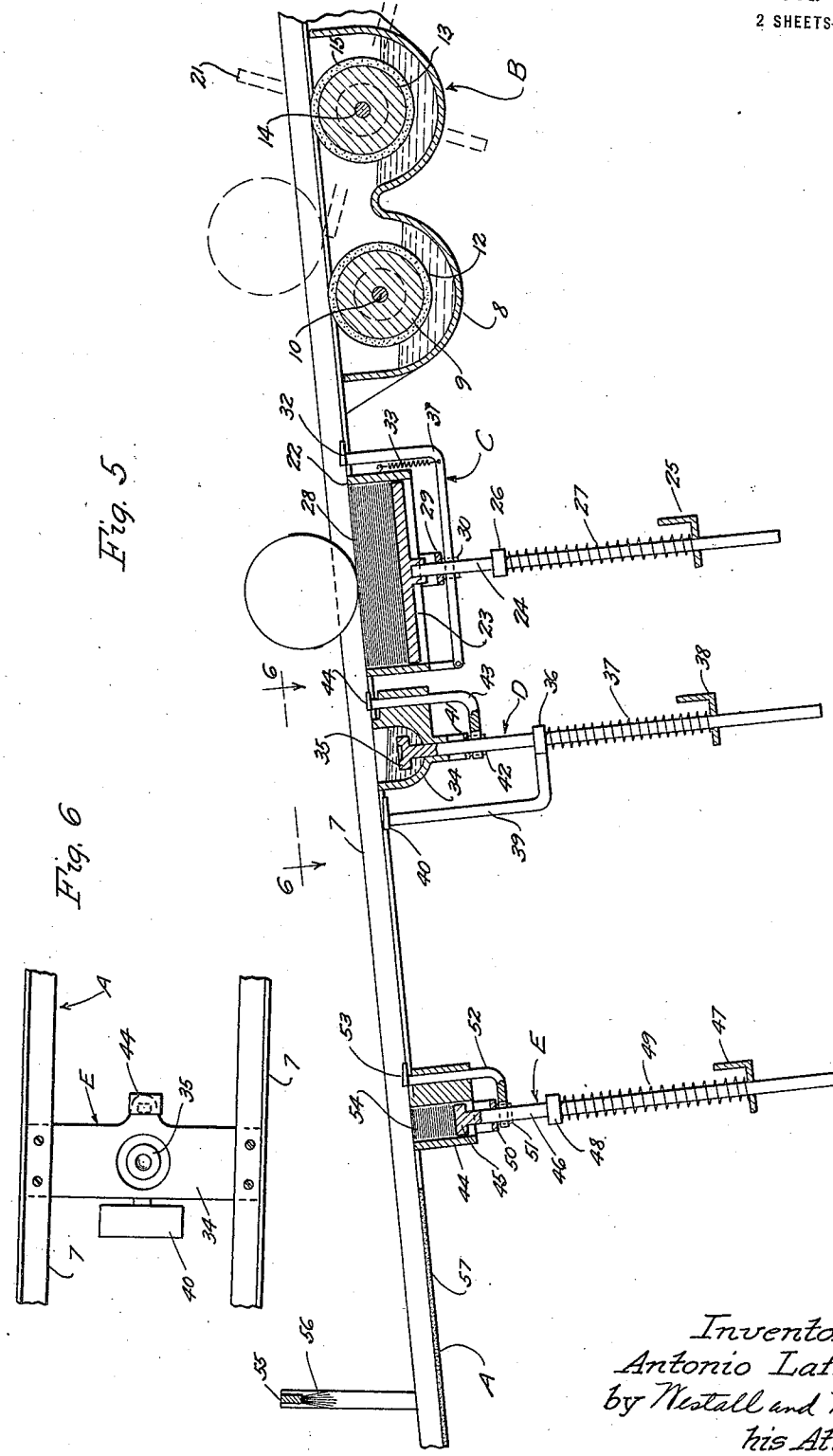


Fig. 6

Inventor
Antonio Lafata
by Nesbitt and Wallace
his Attorneys

UNITED STATES PATENT OFFICE.

ANTONIO LAFATA, OF HARBOR CITY, CALIFORNIA.

GRAVITY LABELING-MACHINE.

1,394,744. Specification of Letters Patent. Patented Oct. 25, 1921.

Application filed August 23, 1920. Serial No. 405,331.

To all whom it may concern:

Be it known that I, ANTONIO LAFATA, a subject of the King of Italy, residing at Harbor City, in the county of Los Angeles and State of California, have invented new and useful Improvements in a Gravity Labeling-Machine, of which the following is a specification.

This invention relates to an apparatus for pasting labels upon cylindrical containers during their travel over ways.

It is an object of this invention to provide means whereby containers will roll along ways due to gravity and in the course of their travel will accumulate paste upon their surfaces on the field to be covered by the label; and thereafter pick up the label in proper position on the field. It is another object of this invention to provide a device requiring no extraneous power to operate the same, is simple, durable and compact in structure.

These objects will be more fully understood, as will also other objects and corresponding accomplishments of my invention from the following detailed description of a preferred embodiment thereof. For the purpose of this description, reference is had to the accompanying drawings, in which:

Figure 1 is a side elevation of a labeling machine; Fig. 2 is an enlarged elevation of a fragment of the machine showing the pasting mechanism in detail; Fig. 3 is a section as seen on the line 3—3 of Fig. 2; Fig. 4 is an enlarged section as seen on the line 4—4 of Fig. 1; Fig. 5 is a diagrammatic longitudinal section through the machine; and Fig. 6 is a plan view of a fragment of the machine as seen on the line 6—6 of Fig. 5.

Referring more particularly to Figs. 1 and 5, a supporting frame having ways at the top for containers, such as cans, is indicated by A. Disposed along the ways and in the frame is a paste mechanism B for applying paste to the cans as they roll along the ways and over the mechanism. Mounted in the frame and beyond the paste mechanism in the path of travel of the cans is a label holder C, which applies labels to the pasted cans as they roll thereover. A second paste applying mechanism is indicated by D, and a corresponding label holder by E. The mechanism last referred to is for the purpose of applying an auxiliary label to the can.

The frame A may be of any convenient construction consisting of legs properly braced supporting inclined ways. In this case the ways are formed of angle irons 7 spaced apart a distance equal to the height of the can allowing sufficient clearance so that a can placed in the way will roll from the upper to the lower part.

The pasting mechanism B comprises a trough 8 having two corresponding lobes. One lobe has a roller 9 mounted upon a shaft 10 journaled in bearings on the frame. Secured to the end of the shaft is a sprocket wheel 11. The roller 9 has a covering of sponge rubber which dips into a paste bath in the trough thereby carrying paste on its surface and delivering it to the can as the latter rolls thereover. Disposed in the other lobe of the trough 8 is a roller 13 mounted upon a shaft 14, and similarly provided with a sponge rubber covering 15. Fixed to the shaft 14 is a sprocket wheel 16, which is geared to sprocket wheel 11 by means of a chain 17. In order to keep the sprocket chain tight, a tension bar 18 is provided. This bar is secured to one of the channels by means of a screw 19 disposed in a slot in the bar. The lower end of the bar has a foot 20 which engages the sprocket chain. By proper adjustment of the tension bar the chain may be kept tight. Mounted upon the shaft 14 and between the channels 7 is an impeller 21 having a number of arms which are adapted to be disposed in the path of travel of the can. This impeller acts as a drive for the shaft 14, and positively rotates the rollers. The linear distance between the rollers is equal to the linear distance along the surface of the can between the two lines at which paste is to be applied. With the construction shown, it is intended that a line of paste longitudinal of the can be applied thereto adjacent the spot in the field where the edge of the label will come and likewise another line of paste adjacent the other edge of the label.

The label holder comprises a case 22 conforming in shape to the label and open at the top. The bottom comprises a movable table 23 having a stem 24 guided in a bar 25 extending across the frame. A collar 26 is fixed to the stem, and disposed between the collar and the bar 25 is a compression spring 27. The compression spring tends to force the table 23 upwardly, and with it

the stack of labels indicated by 28. Extending transverse of the case 22 and spaced from the bottom thereof is a bar 29. Secured to the bar 29 and on either side of the stem are leaf springs 30, the ends of which normally engage the stem 24, and hold the latter against upward movement. Secured to a bracket on the case 22 by means of a pivot is a lever 31. This lever straddles the stem 24 and is disposed above the ends of the springs 30. By moving the lever downwardly, the springs 30 will be moved away from the stem 24 releasing the latter and allowing the compression spring 27 to move the stem and table 23 upwardly. The free end of lever 31 is bent at right angles and has a foot 32 disposed in the path of travel of the cans. A can moving over the foot will engage the latter and push the lever against the action of tension spring 33. This releases the stem 24 momentarily and the compression spring 27 kicks the table 23 upwardly. This provides for feeding the labels. The case 22 is disposed at a distance away from the trough 8 such that a can will roll over the rollers 13 and 9 receiving lines of paste which register with the edges of the label as the can reaches and rolls over the labels 28. A label will then adhere to the can in its proper position.

It is customary to apply auxiliary labels, such as association labels to the can. This may be conveniently accomplished by means of the pasting mechanism D and the label mechanism E. The label mechanism has a pot for paste indicated by 34, in which is a paste plunger 35. The stem of the plunger slidably extends through the bottom of the pot and has a collar 36 which is abutted by a compression spring 37 interposed between it and a guide bar 38. Extending from the collar laterally and then upwardly is a bar 39 having a foot 40 disposed to be engaged by a can rolling over the way. Extending undereneath the pot 34 is a cross bar 41, in which the stem of the plunger is slidably mounted. Secured to the cross bar and engaging the stem are leaf springs 42 similar to the leaf springs 30 for stem 24. Disposed above the leaf springs and embracing the stem of the plunger is a depression member 43 having a foot 44 disposed to be engaged by a can as it rolls along the way. The pot is filled with paste. A can as it rolls over compression foot 44 will cause the stem of the plunger to be released and spring 37 will push it upwardly into engagement with the can, thereby applying paste thereto. As the can continues to roll down the way it engages foot 40, thereby depressing the plunger in the paste pot, its position being shown in Fig. 5

The can continues to roll downwardly along the way and over the label holder E. This label holder comprises a case 44 having a movable bottom 45 to which is secured a stem 46. The stem is guided in a bar 47 and has a collar 48 engaged by compression spring 49 tending to move the table 45 upwardly. A bar 50 is disposed on the case 44, and stem 46 slidably extends therethrough. Stop springs 51 similar to leaf springs 30 normally prevent movement of the stem. A depression member 52 embraces the stem above the leaf springs and has a foot 53 disposed in the path of the cans so that on engagement therewith the stem will be released and the table 45 with a stack of labels 54 moved upwardly.

Bridging the way is a standard 55 carrying a brush 56 which will engage the labels and smooth the latter. A surface of sponge rubber 57 level with the ways so that the can will roll on the rubber smooths and presses the label against the can.

As a can rolls down the way, it will come in contact with a portion of the surface of roll 13 accumulating a line of paste. As it moves along, it revolves an arm of the impeller 21, thereby positively turning both rollers 9 and 13 and bringing to the top surfaces which have been submerged in the paste. After rolling over roller 9, where the can accumulates another line of paste, the can engages the depression foot 32. The action upon the foot is momentary and the stem 24 of the label holder is released permitting the spring 27 to move the table 23 upwardly a very slight amount and with it the stack of labels. The can rolls over the label on the top of the stack picking up the latter on the paster lines. After leaving the label holder, it engages depression foot 44 thereby releasing the plunger 35 which is moved upwardly with fresh paste. The can rolls over the plunger accumulating paste thereon for the auxiliary label and finally reaches foot 40 which is depressed. Depression of foot 40 causes the plunger to be retracted into the paste bath in position ready for operation upon the next can. The can then continues on in its travel until it reaches depression foot 53 and the stack auxiliary labels 54 are kicked upwardly. The can rolls over the stack of auxiliary labels, the paste applied by plunger 35 registering with the label stack and picking up the top label. The can then continues its movement and rolls over the rubber 57 and under the brush 56 which presses and smooths the label. Any succeeding operation desirable may then be carried out.

What I claim is:

A labeling machine for cylindrical containers comprising an inclined way, a paste reservoir, spaced rollers in said reservoir with their surfaces tangential to said way, an impeller having arms disposed in the path of travel of said containers so that

movement of the containers will rotate said impeller, said impeller being geared to said rollers so as to rotate the latter and carry paste to the surface of the container, a label holder disposed so that said containers will roll over and in contact with the top of a stack of labels therein, and pick up labels, and means on said holder to advance said stack, said means being actuated by the travel of said container.

In witness that I claim the foregoing I have hereunto subscribed my name this 16th day of August, 1920.

ANTONIO LAFATA.