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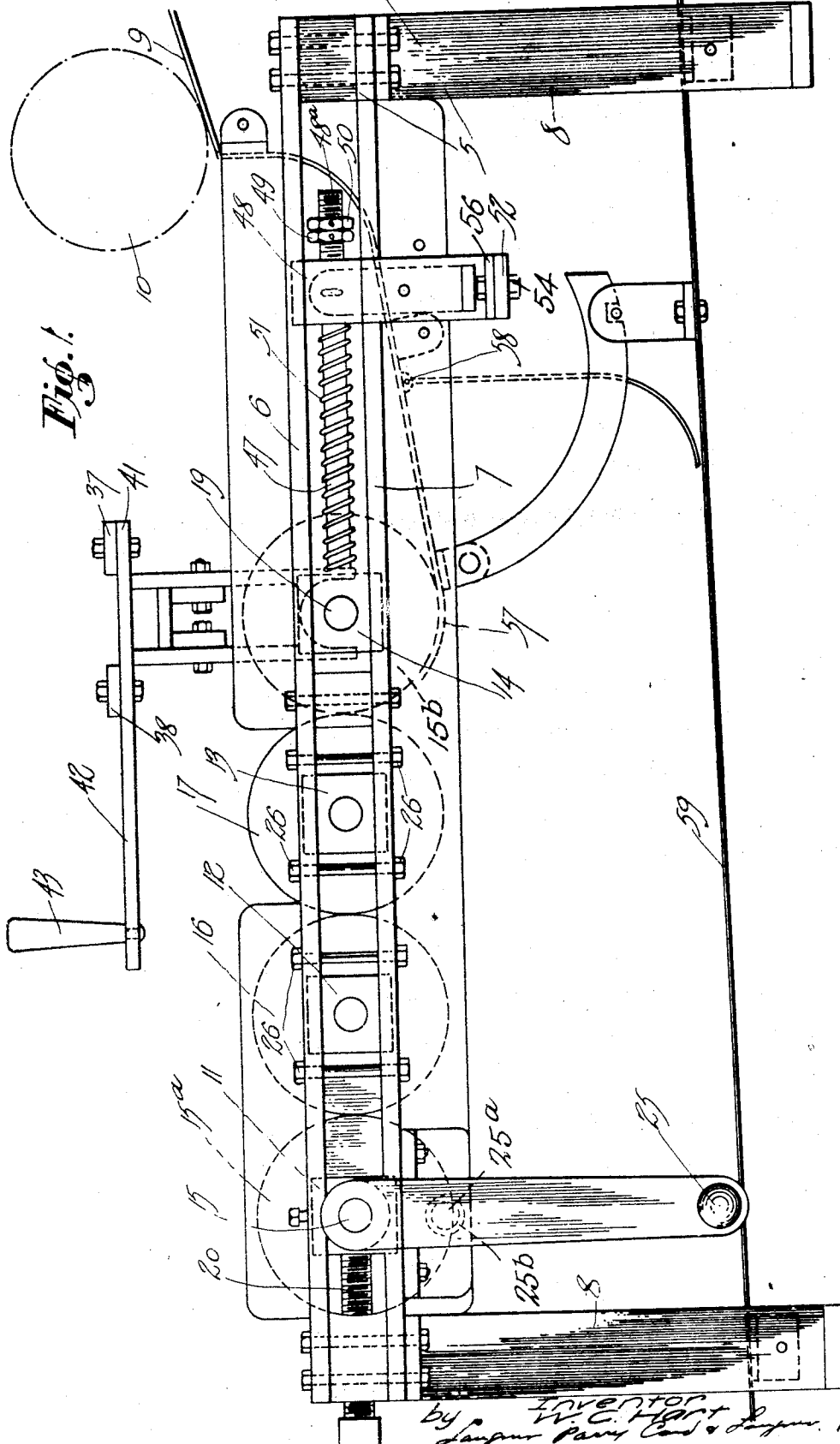
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MEANS FOR LABELING CANNED AND BOTTLED GOODS

Filed April 21, 1926

5 Sheets-Sheet 1



Oct. 16, 1928.

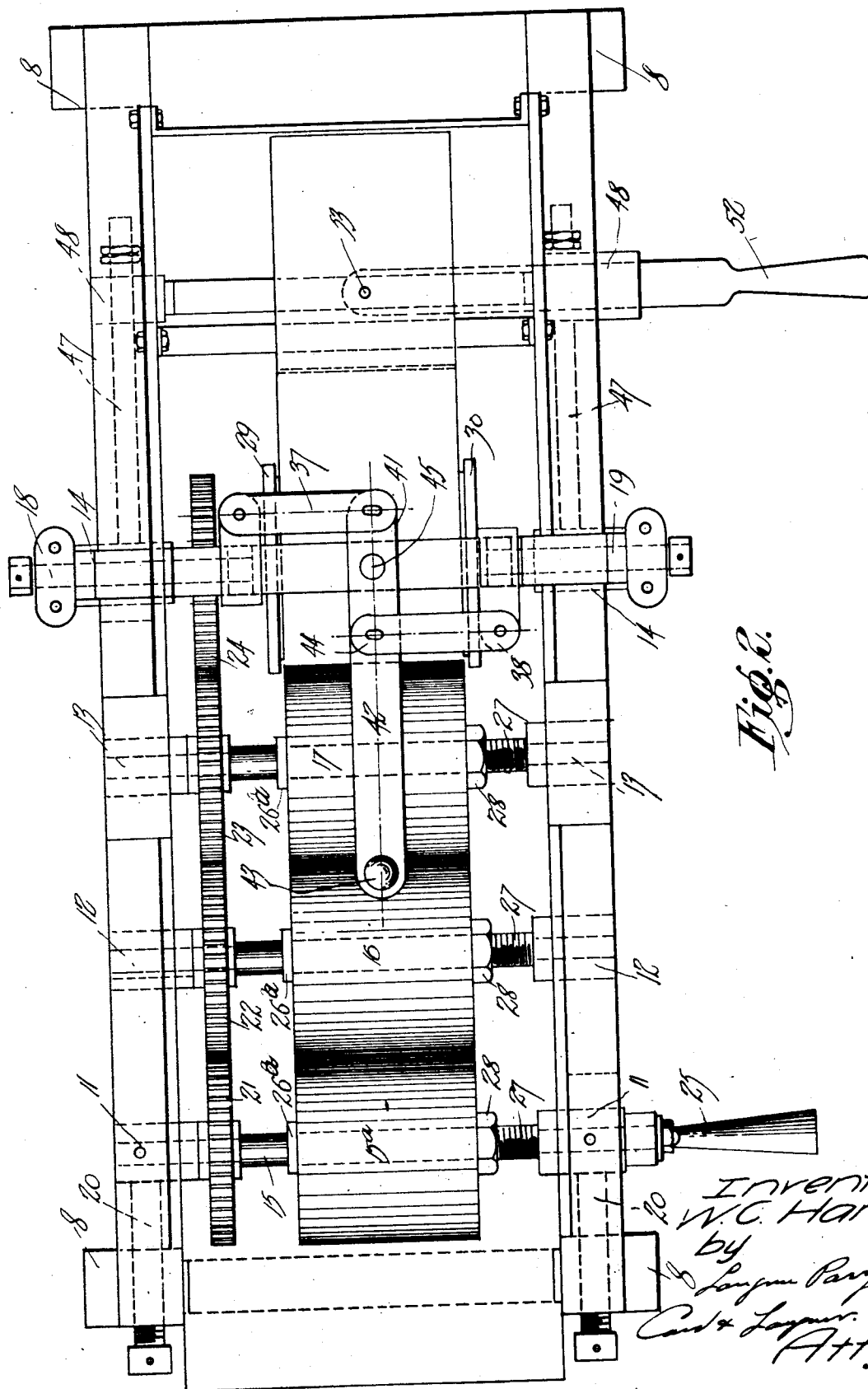
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MEANS FOR LABELING CANNED AND BOTTLED GOODS

Filed April 21, 1926

5 Sheets-Sheet 2



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MEANS FOR LABELING CANNED AND BOTTLED GOODS

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5 Sheets-Sheet 3

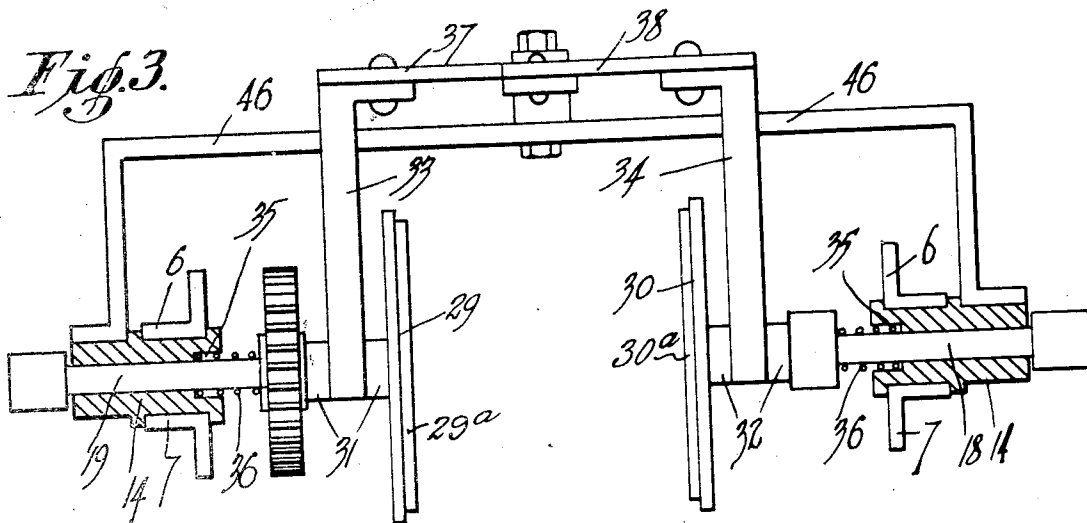


Fig. 4.

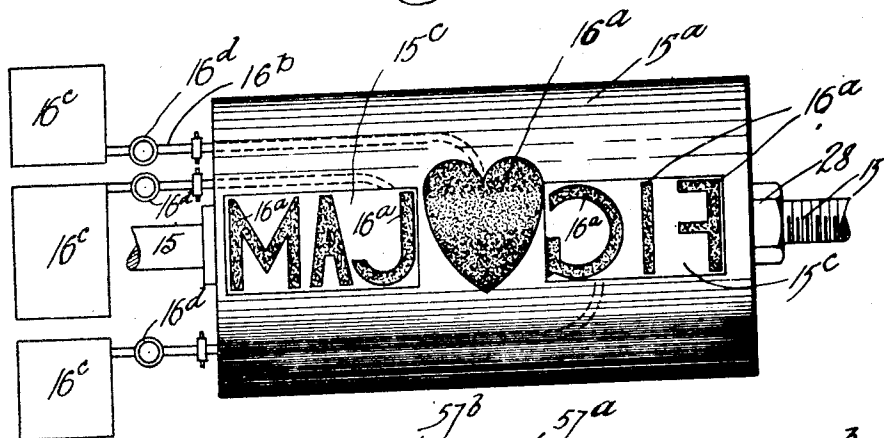
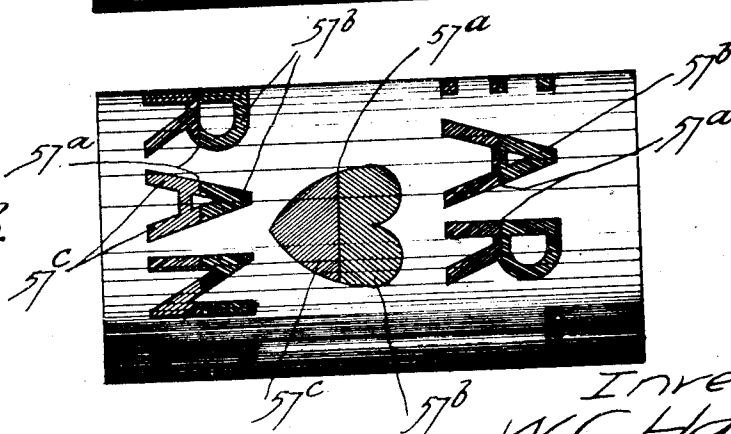


Fig. 8.



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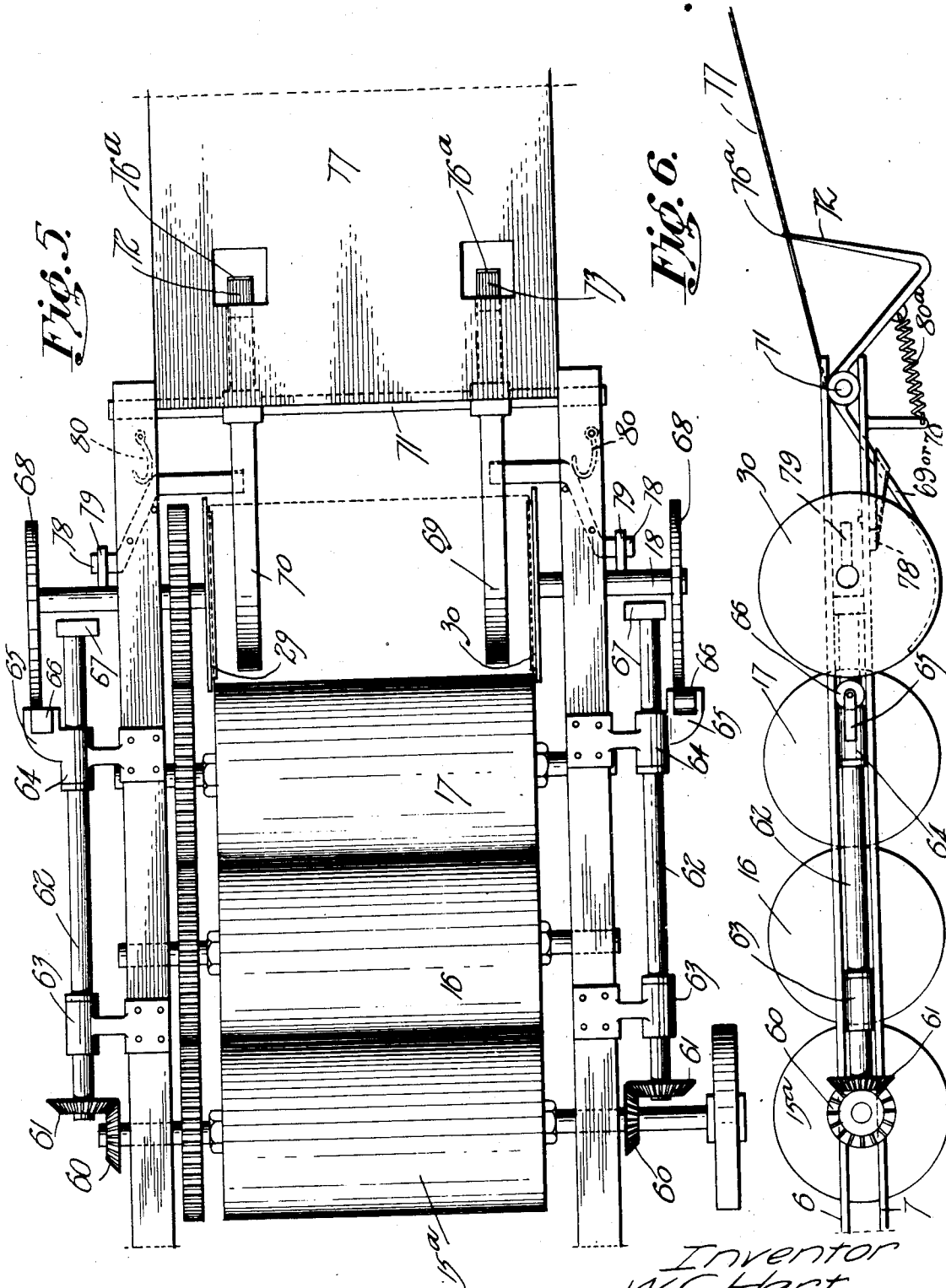
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MEANS FOR LABELING CANNED AND BOTTLED GOODS

Filed April 21, 1926

5 Sheets-Sheet 4



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MEANS FOR LABELING CANNED AND BOTTLED GOODS

Filed April 21, 1926

5 Sheets-Sheet 5

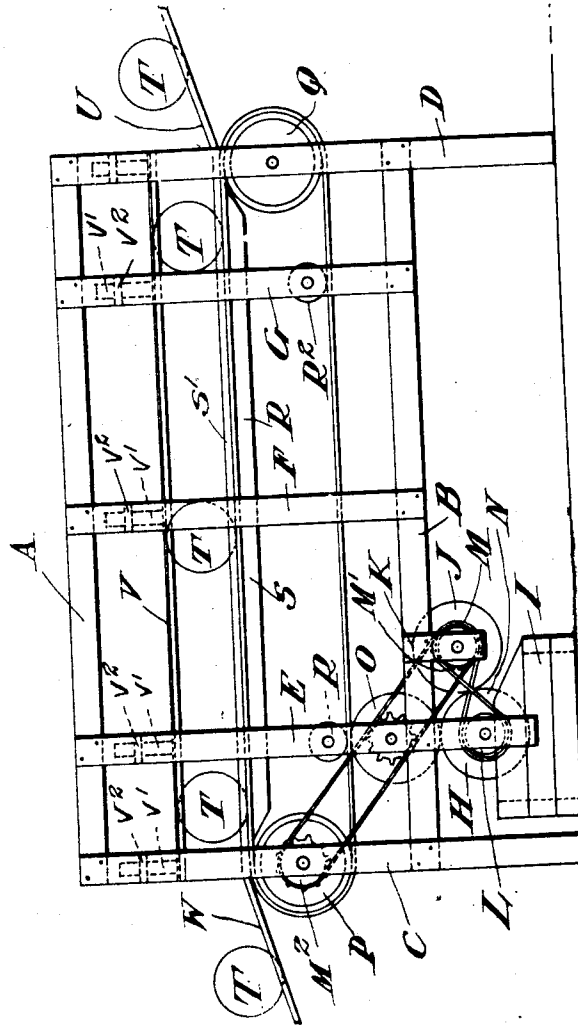
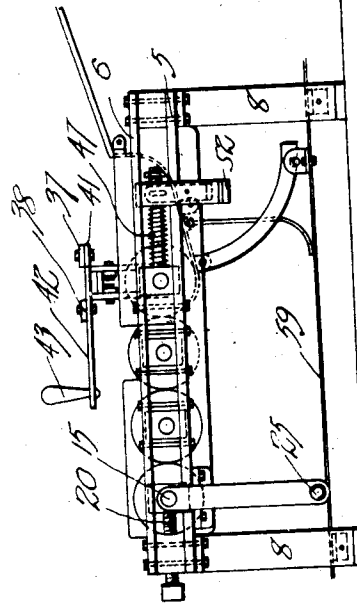


Fig. 7.



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UNITED STATES PATENT OFFICE.

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MEANS FOR LABELING CANNED AND BOTTLED GOODS.

Application filed April 21, 1926, Serial No. 103,623, and in Australia July 22, 1925.

This invention relates to means for forming and applying labels, symbols and the like on containers used for foodstuffs, such as jams, fruit, meat, fish, milk and the like and for other commercial purposes, whereby instead of using paper labels as is now generally in vogue, I propose printing or transferring the label or symbol direct on to the container body, or the container itself, after being filled with goods and sealed top and bottom, or the container body blank may be coloured whilst flat before it is shaped to form the can or container body, after first having a suitable ground colour imparted.

The basic principle underlying the invention therefore consists in the application of colouring or multicolours to a container so that labels or symbols are applied directly on to a lacquered or other basic surface of the container.

An essential feature embodied in the invention consists in the means employed for imparting the colouring or colourings to the container, said means comprising a series of cylinders of the same circumference as the container, the first cylinder being a colour pad holder or inking roller, the intermediate cylinder or cylinders being the distributing rollers and the outer cylinder the label imparting or impress roller which transmits the label to the container.

A further essential feature embodied in the invention is the zoning of the wells in the inking or colour pad cylinder so as to provide for multicolours and shading of the labels on the container.

A further essential feature consists in the use of flat colour imparting pads adapted to be pressed to the surface of the container and these pads may also be zoned for the purpose of imparting multicolours and shading to the labels on the container.

It will be understood that according to this invention the colouring or colourings may be imparted to the container to form directly thereon labels of any design and colour, by contact or pressure, or rotating mechanism but in order to show one practical form of carrying the invention into effect it will now be described with reference to the accompanying drawings in which:—

Figure 1 is a view in side elevation, and Figure 2 is a view in plan of an apparatus employing rotary cylinders for imparting the labels directly on to the container after

same has passed from a lacquering machine for giving the container the necessary body colour.

Figure 3 is a view partly in section illustrating particularly the holding and release mechanism for the container.

Figure 4 is a view showing how the primary roller may be arranged, with the means for replenishing the colour pads with ink.

Figures 5 and 6 are views illustrating the automatic mechanism for feeding, holding and releasing the containers in the machine.

Figure 7 is a side view showing the lacquering machine in combination with the labeling apparatus, and

Figure 8 shows an arrangement for obtaining multicolour effects on containers.

The invention contemplates the use in combination with the labeling apparatus of an apparatus adapted to give the container a coating of lacquer or a body colour of any suitable quick drying paint upon which the label is imposed.

This lacquering machine comprises essentially horizontal members A, B, end vertical members C, D and intermediate members E, F, G.

The members A, B are securely held to the vertical members C, D as by rivets or bolts as are also the intermediate members E, F, G, whilst the member E is extended below the member B and adapted to carry the roller H which moves in a bath of colour I.

In frictional contact with the roller H is a roller J which is carried in depending legs as K secured to the lower member B, wheels L, M being fitted to the spindles of the rollers H and J respectively, a belt N passing crosswise between said wheels.

Disposed above the roller H is a roller O in frictional contact with the roller H, and mounted to the vertical leg C is a roller P in horizontal line with a roller Q, a belt R passing about and between said rollers.

The spindle of the roller J carries a sprocket M¹ which receives a chain from a sprocket M² on the spindle of the roller P.

The belt R moves over a grooved board S whilst guides S¹ are arranged to guide the containers over said belt R, jockey pulleys R¹, R² being adjustably mounted to take up any slack in the belt R.

The colour is contained in the tank I and

is picked up by the roller H, all surplus colour being removed by the roller J, the colour then passing to the belt R.

The containers T are fed to the belt R by means of a ramp U, said containers turning over the belt R and between it and adjustable and flexible guides V held by means of bolts V¹ to lugs V² on the sides of the members C, E, F, G, D.

After passing through the machine above described the coloured containers are delivered to an inclined guideway W where they are transferred to the labeling machine.

After leaving the lacquering machine above described the containers are passed to the labeling machine which consists of a frame 5 provided with spaced longitudinal supports 6, 7 carried on the legs 8 and at the rear end of this machine is a ramp 9 feeding containers 10 by gravity to holding and releasing mechanism as hereinafter described.

Adjustably disposed between the longitudinal members 6, 7 are sets of bearings 11, 12, 13, 14 which are adapted to receive the spindle 15 of inking roller 15^a distributing roller 16 of tacky substance such as gelatine, the impress roller 17 and the spindles 18, 19 of the holding and release mechanism respectively.

More than one distributing roller 16 may be mounted in horizontal line if so desired between the inking roller 15 and the impress roller 17.

The inking roller 15 is adjustably held in its horizontal position by means of set screws 20, the ends of which impinge against the bearings 11 thereof.

Co-axial with the rollers 15, 16, 17 and holding and release mechanism are toothed wheels 21, 22, 23, 24 which mesh with each other, all toothed wheels being of the same size whilst the spindle 15 of the inking roller 15^a is extended to accommodate an operating handle 25.

The bearings described are retained in position by means of bolts 26 which pass through the longitudinal members 6, 7 and through the bearings 11, 12, 13, 14 and if desired the upper longitudinal member 6 may be composed of short sections over each bearing 11, 12, 13, 14 which considerably facilitates the removal of any or all of the rollers.

As previously explained the primary roller 15^a is the one which carries the particular design and colour arrangement which may comprise all one colour or selected parts may be distinctively accentuated by the choice of colour to be determined by the class of goods to be placed in the container or already in the container as in the case of labeling after the goods are canned or otherwise packed.

The rollers 15^a, 16, 17 are retained in their respective positions on the spindles by providing collars 26^a thereon, whilst a portion

of the length of said spindles is threaded as at 27, nuts 28 being adapted to hold the rollers 15^a, 16, 17 from movement.

The container holding and release mechanism comprises opposed discs 29—30 mounted upon spindles 18—19 which are mounted in bearings 14 slidably held between the longitudinal supports 6, 7 of the frame 5.

Arranged on the spindles 18, 19 are collars 31, 32 bifurcated lever members 33, 34 passing therebetween.

The spindle 19 of the holding and release mechanism carries the one of a train of toothed wheels already described, whilst disposed about the spindles 18, 19 and disposed within a recess 35 are springs 36 adapted to normally retain the flanges 29, 30 in the operative position.

Connecting the upper ends of the fork members 33, 34 are short links 37, 38, the link 37 being pivotally connected to the end 41 of a lever arm 42 provided with a vertically rising handle 43, the link 38 pivotally connecting the lever arm 42 as shown at 44, the said lever arm being itself pivoted as at 45 to a transverse bar 46 secured to the longitudinal members 6, 7 of the frame.

The bearings 14 of the holding and release mechanism above described are slidably held in position between the longitudinal members 6, 7 and connecting the said bearings are rods 47 which move in guides 48 between the longitudinal members 6, 7 the said rods 47 being screwed for portion of their length as at 48^a to receive a nut 49 and lock nut 50 as shown which is adapted to limit the movement of the bearings 14 in the forward direction a spring 51 being disposed about the rods 47 to normally keep the holding and releasing discs 29, 30 in the operative position.

Means are also provided for shifting the holding and releasing mechanism above described, rearwardly in order to permit a branded container being released and a fresh container placed between the flanges 29, 30.

The means for accomplishing this operation comprise an extending handle 52 which is pivoted at 53 the handle being also pivoted at 54 to a pillar which is held between lugs on a transverse bar 56.

The container is held between the discs 29, 30 during the branding operation and immediately same is completed the container is released and drops into the curved plate 57 which is hinged at 58 to enable the holding portion to drop downwardly and release the tin which drops on to the ramp 59 to run by gravity to any convenient place.

As previously described the primary roller 15^a carries the particular band to be ultimately imparted to the container as 15^b shown in dotted lines, Figure 1 and in order to render the branding portion of said roller constantly operable, dye or colour wells 15^c are received in the said roller and will take

a shape according to the shape of the brand, and as the brand may be built up of various devices, symbols and the like, the parts constituting the finished or complete brand may be of any suitable number of colours according to the taste of the packer and the goods packed, and the dye or colour wells 15^c impart the colour to the distributing roller or rollers 16 by means of the absorbent surfaces 16^a covering the wells and the wells may be refilled through flexible pipes 16^b from supply tanks 16^c, the tank outlets being fitted with a valve 16^d.

The dye or colour wells may be of metal and received in the surface of the roller 15^a so as to present the actual contacting surface thereof to the distributing roller 16 which is of resilient material as gelatine, or gelatinous material in combination with other materials of a like nature to form a tacky composition.

The description herein refers more particularly to a hand or manually operated machine and I will now describe the operations necessary to brand a container and deliver same to any convenient place.

The container as 15^b shown by dotted lines, Fig. 1, is held between the discs 29, 30 the raised portion 29^a and 30^a thereof entering the bottom of the container and fitting neatly within the annular rim of said container.

Prior to fitting the container between the discs 29, 30 however, the same are spread and forced forwardly by the operation of the levers 42 and 52 respectively and once the container is in position the discs 29, 30 are permitted to come together and thus hold the container after which the container and holding mechanism is permitted to move forwardly by the springs at the same time the toothed wheel 24 is caused to engage with the toothed wheel 23.

The operating handle 25 is automatically set at the required starting position by means of a ball 25^a under spring control which is adapted to enter a recess 25^b in the frame 5, the object of this arrangement being to definitely determine the correct starting position of the rollers.

Upon the rotation of the handle 25 the rollers 15^a, 16, 17 rotate by means of the train of gears 21, 22, 23, 24 the dye from the primary roller 15^a being transferred to the distributing roller 16 which passes the brand on to the impress roller 17 which then passes the brand on to the container in frictional contact therewith.

When the branding operation has been completed the discs 29, 30 and parts are moved forwardly clear of the impress roller 17 by means of the lever 52, in order to prevent any injury to the wet brand upon the container, and when said container is clear of the roller 17 the discs are spread

by the lever 42 allowing the container to drop on to the curved plate 57 and thence to the ramp to run by gravity to any convenient place.

If desired the label may be divided centrally as at 57^a the upper portion 57^b of the label being in one colour and the lower portion 57^c of another, the resultant label being in multicolours which will eventually blend thus adding considerable appearance thereto.

The partitions 57^a are preferably at their abutting edges tapered so as to bring the adjacent impression of the colours as near as possible to each other to allow of the blending thereof to form shading.

In the herein described apparatus rollers 15^a, 16 and 17 are used, being the primary, distributor and impress rollers respectively, but if desired the distributor roller 16 may be dispensed with and the label pattern from the roller 15^a directly transferred to the impress roller 17 from where it is transferred to the container held between the discs 29—30.

The apparatus already described is directed to a manually operated one, the rollers being operated by means of the handle 25.

If, however, it is desired to automatically operate the machine such as in the case of outputs of great quantities of containers the hereinafter described mechanism is employed in addition to the existing apparatus.

Mounted co-axial with the spindle 15 carrying the roller 15^a are bevel pinions 60 meshing with bevel pinions 61 on spindles 62 held in bracket bearings 63—64 attached to a convenient position on the frame 5, the bearings 64 having an extension 65 thereon which carries rollers 66 therein the use of which will be hereinafter described.

The spindles 62 have on one end cams 67 which are adapted to engage, at the required time period, with cams 68 on the spindles 18—19 carrying the discs 29—30 and move them outwardly or apart in order to release the container after the branding operation has been performed.

Pivotally mounted below the opposed discs 29—30 are curved arms 69—70 on a spindle 71 held in any suitable way, the arms 69—70 being continued at the rear as at 72—73.

The containers are fed by gravity to the branding position i. e. between the opposed discs 29—30 by allowing them to pass down an inclined path 77.

The operations are as follows:

The canister is disposed between the discs 29—30 and the rollers 15^a, 16, 17 constantly rotating, one complete revolution of the rollers 15^a, 16, 17 is sufficient to impart the necessary brand to the container.

Upon the completion of one revolution, the cams 68 have reached the maximum posi-

tion out of centre and by riding against the fixed rollers 66 the bearings carrying the spindles 18—19 together with the discs 29—30 and burden are caused to slide away from the branding position and almost simultaneously the cams 67 have reached a position when the cams 68 are forced outwardly and the container released to rest upon the curved arms 69—70, the weight of the container being sufficient to cause the said arms to drop and pass the containers on to a gravity ramp where they may be directed to any convenient place.

Before the container can drop, however, a bar 78 has to be cleared from under the arm 69 or if desired one of said bars may also be disposed under the arm 70, this being necessary in order to prevent the incoming container from dropping on to the arms 69—70 and on to the ramp before labeling or branding.

In order to remove the bar or bars 78 from under the arms 69—70 a projecting member 79 is fixed to the spindle 18 carrying the discs 30 and upon the rotation of the spindle the member 79 meets the bar or bars 78 and removes them clear for a sufficient period to allow the branded container to drop through on to the gravity track when the arms 69—70 return and the bars 78 also by the action of the springs 80^a.

Means are also provided for preventing more than one container reaching the branding position at one time and consists in forming the ends of the curved arms 69—70 in the manner shown at 76, the points 76^a being adapted to pass between the containers when the arms 69—70 are downwardly disposed, as when delivering a container to the ramp, but when the arms 69—70 are in the operative position the points 76^a are in line with the ramp 77 and the containers are permitted to run to the branding position.

I desire it to be understood that any suitable improvements and modifications may be embodied without departing from the spirit and scope of the invention, the essential features of which are above described.

What I claim as my invention and desire to secure by Letters Patent is:—

1. Apparatus for the purposes specified, comprising the combination of a printing roller for imparting colors or multicolors directly to a can body or bottle, a primary roller, a distributing roller, said distributing roller receiving the color from the primary roller and delivering it to the printing roller, and the said printing roller carrying colour wells and the label pattern, the colour wells feeding the pattern of the label and being of the same area as the said label patterns.

2. Apparatus as and for the purposes specified in claim 1, characterized in that the primary roller is fitted with internal colour

retaining wells communicating with the label patterns of absorbent material on the surface of the said roller.

3. Apparatus as and for the purposes specified in claim 1, characterized in that the primary roller is fitted with internal colour retaining wells, fixed reservoirs and flexible pipes communicating with the reservoirs for refilling said wells.

4. In an apparatus for the purposes specified, means for revolvably supporting the can or bottle at each end comprising two spaced and vertically arranged discs, the spindles of which carry toothed pinions in mesh with pinions of labeling rollers the spindles of said discs being mounted on bearings slidably mounted between the plates of the longitudinal members of the frame, springs disposed behind the said bearings to normally hold the discs in operative position, means for spreading the said discs apart comprising collars on the spindles of the discs spaced to receive the ends of bifurcated members, the upper end of which pivotally connects links arranged in staggered positions, links connecting the above links at one end, said links engaging with a pivoted handle bar so that on the operation of said handle bar the said discs are spaced apart by one link forcing its respective disc in one direction and the other link forcing the other disc in the other direction and means for returning the said discs to the holding position comprising springs wound about portion of the spindles of the discs and also received in annular recesses formed in the bearings of the disc spindles as and for the purposes specified.

5. In an apparatus for the purposes specified in claim 4, means for withdrawing the can and bottle supporting discs and mechanism clear of the impress roller comprising a lever pivoted centrally of the apparatus and at the can receiving end thereof, said lever accommodating rods provided with nuts and lock nuts, said rods connecting the slidable bearings of the holding and releasing mechanism, springs disposed between the lugs of the lever and the slidable bearings so that when thrust is exerted on the said lever the slidable bearings are moved sufficiently to disengage the can or bottle from contact with a label impressing roller, the springs about the rods connecting the lever and slidable bearings being adapted to automatically return the discs to frictionally engage a can or bottle with the roller and also bring the toothed pinion on the spindle of the one disc into mesh with the pinion of the impress roller substantially as described.

6. Apparatus for the purposes specified, comprising, an operating handle, an impress roller, opposed spaced discs, means for mov-

ing said discs forwardly and spreading said discs apart, for receiving a can or bottle between the discs, means allowing the discs to close in on the can or bottle, and means for moving the discs and burden towards said impress roller so that the can or bottle frictionally engages therewith, on rotating the operating handle for one complete revolution.

10 7. Apparatus for the purposes specified, characterized in that a color transmission roller or rollers is or are adapted to be rotated in a frame, means for supporting and carrying a can or bottle to frictional driving contact with said roller whereby a colored label is directly imparted to the can or bottle and means for releasing the labeled can or bottle, said means consisting of two spaced disks supported from the frame and adapted to be moved forwardly and rear-

wardly and to be pressed apart for the purposes specified.

8. In an apparatus for the purpose specified, means for determining the starting position for labeling a can or bottle and means for insuring the correct relationship between a train of fixed gears and a gear on a slidable spindle to which one of a pair of can or bottle holding disks are mounted, consisting in fitting an operating handle with a ball under spring control, said ball being adapted to enter a recess in the framework of the machine when the handle is in a vertically depending position at which time contact is made between the can or bottle and the label impressing roller.

Signed at Adelaide, South Australia, Australia, this 19th day of February, 1926.

WILLIAM CLIFTON HART.