(No Model.) 2 Sheets—Sheet 1.

G., J. G. & M. O. REHFUSS.

APPARATUS FOR AUTOMATICALLY LABELING BOTTLES.

No. 535,997. Patented Mar. 19, 1895.

Fig. 1.

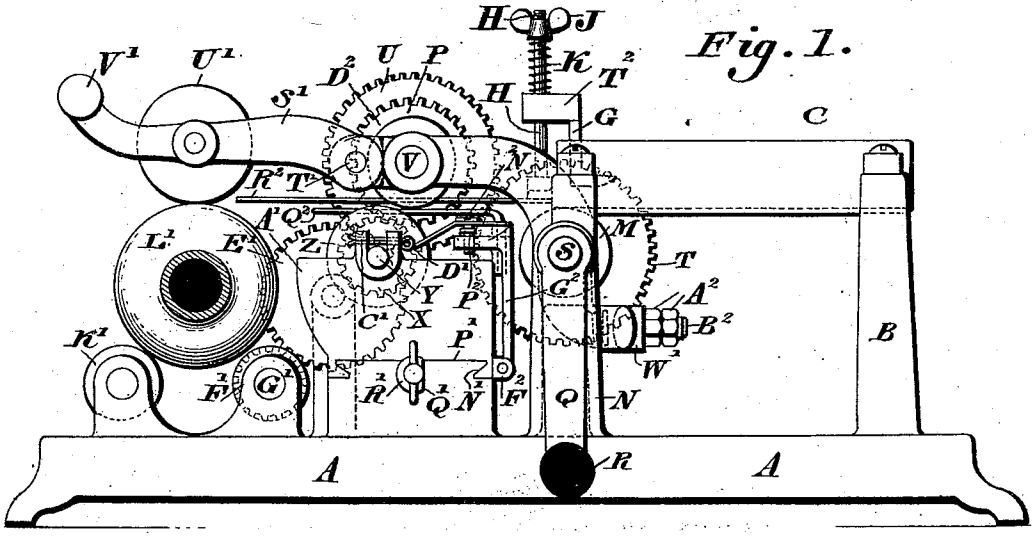

Fig. 2.

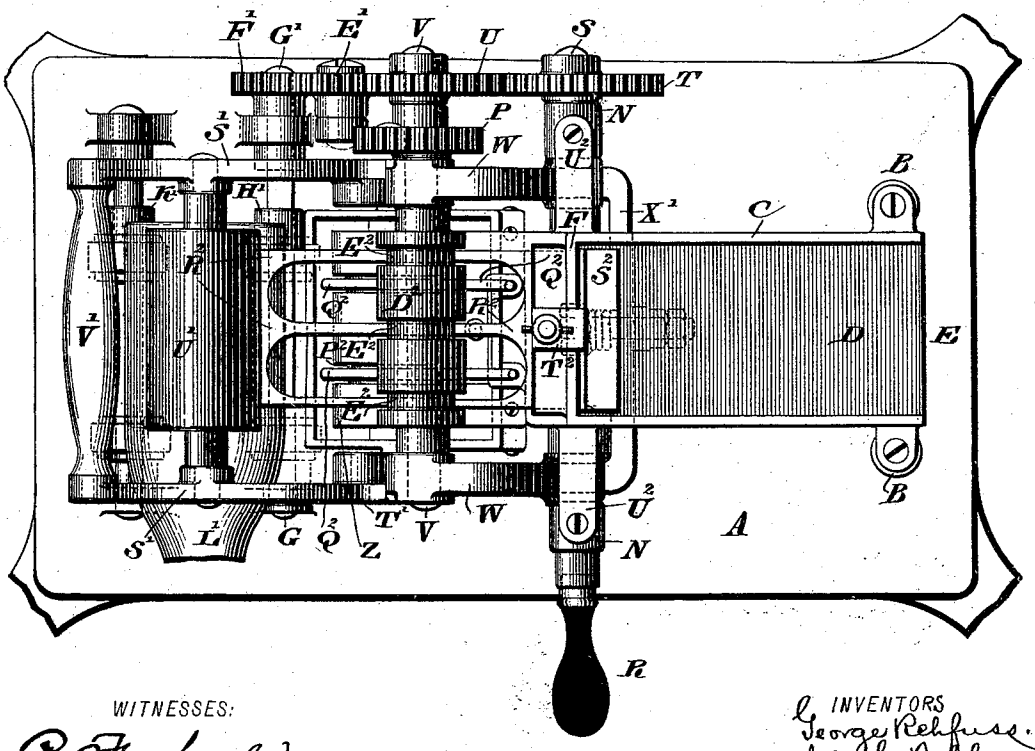

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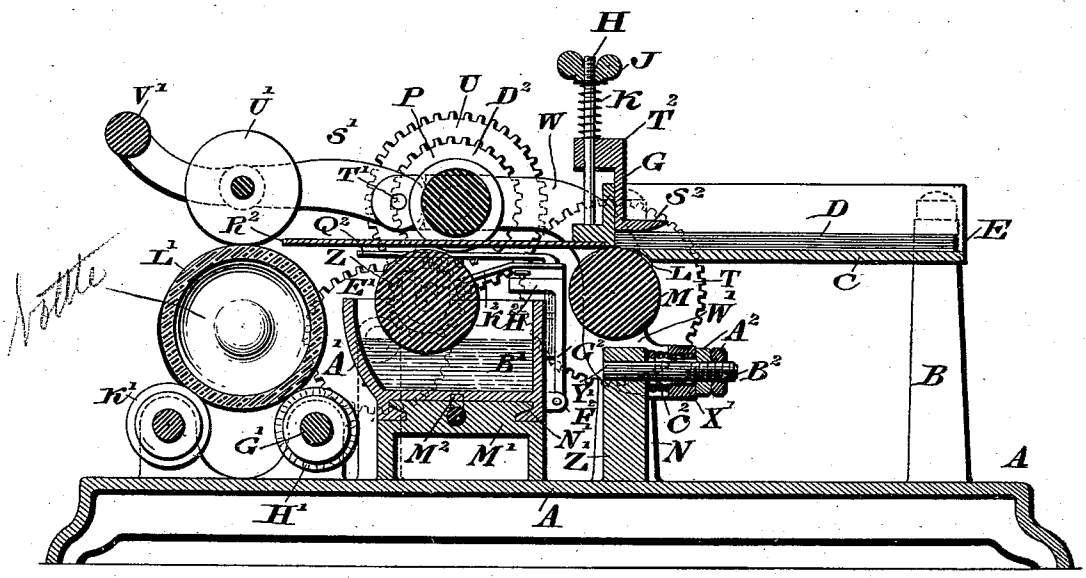
Fig. 3.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR AUTOMATICALLY LABELING BOTTLES.

SPECIFICATION forming part of Letters Patent No. 535,997, dated March 19, 1895.

Application filed May 14, 1894. Serial No. 511,109. (No model.)

To all whom it may concern:

Be it known that we, GEORGE REHFUSS, JOHN G. REHFUSS, and MARTIN O. REHFUSS, citizens of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Automatically Labeling Bottles and Similar Articles, which improvement is fully set forth in the following specification and accompanying drawings.

Our invention consists of a novel apparatus for labeling bottles and similar articles, in which a label is fed from a suitable holder and afterward pasted and applied to the bottle, &c., entirely by machinery, the work being done much more rapidly and accurately than heretofore by hand, and provision being made for acquiring ready access at all times to all parts of the apparatus whenever required.

It further consists of novel details of construction, all as will be hereinafter set forth.

Figure 1 represents a side elevation of a machine for automatically labeling bottles, &c., embodying our invention. Fig. 2 represents a plan view of the same. Fig. 3 represents a vertical longitudinal section through the center of the machine.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings: A designates a bed which supports the operative parts of the machine.

B designates posts or standards located near one end of said bed, to the top of which is suitably secured one end of a receptacle or holder C, in which the labels D are placed, said labels being superimposed therein as shown in Fig. 3, the other end of the holder C being supported on the standards N by the ears U^2, which are suitably fastened thereto. The end E of the holder is preferably open, while the other end F is closed.

G designates an angle shaped piece having a foot S^2, which is adapted to press upon the labels D, while another portion T^2 overhangs the end piece F, and has the bolt or stud H passing through the same, the upper end of said bolt being threaded and having a thumb screw J.

K designates a spring held between the thumb screw J, and the piece G, whereby the pressure upon the labels D can be regulated and is kept constant, as may be desired.

The bottom of the holder is cut away at L, near the end piece F, so that the ends of the labels may be pressed into contact with the feed roll M, which may be of rubber or other suitable material, and is suitably mounted in the standards N.

One end of the journal S which carries the roll M is extended beyond its bearing, and has attached thereto the arm Q, which is provided with the handle R. The other end of the said journal S, carries the gear T, which is adapted to mesh with the gear U, which is suitably attached to a shaft V, said shaft being journaled in the arms W, which are in the present instance loosely supported on the shaft or journal S. The shaft V also carries the gear P, which is suitably secured thereto, and is adapted to mesh with the pinion X, which is carried on the shaft Y, the latter carrying also the paste roll Z, which is revolved in the paste B′ contained in the receptacle A′, by means of the engagement of the pinion X, with the gear P.

The shaft or journal Y revolves in the slots C′, and is held in place by the split pin D′, whereby the paste roll Z can be readily removed when desired.

The gear U meshes with another gear E′, and the latter meshes with the pinion F′, whose journal G′ carries a roll H′, which in combination with the idle roll K′ both revolving in suitable bearings, is adapted to support the bottle or other article L′, and to cause the same to revolve while the label is being pasted thereon, as will be hereinafter explained, all the rolls, pinions, &c., being suitably supported from the bed A.

The paste cup A′, is supported on the base M′, said cup and base having the tongue and groove device N′, and the flat portion P′, so that when the flat side Q′ of the screw R′ is turned so as to coincide with the straight surface P′, of the base M′, the cup A′, holding the paste can be readily withdrawn.

The stop M^2 on the side of the machine, op-

posite to the screw R′, in conjunction with the said screw prevents the paste receptacle from being moved in either direction when the parts are in the position shown in Figs. 1 and 3.

S′ designates arms which are suitably pivoted to the arms W at T′, said arms S′ having journaled therein the roll U′, and being joined together at their ends by the cross bar V′, which serves both as a weight to assist in keeping the roll U′ in contact with the bottle L′, and as a handle for lifting the said roll, when it is desired to place a bottle in position. The arms W have extensions W′ which extend beyond the shaft or journal S which supports them, said extensions being connected by a cross-bar X′.

Y′, designates a pin tightly fitted to the stand Z′ said pin passing loosely through the cross bar X′, and having its end B^2 screw-threaded so as to engage the check nuts A^2.

C^2 designates a spring held between the stand Z′ and the cross bar X′, which serves to cushion any movement of the arms W, which may arise from any cause, and by means of the nuts A^2, which bear on the cross bar X′, the position of the shaft V, and of the roll D^2 carried thereon relative to the paste roll Z can be varied at will, the paste roll Z being slightly in advance of the roll D^2, which is provided with the grooves E^2.

F^2 designates a lug on the paste receptacle A′, to which is pivotally secured the arm G^2, which has the overhanging portion H^2, which has suitably attached to it the scraper K^2, which is adapted to be in contact with the paste roll Z for the whole of its longitudinal surface and a portion of its ends, said scraper being provided with projections which enter the grooves E^2 of the said paste roll, thereby removing from the same any surplus paste which may adhere thereto, so that a uniform quantity will always be applied to the surface of the label.

N^2 designates the head of a screw, which has a flange P^2, said screw being secured in the overhanging piece H^2, the head N^2 and the flange P^2 serving to regulate the movement of the scraper K^2.

Q^2 designates fingers which are suitably supported in the arm G^2, and which lie in the grooves E^2, as shown in Fig. 2.

R^2 designates a plate which has the end adjacent the end piece F suitably supported, said plate being cut out preferably as shown in Fig. 2, so that the position of the label passing thereunder relative to the bottle, can be at all times observed.

The operation will now be apparent. Assume the parts to be in the position shown in Fig. 3, the labels having been placed in the holder C, and the foot S^2 properly adjusted, and a bottle or can resting on the rolls H′ and K′. As the feed roll M is revolved, its top will enter the recess L of the holder C, and the bottom label will be drawn forward, thence onto the fingers Q^2, and the roll D^2, whose axis is slightly in advance of the axis of the said paste roll Z will press the label on to said paste roll, and assist the forward movement of the same, which is always between the plate R^2 and the fingers Q^2, the under side of said label being in contact with the paste roll Z at its greater diameters, the fingers Q^2 supporting the same, and the plate R^2 preventing the label from curling up. The paste having been applied to the label, it passes on and is pressed by the roll U′ onto the bottle, can or other article, which is revolved by and is supported on the rolls K′ and H′, the proper rotary movement being imparted to the rolls M, D^2, Z, and H′ by means of the train of gearing operated by the gear T, as has already been described, the rolls K′, and U′ being idlers, and moved only by the contact of the bottle L′, or other article which is being labeled.

When it is desired to label the bottle at some particular point, the exact position of the label with reference to the bottle can be observed through the openings in the plate R^2, and the revolution of the rolls can be stopped or the bottle adjusted so that the label will be caused to adhere thereto at the desired point. If it is immaterial where the label is to be placed, it is only necessary to place the bottles on the rolls K′ and H′ and turn the crank continuously. The paste receptacle and the roll Z can be removed, as has been already explained, and the arms W and the arm G^2, which carries the scraper K^2 and the fingers Q^2 can be raised from the positions shown in Figs. 1 and 3, as is evident.

The arm G^2 is held in an upright position, as in Figs. 1 and 3, in any suitable manner.

The roll D^2 can be adjusted by means of the nuts A^2 on the pin Y′.

It is obvious that our apparatus can be employed for labeling many articles other than bottles, or cans, and we do not therefore desire to be limited thereto, or to be confined to the exact constructions which we have herein shown and described.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a labeling machine, the bed A with the standards B and N thereon, the label-holder C supported on said standards, the feed roll M journaled in said standards N, the paste cup A′, the arms W loosely mounted on the journal S of the feed roll, the shaft V journaled in the arms W, and carrying a gear wheel meshing with a gear wheel on the journal S, the paste roll Z suitably mounted and having on its shaft a gear wheel meshing with the gear wheel on the shaft V, said parts being combined substantially as described.

2. In a labeling machine, a holder, a feed

roll having a gear wheel on its journal, a paste cup, a paste roll dipping in said paste cup, the arms W loosely mounted on the journal of said feed roll and having extensions with a connecting cross bar, a shaft journaled in said arms and carrying a roll thereon, meshing gearing on said feed, paste and roll shafts, and mechanism connected with said cross bar for adjusting said arms, said parts being combined substantially as described.

3. In a labeling machine, a feed roll, arms loosely mounted on the shaft thereof, a shaft with a roll mounted in said arms, a paste cup with a paste roll therein, meshing gearing on the said shafts and that of the said paste rolls, a cross bar connecting said arms, a threaded pin having a suitable support and loosely passing through an opening in said cross bar, a nut on said threaded pin and a spring between said cross bar and support, said parts being combined substantially as described.

4. In a labeling machine, a label receptacle, a feed roll with a gear wheel on its shaft, arms mounted on said shaft, carrying a shaft with a roll thereon, and a gear, a paste cup with a paste roll having on its shaft a gear wheel, arms suitably pivoted and carrying a pressure roll, and rolls adapted to support a bottle thereon below said pressure roller, said parts being combined substantially as described.

5. In a labeling machine, the bed A with the standards B and N thereon, the label holder C supported on said standards the feed roller M having its shaft S mounted in said standards N, the arms W loosely mounted on the shaft S, and carrying the shaft V with the roll D^2 thereon, the paste cup A′ with the shaft Y having the paste roll Z therein, the shafts S, V, and Y having meshing gearing thereon, the plate R^2, and the finger Q^2, supporting rolls for a bottle adapted to rotate the same, and the arms S′ connected with the arms W, and carrying the pressure roll U′ bearing on said bottle, said parts being combined substantially as described.

6. In a labeling machine, a holder for the labels, a feed roll adjacent thereto, a grooved paste roll, another roll adjacent thereto, a paste receptacle, an arm pivotally attached thereto, said arm having a scraper secured thereto which is adapted to contact with the grooved longitudinal surface and the ends of said paste roll, fingers mounted on said arm, the slotted plate R^2 and the rollers U′, K′ and H′, substantially as described.

7. In a labeling machine, a holder for the labels, an adjustable spring pressed foot adapted to rest on the latter, a feed roll, a grooved paste roll, another grooved roll above the latter, mounted in the arms W attached to the cross bar X′ through which passes the pin Y′, which is attached to the stand Z′, the spring C^2 interposed between said stand and cross bar, means for holding the latter in position, guiding devices for said labels, a scraper for said paste roll, and means for fastening said labels in position, the above parts being combined substantially as described.

8. In a labeling machine, a holder for the labels, having its bottom recessed near the front end, and a feed roll whose top is adapted to enter said recess, a grooved paste roll, fingers for supporting the labels adapted to rest in said grooves, a grooved feed roll D^2 adjacent to said paste roll, the axes of said rolls being in different vertical planes, and a recessed plate P^2 located between the feed roll D^2 and the paste roll, rolls for supporting a bottle or other article, and a pressure roll for causing a label to adhere thereto, said parts being combined substantially as described.

9. In a labeling machine, a holder for the labels, a feed roll, a grooved paste roll, a paste receptacle, fingers for supporting the labels pivotally secured to the paste receptacle, a feed roll adjacent said paste roll, rolls for supporting a bottle or similar article, and means for causing a label to adhere to the latter, said paste roll, paste receptacle and fingers being movable, the above parts being combined substantially as described.

10. In a labeling machine, a holder for the labels, a feed roll, a grooved paste roll, a paste receptacle, fingers for supporting the labels adjacent said feed roll and mounted on an arm pivotally secured to the paste receptacle, a feed roll adjacent said paste roll, rolls for supporting a bottle or similar article, and causing the same to revolve, and means for causing a label to adhere to the latter, said paste roll, paste receptacle and fingers being removable, the above parts being combined substantially as described.

11. In a labeling machine, a holder for the labels, a feed roll, a grooved paste roll, a scraper therefor, a paste receptacle, fingers for supporting the labels movably secured to the paste receptacle, a feed roll adjacent to said paste roll, rolls for supporting a bottle or similar article, and means for causing a label to adhere to the latter, said paste roll, scraper, paste receptacle and fingers being removable, and the latter being intermediate said feed roll and paste roll the above parts being combined substantially as described.

12. In a labeling machine, a holder for the labels, means for feeding the same to and over a paste roll, means for removing surplus paste therefrom, means for pressing the labels onto the paste roll, an adjusting device for the same, consisting of rearwardly extending arms attached to a cross bar, a stand adjacent the latter, a threaded pin passing through said cross bar and secured to said stand, a spring interposed between the two latter, and a nut engaging said pin a roller U pivotally secured to a suitable point, and adapted to bear on the article which is being

labeled, said article being suitably supported on rolls K′ and H′ or their equivalents, substantially as described.

13. In a labeling machine, the holder C, the spring-pressed piece G, having the foot S^2, feed roll M adjacent to said holder, the grooved rolls Z and D^2, the latter being supported in the arms W, means for adjusting said arms, arms S′ attached to said arms W, and forming bearings for the roll U′, and rolls K′ and H′ adapted to support the article which is being labeled, a plate R^2, fingers Q^2, a scraper, a paste receptacle, and a system of gearing for actuating the above rolls, said parts being combined substantially as described.

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