

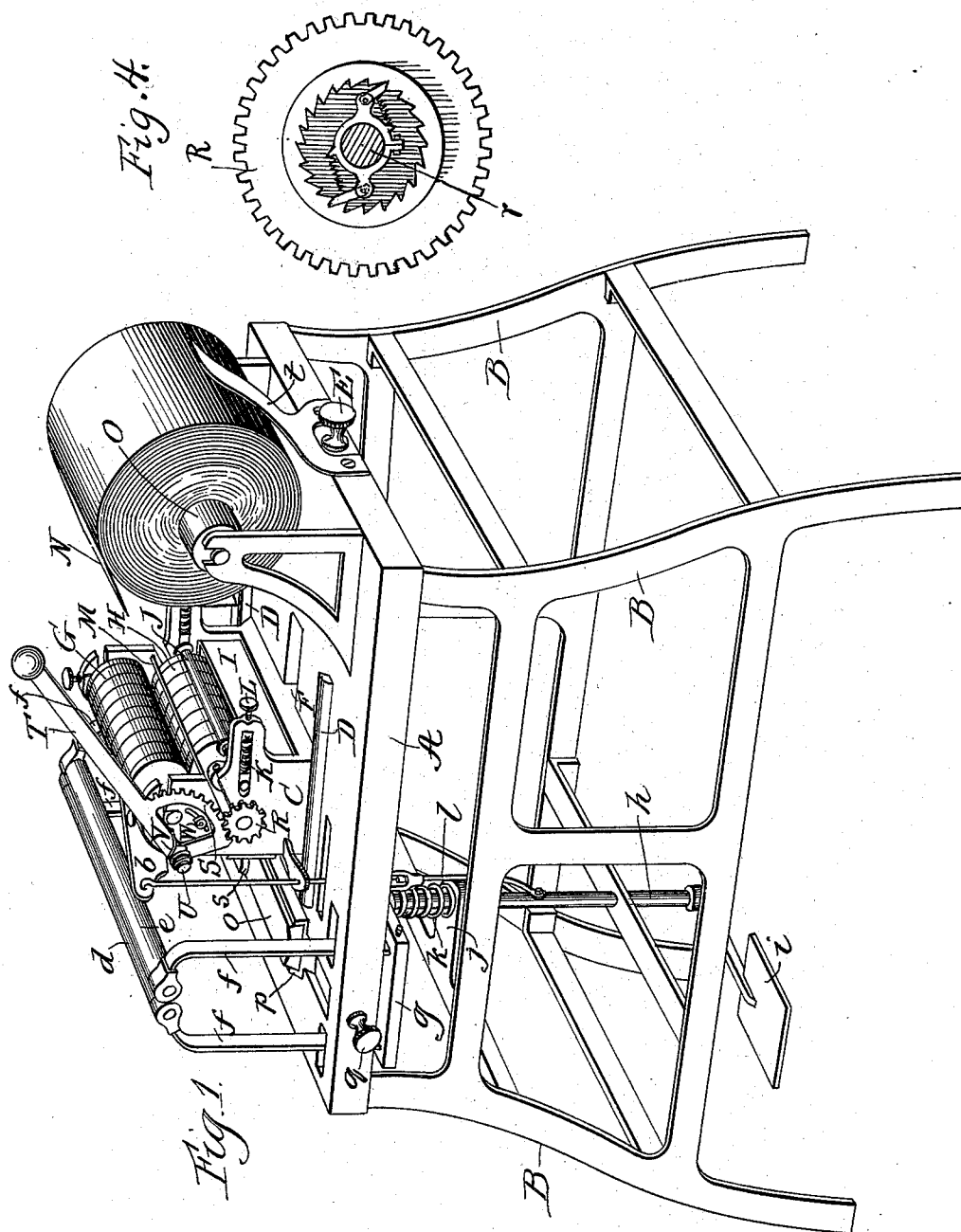
(No Model.)

2 Sheets—Sheet 1.

F. C. H. STRASBURGER.
BOTTLE LABELING MACHINE.

No. 559,002.

Patented Apr. 28, 1896.



Witnesses
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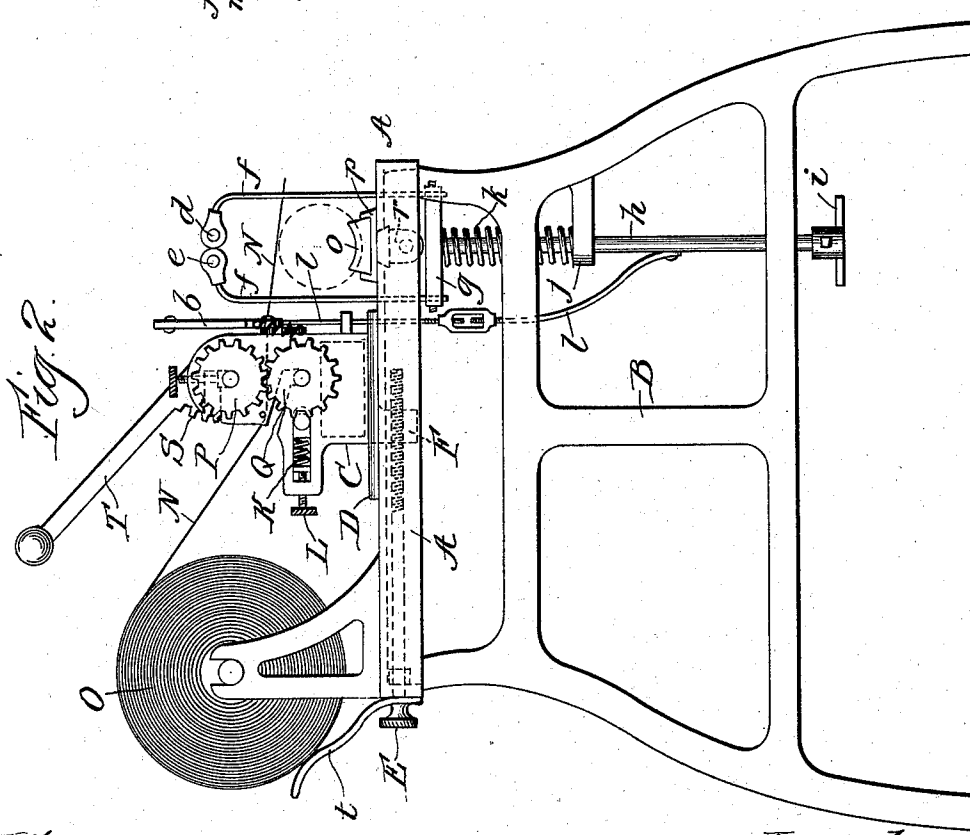
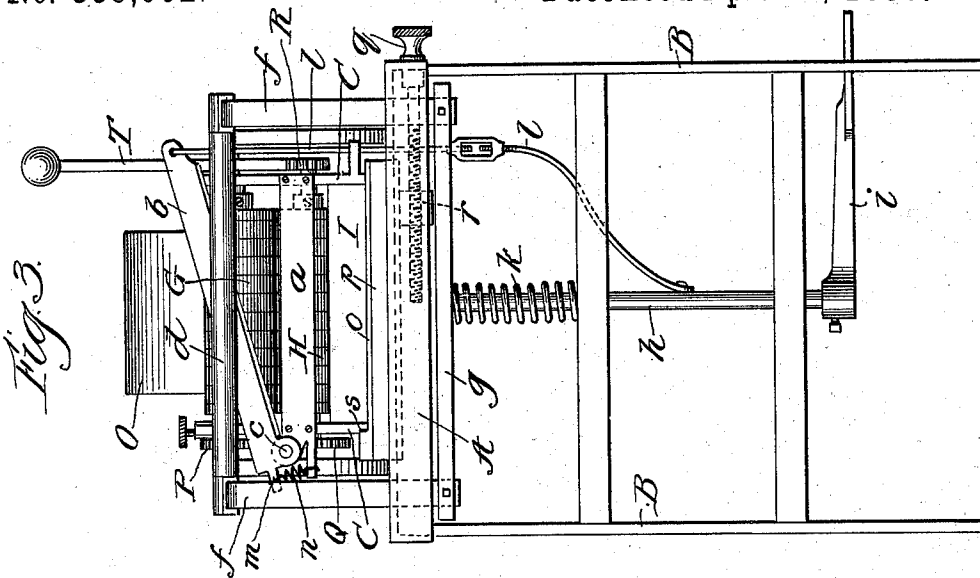
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2 Sheets—Sheet 2.

F. C. H. STRASBURGER.
BOTTLE LABELING MACHINE.

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UNITED STATES PATENT OFFICE.

FRANK C. H. STRASBURGER, OF GREAT FALLS, MONTANA.

BOTTLE-LABELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 559,002, dated April 28, 1896.

Application filed March 9, 1895. Serial No. 541,095. (No model.)

To all whom it may concern:

Be it known that I, FRANK C. H. STRASBURGER, a citizen of the United States, residing at Great Falls, in the county of Cascade and State of Montana, have invented certain new and useful Improvements in Bottle-Labeling Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in that class of machines designed to apply labels to bottles, cans, and similar cylindrical articles.

The prime object of this invention is to apply the labels to the bottles from a continuous web, the labels being intermittently delivered to the bottles, severed from the web and applied to the bottles, and supplied with paste or other adhesive material in their passage from the storage-reel to the bottles.

Other objects are to enable the application by the same machine of labels varying both in length and in width with equal facility, and to enable the application of the labels to bottles or other cylindrical articles varying in size both as to length and diameter.

These objects and such others as may hereinafter appear are attained by the devices illustrated in the accompanying drawings, in which—

Figure 1 represents a perspective view of a bottle-labeling machine embodying my invention. Fig. 2 represents a side elevation of the same, taken from the side opposite that shown in Fig. 1; Fig. 3, an end elevation of the machine, and Fig. 4 is a view in detail illustrating the pawl-and-ratchet mechanism connected with one of the pinions on the lower feed-roll.

Similar letters of reference indicate the same parts in the several figures of the drawings.

Referring by letter to the accompanying drawings, A indicates a bed-plate of suitable dimensions and configuration, supported upon a suitable frame B of any desired character, or upon a table, bench, or other place affording proper support for and disposition of the bed-plate. This bed-plate is preferably rectangular in form and has movably mounted thereon a frame C, which carries

the feeding and cutting devices. This frame is guided between suitable ways D on the bed-plate and is longitudinally adjustable by means of a screw-bolt E, working through the bed-plate and engaging a depending lug F of the frame C, as more clearly indicated by the dotted lines in Fig. 2.

In the frame C is mounted above one another the feed-rolls G and H, the upper roll G being preferably the driving-roll and the lower roll H the driven roll, beneath which and supported upon the frame C is a vat I, containing paste or other adhesive material into which the roll H dips. To the roll H, above the vat, is applied a "doctor" or "scraper" J of any suitable character, which is shown in the drawings as a rotatably-mounted rod or roller, journaled at its ends in slots in the frame C, in which slots are confined coiled springs K, made adjustable by the application of thumb-screws L, so that the scraper may be caused to press against the roll H with any desired degree of pressure, and thus remove from the roll the proper amount of surplus adhesive material.

Above the scraper J and secured at its ends respectively to the frame C is a rod or bar M, which serves to guide the web or tape N, which is wound upon a reel O, loosely journaled in suitable bearings upon the bed-plate at one end of the machine. The labels are printed in successive order upon this continuous web or tape, the end of which is constantly held by the feed-rolls G and H, so that at each successive operation of these rolls the web is fed forward the width or length of a label, as the case may be, so as to bring the edge of the label under the cutting devices, as hereinafter described, the paste or other adhesive material being applied to the label in its passage between the feed-rolls.

At one end and outside the frame C the feed-rolls G and H are geared together, so as to rotate in unison, by means of gears P and Q, and at the opposite end the lower roll H is provided with a pinion R, with which meshes a sector-gear S, carried by a lever T, pivoted at U to the frame C and actuated in one direction by a coiled spring V, attached at one end to the pivot U of the lever or to the frame C and at its opposite end bearing against the lever T. The tension of the spring

normally maintains the lever in an elevated position and returns the same to an elevated position whenever depressed by hand. Hence it will be seen that whenever the lever is depressed the feed-rolls will be caused to rotate, so that their contacting surfaces move in the same direction, and hence feed the continuous web to the cutter and in position to be applied to the bottle.

10 An adjustable stop *W* upon the frame *C* is located in the path of movement of the actuating-lever *T*, by which stop the feed of the rolls may be adjusted and limited to the varying widths of the labels to be fed thereby at
15 each stroke. As the lever *T* is instantly returned to its elevated position after each depression, in order to prevent a reverse rotation of the feed-rolls, I provide between the pinion *R* and the journal *r* of the roll *H* a
20 pawl-and-ratchet connection, such as shown in Fig. 4, or any desired construction which will permit the free rotation of the pinion in one direction without affecting the journal, but which will cause the journal to rotate when
25 turned in the opposite direction.

To the frame *C*, at the side of the rolls *G* and *H*, is secured a pair of cutters *a* and *b*, the former being rigidly secured with its upper edge substantially in a plane with the contacting surfaces of the rolls and parallel with
30 the axis thereof, while the latter is pivoted at one end, as shown at *c*, and is caused to vibrate, so as to operate in connection with the stationary cutter like a pair of shear-blades.
35 When the endless web is passed between these blades and fed into position over the bottle, the inner edge of the uncut label will lie between these two cutters and will be severed thereby, so as to detach the label from
40 the web. Beyond these cutters is a pair of label-affixing rollers *d e*, whose axes are parallel with but preferably in a plane slightly above the axis of the upper roll *G*. These rolls *d* and *e* are loosely mounted upon shafts
45 or rods having a bearing either loose or fixed, according to choice, in the ends of vertical spring-arms *f*, of which there are two pairs, one pair for each roller, and which at their upper ends are bent toward each other, so
50 as to have the arms proper at a sufficient distance apart for convenience in manipulating the machine and to take full advantage of the yield or spring of the arms. These arms at their lower ends are rigidly secured
55 to a vertical movable frame or plate *g*, suitably guided upon the frame of the machine and actuated in any desired manner, preferably by means of a rod *h*, attached to the center of the plate and having a treadle *i*
60 secured to the lower end thereof, by means of which foot-power may be employed to depress the plate, carrying down with it the label-affixing rolls. Between the plate *g* and a guide *j* upon the frame of the machine is confined a coiled spring *k*, sleeved upon the rod
65 *h* and normally tending to hold the frame in an elevated position. The rod *h* is also con-

nected by a rod *l* with the free end of the pivoted cutter *b*, so that this cutter will be brought down simultaneously with but slightly in advance of the affixing-rolls. To relieve the rod
70 *l* of strain in returning the cutter *b* to its normal elevated position, it may be desirable to apply to an extension *m* thereof a coiled spring *n*, the opposite end of which may be connected
75 to a like extension on the fixed cutter *a* or to the frame *C*, to which the blade *b* is directly or indirectly pivoted.

Below the label-affixing rollers is a bed *o* for the bottle, which preferably consists of rubber
80 or some soft material, having a curved upper surface to receive the bottle, and secured to a plate *p*, which is adjustably mounted upon the bed-plate of the machine and operated by a screw-bolt *q*, working through a depending
85 lug *r* upon the plate *p*, as is more clearly illustrated by the dotted lines in Fig. 3. This bed is preferably provided with a shoulder *s*, against which the bottom of the bottle will rest when the same is inserted in position to receive the
90 label.

The operation of the machine is as follows: The bottle is first inserted in position upon the bed *o*, which has been previously adjusted,
95 so that the bottle rests in proper position to receive the label at the proper point, and then the lever *T* is depressed so as to feed the label into position over the bottle, this action applying the paste or other adhesive material
100 to the label and bringing it into position to be severed from the continuous web or roll. A tension device *t* of any suitable character is applied to the reel *O* to prevent too free rotation thereof. The treadle is now depressed,
105 which causes the cutters to first sever the label from the continuous web, and immediately after the affixing-rolls are brought down upon the label and press the same thereon, the rolls spreading as the pressure upon the treadle continues, thus smoothing the label perfectly
110 on the bottle, and as soon as the affixing-rolls pass below the axis of the bottle they are sprung together, thus completing the attachment of the label with perfect smoothness and lifting the bottle off of the bed and ejecting
115 it from the machine, if desired, or lifting the bottle so that it may be received from on top of the rolls by hand.

Of course if the label and bottle are of such relative size that the ends of the labels will
120 not reach beyond the horizontal line drawn through the axis of the bottle, it is not necessary to depress the affixing-rolls until they pass such line, so as to lift the bottle, for they may be restored to their original position before passing the center line and thus leave the bottle resting upon its bed; but as such reverse action is liable to rumple the freshly-applied label it is generally desirable to continue the motion until the bottle is lifted from
130 the bed by the pasting-rolls.

Obviously various changes may be made by one skilled in the arts without departing from the spirit of my invention—such, for in-

stance, as substituting rigid but spring-actuated arms instead of the spring-arms shown for supporting the affixing-rolls; but all such variations and modifications are contemplated by my invention.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a bottle-labeling machine, the combination with a reel for a continuous web, having labels printed thereon or otherwise applied thereto, and mechanism for affixing the labels on bottles, of feeding and severing mechanisms located between, and adjustable with relation to, said reel and affixing mechanism, and a bottle-rest beneath the affixing mechanism, and adjustable at right angles to the feeding and severing mechanisms, substantially as described.

2. In a bottle-labeling machine, the combination with a reel for a continuous web, having labels printed thereon or otherwise applied thereto, mechanisms for feeding said web, for severing labels therefrom and for affixing the severed labels on bottles, said feeding, severing and affixing mechanisms being intermittently actuated, and means operatively connecting the severing and affixing mechanisms, whereby a downward movement of such means causes both of the last-named mechanisms to act substantially simultaneously, substantially as described.

3. In a bottle-labeling machine, the combination with a reel for a continuous web, having labels printed thereon or otherwise applied thereto, and mechanism for affixing labels on bottles, of a frame adjustable at right angles to the affixing mechanism, mechanisms for severing and supplying paste to the labels, an intermittently-actuated feed mechanism also carried by said frame and comprising a pair of rolls geared together, a pinion on the journal of one of said rolls, a sector-gear carried by a lever and engaging said pinion, and a bed for supporting the bottle, said bed being adjustable at right angles to the feeding and severing mechanisms, substantially as shown and described.

4. In a bottle-labeling machine, the combination with a reel for a continuous web, having labels printed thereon or otherwise applied thereto, mechanism for affixing labels on bottles, of mechanisms for severing and supplying paste to said labels, a frame adjustable at right angles to said affixing mechanism and carrying the severing mechanism, and a feed mechanism also carried by said frame, comprising a pair of feed-rolls and means for intermittently rotating said rolls, and mechanism operatively connecting the severing and affixing mechanisms, whereby a downward movement of such mechanism causes both the severing and the affixing mechanisms to act simultaneously, substantially as described.

5. In a bottle-labeling machine, the combination with a reel for a continuous web, hav-

ing labels printed thereon or otherwise applied thereto, and mechanisms for feeding and affixing the labels, of a frame adjustable at right angles to the affixing mechanism, said frame carrying the feeding, paste-supplying and severing mechanisms and located between the reel and affixing mechanism, and a severing mechanism consisting of a pair of cutters, one fixed and the other pivoted, and means operatively connecting the severing and affixing mechanisms, whereby the severing mechanism and the affixing mechanism are operated simultaneously to sever and affix the labels, substantially as described.

6. In a bottle-labeling machine, the combination with a bed for the bottle, of a pair of laterally-yielding vertically-movable affixing-rollers located above said bed, and mechanism for operating said affixing-rollers, said mechanism having sufficient movement to cause the rollers to pass below the horizontal center of the bottle and affix the label on the bottle, lift said bottle, and eject the same from the machine, substantially as described.

7. In a bottle-labeling machine, the combination with an adjustable bed for the bottle, of a pair of yieldinglly-supported affixing-rollers supported above said bed, and mechanism for operating said affixing-rollers, said mechanism having sufficient movement to cause the rollers to pass below the horizontal center of the bottle and affix the label on the bottle, lift the bottle, and eject the same from the machine, substantially as described.

8. In a bottle-labeling machine, the combination with an adjustable bed for the bottle, of a pair of yieldinglly-supported affixing-rollers located above said bed, mechanism for operating the affixing-rollers, said mechanism having sufficient movement to cause the rollers to pass below the horizontal center of the bottle and affix the label on the bottle, lift said bottle, and eject the same from the machine, and means for severing the label during the movement of the affixing-rollers toward the bed, said bed being adjustable in a direction parallel to the axes of the said rollers, substantially as described.

9. In a bottle-labeling machine, the combination with an adjustable bed for the bottle, of a vertically-movable frame, vertically-disposed spring-arms secured to said frame, a pair of affixing-rollers loosely journaled to the upper free ends of said arms, and mechanism for operating said rollers, said mechanism having sufficient movement to cause the rollers to pass below the horizontal center of the bottle and affix the label on the bottle, lift said bottle, and eject the same from the machine, substantially as described.

10. In a bottle-labeling machine, the combination with a reel for a continuous web, having labels printed thereon or otherwise applied thereto, of an adjustable frame-carrying mechanism for feeding the labels, and mechanism for severing the same and for supplying the paste thereto, an affixing mechan-

ism comprising a pair of laterally-yielding
vertically-movable affixing-rolls, and a bed
for the bottle, said bed being adjustable at
right angles to the feed, severing and paste-
5 supplying mechanisms, substantially as de-
scribed.

11. In a bottle-labeling machine, the combi-
nation with a reel for a continuous web, hav-
ing labels printed thereon or otherwise ap-
10 plied thereto, and mechanisms for feeding
and severing said web and supplying the paste
thereto and carried by an adjustable frame,
of a pair of vertically-movable laterally-yield-
ing affixing-rollers, a bed for the bottle, said
bed being adjustable at right angles to the 15
feed, severing and paste-supplying mechan-
isms, and a treadle connected with and si-
multaneously actuating said affixing-rollers
and severing mechanism for successively act-
ing on the labels, substantially as shown and 20
described.

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Witnesses:

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