

(No Model.)

R. L. & H. F. WIGHT.
CAN LABELING MACHINE.

3 Sheets—Sheet 1.

No. 474,618.

Patented May 10, 1892.

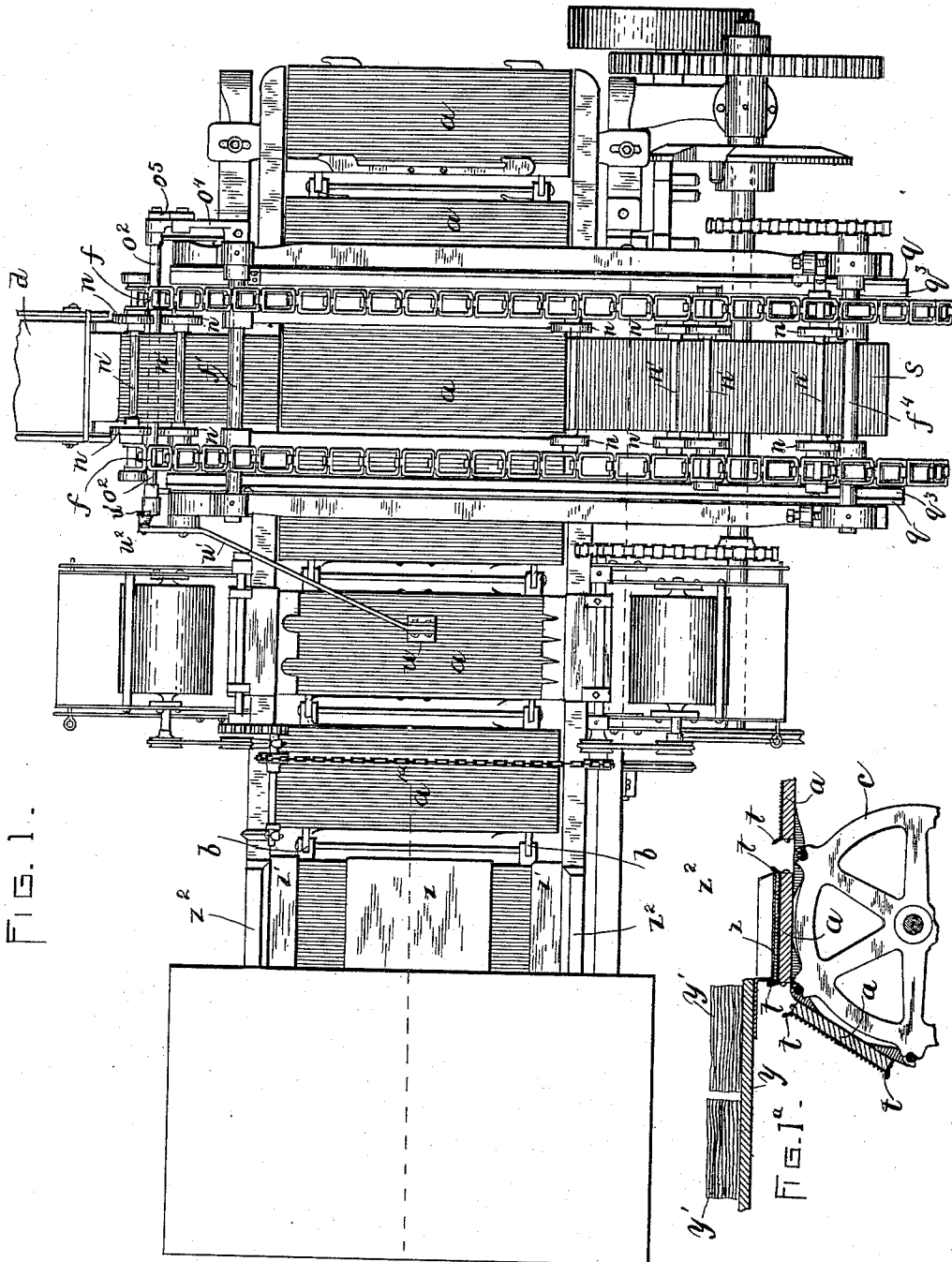


FIG. 1.

FIG. 1a.

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3 Sheets—Sheet 2.

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FIG. 2.

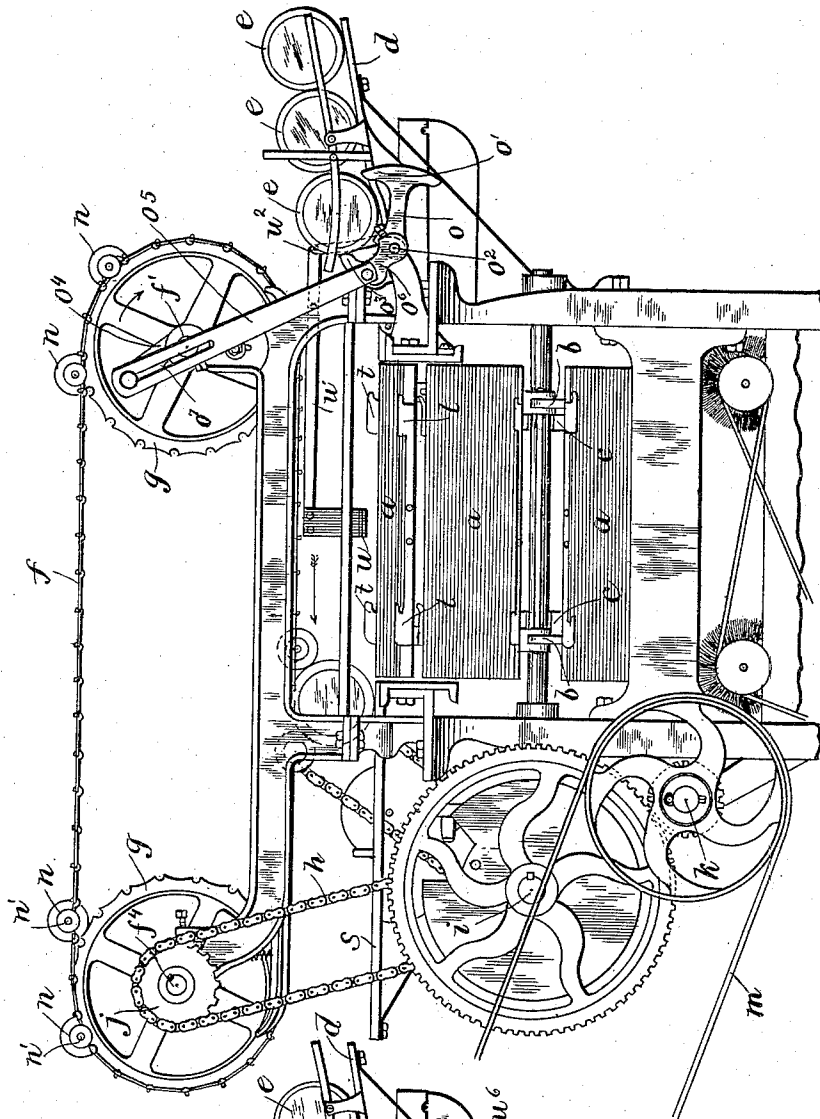
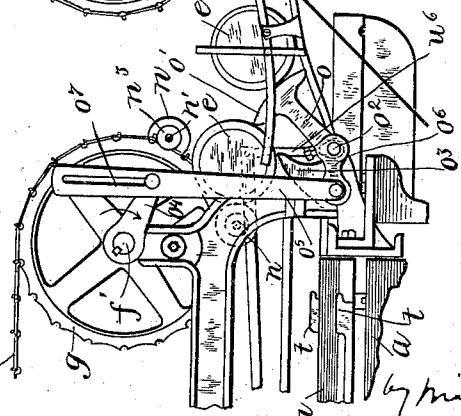


FIG. 3.



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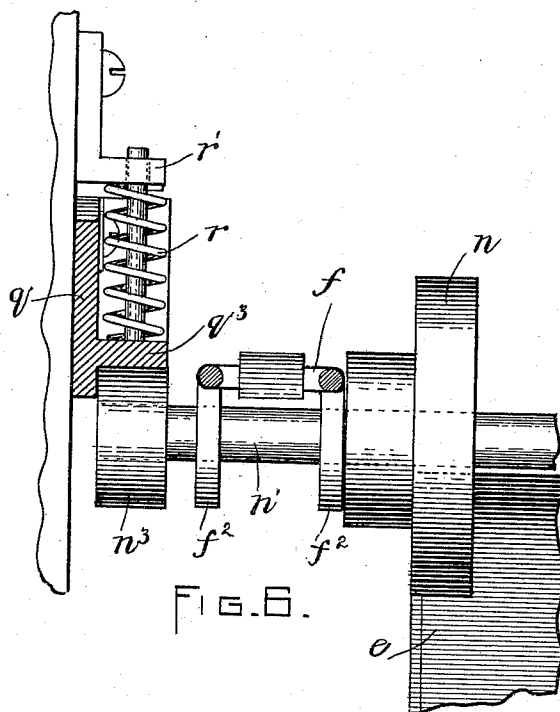
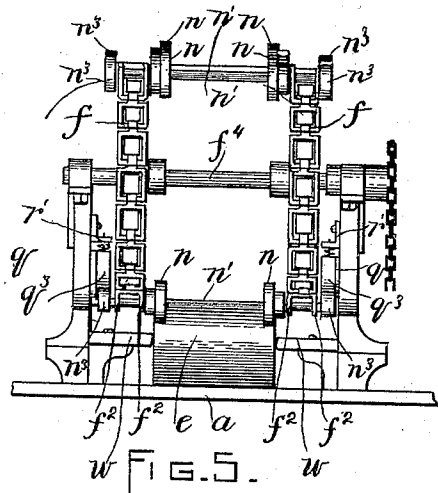
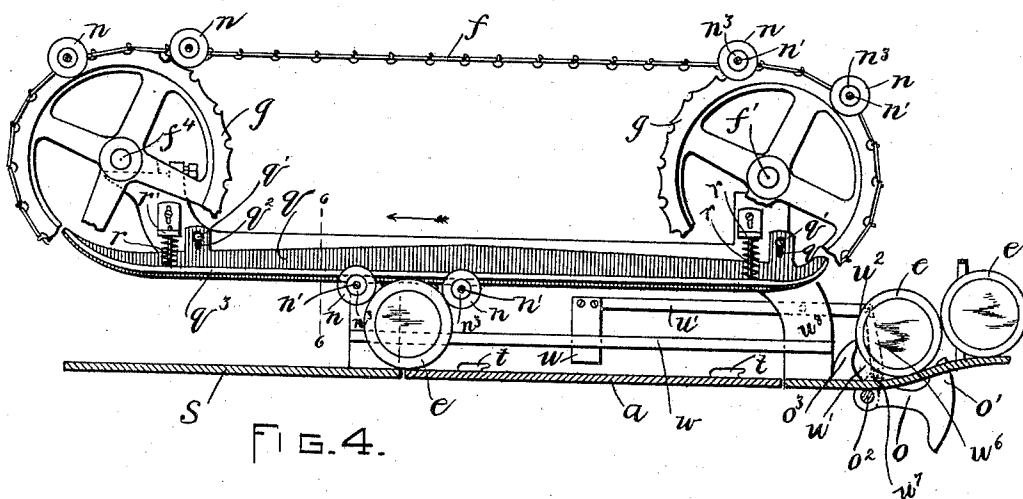
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3 Sheets—Sheet 3.

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WITNESSES:

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UNITED STATES PATENT OFFICE.

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MALDEN, MASSACHUSETTS, ASSIGNORS OF ONE-THIRD TO WILLIAM
M. McDONALD, OF SOMERVILLE, MASSACHUSETTS.

CAN-LABELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 474,618, dated May 10, 1892.

Application filed January 4, 1892. Serial No. 416,988. (No model.)

To all whom it may concern:

Be it known that we, RONELL L. WIGHT, of
Bridgton, in the county of Cumberland and
State of Maine, and HENRY F. WIGHT, of Mal-
den, in the county of Middlesex and State of
Massachusetts, have invented certain new
and useful Improvements in Can Labeling Ma-
chines, of which the following is a specifica-
tion.

This invention is an improvement on the
machines shown in Letters Patent of the United
States No. 463,607, dated November 17, 1891,
and relates particularly to the means for mov-
ing or feeding the cans across the label-sup-
porting beds shown in said patent, the object
of the invention being to control the cans and
insure their uniform rotation when they are
passing across the said beds and taking up
the labels therefrom.

The invention consists in the several im-
provements which we will now proceed to de-
scribe and claim.

Of the accompanying drawings, forming
part of this specification, Figure 1 represents
a top view of a can-labeling machine provided
with our improvements. Fig. 2 represents an
end elevation of the same. Fig. 3 represents
a similar elevation of a portion of the machine,
showing the operation of the devices that pre-
sent the cans to the feeding and rotating de-
vices. Fig. 4 represents an end elevation of
a part of the machine, portions of the frame-
work being broken away and the can and
label-supporting devices being shown in sec-
tion. Fig. 5 represents an end elevation of
the construction shown in Fig. 4. Fig. 6 rep-
resents an enlarged section on line 6-6, Fig.
4, looking toward the right. Fig. 1^a repre-
sents a section on line 1^a-1^a, Fig. 1.

The same letters of reference indicate the
same parts in all the figures.

In the drawings, *a a* represent a series of
flat beds or label-carriers, which are secured
to the links of sprocket-chains *b b*, and are
supported by sprocket-wheels *c c*, engaged
with said chains, substantially as shown in
the Letters Patent above mentioned. The
beds *a* may be constructed and arranged to
operate as shown in said patent, and the

means for operating them may also be as shown
in said patent, our present invention relating,
chiefly, to the means for feeding and rolling
the cans across said beds. We therefore do
not describe in detail the mechanism for mov-
ing the label-supporting beds, but refer to
said Letters Patent for a full description of
the beds and their operating mechanism, it
being sufficient to here remark that the series
of beds are moved progressively step by step
and that each bed is held stationary at the
point where the cans are rolled over it by our
improved can feeding and rolling devices
hereinafter described long enough for a can
to be moved across said bed at right angles to
the direction of its movement and to take up
a gummed label resting upon the bed.

d represents an inclined spout or chute,
down which the cans *e* to be labeled are car-
ried by gravitation, said chute being arranged
to present the cans to the point where they
are raised by the separating devices herein-
after described into engagement with the feed-
ing and rotating devices.

The can feeding and rotating devices com-
prise two flexible bands or sprocket-chains
f f, mounted on wheels *g g*, which are sup-
ported by shafts *f' f'*, mounted in fixed bear-
ings on the supporting-frame, the shaft *f'*
being positively rotated by any suitable
means—such as a sprocket-wheel *h*, running
from a wheel on a driving-shaft *i* to a wheel
j, affixed to the shaft *f'*, the shaft *i* being here
shown as driven by a gearing connecting it
to a shaft *k*, which receives motion through a
belt *m* from a suitable source of power. The
chains *f f* are provided with can-engaging
devices, which are pulleys or trucks *n n*,
mounted on rods or shafts *n' n'*, which are
suitably secured to the bands or chains *f f*,
each rod *n'* extending from one chain to the
other across the space between the two chains.
The pulleys *n n* are adapted to rotate loosely,
either by being loosely mounted upon the rods
n' or by the loose mounting of said rods in
bearings *f² f²*, Fig. 5, affixed to the chains *f*.
The pulleys *n* are arranged in pairs, each pair
of pulleys on one chain and the correspond-
ing pair on the other chain constituting one

set of can-grasping or engaging devices, said pulleys being spaced so that they will bear upon the upper portion of a can in a manner shown in Figs. 2 and 4 when the pulleys are being moved horizontally by the chains and are at the lower portions of the chains and moving across the beds *a*. The chains *f* are arranged at such height as to hold the pulleys *n* in engagement with a can that is resting upon one of the beds *a*, so that when a can is engaged with a set of pulleys the movement of the chains in the direction indicated by the arrows in Figs. 2 and 4 will cause the pulleys to move the can positively across the bed, which is under the chains, the loosely-rotating pulleys at the same time permitting the free rotation of the can caused by its contact with the bed under it and preventing the can from slipping along the bed without rotating.

It will be seen that the sprocket-chains engaged with the positively-rotated wheel *g* and driven by said wheel and provided with the can-engaging pulleys are adapted to positively feed the cans forward across the beds and insure their free rotation, thus insuring the proper taking up by each can of a gummed label resting upon the bed over which the can is being moved.

The can-separating devices, which separate the lowest can in the chute *d* from the procession of cans and present it to the chains *f* and their pulleys, are preferably as follows:

o represents an arm affixed to a rock-shaft *o*², which is journaled in fixed bearings on the supporting-frame. The arm *o* is provided with an upwardly-projecting finger *o*¹ at its outer end, which is arranged to be inserted behind the lowest can on the chute and to lift said can from the chute over a fixed stop or finger *o*³, secured to the supporting-frame, said stop or finger co-operating with the finger *o*¹ in raising the can from the chute. The rock-shaft *o*² is oscillated by means of a crank *o*⁴, affixed to the shaft *f*¹, a connecting-rod *o*⁵, engaged at one end with the wrist-pin of said crank, and an arm *o*⁶, affixed to the rock-shaft *o*² and engaged with the opposite end of said connecting-rod. The connecting-rod is provided with a slot *o*⁷, which receives the wrist-pin of the crank and permits considerable freedom of movement of said wrist-pin independently of the connecting-rod. When the crank in its revolution reaches the lower end of the slot *o*⁷, the crank revolving as indicated by the arrows in Figs. 2 and 3, it depresses the rod *o*⁵, and thereby, through the arm *o*⁶ and rock-shaft *o*², raises the finger *o*¹, causing the latter to elevate the lowest can. The mechanism is timed so that a set of pulleys *n* is in position to engage the raised can, as shown in Fig. 3, so that after the can has been raised it is engaged by a set of pulleys and caused by the latter to pass over the stop or finger *o*³ and move downwardly upon the label-supporting bed *a*. The finger *o*¹ remains elevated and serves to arrest the procession of cans in the chute until the revolution of the crank

causes its wrist-pin to strike the upper end of the slot *o*⁷, this occurring during the upward movement of the wrist-pin, so that the connecting-rod is raised and the finger *o*¹ is depressed to the position shown in Fig. 2, thus permitting the procession of cans to move forward and the lowest can to strike the finger or stop *o*³, said can being then in position to be raised by the next upward movement of the finger *o*¹.

We prefer to employ pressure-bars *q*, arranged to exert a downward yielding pressure upon the pulleys *n* when said pulleys are engaged with a can and are rolling the same across one of the beds *a*, thus making the rotation of each can by frictional contact with the bed and label more positive and certain. Said pressure-bars *q* are engaged with the supporting-frame in such manner as that they can rise and fall, the means of engagement here shown being bolts *q*¹ *q*², passing through slots *q*³ *q*⁴ in ears formed on the bars *q*, as shown in Fig. 4, said slots permitting the bars to move vertically to a sufficient extent. The bars are pressed downwardly by means of springs *r*, interposed between fixed ears or brackets *r*¹, attached to the supporting-frame and flanges *q*³, formed on the pressure-bars *q*. The pulley-supporting rods *n*¹ are provided at their outer ends with smaller pulleys *n*², which bear upon the undersides of the flanges *q*³, said flanges being caused by the springs *r* to exert a downward pressure on the pulleys *n*² and through the latter and the rods *n*¹ on the can-engaging pulleys *n*. The pressure-bars *q* are of sufficient length to exert downward pressure upon the cans from the time of their first contact with the labels until they have left the beds and have passed from or well along upon the tables, which is arranged beside the series of beds to receive each can after the label has been applied thereto.

The labels are kept in place upon the beds *a* by means of ears *t*, attached to the ends of the beds and projecting forward above the label-supporting surfaces of the beds at opposite edges of the same, said ears constituting stops to prevent the labels from slipping laterally off from the beds. The ears *t* do not positively hold the labels down upon the beds and offer no resistance to the lifting of the labels from the beds. To prevent the displacement of the labels by the gumming devices, which are arranged to operate substantially as shown in the patent above described, we provide a clamping or holding device arranged to bear on the central portion of the label while it is being gummed and prevent endwise movement of the label by the brushes that apply the gum. In our former patent above mentioned we have shown a clamping device consisting of a roller mounted in an arm attached to a movable part of the machine and arranged to bear yieldingly on a label which is in position to be gummed. In this case, however, we have provided a clamp, which is alternately raised and lowered, and

is pressed downwardly upon the label while the same is being gummed and raised from the label to permit the unobstructed forward movement of the label to the point where the can is presented to it. Said clamping device is here shown as an elastic arm u , attached to the outer end of a lever u' , which is pivoted at u^8 to the supporting-frame and at u^2 to a link u^6 , which in turn is pivoted to an arm u^7 , attached to the rock-shaft o^2 , the arrangement being such that when the rock-shaft is in the position shown in Fig. 2 the arm u is raised and separated from the label-supporting bed under it; but when the rock-shaft is moved to the position shown in Fig. 3 the arm u is depressed and caused to bear forcibly upon a label.

We do not limit ourselves to the details of mechanism herein shown and described, and may variously modify the same. For example, bands or belts may be substituted for the sprocket-chains, in which case pulleys would be substituted for the sprocket-wheels $g g$. We prefer the chains and sprocket-wheels, however, on account of the positive character of the movement imparted by them to the cans, the sprocket-chains being free from the liability to slip, which would exist if belts and ordinary pulleys were employed. Instead of the loosely-rotating pulleys $n n$ on the belts or chains, non-rotating enlargements or projections may be employed, arranged to engage the cans in the manner shown and to cause the progressive movement of the cans. We prefer the pulleys, however, because of the freedom of rotation of the cans which they permit. The means for applying yielding pressure to the acting portions of the bands or chains may be omitted, and the elasticity of said bands or chains may be relied upon to press the cans downwardly upon the labels; but we prefer the pressure devices on account of the uniformity of pressure which they give along the entire path through which the cans are fed and rotated.

It is obvious that any other suitable means besides those here shown may be employed for separating the cans at the bottom of the chute and for presenting the lowest can to the feeding and rotating devices.

To aid the operator in placing the labels upon the beds $a a$, we have provided the devices shown in Figs. 1 and 1^a. Said devices comprise a table y , adapted to support an accumulation of labels y' , and fingers $z z' z''$, preferably of thin sheet metal, attached to the table y and projecting from the inner edge thereof. The fingers $z z'$ are offset from the table, so that they occupy a lower plane than the table, as shown in Fig. 1^a, the fingers being arranged so that they are in close proximity to and extend across the upper surface of each bed a that is brought by the step-by-step movement of the series of beds to a position adjacent to the table y . The central finger z is separated from the fingers $z' z''$ by spaces of sufficient width to permit the label-

confining ears $t t$ to pass between the finger z and the fingers $z' z''$, said ears projecting above the upper surfaces of said fingers and engaging the edges of labels laid thereon when the beds are moving forward. The operator, taking a label from the table y , drops it upon the fingers $z z'$ while the beds are at rest, the ears $t t$ of the bed under the fingers being at this time at opposite ends of said fingers, as shown in Fig. 1^a. When the beds start forward, the rear fingers t engage the rear edge of the label and move the same forward, causing the label to assume the proper position upon the bed. It will be observed that the operator does not have to take any special care to place the label so that its edges will be parallel with the edges of the bed, and is only required to place the ends of the label against fixed gages $z^2 z^2$, located beside the fingers $z' z'$. Said fixed gages are preferably beveled at their inner edges, so that the labels dropped by the operator upon the fingers will readily assume the proper longitudinal position between the gages. After the label has been dropped upon the fingers $z z'$ the ears t at the rear edge of the bed under said fingers pass through the spaces between the fingers $z z'$ and catch the rear edge of the label, pushing it forward and causing it to assume a position parallel with the edges of the bed.

The cans are prevented from moving endwise while rolling across the label-beds by guides $w w$, Figs. 4 and 5, attached to the supporting-frame and arranged in close proximity to the ends of the cans.

We claim—

1. In a can-labeling machine, the combination, with means for moving a series of labels progressively step by step, of can feeding and rolling devices comprising flexible chains or bands, means for supporting and impelling the same, and can-engaging trucks or pulleys carried by said chains or bands and arranged to move a can progressively and permit its free rotation, said chains or bands being arranged with their acting portions substantially parallel with the labels and extending substantially at a right angle to the direction of movement of the labels, as set forth.

2. In a can-labeling machine, the combination of means for moving a series of labels progressively step by step, the flexible chains or bands supported and driven by wheels or pulleys above the labels, can-engaging devices carried by said chains, and pressure-bars adapted to exert a downward yielding pressure on the acting portions of said chains and on the can-engaging devices thereon, as set forth.

3. In a can-labeling machine, the combination of means for moving a series of labels progressively step by step, belts or chains carrying laterally-extending rods or shafts having can-engaging pulleys, and movable pressure-bars arranged to exert downward pressure on said shafts, as set forth.

4. In a can-labeling machine, the combination of means for moving a series of labels progressively step by step, belts or chains carrying laterally-extending rods or shafts having can-engaging pulleys, vertically-movable pressure-bars having flanges arranged to bear on the pulleys on said shafts, and springs arranged to exert downward pressure on said bars, as set forth.
5. In a can-labeling machine, the combination of means for moving a series of labels progressively step by step, belts or chains carrying laterally-extending rods or shafts having can-engaging pulleys, a can-chute arranged to guide cans to a point contiguous to said belts or chains, oscillating fingers arranged to separate the lowest can from the procession of cans in the chute, and fixed stops or fingers arranged to co-operate with said oscillating fingers in raising the said can into engagement with the said pulleys, as set forth.
6. The combination of the series of label-supporting beds having upwardly-projecting label-engaging ears at their edges, the label-

supporting table located above the plane of said beds, and the label-supporting fingers located below and at one side of said table, said fingers being separated by spaces which permit the passage of said ears between the fingers, as set forth.

7. The combination of the series of label-supporting beds having upwardly-projecting label-engaging ears at their edges, the label-supporting table located above the plane of said beds, the label-supporting fingers located below and at one side of said table, and the label-gages located at opposite ends of the series of fingers, as set forth.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 22d day of December, A. D. 1891.

RONELL L. WIGHT.
HENRY F. WIGHT.

Witnesses:

C. F. BROWN,
A. D. HARRISON.