

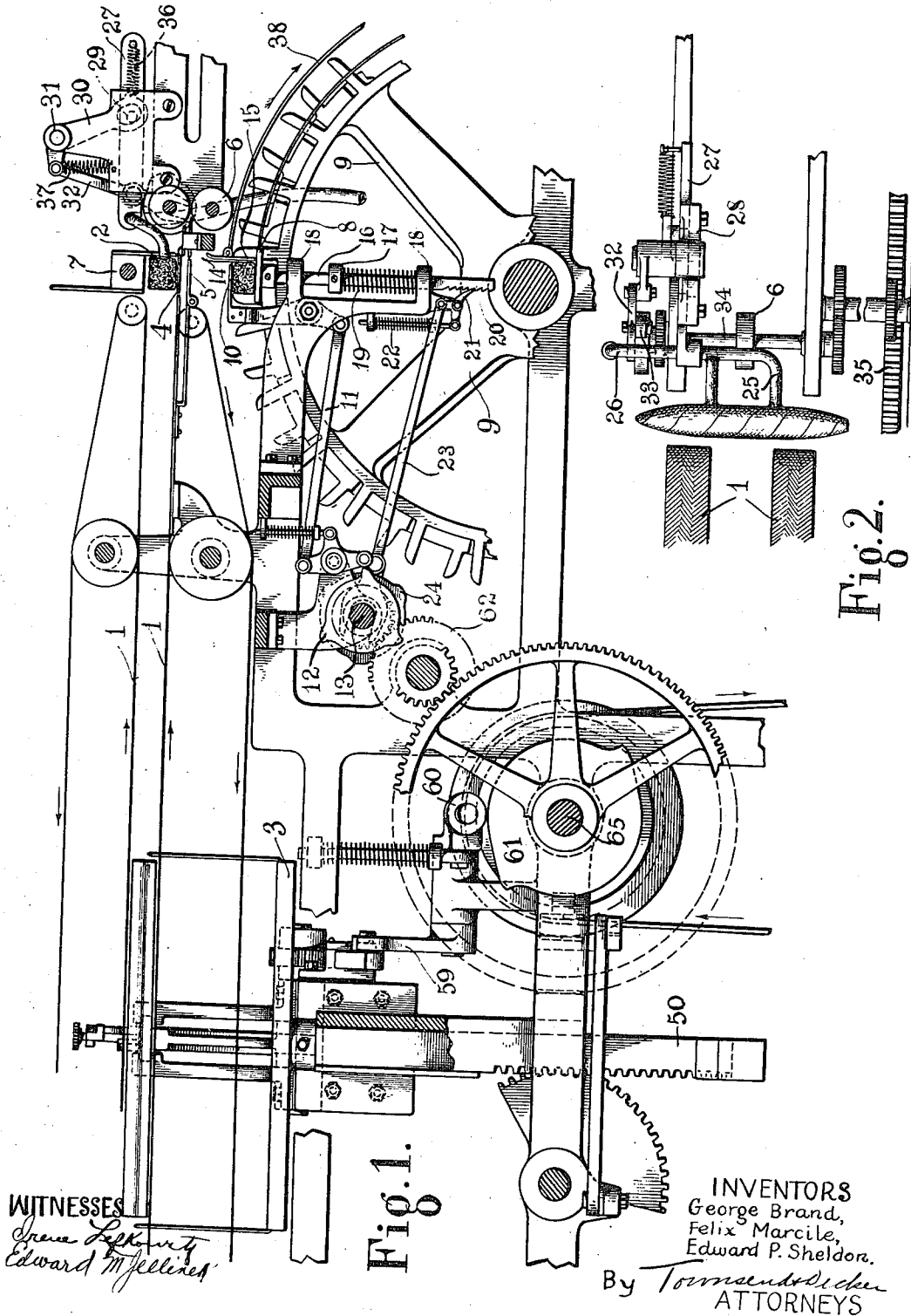
G. BRAND, F. MARCILE & E. P. SHELDON.
LABELING MACHINE.

APPLICATION FILED APR. 30, 1909.

Patented Nov. 8, 1910.

3 SHEETS—SHEET 1.

974,856.



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Fig. 1.

Fig. 2.

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3 SHEETS-SHEET 2.

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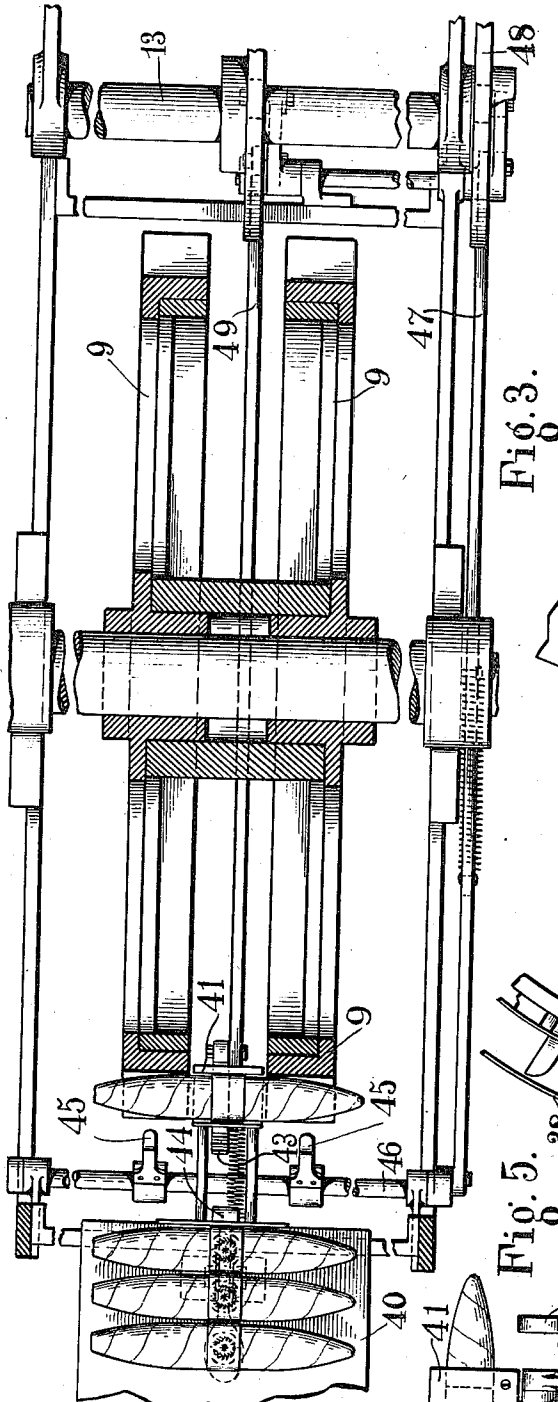


Fig. 3.

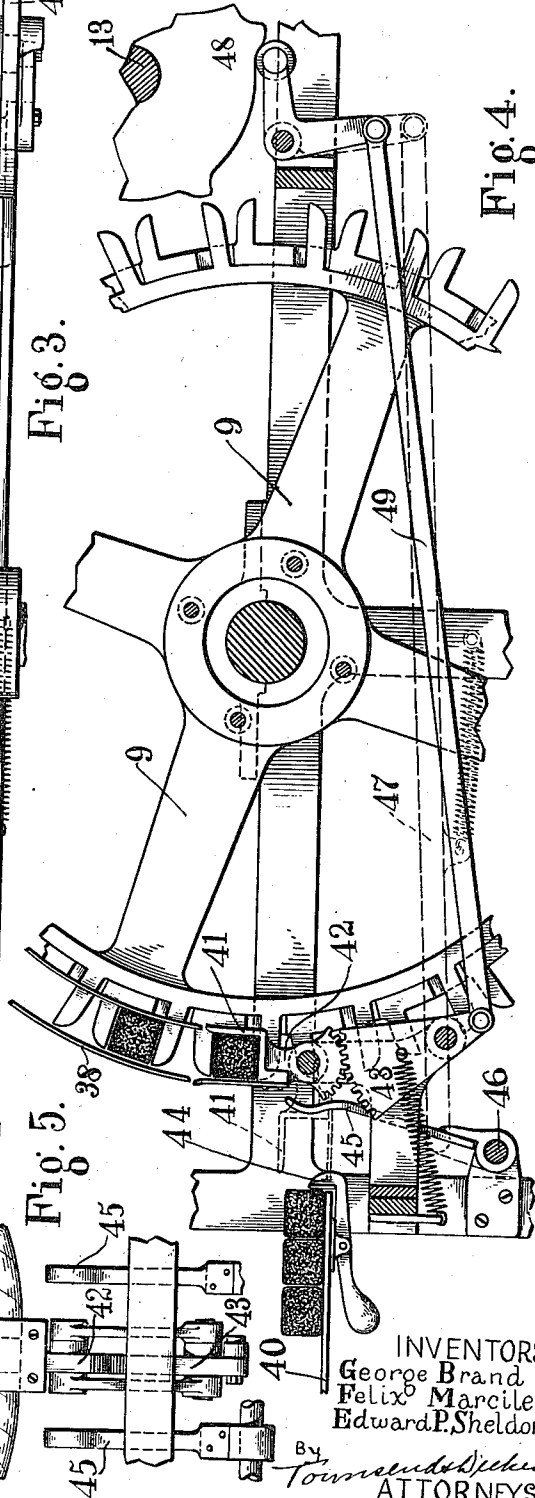


Fig. 4.

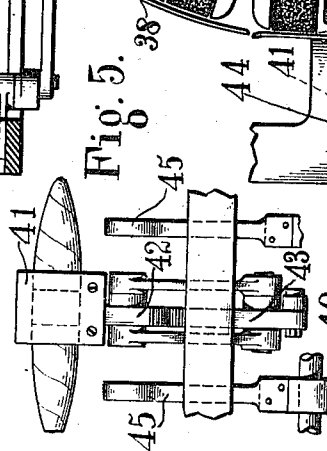


Fig. 5.

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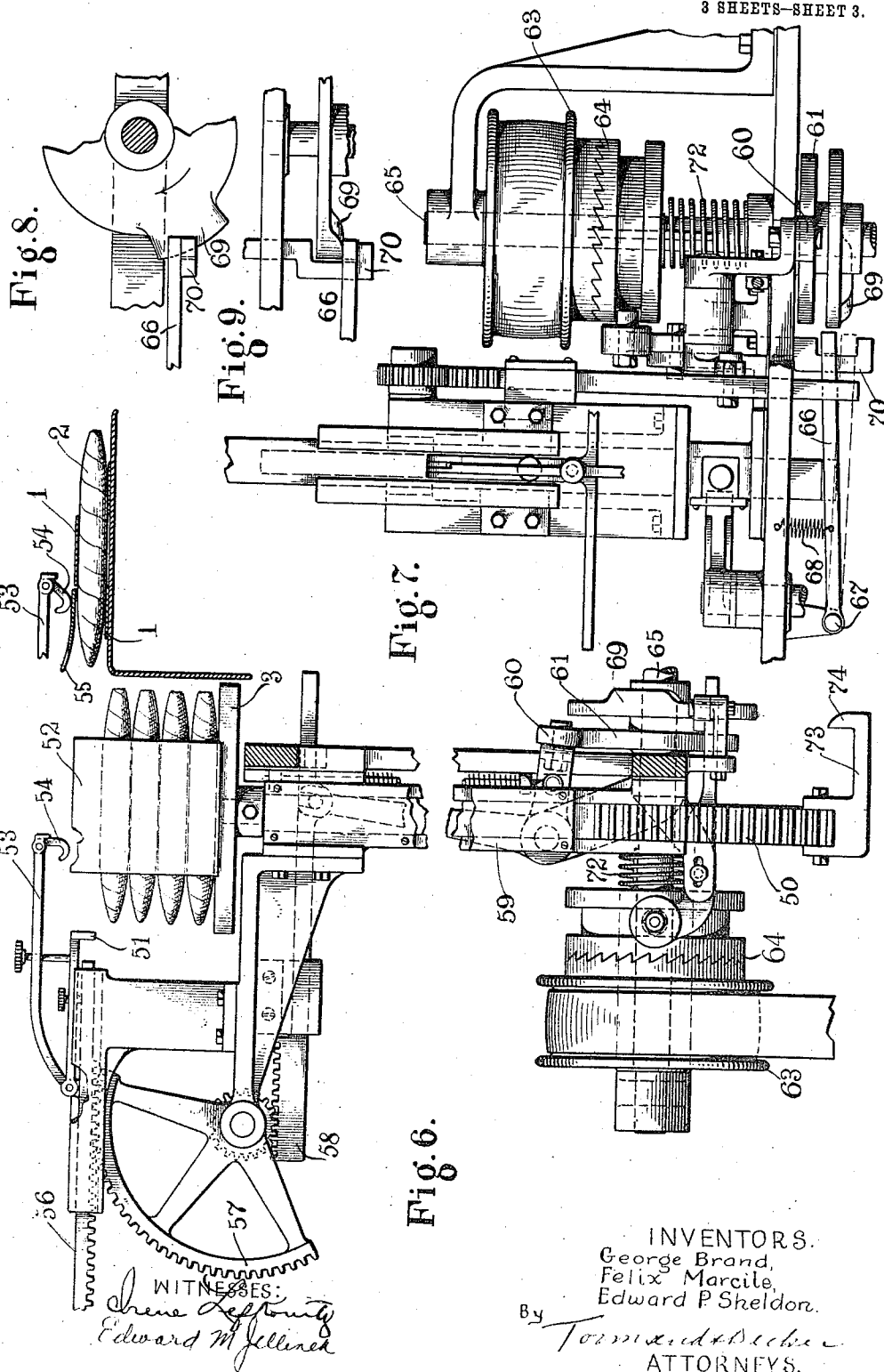
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3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

GEORGE BRAND, FELIX MARCILE, AND EDWARD P. SHELDON, OF BROOKLYN,
NEW YORK.

LABELING-MACHINE.

974,856.

Specification of Letters Patent.

Patented Nov. 8, 1910.

Application filed April 30, 1909. Serial No. 493,098.

To all whom it may concern:

Be it known that we, GEORGE BRAND, FELIX MARCILE, and EDWARD P. SHELDON, citizens of the United States, and residents of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Labeling-Machines, of which the following is a specification.

Our invention relates to apparatus for affixing labels to cigars or other articles or objects, and has to do more particularly with the mechanisms of such an apparatus aside from those employed for feeding the labels to position.

The invention relates more particularly to improved means acting on the cigar or other article to move it or withdraw it from a conveyer and bringing it accurately into labeling position without damage to the cigar and by means which shall operate uniformly irrespective of differences in the size of the cigars, or other articles.

This part of our invention consists, generally speaking, of a pneumatic finger or fingers acting by exhaust and adapted to take hold of the cigar and remove it from the conveyer to labeling position where it will be immediately beneath the plunger or other device which forces it down upon the label previously brought to position beneath it.

Another part of our invention consists of a yielding support plate which receives the article when the plunger is forced down and supports it in position in a pocket wheel by which it is carried away to the delivery end of the machine after the folding or pressing of the gummed label upon the article.

The object of this part of our invention is to compensate for differences in the thickness of the articles to be labeled.

Our invention relates further to improved means for transferring the articles in layers from a platform to the conveyer by which they are fed one at a time to labeling position.

Our invention also relates to means for automatically stopping the machine in case the attendant should fail to promptly supply a fresh stack of articles upon the platform after the automatic transfer of the last layer of the stack to the conveyer.

Our invention relates further to improved

means for securing a delivery of the labeled articles to the delivery platform in a position the reverse of that in which they pass into the machine.

The invention is particularly useful for cigar banding machines of the kind described in the prior application of E. P. Sheldon filed June 6, 1908, Serial No. 437,041 but is not limited to use for banding or affixing labels to cigars.

The nature of our improvements as applied to cigar banding machines may be more readily understood by reference to the aforesaid application of E. P. Sheldon.

The invention claimed will be more particularly hereinafter set forth, and then specified in the claims hereto annexed.

In the accompanying drawing Figure 1 is a side elevation of the upper portion of a label affixing machine embodying our invention. Fig. 2 is a plan of the device for taking the cigar from the conveyer and bringing it to labeling position. Fig. 3 is a plan of the device for transferring the cigar from the pocket wheel after it has been labeled to the delivery platform. Fig. 4 is a partial side elevation of the pocket wheel and transfer device. Fig. 5 is a rear elevation of the transfer device acting in conjunction with said pocket wheel. Fig. 6 is an end elevation of the portion of the mechanism comprising the platform for holding a stack of the cigars, or other articles, together with the mechanism for pushing the layers of said stack into the conveyer and for automatically stopping the apparatus when there are no more layers to be transferred. Fig. 7 is a plan of the automatic stopping mechanism. Fig. 8 is a partial side view of a detail of said mechanism and Fig. 9 is a plan of the same.

The conveyer for feeding the articles one at a time to labeling position may consist of feed bands 1, or other suitable device which receive the cigars 2, or other articles when pushed edgewise into position between said bands from a stack or layer supported on a platform 3 as shown in Fig. 6. Said conveyer, whether of the construction indicated or of any other suitable form, carries the articles along to the labeling position in which one of them is represented in Fig. 1. In this position the article is sustained upon a collapsible platform or support 4 and immediately over a collapsible plate 5 upon

which the band or label fed thereto through roll 6 or other means is temporarily supported.

A plunger 7 intermittently operated by
5 suitable mechanism as described in the
aforesaid application for patent, or in any
other suitable way, descends upon the arti-
cle and carries it down to position upon a
10 plate 8 where it lies in the pocket of an in-
termittently operated pocket wheel 9 as de-
scribed also in said application. The label
previously gummed or moistened is folded
down upon the article by the intermittently
15 operated swinging folder 10 actuated by a
link connection 11 to a rocker arm which is
actuated by cam wheel 12 or master shaft
13. An opposite or upwardly projecting
free end of the label as indicated at 14 is
20 folded down as the intermittently operated
pocket wheel moves forward carrying the
cigar past the swinging plate or flap 15.
These particular mechanisms and devices
acting in the article and bringing it to label
fastening position with the label in place
25 and fastening the label do not constitute our
present invention.

In the aforesaid Sheldon application,
however, the platform 8 is fixed, and as the
plunger 7 has a fixed range of motion there
30 is no compensation for cigars or articles of
different thickness, so that cigars of small
size are not brought accurately to position
by the plunger while the larger sizes are
liable to be crushed. We overcome this de-
35 fect by so mounting the plate 8 that it may
yield when engaged by the article and by
providing means for automatically restoring
it to position to receive another article and
sustaining it in that position. We also pro-
40 vide means for temporarily holding it down
in the position shown until the cigar or
other article has been carried away by the
pocket wheel. To these ends the following
construction may be employed. 16 is a rod
45 carrying a collar 17 and working in guides
18. 19 indicates a spring which lifts the rod
and plate 8 until stopped by engagement of
the collar 17 with one of the guides. On the
50 lower end of the rod is a ratchet 20 with
which a dog or pawl normally tends to en-
gage being actuated for that purpose by a
suitable spring 22. Said pawl has a heel
to which is connected a link 23 and the lat-
55 ter is operated by means of a cam 24 on the
shaft 13, or by other suitable mechanism,
timed to release the rod 16 after the article
has been carried away from the plate 8 by
the pocket wheel 9. Upon such release the
60 spring 19 raises the plate 8 to position for
receiving the article under the action of the
plunger 7 which as it moves down depresses
the plate 8 to its label fastening position.
After the down movement is completed the
plate is held by the dog or ratchet pawl 21,
65 the teeth of the ratchet being graduated to

such degree of fineness as will take care of
the usual small differences in the thickness
of the articles.

To transfer the articles from the conveyer
to the labeling position shown at 2 we em-
70 ploy one or more reciprocating pneumatic
finger 25 which operate as suction devices
to take hold of the cigar at its side and with-
draw it from position in the conveyer to la-
beling position. These fingers form termi-
75 nals of a tube 26 which is carried by a re-
ciprocating support 27, whereby said fin-
gers may be moved toward the conveyer to
engage the cigar or other article and then
backward to position shown. Tube 26 is 80
flexible and is connected to any suitable ap-
plications for producing an exhaust or vacu-
um therein. The support 27 is preferably
constructed as a slide which works in a guide
plate 28 and has a pin 29 projecting later-
85 ally into an enlarged opening in a swing-
ing arm 30. The arm 30 projects from a
rock shaft 31 to which movement is given
by a link 32 carrying roller 33 which rides
on a cam on a shaft 34. Said shaft 34 may 90
be a shaft of the label feed train receiving
motion from a gear wheel 35 through suit-
able intermediate gear, said wheel 35 being
driven from any portion of the machine as
described in the Sheldon application. A 95
spring 36 connected at one end to slide 27
and at the other to the guide plate tends to
move the slide to carry the pneumatic fin-
gers over to engagement with the article
when in position at the end of the conveyer. 100
The spring is normally restrained by en-
gagement of the pin 29 with one side of the
opening in the arm 30, but when the latter
is actuated by the cam and moved toward
105 the left the spring causes the slide to follow
up and to bring the fingers to position to
take hold of the article. The lost motion of
the arm 30 with relation to the pin which is
provided by the enlargement of the slot or
opening in the arm laterally prevents any 110
damage to the article which would ensue
from a rigid connection of the arm and slide,
since, after the fingers are engaged the arm
30 may move to its full extent as produced
by the cam without operating on the slide. 115

As soon as the cam permits, a spring 37
connected to an arm of rock shaft 31 moves
arm 30 backward and the slide is positively
withdrawn by engagement of the arm and
pin 29 thus carrying the fingers back to the
120 fixed, or invariable position shown which is
determined by the positive action of the cam
in limiting the movement of the parts un-
der the influence of the spring 37. In the
forward or reverse movement of the slide 27 125
it is obvious that it will move under the in-
fluence of spring 36 until it meets the cigar,
or other article, in the conveyer, when it
will stop and thereafter be retracted by the
action of arm 30. Obviously the spring 37 130

should be somewhat superior in strength to spring 36. It is further obvious that by the action of the device the liability to injury of the cigar is avoided and that at the same time by providing sufficient lost motion, cigars or articles varying in thickness will be alike taken from the conveyer and brought to invariable position with relation to the label applying devices. The use of the pneumatic device or finger acting by suction to pull the cigar to position further insures absence of injury in the transfer operation.

The pocket wheel 9 intermittently operated as described in the Sheldon application, or in any other desired way, carries the articles partially around beneath the shield or holder 38. In the Sheldon apparatus they are carried around through nearly a half circumference and then carried away beneath the machine onto a conveyer, or to a delivery platform. By this movement they are inverted from the position in which they are fed into the machine and are thereby restored to the position which they occupied in the box; this being due to the fact that the box is inverted to remove the cigars in an inverted stack for transfer by layers to the machine. In our improved machine we transfer the article at the end of the machine instead of beneath, to the delivery platform 40 shown in Figs. 3 and 4, by means of a swinging basket or transfer device which turns through an angle of 90 degrees or thereabouts. The article having been already through an arc of 90 degrees, more or less, by rotation of the pocket wheel, is now completely inverted so that the inversion produced by slipping the cigars in a pile from the box as described in the Sheldon application shall be corrected and that part of the cigar which was uppermost in the box will be uppermost on the delivery platform 40. This swinging basket, or transfer device, as shown at 41 is mounted upon an arm 42 carrying a segmental rack gearing with another segmental rack 43. The arm 42 rocks on a suitable cross shaft and normally sustains the basket or holder 41 in position between the two members of the pocket wheel and where it will receive the cigar or other article in the intermittent movement of said pocket wheel and as clearly shown in Fig. 4. After receiving the same the said arm is swung to carry the holder or basket to the position indicated in the dotted lines Fig. 4 and where the cigar may be pushed from the pocket to the platform 40.

A pivoted plate 44 stands normally in position to prevent the cigars from moving backward off the platform and is swung down away from position where it would obstruct the transfer, by engagement of the side of the holder or basket 41 with a lip of

the plate 44. The actual transfer of the cigar from the holder 41 is produced by a pair of fingers 45 mounted on rock shaft 46. These fingers are intermittently swung at the proper times by means of the link 47 operated by cam 48 on the master shaft or otherwise. Motion of the basket or holder 41 is produced in a similar way through a link 49, also actuated by a cam on the master shaft or otherwise, the motions being so timed that the transfer fingers will be actuated in alternation with the movement of the basket, tray or holder 41. This combined operation of the rotary pocket wheel and swinging transfer basket obviously depends simply upon turning the article partially on its axis by carrying it around through part of the circumference of a circle and completing the half turn by swinging it in an arc to the required extent by the transfer basket or tray. It is obvious, therefore, that the extent of movement in the pocket wheel before the transfer takes place may be more or less than 90 degrees, provided that the complementary swinging movement of the transfer basket or tray is sufficient to turn the article a proper amount to produce inversion.

Referring now more particularly to Figs. 6, 7, 8 and 9 taken in conjunction with Fig. 1, the platform 3 which holds a stack of the cigars is shown as carried by the rack rod 50 which is raised progressively with the operation of the machine as described in the Sheldon application to bring the horizontal layers of the stack of cigars successively into position for transfer to the conveyer as a layer, by an operating mechanism such as described in that application, or in any other suitable manner. The pusher for producing the transfer is indicated at 51 and the tray which holds the stack of cigars in a position inverted from that which they occupy in their box is indicated at 52.

To insure the presentation of the pusher 51 properly to the end of the cigar, even though the vertical position of that end may vary as would be the case with cigars of varying size assembled in a stack, we provide an arm 53 connected to the arm carrying the pusher 51, said latter arm being adapted to turn in a vertical plane to permit the pusher to rise and fall. The finger 54 on the arm 53 is adapted to rest upon the top of the cigar and thereby determine the position of the pusher with relation to the end thereof. As the pusher moves forward the swinging finger 54 yields as it passes over the guide 55 which guides the end of the cigar into place in the conveyer.

When the operation of the machine has progressed to a point where a new layer of cigars can be transferred to the conveyer the pusher 51 is automatically projected by the mechanism of the machine which for this

purpose may be connected up to the pusher in the following manner. The pusher itself is secured to a suitable rack 56 properly guided on the frame and gearing with a wheel 57 to which rotation is imparted from another rack 58. The latter receives its motion from an elbow lever 59, one arm of which carries roll 60 bearing on cam wheel 61. Said wheel 61 is upon the shaft of the machine geared up through wheel 62 with the master shaft 13 and may be the main drive shaft which receives power directly from the pulley 63 adapted to run free on said shaft or to be coupled thereto by means of the clutch 64.

The operation of the cam is timed to produce the intermittent action of the pusher in coordination with the operation of the machine in conveying the cigars to the labeling position, and so that the layers will follow one another in immediate succession, being transferred from the platform 3 to the conveyer as soon as the last one of a layer has passed along sufficiently to permit the first cigar of the next layer to be transferred. We further provide means for automatically stopping the operation of the machine as soon as that operation reaches the stage where the bottommost layer of the stack has been transferred to the conveyer and has been moved along thereby so that a fresh layer may be transferred and in the meantime, the table 3 shall not have been provided with a new stack. To accomplish this we connect with the table a suitable controlling mechanism which will automatically disconnect the drive shaft 65 from the drive power in any suitable way after the table has been allowed to remain in its uppermost position a predetermined length of time. This we accomplish preferably by simply operating the clutch 64 by mechanism connected to the machine and brought into play by an attachment to the table 3. For this purpose we use preferably a coupling bar 66 mounted on a pivotal support at 67 and normally having an end turned inward toward the frame of the machine by the action of a spring 68 so that it will be out of the path of a cam 69; or wiper, which, if the arm be turned to position shown in dotted lines will wipe the end of said arm and carry it against the heel of a sliding bar 70, thus coupling the cam and bar and force the latter endwise so as to disconnect the clutch 64 through the action of a pin carried by the bar 70 and engaging in the circumferential groove formed in the clutch member 64 that is keyed or has a spline or feather connection with shaft 65. A spring 72 normally tends to keep the clutch engaged until it is positively disengaged by the action of the cam 60 made operative through movement of the arm 66. Movement of the latter is produced by the engagement therewith of an arm 73

having a toe provided with an incline at 74 and which is adapted to engage the side of the arm 66 when the table 3 and bar 50 carrying arm 73 have been raised to their extreme upward position. The disconnecting action, however, does not ensue as soon as the table has reached such position, but is delayed, owing to the position of the cam 69, until the last layer of cigars has been transferred and has been moved along by the conveyer sufficiently to require a fresh layer in order that the continuous operation of affixing the labels shall not be interrupted. This delayed action of the cam gives the operator time to place a new stack of cigars on the platform 3 and to depress the same to position to bring the topmost layer opposite the pusher in readiness for the operation of said pusher upon the topmost layer. When the platform is depressed the toe 74 releases the connecting arm 66 and allows it to swing back out of the way of the cam 69 by the time the latter has moved around to position for engaging the end of the arm 66. Hence the power will remain connected.

What we claim as our invention is:

1. In a labeling machine, the combination of a yielding support for the article, a plunger engaging the article and forcing it against the support to depress the same, means independent of the plunger for holding the support temporarily depressed and label fastening devices for fastening the label around the article while resting upon the support in its depressed position.
2. In a labeling machine, the combination of a yielding support plate for the article in its label fastening position, a conveyer having pockets adapted to receive the article in its label fastening position and acting to carry the article away from the support plate after the label is fastened, a plunger for forcing the support plate down to position where the article will lie in the pocket in said conveyer and means independent of the plunger for holding the support plate temporarily depressed.
3. In a labeling machine the combination of a spring actuated support plate for the article to be labeled, a catch for holding the plate in the label fastening position and means for intermittently releasing the catch after each fastening operation.
4. In a labeling machine, the combination of a spring-actuated support for the article in its label fastening position, mechanism for holding the same down in the position to which it may be depressed, means for removing the article from said support and co-operating mechanism for releasing the support to allow it to return to normal position under the action of its spring upon the removal of the article therefrom.
5. In a labeling machine the combination of label applying mechanism, a conveyer

for feeding the article toward labeling position and a pneumatic transfer device acting by suction on the article to transfer it from the conveyer to accurate position with relation to the label applying devices.

6. In a labeling machine the combination of label applying mechanism, a conveyer for carrying the article to the label applying mechanism and a reciprocating pneumatic finger adapted to act by suction and to transfer the article from the conveyer to position for the action of said mechanism.

7. In a labeling machine the combination of label applying mechanism, a conveyer, a reciprocating transfer device for transferring the article from the conveyer to position in the label applying mechanism and actuating mechanism having lost motion in the movement of the transfer device toward the article.

8. In a labeling machine the combination of a conveyer, label applying mechanism, a reciprocating spring actuated transfer device for transferring the article from the conveyer to position in the label applying mechanism, and actuating mechanism for the transfer device having lost motion.

9. In a labeling machine the combination of a delivery table, a rotary pocket wheel for the article and a swinging pocket swinging in a plane transverse to the axis of rotation of said wheel for receiving the article at a predetermined stage in the rotation of the wheel and swinging the article through an arc of a circle to an extent sufficient to complete its inversion in the delivery table.

10. In a labeling machine, the combination of a delivery table, a rotary pocket wheel, a swinging pocket swinging in the plane in which the pocket wheel turns, and a transfer device for ejecting the article from the pocket on to the delivery table.

11. In a labeling machine the combination of a platform, a conveyer, a pusher for transferring the article from the platform to the conveyer and an arm connected to the pusher and adapted to rest upon the article to determine the position of the pusher with relation to the article.

12. In a labeling machine the combination of a conveyer, means for supporting the article to be labeled, a pusher for transferring the article to the conveyer and a supporting arm for the pusher having a swinging finger adapted to rest upon the article.

13. In a labeling machine the combination of a supporting platform adapted to carry a stack of the articles to be labeled, a conveyer, a pusher for transferring the articles by layers to the conveyer and actuating mechanism for said pusher cooperating with the conveyer and acting when a previously transferred layer has been progressed to the proper point as and for the purpose described.

14. The combination in a labeling machine of a table adapted to hold a stack of the articles to be labeled, a conveyer, means for lifting the table automatically to position for transfer of the layers successively to the conveyer, mechanism for automatically throwing off the driving power and devices controlled by the table and cooperating therewith for bringing said mechanism automatically into action when the operation of the machine has progressed to a predetermined point as and for the purpose described.

15. In a labeling machine the combination of a platform adapted to support a stack of the articles to be labeled, means for lifting said platform, cut-off mechanism for cutting off the driving power of the machine, a cam connected to the mechanism of the machine, and means carried by the platform for throwing the cut-off mechanism into operative relation to the cam when the platform is in its uppermost position as and for the purpose described.

Signed at New York in the county of New York and State of New York this 29th day of April A. D. 1909.

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