

April 16, 1935.

C. ARELT ET AL

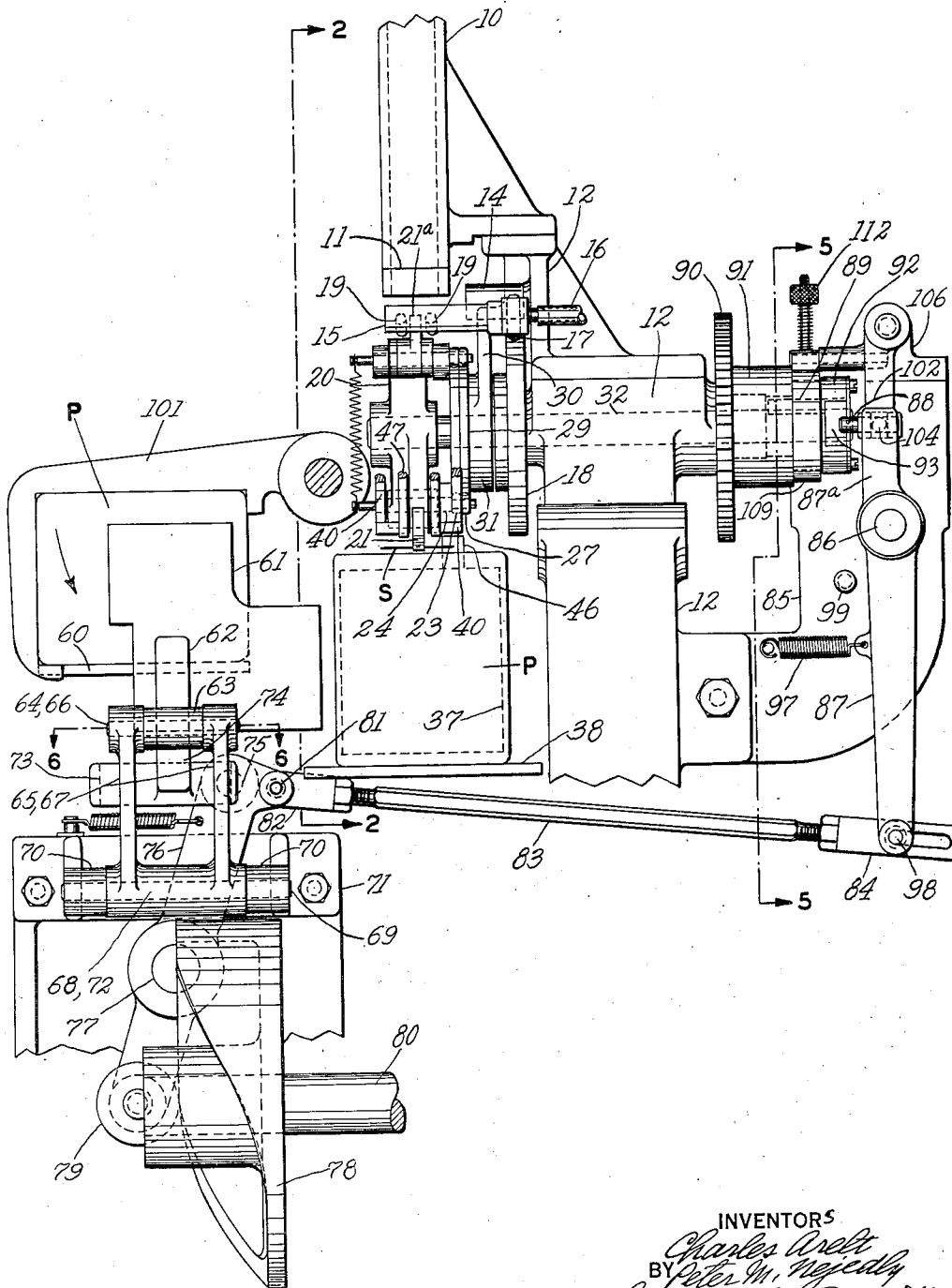
1,998,067

STAMPER FOR CIGARETTE PACKAGING MACHINES

Filed Oct. 2, 1933

4 Sheets-Sheet 1

FIG. 1



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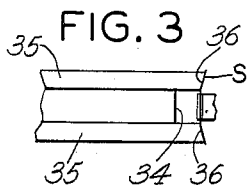
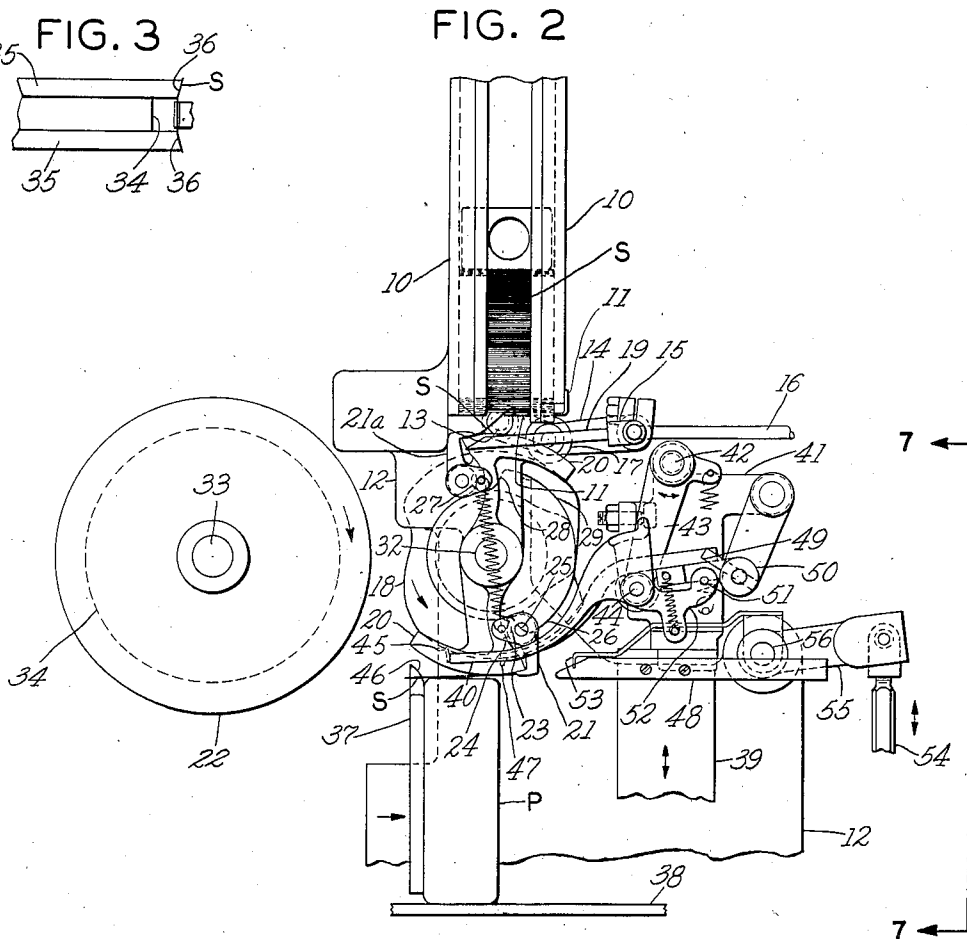
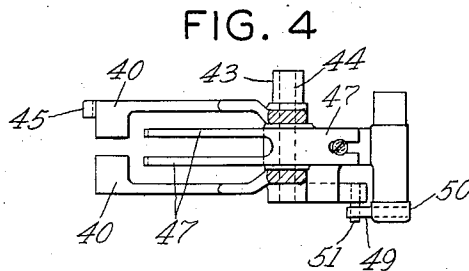
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STAMPER FOR CIGARETTE PACKAGING MACHINES

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4 Sheets-Sheet 2



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4 Sheets-Sheet 3

FIG. 5

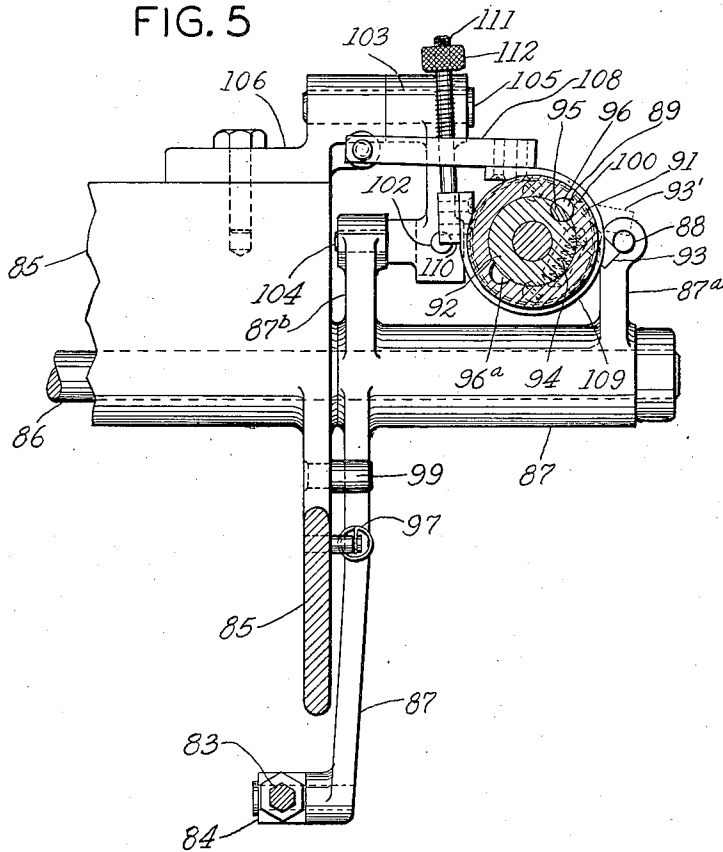
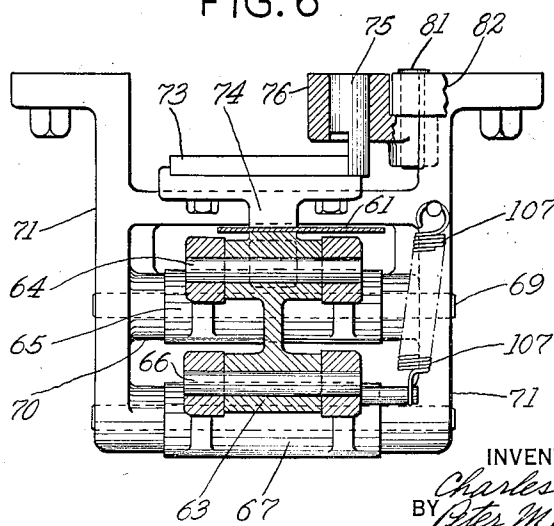


FIG. 6



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STAMPER FOR CIGARETTE PACKAGING MACHINES

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4 Sheets-Sheet 4

FIG. 7

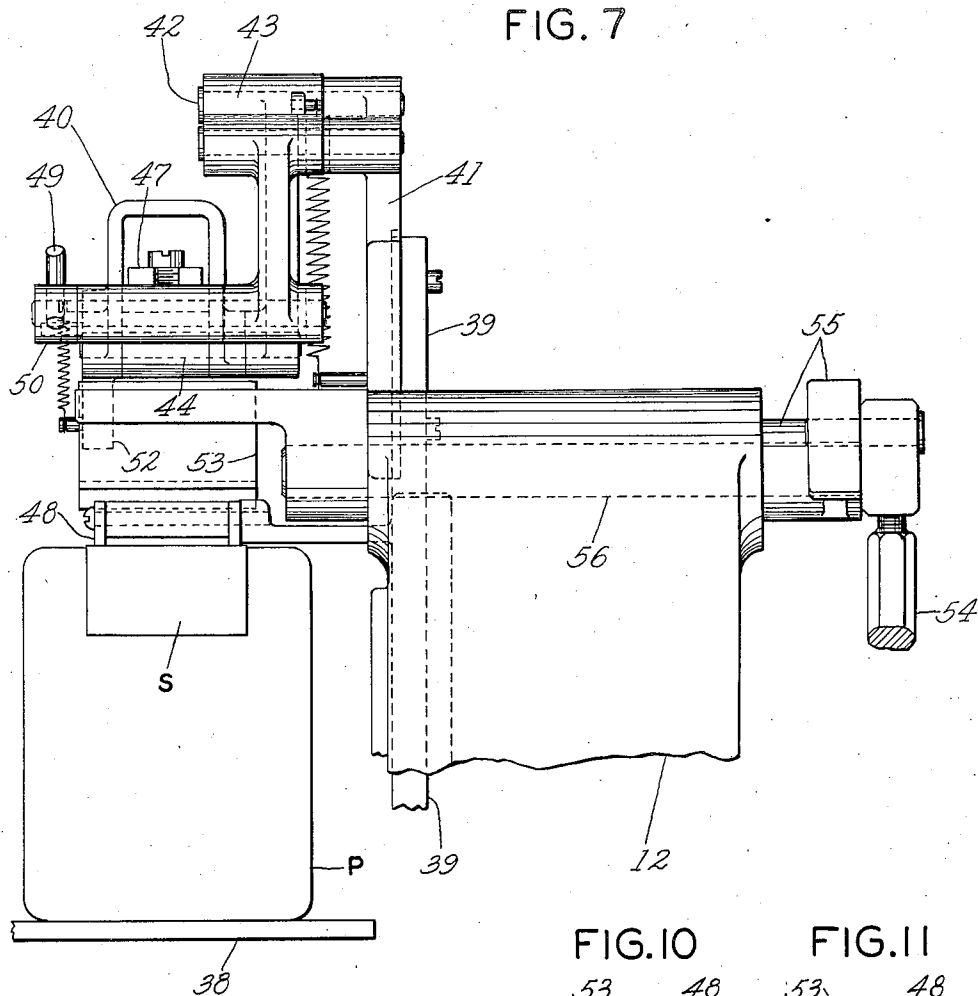


FIG. 8

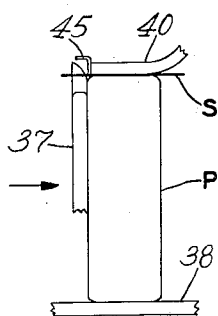


FIG. 9

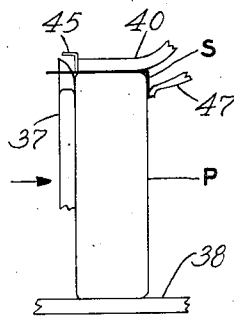


FIG.10

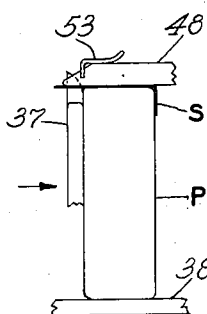
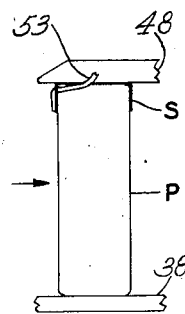


FIG. 11



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UNITED STATES PATENT OFFICE

1,998,067

STAMPER FOR CIGARETTE PACKAGING
MACHINES

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Application October 2, 1933, Serial No. 691,852

8 Claims. (Cl. 216—54)

This invention relates to an improved pack-
age stamper for attaching revenue stamps or
labels to packages, its main object being the
production of a package stamper having a novel
5 construction and mode of operation, and which
is free from the disadvantages inherent in prior
package stampers.

In the improved device, the stamps or labels
are stacked in a magazine from which they are
successively withdrawn by a suction take-off
which deposits each stamp upon the circumfer-
ence of a stamp transfer wheel, the transfer
10 wheel successively bringing the stamps into jux-
taposition with the packages being propelled
over a runway. The stamp, which is held on the
transfer wheel by a clamp while being carried
to the package, receives a coat of paste from the
15 spaced flanges of a rotating paste wheel by be-
ing drawn therebetween. When the stamp on
the transfer wheel is opposite the top of the
package, it is then pressed onto the top of the
package by a set of fingers, bearing upon the top
of the package. Immediately thereafter the
20 clamp on the stamp wheel is opened and the re-
leased stamp end is folded down and sealed to
the side of the package, the other end of the
stamp remaining loose at this stage. The pack-
age is then propelled along the runway and en-
ters beneath a set of top tension plates, the pack-
25 age resting at this point, while the propelling
member retreats to its former position to deliver
the next package. While the package is at rest
waiting to be pushed forward by the next pack-
age following, a set of fingers descends upon it
30 and seals the remaining end of the stamp, so
that the stamp is attached to three surfaces of
the package.

Accordingly, the present device is free from
certain disadvantages common to prior construc-
35 tions as will be hereinafter noted. With this
and other objects not specifically mentioned in
view, the invention consists in certain construc-
tions and combinations hereinafter fully de-
scribed and then specifically set forth in the
40 claims hereunto appended.

In the accompanying drawings, which form a
part of this specification, and in which like char-
acters of reference indicate the same or like parts:

Fig. 1 is an end view of the applying device
provided with a no-package no-stamp mecha-
50 nism;

Fig. 2 is a front elevation of the applying de-
vice from line 2—2 of Fig. 1;

55 Fig. 3 is a fragmentary top view of the paste

wheel showing the stamp at its paste receiving
position;

Fig. 4 is a detail top view of the pressure fingers
and the stamp folding fingers;

Fig. 5 is a sectional view of the stamp wheel
5 clutch control from line 5—5 of Fig. 1;

Fig. 6 is a sectional view of the clutch operating
mechanism from line 6—6 of Fig. 1;

Fig. 7 is an end view of the stamp applying
device from line 7—7 of Fig. 2, the magazine and
10 paste wheel being omitted; and

Figs. 8 to 11 show the successive steps of the
stamp being attached to the package.

In carrying the invention into effect there is
provided a stamp transfer wheel, means for ro-
tating the wheel, and package-controlled mecha-
15 nism for incapacitating and rehabilitating said
means. In the best constructions contemplated
said means includes a shaft on which the wheel
is mounted, and a clutch including a driving
20 member loosely mounted on the shaft, a driven
member fixed to said shaft, and a device con-
trolled by said mechanism for connecting said
clutch members to rotate the shaft and wheel.
In the best constructions contemplated, also, said
25 mechanism operates to incapacitate said means
at the end of each half turn, and the wheel is
provided with clamps for gripping the stamps
and releasing them in position to be applied to a
package. With the preferred embodiment of
30 the invention there is provided a magazine con-
taining a stack of stamps, suction pipes adapted
to withdraw a stamp from the magazine and lay
it on the stamp wheel whereon it is gripped by
one of its clamps; and there is also provided a
35 paste wheel having spaced inwardly beveled
flanges adapted to arch and apply paste to the
edges of a stamp drawn therebetween by the
paste wheel. These various means and parts
may be widely varied in construction within the
40 scope of the claims for the particular device se-
lected to illustrate the invention is but one of
many possible concrete embodiments of the same.
The invention therefore is not to be restricted to
the specific construction shown and described.

Referring to the drawings, the stamps or labels
S are stacked in a magazine 10, which has a
plate 11 partially closing its bottom and pre-
venting the stamps from falling out. The mag-
50 azine 10 is carried by a bracket 12, which also
supports a stud 13 on which is pivotally mount-
ed an arm 14. The arm 14 carries an air port
15, connected by a hose 16 with a pipe (not
shown) which connects to a suction pump of any
55 well known construction. The arm 14 also car-

ries a stud on which is mounted a cam roller 17 engaging with a revolving cam 13 fixed on the transfer wheel shaft 32, thereby imparting to the ends of the suction pipes 19, attached to the air port 15 and communicating with the interior thereof, an up and down motion.

The upward motion of the suction pipes 19 brings them into contact with the bottom stamp in the magazine 10. When there is suction in the hose 16, which is the case whenever the suction pipes 19 are in contact with the stamp stack, they will withdraw one end of the bottom stamp from the stack and pull it down to the periphery of the transfer wheel 20, which is provided with two cam-actuated clamps 21 and 21a pivotally mounted thereon. The end of the stamp so deposited on the wheel 20 by the suction pipes 19 is gripped by one of the clamps 21 and 21a, whereby the stamp is completely withdrawn from the stack as the wheel 20 turns through half of a revolution, during which the stamp receives a coating of paste by contact with a paste wheel 22. At the end of the half revolution, when the trailing end of the stamp rests on the top of a package "P", a cam roller 23 mounted on an arm 24 secured to the clamp 21, encounters a raised portion 25 on a stationary cam 26, thereby swinging the clamp 21 open and releasing the stamp. At the same time, a diametrically opposite cam roller 27, connected in a similar manner to clamp 21a, engages a depressed portion 28 of the stationary cam 26, thus closing the clamp 21a upon the stamp just delivered by the suction pipes 19. The cam rollers 23 and 27 are held in engagement with cams 26 and 29 by a tension spring connecting the arm 24 of clamp 21 and the corresponding arm of clamp 21a; the cams 26 and 29 are adjustably mounted on an arm 30 attached to the bracket 12, the hub 31 of arm 30 and the hub of the bracket 12 serving as bearings for the transfer wheel shaft 32. The latter is intermittently rotated step by step as hereinafter described.

The paste wheel 22 mounted on a shaft 33 is suitably supported and driven from the main drive of the machine. The paste wheel 34 has spaced flanges 35, the space between the flanges registering with the periphery of the transfer wheel 20 which fits into said space, thus preventing contact between the two wheels and keeping paste from touching the periphery of the transfer wheel when no stamp is carried by it. The peripheries of the flanges 35 of the paste wheel have inwardly beveled surfaces 36, which arch the stamp as it is drawn between the flanges of the paste wheel by the transfer wheel and apply paste to the edges of the stamp S, see Fig. 3. With this arrangement of the paste wheel and transfer wheel all difficulties caused by drawing the stamps, which may be of varying thickness, through a constant clearance between the paste wheel and transfer wheel, as in the prior constructions, are avoided.

A pusher 37 which propels the packages P along the runway 38, the pusher being operated by suitable means such as shown in the prior patent to Nejedly, No. 1,682,406, granted Aug. 28, 1928, delivers a package to a point below the stamp transfer wheel. Just before the stamp S is released by the clamp on the transfer wheel, and while it rests on the top of the package, a cam-operated slide 39 descends, thus bringing a set of pressure fingers 40 in contact with the stamp on the top of the package and sealing the stamp thereon (see Fig. 8). The slide is re-

ciprocally mounted in the bracket 12, and in descending carries along a bracket 41, fixed to the slide and supporting a stud 42 on which is fulcrumed a bell crank lever in one arm 43 of which is loosely mounted a stud 44 to which are secured the fingers 40, a tension spring being connected to the other arm of the bell crank lever and anchored to the bracket 41, thus urging the arm 43 against a stop screw threaded into a lug of the bracket 41. When the fingers 40 are brought into contact with the stamp on the top of the package during the descent of the slide they slide over the top of the package until the angular piece 45 on one of the fingers 40 engages the nose 46 of the pusher 37. In this manner the fingers 40 are caused to slide over the stamp to smooth it and seal it to the top of the package. A set of folders 47 now descend and press one overhanging end of the stamp down and seal it against the forward side of the package, Fig. 9. The folders 47 are mounted on the stud 44 so that the descent of the slide 39 carries them into position to fold down and seal the overhanging end of the stamp to the side of the package.

The pusher 37 in moving forward, raises the fingers 40 and folders 47 in order that the package may enter beneath the stationary top tension plates 48, the angular piece 45 which is then in contact with the nose 46 of the pusher being raised during the advancing movement of the latter, thereby swinging the fingers 40 and folders 47 upwardly on the stud 44 to permit the package to move under the plates 48. In this position a trip 49 carried by a collar 50 engages a pin 51 attached to an arm 52 due to the movement of arm 43 caused by engagement of the pusher with the angular piece 45, and depresses the arm, the arm 52 being connected to the stud 44 lifts the same, freeing the angular piece 45 from the pusher, thus returning it to its former position.

The pusher 37 advances the package until it has passed a set of cam actuated folding fingers 53, Fig. 10. The pusher then retreats and a cam (not shown) actuates a rod 54 connected to an arm 55, which is attached to a stud 56 loosely mounted in the bracket 12. The motion thus imparted to the stud 56 actuates the fingers 53 which are secured to the stud and thereby caused to descend and seal the other overhanging end of the stamp against the package, Fig. 11, so that the stamp is now attached to three surfaces of the package P.

Referring now particularly to Figs. 1, 5, and 6 of the drawings, the no-package no-stamp mechanism will be described. The packages P issuing from the cigarette packaging machine travel over a runway 60. Arriving at the end of runway 60 the leading package encounters a feeler plate 61 attached to a projecting member 62 of a connecting arm 63. One end of arm 63 is mounted on a stud 64 carried by the upper hubs of arm 65, the other end of arm 63 being connected to a stud 66 carried by the upper hubs of arm 67. The lower hub 68 of arm 65 is mounted on a stud 69, the ends of stud 69 being supported in bearings 70 of a bracket 71. The lower hub 72 of arm 67 is mounted and supported in a like manner.

A lock plate 73 carried by a depending member 74 of the connecting arm 63, engages with a lock pin 75 attached to a cam lever 76, which is pivotally mounted on a shaft 77 actuated by a cam 78 through a cam roller 79. The cam 78 is mounted on a shaft 80 which is suitably driven from the drive of the machine. The upper end of cam 78

lever 76 carries a stud 81 attached to which is a head 82 carrying a connecting rod 83 fastened to a slotted head 84 at its other end.

The bracket 12 carries a bracket 85 supporting a shaft 36 on which is pivotally mounted a bell-crank lever 87. The arm 87a of lever 87 carries a stud 88 engaging with a clutch lock pin 89.

A gear 90 loosely mounted on the stamp transfer wheel shaft 32, meshes with a gear (not shown) suitably driven from the drive of the machine. A clutch driver member 91 fastened to the hub of gear 90, drives through a lock pin 89, a clutch member 92 fixed on shaft 32.

Referring to Fig. 5, the extending arm 93 of lock pin 89, which projects through a slot in the clutch member 92, in the position shown, is locked against the stop stud 88. While in this position a spring 94 bearing against the pin 89 and seated in a bore in member 92 is compressed, so that upon release of the lock pin its semi-cylindrical portion 95, which fits a slot in the clutch driver 91 will be turned to engage in one of the semi-annular slots 96 and 96a provided in the clutch driver 91. The gear 90 and driver 91 are thus free to rotate idly around the shaft 32 as long as the pin 89 is locked against the stop stud 88.

The operation of the device is as follows: The package P on runway 60 advances against the feeler 61, thus moving the arms 65 and 67, and the lock plate 73. When the lock plate has disengaged the lock pin 75, the cam 78 through roller 79 actuates the cam lever 76, and through the connecting rod 83 actuates the bell crank lever 87. A tension spring 97 having one end connected to the lever 87 and the other end anchored to bracket 85 holds a stud 98 carried by the depending end of lever 87, against the forward wall of the slot in head 84. In this manner the lever 87 is caused to swing and stop against a pin 99 in bracket 85, the pin 99 being so positioned that it allows the stop stud 88 to swing away from the arm 93 of lock pin 89. The arm 93 thus freed permits the spring 94 to move it against the upper face 100 of the slot provided in the clutch member 92, thus moving the arm to its dotted position 93' (Fig. 5). In this dotted position a portion of the semi-cylindrical member 95 engages either of the semi-annular slots 96 and 96a thus making a direct drive to the shaft 32 and thereby turning the stamp wheel 20. In the meanwhile the package P in tripping the feeler 61, enters into a pocket of a transfer arm 101 which is suitably actuated by mechanism of conventional construction (not shown). The arm 101 then swings from its horizontal position to a vertical position, bringing the package directly in front of the runway 38. Having arrived at this position, the pusher 37 sweeps the package from the arm onto the runway 38, and continues to push the same under the stamp wheel.

The shaft 32 having rotated a half-revolution, brings the extending arm 93 of the lock pin 89 into engagement with a stop pin 102. The pin 102 is carried by an arm 103 and connected by means of a stud 104 to the upper end 87b of lever 87. The arm 103 is pivotally mounted on a stud 105 supported in a bearing 106 carried by the bracket 85. At the completion of half revolution of shaft 32 the stop pin 102 disengages the direct drive of the clutch thus permitting the gear 90 and clutch member 91 to once again rotate idly around the shaft 32. In the interim the arms 65 and 67 are returned to their original position by a tension spring 107 (Fig. 6), thus locking the device. In case of a lapse in the de-

livery of the packages along runway 60, the feeler 61 retains its original position thus holding the locking device intact, and permitting the cam 78 to rotate idly. In this manner, the clutch 91, 92 is held disengaged until the pusher 37 forwards the next package against the feeler 61. Thereupon the arm 87b of the lever 87 is actuated to disengage the stud 102 from arm 93 of the lock pin 89, thereby permitting the spring 94 to turn the semi-cylindrical portion 95 of the lock pin into one of the slots 96 or 96a of the clutch member 9, to rotate the transfer wheel shaft another half turn, whereupon the stud 88 engages the arm 93, returning the lock pin to its inoperative position and thereby stopping the rotation of the transfer wheel shaft. The same cycle of operations is then repeated as long as packages are advanced by the pusher.

The bearing 106 (Fig. 5) supports a bar 108, which carries a brake band 109 partly surrounding the clutch member 92. The other end of brake band 103 being fastened to a block 110 attached to a spring tensioned rod 111. The rod 111 is guided in a hole provided in bar 108. An adjusting nut 112 on the rod 111 permits a slight drag to be maintained on member 92, thereby preventing the stamp wheel 20 from over-running its destination when the clutch is disengaged.

What is claimed is:

1. In a package stamper, the combination with a stamp transfer wheel, of means for rotating said wheel, and package-controlled mechanism for incapacitating and rehabilitating said means.

2. In a package stamper, the combination with a stamp transfer wheel, of means for rotating said wheel, and package-controlled mechanism for incapacitating and rehabilitating said means, said wheel being provided with a pair of clamps pivoted on diametrically opposite portions thereof, and stationary devices adjacent the wheel for causing each of said clamps successively to grip a stamp and then release it at a position to be applied to a package.

3. In a package stamper, the combination with a stamp transfer wheel, of means for rotating said wheel, and package-controlled mechanism for incapacitating and rehabilitating said means, said means including a shaft on which said wheel is mounted, and a clutch including a driving member loosely mounted on the shaft, a driven member fixed to said shaft, and a device controlled by said mechanism for connecting said clutch members to rotate the shaft.

4. In a package stamper, the combination with a stamp transfer wheel, of means for rotating said wheel, and package-controlled mechanism for incapacitating and rehabilitating said means, said mechanism operating to incapacitate said means at the end of each half turn of said wheel, and including a feeler, a pair of stop studs normally disposed to incapacitate said means at the end of each half turn of the wheel and connected to said feeler to be retracted into inoperative position when said feeler is engaged by a package.

5. In a package stamper, the combination with a magazine adapted to contain a stack of stamps, of a stamp transfer wheel, a shaft supporting said wheel, a pair of pivoted suction pipes disposed on either side of said wheel, a cam fixed on said shaft and adapted to actuate said pipes to cause them to withdraw a stamp from said magazine and lay it on the periphery of said wheel, a clamp pivoted on said wheel, and a stationary cam arranged to actuate said clamp to grip the stamp laid on the wheel by said pipes.

6. In a package stamper, the combination with
a magazine adapted to contain a stack of stamps,
of a rotatable stamp transfer wheel, a pair of
spaced pivoted suction pipes disposed on either
5 side of said transfer wheel and adapted to with-
draw one end of a stamp from said magazine and
lay it on the periphery of said transfer wheel,
diametrically opposite clamps pivoted on said
wheel and each adapted successively to grip the
10 end of a stamp deposited on said transfer wheel
by said pipes, whereby the gripped stamp will be
completely withdrawn from said magazine during
the rotation of said transfer wheel, a paste wheel
having a pair of spaced inwardly beveled flanges
15 arranged to arch and apply paste to the longi-
tudinal edges of stamps drawn between said
flanges by said transfer wheel, the periphery of
said transfer wheel registering with the space
between said flanges to prevent application of
20 paste to said transfer wheel when there are no
stamps thereon, means for pushing a package to
be stamped under said transfer wheel, a device
for pressing the middle portion of the stamp on
the top of the package to seal it thereon, a cam
25 controlling said clamps to release the stamp after
it has been pressed on the top of the package, and
mechanism for pressing the overhanging ends of
the stamp against the sides of the package to
seal the stamp ends to the package.

7. In a package stamper, the combination with
30 a magazine adapted to contain a stack of stamps,
of a rotatable stamp transfer wheel, a pair of
spaced pivoted suction pipes disposed on either

side of said transfer wheel and adapted to with-
draw one end of a stamp from said magazine and
lay it on the periphery of said transfer wheel,
diametrically opposite clamps pivoted on said
transfer wheel and each adapted successively to
5 grip the end of a stamp deposited on said trans-
fer wheel by said pipes, whereby the gripped stamp
will be completely withdrawn from said maga-
zine during the rotation of said transfer wheel,
and a paste wheel having a pair of spaced in-
wardly beveled flanges arranged to arch and
10 apply paste to the longitudinal edges of stamps
drawn between said flanges by said transfer
wheel, the periphery of said transfer wheel regis-
tering with the space between said flanges to pre-
vent application of paste to said transfer wheel
15 when there are no stamps thereon.

8. In a package stamper, the combination with
a rotatable stamp transfer wheel, of diametri-
cally opposite clamps pivoted on said transfer
20 wheel and each adapted to grip the end of a
stamp deposited on said transfer wheel, and a
paste wheel having a pair of spaced inwardly
beveled flanges arranged to arch and apply paste
to the longitudinal edges of stamps drawn be-
25 tween said flanges by said wheel, the periphery
of said transfer wheel registering with the space
between said flanges to prevent application of
paste to said transfer wheel when there are no
30 stamps thereon.

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