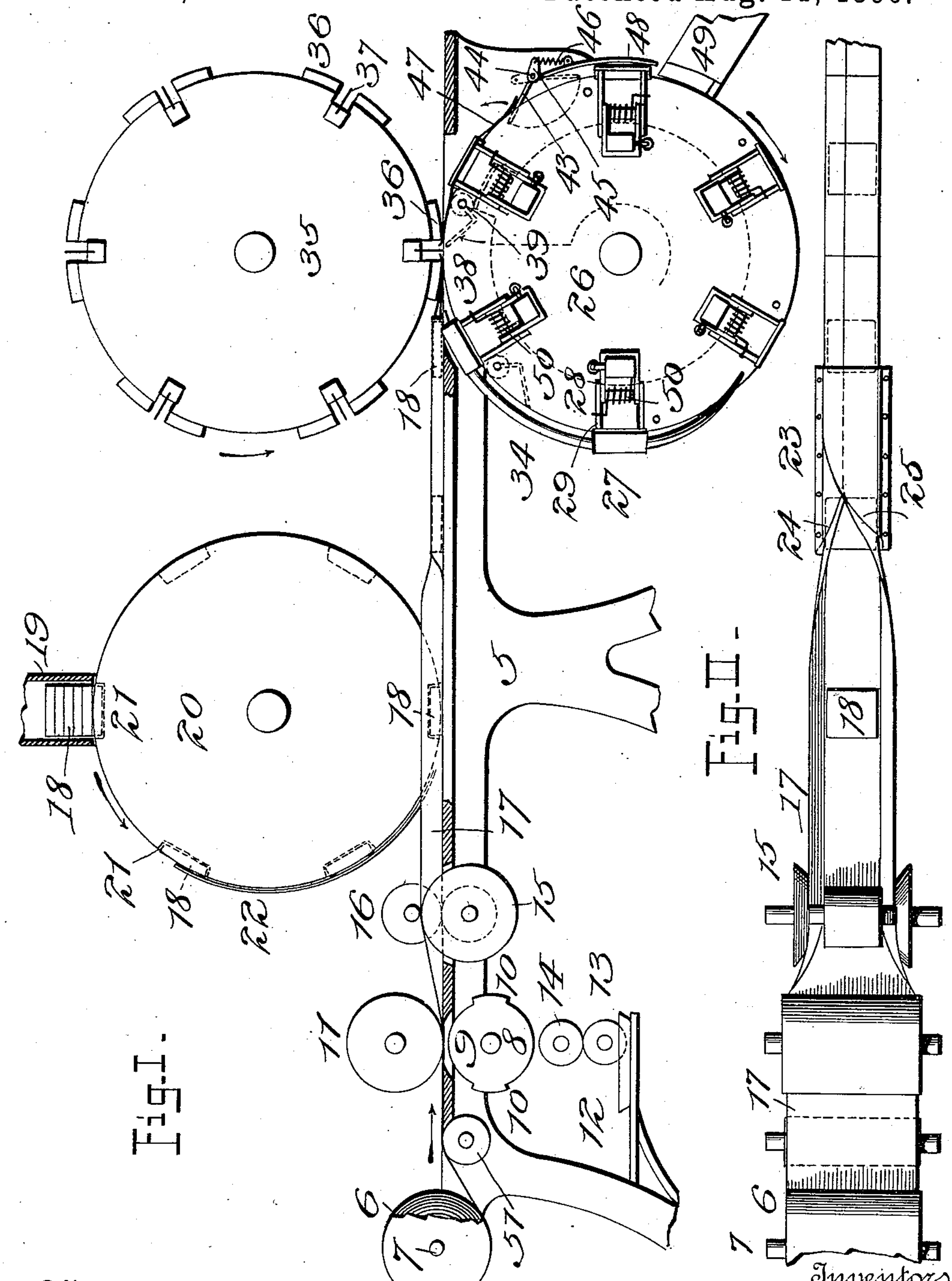
(No Model.) 2 Sheets—Sheet 1.

J. D. MACLAY & A. J. SEAMAN.

PACKAGE WRAPPING MACHINE.

No. 565,479. Patented Aug. 11, 1896.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. III.

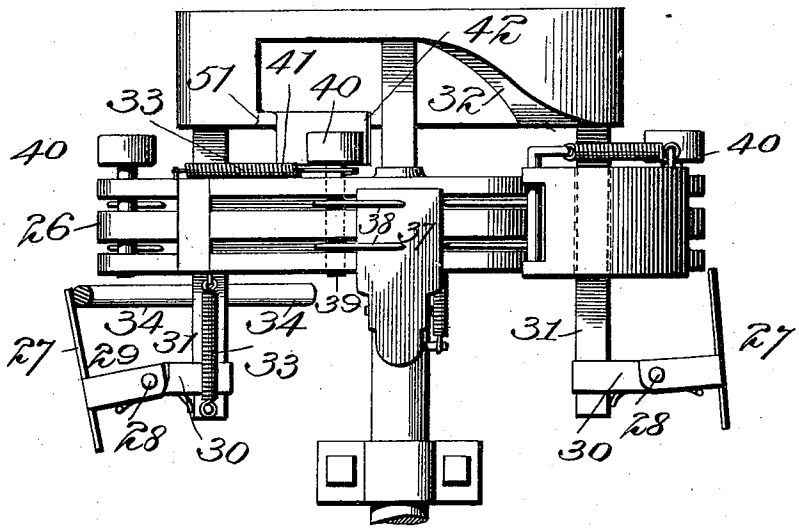
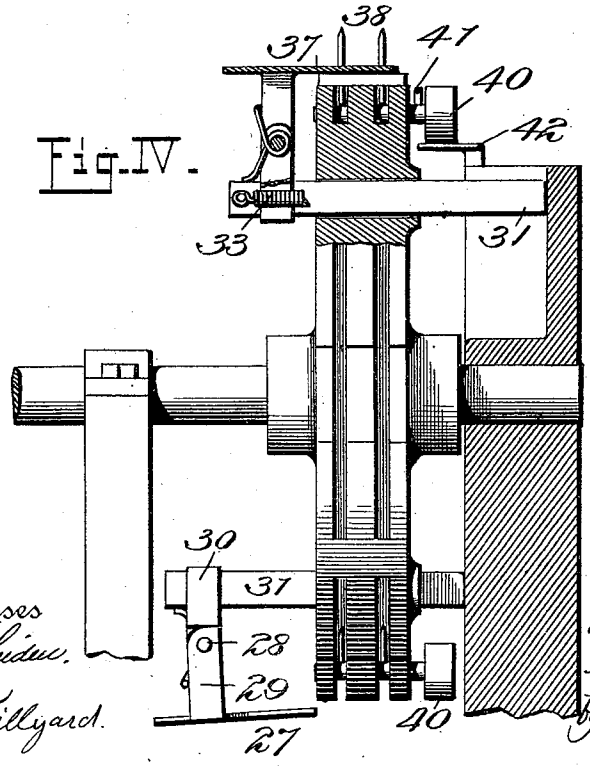


Fig. IV.



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UNITED STATES PATENT OFFICE.

JAMES D. MACLAY AND ALBERT J. SEAMAN, OF LOUISVILLE, KENTUCKY.

PACKAGE-WRAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 565,479, dated August 11, 1896.

Application filed April 23, 1896. Serial No. 588,748. (No model.)

To all whom it may concern:

Be it known that we, JAMES D. MACLAY and ALBERT J. SEAMAN, citizens of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Improvement in Package-Wrapping Machines; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure I represents a package-wrapping machine according to our invention in side elevation, the near side and bottom portions of the frame being removed. Fig. II is a top view of the working parts without the feed-hopper, feeding-wheel, and paper-cutter wheel. Fig. III is an enlarged detail view looking down upon the folding-wheel, certain portions being removed for the sake of greater clearness; and Fig. IV is an edgewise view of the folding-wheel, partly in transverse vertical section.

This invention relates to that class of devices by means of which lumps or cakes of any material, such as gum, confectionery, soap, medicines, tobacco, &c., may be mechanically wrapped in paper, forming small packages for market; and the object of the invention is to print the paper which is to form the cover of each package, to place in it the cake of material, to wrap the paper around the material, to cut the paper into proper lengths, to fold the ends over upon the cake, and to drop the cakes thus wrapped into packages out of the machine, all mechanically and automatically.

To this end our invention consists in the construction and combination of parts forming a package-wrapping machine hereinafter described and claimed.

5 represents the frame of the machine; 6, a roll of paper of proper width to inclose the package and mounted to revolve in the frame on an axle 7.

8 represents a cylinder mounted on an axle 9 to rotate in the frame and carrying printing blocks or forms of type 10 for the purpose of printing any desired inscription on the paper of the wrapper.

11 is the impression-cylinder mounted to roll on top of the paper over the cylinder 8.

12 is a can for containing ink; 13, a roller mounted to revolve therein to carry ink upon the distributing-roller 14, which in turn carries the ink against the block or type 10. The distance between the blocks 10 is such as to bring them into registry in the desired manner with the wrapper of each package as fast as the wrapping-paper is unrolled.

51 is a guide-roller journaled in the frame to start the paper level with the table between the printing-rollers.

15 is a spool-shaped roller whose cylindrical portion is located level with the bed of the frame 5, in which the spool 15 revolves, and 16 is a mate roller mounted in the frame to roll upon the paper pressing against the cylindrical portion of the spool 15, while the ends or flange portions of the spool 15 turn up the edges of the paper 17, forming the paper into a trough whose bottom is of a width corresponding to the width of the cake 18 to be wrapped therein.

19 represents a hopper in which the cakes 18 are piled to enter the machine, and 20 is the carrier-wheel provided with recesses 21 in its circumference adapted in shape and size to receive one cake each of the material to be wrapped, and 22 is a portion of casing around an arc of the wheel to prevent the cakes 18 from dropping out of the wheel until they arrive at the right spot each upon the paper 17.

23 is the side-folding box provided with folding-guides 24 and 25, by means of which the side of the trough of paper 17 is turned over upon the cake 18.

26 is the end-folding wheel provided with a series of clips 27, each of which is pivoted at 28 by means of two arms 29 to a projection 30 of a cross-bar 31, that is fitted to slide through the plane of the wheel and to engage at its opposite end a cam 32, against which it is continually pressed by a spring 33, which is connected at one end with the side of the wheel and at the other end with the cross-bar.

34 represents a curved guide-rail upon which the free end of the clip 27 rises when being revolved by the wheel, the rail 34 being a stationary fixture to the frame.

35 represents a cutter-roller mounted to revolve in the frame and provided with projecting blocks 36, located at certain distances apart to step over cakes and to press down upon that portion of the wrapper which pro-

jects beyond the ends of the cake, and registering with the spaces between the clips 27, upon the wheel 26, to press upon the folded paper ends and to draw the paper along by the rotation of the wheels 26 and 35.

37 represents a series of cutting-blades located midway the blocks 36, and adapted to cut against the wheel 26 to cut off the paper half-way between the cakes 18.

38 represents a pair of fingers pivoted at 39 in grooves in the edge of the wheel 26 and provided with a roller 40, fixed on the end of the pivot projecting from the side of the wheel and a retracting-spring 41.

42 is a cam-shelf in the path of the rollers 40, so located as to engage the roller 40 the instant after the paper has been cut, and by quickly rotating the rollers 40 to bring up the fingers 38 and fold the rear end of the wrapper forward upon the clip 27. At this time the clip rests upon the folded sides of the wrapper, holding them down upon the cake.

43 represents a pair of fingers pivoted at 44 in the frame and provided with an arm 45, and a spring 46 is adapted to hold the fingers 43 normally pointing backward into the aforesaid grooves in the wheel 26 beneath the path of the coming package, and as the package advances the forward end 47 of the paper rides upon the fingers 43 and gradually presses them to swing on an inward arc while the paper is gradually turned over backward upon the clip 27 above the rear end fold of the wrapping-paper, and at this instant the roller 40 passes off from the cam-shelf 42, and the fingers 38 are rotated backward by the spring 41 to their normal resting place in the grooves in wheel 26. Now as the wheel advances the clip 27, actuated by the cam 32, operating against the end of its cross-bar 31, is withdrawn sidewise from over the package, and the wheel still advancing carries the package around beneath a portion of the outer casing 48, which rests close enough upon the package to press the folded end firmly down thereon, and when the package passes the fingers 43 they are set at liberty to be returned to their normal position by the spring 46.

49 represents a trough into which the packages completed fall after they leave the casing 48, and any suitable receptacle may be located beneath the delivery end of the spout 49 to receive the folded packages. The guide-rail 44 ends at the right point to permit the clip 27 to be thrown by its spring 50 upon the package over the side folds at the instant that the cross-bar 31 passes over the shoulder 51 of the cam 32, whereby the side folds are pressed firmly down upon the top of the cake, and the paper is so held while the ends are being cut, and while first the rear end and then the forward end of the paper are folded over upon the clip on the cake, as before described.

This machine may be arranged to operate with great rapidity and economy, the only service required of an attendant being to keep it provided with cakes and wrapping-paper and to remove the packages by the basketful after they have been automatically wrapped by the machine.

The machine is comparatively inexpensive and it may be adapted in size and proportions for wrapping packages of anything, however large or small, within reasonable limits, provided only that the material to be wrapped will remain together as a unit, in cake form, while being wrapped.

Having thus fully described our invention, what we believe to be new, and desire to secure by Letters Patent, is the following:

1. The combination of a frame; means for mounting a roll of paper thereon; a printing-cylinder; a spool-shaped roller and a mate therefor adapted to fit down upon the cylindrical portion of the roller between the flanges; a carrier-wheel journaled to rotate above the path of the paper and having recesses in its periphery; a hopper over the wheel; side-folding guides for the paper located at the sides and above the path thereof; an end-folding wheel comprising spring holding-clips and rear-end fingers; forward-end-folding fingers hung upon a fixture of the frame to swing into the wheel; compressing casing fixed near an arc of the wheel at the delivery, and a cutter-roller having projecting blocks on its periphery with a blade midway each block fitted to roll in registry with the end-folding wheel, substantially as described.

2. In a package-wrapping machine, the combination of means for directing paper into the machine; means for shaping the paper into a trough; means for depositing one cake at the time in the trough; means for turning the sides of the trough over the cake; a pair of feeding-wheels adapted to engage the paper at each end of the cake and draw both along; a cross-bar passing freely through one of the wheels; a cam fixed in the rotary path of one end of the bar; a clip pivoted upon the other end of the bar; a spring for the clip; a spring impelling the bar toward the said cam and a guide-rail for the clip located beside the wheel, substantially as described.

3. In a package-wrapping machine, the combination of means for shaping paper into a continuous trough; means for placing cakes one at a time in the trough; means for turning the sides of the trough over the cakes; and two wheels hung to revolve face to face, one of them having blocks projecting from its periphery, each block adapted to engage with the opposite wheel the approaching end of the paper projecting beyond a cake and the adjacent blocks fitted to step over the cakes and register with the projecting ends of the wrapper substantially as described.

4. In a package-wrapping machine, the combination of feeding-wheels, the one being provided with cam and spring operated clips and

the other provided with projecting blocks registering with the spaces between clips, substantially as described.

5. In a package-wrapping machine, the combination of a pair of feeding-wheels, means for delivering packages in a trough of paper with its sides laid over the packages, to the said wheels; means for cutting off the paper trough at intervals; pairs of rear-end-folding fingers journaled in one wheel and provided each with a roller and a return-spring, and a cam fixed in the path of the rollers relative to the rotation of the wheel, substantially as described.

6. In a package-wrapping machine, the combination of a wheel having grooves in its periphery; a pair of rear-end-wrapping fingers pivotally hung in the said grooves; a roller upon one end of the pivot extended at the side of the wheel; a cam-shelf fixed outside of the wheel in the path of the said roller, and a returning-spring attached at one end to the roller and at the other end to the wheel substantially as described.

7. In a package-wrapping machine the combination of a package-carrier and forward-end-folding fingers pivoted outside of the path of the package, the fingers normally slanting across the path with their points toward the coming package and adapted to swing forward with the advancing package and a returning-spring for the fingers substantially as described whereby the projecting forward end of the wrapper is first turned outward over the end of the package and then folded back over the package.

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES D. MACLAY.
ALBERT J. SEAMAN.

Witnesses:
JNO. S. HENRY,
ISRAEL B. WEBSTER.