

(No Model.)

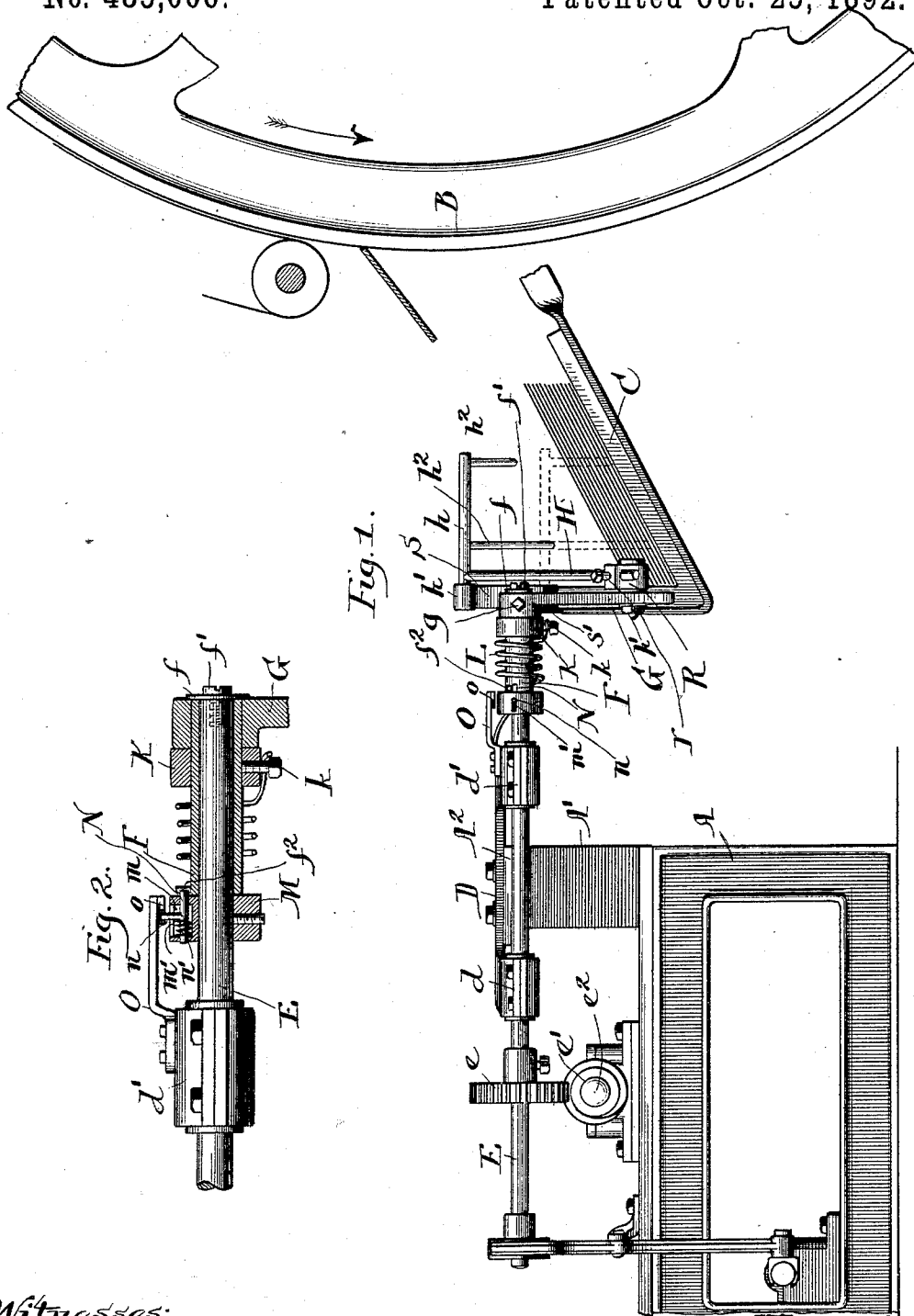
3 Sheets—Sheet 1.

A. C. GETTEN.

MECHANISM FOR DELIVERING BAGS FROM PAPER BAG MACHINES
AND FOR OTHER PURPOSES.

No. 485,006.

Patented Oct. 25, 1892.



Witnesses:
Fred Gerlach
J. B. Carpenter

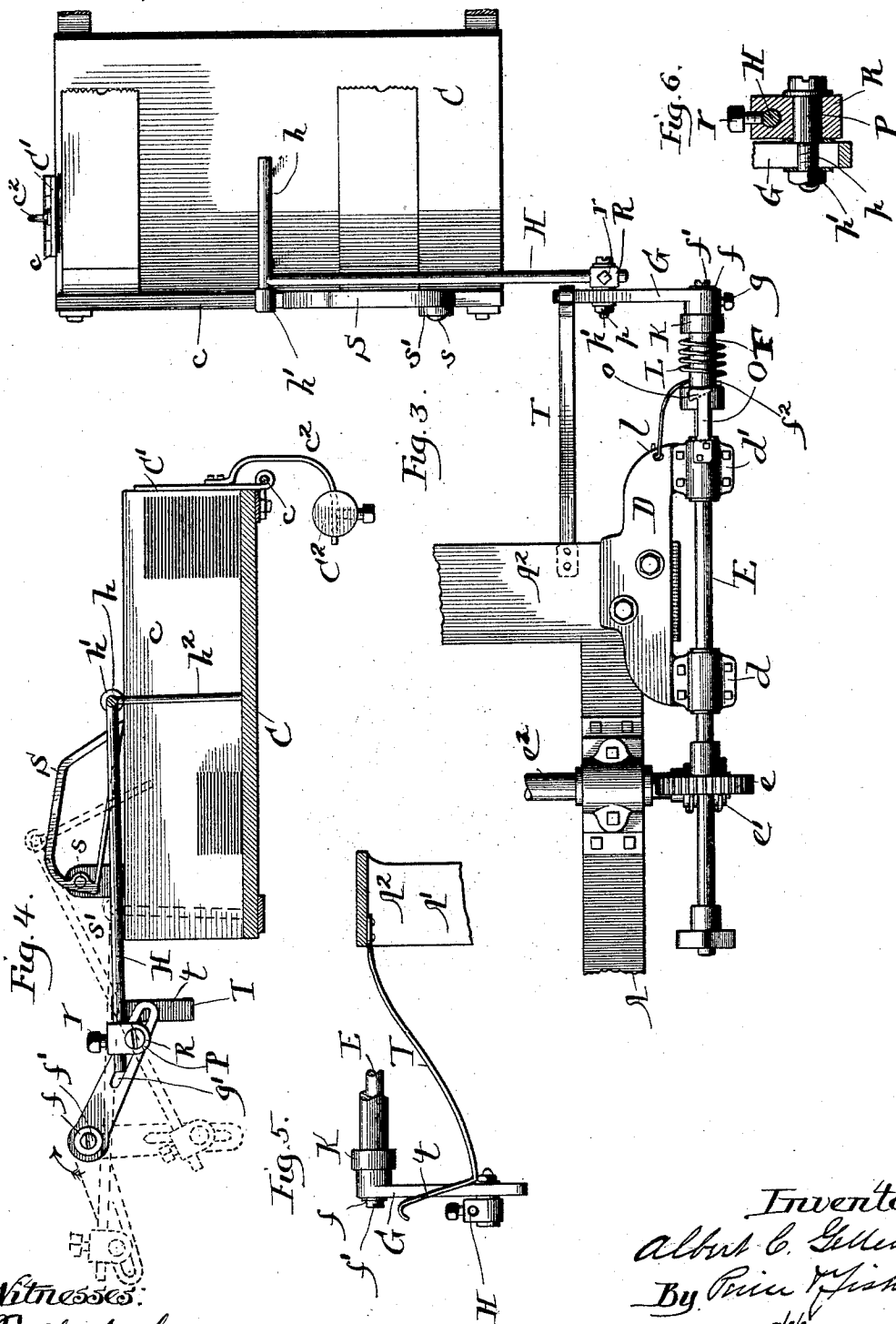
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MECHANISM FOR DELIVERING BAGS FROM PAPER BAG MACHINES
AND FOR OTHER PURPOSES.

No. 485,006.

Patented Oct. 25, 1892.



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(No Model.)

3 Sheets—Sheet 3.

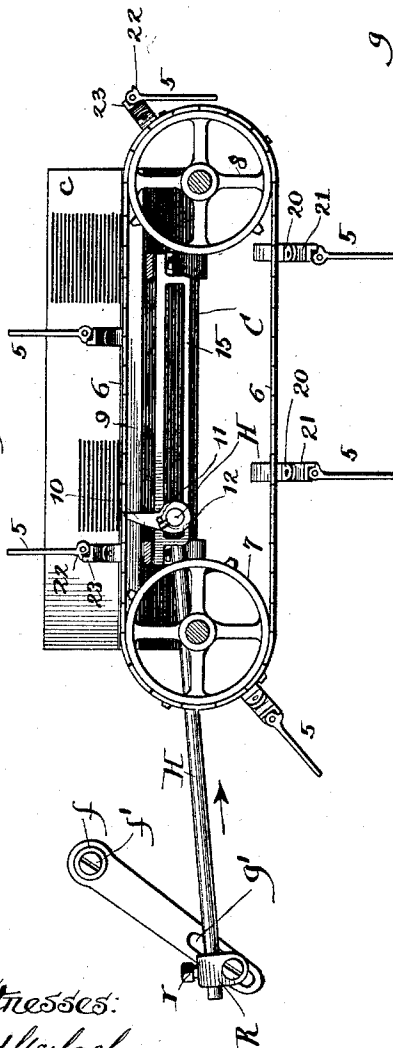
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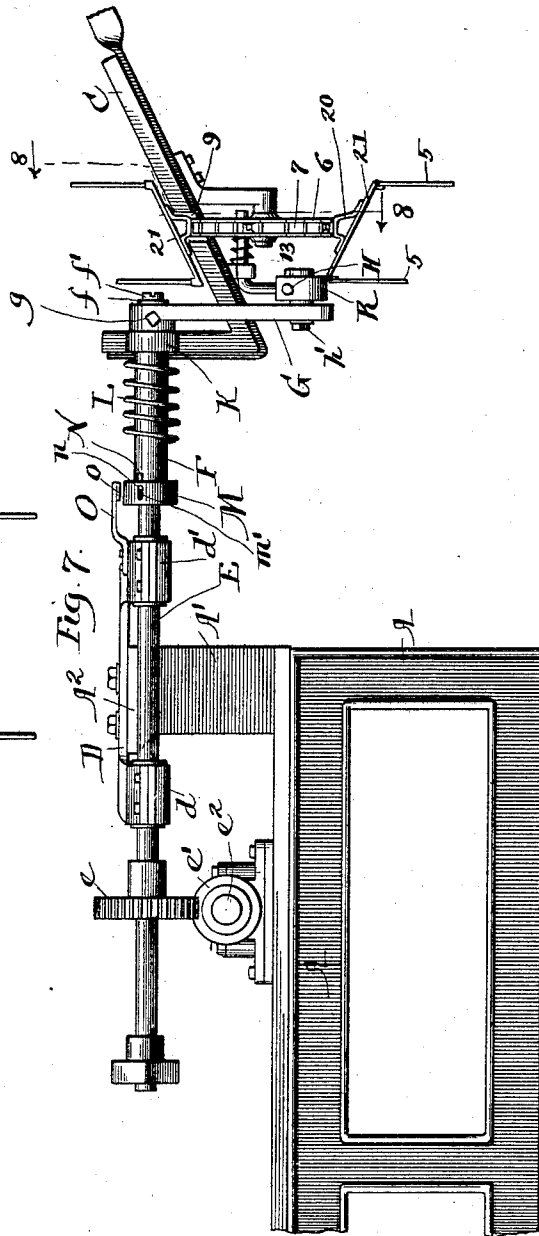
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Fig. 8.



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UNITED STATES PATENT OFFICE.

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MECHANISM FOR DELIVERING BAGS FROM PAPER-BAG MACHINES AND FOR OTHER PURPOSES.

SPECIFICATION forming part of Letters Patent No. 485,006, dated October 25, 1892.

Application filed April 18, 1892. Serial No. 429,588. (No model.)

To all whom it may concern:

Be it known that I, ALBERT C. GETTEN, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mechanism for Delivering Bags from Paper-Bag Machines and for other Purposes, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

In the construction of paper-bag machines as at present commonly practiced it is customary to deliver the bags upon a discharge-table and to provide the machine with a signal-bell adapted to be rung each time a certain predetermined number of bags—say fifty or one hundred—have been delivered onto the table, in order that the attendant can withdraw the bags and tie them into packages of uniform number. In practice it is found, however, that the bags are delivered so rapidly from the machine onto the table that notwithstanding the attendant may be a most skillful one there is liability of variation in the packages—that is to say, before the attendant can withdraw a package the machine may deliver one or more bags thereto in excess of the desired number, or if the attendant too quickly withdraws the packages it may be found to contain somewhat less than the proper number.

The object of my present invention, so far as the same relates to paper-bag machines, is to provide means for discharging the masses of bags from the line of feed at the proper moment, so that each package shall contain the same number of bags.

My invention will be found applicable, however, not merely in the manufacture of paper bags, but as well, also, in the delivery of cards, papers, or like articles from printing-machines and for a variety of other purposes.

While, therefore, I have shown and shall describe my invention in connection with paper-bag machinery, I do not wish the invention to be understood as restricted thereto.

The features of novelty which distinguish my invention will be hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the claims at the end of this specification.

Figure 1 is a view in side elevation of a

portion of a paper-bag machine having my invention applied thereto. Fig. 2 is an enlarged detail view, partly in side elevation and partly in vertical section, through the shaft, whereby the operation of the ejector mechanism is effected. Fig. 3 is a plan view of the mechanism illustrated in Fig. 1. Fig. 4 is a view in vertical transverse section through the delivery-table and through the cross-bar of the ejector-arm, the remaining parts being shown in elevation. Fig. 5 is a detail view showing more particularly the buffer-spring for the ejector-arm. Fig. 6 is a detail sectional view of the journal-stud whereby the ejector-arm is carried. Fig. 7 is a view in side elevation showing the modified form of my invention. Fig. 8 is a view in transverse section on line 8 8 of Fig. 7, looking in the direction of the arrows, parts being shown in elevation.

A designates the main frame of a paper-bag machine, and B denotes a portion of the drying-drum from which the finished bags pass onto the delivery-table C.

I have not deemed it necessary to illustrate any of the mechanism by which the folding, cutting, or pasting of the bags is effected, as these are familiar to all persons skilled in the art, and, indeed, my invention is applicable to a great variety of this class of machines.

From the main frame A of the machine rises a standard A', on the top of which is carried a transverse bar A², and at one end of this bar A² is secured the journal-plate D. This journal-plate is furnished with suitable boxes *d* and *d'*, within which is journaled the drive-shaft E. This drive-shaft E is provided with a cog-wheel *e*, that engages with a worm-wheel *e'* upon a suitable shaft *e*² of the machine, this shaft *e*² being any shaft of the machine that makes a predetermined number of revolutions in keeping with the number of bags formed. Upon the end of the shaft E is loosely held a sleeve F, this sleeve being retained upon the shaft preferably by a washer *f* and screw *f'*, (see Fig. 2,) and upon the outer end of the sleeve F is fastened by a set-screw *g* the rocking arm G, whereby motion is imparted to the ejector, comprising, preferably, an ejector-arm H, whereby ejector-fingers or devices are operated, as will presently more fully appear. Upon the sleeve F is also fixed

(preferably by a set-screw k) a collar K, and to this collar K is connected one end of a coiled spring L, the opposite end of this coiled spring being connected, as at l , to the journal-plate D. (See Fig. 3.) If desired, the collar K might be omitted and the spring L be directly attached to the rocking arm G, although I prefer to employ the collar K, as by means of this collar the tension of the spring can be adjusted or taken up from time to time, as required. Upon the shaft E is also fixed a collar M, that is formed with a chamber m to receive the locking-bolt N, this bolt N passing through suitable holes in the collar (see Fig. 2) and being formed with an extension n , that projects through the slot m' of the collar M, and upon this locking-bolt N is placed a coiled spring n' , that serves to force the bolt normally into position to engage a pin f^2 of the sleeve F. To the box d' of the journal-plate D is attached an arm O, the end of which is provided with a trip or cam o , (see Figs. 1 and 2,) which at each revolution of the shaft E will contact with the arm n of the locking-bolt N and withdraw this bolt from engagement with the pin f^2 of the sleeve F. The rocking arm G is preferably formed with a slot g' , (see Fig. 4,) through which passes the reduced end p of the journal-stud P, this reduced end p being threaded to receive a nut p' , by which the stud P is fastened securely to the arm G. Upon the stud is journaled the box R, through which passes the ejector-arm H, this arm H being held in proper position within the box R by means of the set-screw r . The ejector-arm H has its outer end preferably formed with a cross-bar h , one end of which is provided with a friction-roll h' , adapted to ride over the face of a cam-plate or frame S, that is pivotally connected, as at s , to a bracket s' , that rises from the upturned end c of the delivery-table C, and from this cross-bar h of the ejector-arm H depend the fingers h^2 , by which the bags are expelled from the path of feed of the machine, as will presently appear. To the cross-bar A^2 is suitably attached a buffer-spring T, preferably of the shape shown more particularly in Fig. 5—that is to say, with an upturned end t , along which the rocking arm G will ride during the latter part of its stroke in thrusting the package of bags out of the path of the feed of the machine, this upturned end of the spring serving to gradually check the final movement of the arm and modify its violence.

From the foregoing description the operation of the mechanism thus far defined will be seen to be as follows: The bags in finished condition will be delivered from the drum B or other source onto the delivery-table C in usual manner, and if the ejector-arm H be in the position shown by full lines in Fig. 4 the coiled spring L will be "off tension;" but as the shaft E is turned in the direction of the arrow, Fig. 4, through the medium of the cog-wheel e and worm-wheel e' the locking-bolt

N, which constantly rotates with the shaft E by reason of its engagement with the pin f^2 of the sleeve F, will cause this sleeve to rotate against the force of the coiled spring L, thereby winding the spring, (one end of which is connected to the collar fixed to the sleeve,) and at the same time will cause a downward movement of the rocking arm G to the position shown by dotted lines in Fig. 4. As the rocking arm G is thus moved downward, the coiled spring L being at the same time wound or placed "on tension," the friction-roll h' at the free end of the ejector-arm H will ride upward over the inclined edge of the frame S until it passes down and off the rear end of this frame, the frame S serving to lift the fingers h^2 of the ejector-arm above the line of feed of the bags. When the rocking arm G has been moved to the position shown by the dotted lines at the left-hand side of Fig. 4, the ejector-fingers h^2 will bear upon the inclined face of the delivery-table C at the left-hand side of the line of feed of the bags and will remain in such position until the shaft E has so far completed its revolution as to cause the pin n of the locking-bar N to ride against the face of the trip or cam o at the end of the arm O. As the pin n rides against the face of the cam o it will be retracted against the force of the spring n' until the bar N passes from engagement with the pin f^2 of the sleeve F, thereby releasing the sleeve and permitting the coiled spring L to impart a quick rotation to the sleeve and its connected parts in a direction opposite to the direction of revolution of the shaft E, in order to expel the bags from the line of feed. Hence it will be seen that at each revolution of the shaft E the ejector-arm will be retracted to the left-hand side of the delivery-table C and into proper position to enable it to cause the ejector-fingers to force out of the line of feed a package of bags when such package has reached the predetermined number, (say fifty or one hundred,) and as soon as the coiled spring is released and the sleeve F is rotated thereby the rotation of the sleeve F will force the ejector-arm H from the position shown by dotted lines in Fig. 4 to the position shown by full lines in Fig. 4, and as the rocking arm G will be thrust forward, causing its fingers h^2 to suddenly push the mass of bags that has accumulated in the line of feed of the machine out of such line of feed and in convenient position to be grasped by the attendant, who will bind or tie them while the next succeeding mass of bags is being collected. It is manifest that the sudden release of the coiled spring L by reason of the disengagement of the locking-bar N from the pin f^2 will permit the coiled spring L to very quickly shift the rocking arm G from the position shown by dotted lines at the extreme left of Fig. 4 to the position shown by full lines in Fig. 4, and as a consequence the accumulated package of bags will be ejected from the line of feed at the proper instant

and before any additional bags can be added thereto and without danger of the fingers h^2 of the ejector-arm being struck by the bags as they are delivered onto the table C. It will be seen that as the ejector-arm is thus forced quickly forward by the coiled spring L to thrust the mass of bags out of the line of feed the rocking arm G will toward the latter part of its movement ride against the inclined portion t of the buffer-spring T, (see Fig. 5,) so that the final movement of the ejector-arm will be in a measure moderated and consequently the danger of scattering the mass of bags after they have been moved from the line of feed will be avoided. It will be observed that as the ejector-arm is moving to deliver the mass of bags from the line of feed the friction-roll h' will ride beneath the lower edge of the pivoted cam S, this cam rising to permit the passage of the friction-roller. It is plain that by my improved mechanism each package of bags will be caused to contain precisely the same number and all danger of miscount of the bags in the packages will be avoided.

As it is somewhat desirable to provide the delivery-table C with an end plate C' in order to prevent the falling of the bags therefrom and yet permit the attendant to readily remove the masses of bags from the table, I hinge this end plate C' to the table C, as shown at c , but provide the end plate with a weight C², connected thereto by a weight-rod c^2 , the weight serving to maintain the end plate normally in upright position, while permitting it to be readily moved backward without any appreciable effort upon the part of the attendant as the masses of the bags are withdrawn from the table. It is manifest that a spring could be substituted for the weight as a means for holding the end plate in normally-upright position.

Obviously the details of construction above set out may be modified within wide limits without departing from the spirit of my invention, and to such details, therefore, I do not wish my invention to be understood as restricted. Thus, for example, in Figs. 7 and 8 of the drawings one modified form of the invention is illustrated. In such modification the main drive-shaft E is sustained and driven in the same manner as in the previously-described form of my invention, and upon the outer end of the shaft E is sustained the sleeve F, the coiled spring L, the collar K, and the rocking arm G, as in the construction previously described. In this form of the invention, however, the ejector-arm H, instead of having attached directly thereto the fingers for ejecting the masses of boxes out of the line of feed, although connected to the rocking arm G in the same manner as in the construction hereinbefore described, will operate a series of ejector fingers or devices separate from the ejector-arm, but actuated thereby. In such modified form of the invention the

ejector-fingers 5 in suitable number are carried by an endless sprocket-belt 6, which passes over sprocket-wheels 7 and 8, conveniently journaled beneath the bottom of the delivery-table C, the table being provided with a transverse slot 9, through which will move the dog or pawl 10, that is carried at the free bent end of the ejector-arm H. This dog or pawl 10 is pivoted at the end of the ejector-arm H, and is provided with the pin 11, adapted to contact with a shoulder or stop 12 upon the end of the ejector-arm, so as to limit the backward movement of the pawl, the pawl 10 being held normally in vertical position by means of a coiled spring 13 upon the bent end of the ejector-arm H. The bent end of the ejector-arm H passes through and is sustained by a guideway 15, conveniently bolted beneath the bottom of the delivery-table C, so that a straight-line movement is imparted to the outer end of the ejector-arm as it is moved forward and backward. The upper end of the pawl 10 extends to a sufficient height to engage the links of the sprocket-chain 6 when the ejector-arm is forced in the direction of the arrow, Fig. 8; but the upper end of the pawl 10 will yield and ride against the lower face of the links as the ejector-arm H is retracted. The ejector-fingers 5 are preferably pivoted to brackets 20, fixed to the sprocket-chain 6, the brackets 20 having each a cross-bar 21, to the outer ends of which the ejector-fingers 5 will be pivotally connected, as seen in Fig. 8—that is to say, each of the ejector-fingers 5 is formed with a shoulder 22, adapted to contact with a corresponding shoulder 23, formed upon the bar 21, so as to limit the backward movement of the fingers.

From the foregoing description the operation of the modified form of my invention will be seen to be as follows, it being understood that the mechanism for imparting movement to the ejector-arm H is the same as in the previously-described embodiment of my invention. When the ejector-arm H is thrust forward in the direction of the arrow, Fig. 8, by the release of the coiled spring L in manner hereinbefore described, the pawl 10 will be in engagement with the sprocket-chain 6, and as the ejector-arm is thus forced suddenly forward a corresponding movement will be imparted to the sprocket-chain 6 and the ejector-fingers 5 carried thereby. This forward movement of the sprocket-chain and ejector-fingers will cause the accumulated masses of bags to be quickly thrust to one side of the line of feed and into position to be removed by the attendant for tying or binding. As the ejector-fingers are thus moved successively by the ejector-arm H and the pawl 10 these ejector-fingers 5 will fall downward, so as not to interfere with the attendant in withdrawing the bags from the delivery-table. In order to moderate the movement of the ejector-fingers, the pulleys

7 and 8 can be set upon their bearings with more or less friction.

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

1. In a paper-bag machine, the combination, with the mechanism for continuously feeding the bags and with a stationary table whereon said bags are fed, of an ejector for moving said bags across said table and out of the line of feed and intermittently-actuated mechanism adapted to remain out of action while the mass of bags is being accumulated, but arranged to operate said ejector at intervals to propel the mass of bags out of the line of feed, substantially as described.

2. In a paper-bag machine, the combination, with the mechanism for feeding out the finished bags and a stationary table whereon said bags may be accumulated, of an ejector for moving the accumulated bags at predetermined intervals transversely to and across the line of feed, a spring for imparting a quick motion to said ejector in one direction, and means for retracting said ejector, substantially as described.

3. In a paper-bag machine, the combination, with the mechanism for feeding out the finished bags and a stationary table whereon said bags are accumulated, of an ejector for moving said bags out of the line of feed, means for forcing said ejector across the line of feed to impel the accumulated bags therefrom, and mechanism for retracting said ejector out of the line of feed to prevent its contact with the bags as they are fed onto the table, substantially as described.

4. In a paper-bag machine, the combination, with the mechanism for feeding out the finished bags and with a stationary table whereon said bags are accumulated, of an intermittently-operating ejector for moving said bags transversely to and out of the line of feed, mechanism for imparting a quick motion to said ejector across the line of feed, and mechanism for lifting and retracting the ejector outside of said line of feed into position for again traveling across said line of feed, substantially as described.

5. In an apparatus of the character described, the combination, with mechanism for feeding the articles—such, for example, as paper bags—and a table whereon said articles may be accumulated, of an ejector for moving said articles out of the line of feed, a continuously-moving shaft for retracting said ejector, a spring for imparting forward movement to said ejector, a lock mechanism for connecting said ejector positively to said shaft, and a trip for releasing said lock mechanism to permit the spring to operate the ejector, substantially as described.

6. In apparatus of the character described, the combination, with mechanism for feeding the articles—such, for example, as paper

bags—and a table whereon said articles may be accumulated, of an ejector for moving said articles out of the line of feed, a rocking arm to which said ejector is connected, a drive-shaft upon which said rocking arm is loosely mounted, a spring for imparting movement to said ejector in one direction, a locking-bar for temporarily connecting said rocking arm to said shaft, and a trip for releasing said locking device to permit the ejector to be operated independently of the drive-shaft, substantially as described.

7. In apparatus of the character described, the combination, with mechanism for feeding the articles—such, for example, as paper bags—and a table whereon said articles may be accumulated, of an ejector for moving said articles out of the line of feed, a rocking arm to which said ejector is pivotally connected, a cam for lifting said ejector out of the line of feed, a drive-shaft upon which said rocking arm is loosely mounted, a spring for imparting forward movement to said ejector, a lock mechanism for connecting said ejector positively to said shaft, and a trip for releasing said lock mechanism to permit the spring to operate the ejector, substantially as described.

8. In apparatus of the character described, the combination, with mechanism for feeding the articles—such, for example, as paper bags—and a table whereon said articles may be accumulated, of an ejector for moving said articles out of the line of feed, a rocking arm to which said ejector is pivotally connected, a sleeve to which said rocking arm is fastened, a drive-shaft whereon said sleeve is loosely mounted, a collar fixed to said shaft, a lock for effecting the engagement of said sleeve with said collar, and a spring connected to said sleeve for imparting quick movement thereto to operate the ejector, substantially as described.

9. In apparatus of the character described, the combination, with mechanism for feeding the articles—such, for example, as paper bags—and a table whereon said articles may be accumulated, of an ejector for moving said articles out of the line of feed, said ejector comprising an arm having depending fingers and provided with a projection, a cam over which said projection will ride to lift the ejector-arm, means for forcing said ejector-arm across the line of feed to expel the accumulated articles therefrom, and mechanism for retracting said ejector-arm, substantially as described.

10. In apparatus of the character described, the combination, with mechanism for feeding the articles—such, for example, as paper bags—and a table whereon said articles may be accumulated, of an ejector for moving said articles out of the line of feed, a spring for imparting a quick motion to said ejector in one direction, a yielding buffer for moderat-

ing the final movement of said ejector, and means for retracting said ejector, substantially as described.

5 11. In apparatus of the character described, the combination, with mechanism for feeding the articles—such, for example, as paper bags—and an ejector for moving said articles out of line of feed, of means for forcing said ejector across the line of feed and for retract-

ing said ejector and a table whereon said articles may be accumulated, said table being provided with a yielding end plate, substantially as described. 10

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