

No. 676,048.

Patented June 11, 1901.

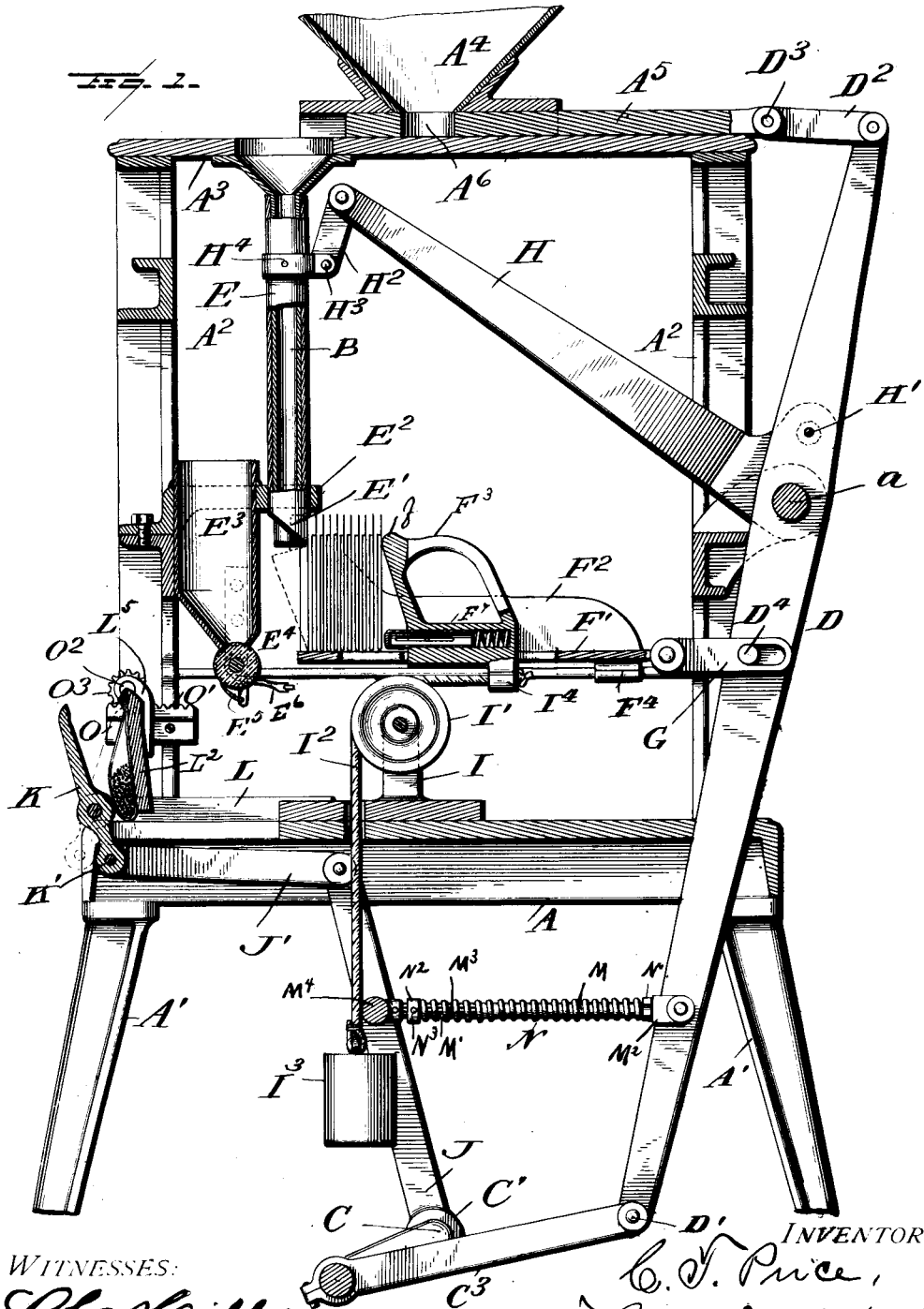
C. T. PRICE.

MACHINE FOR FILLING SEED BAGS OR PACKETS.

(Application filed Oct. 11, 1900.)

(No Model.)

5 Sheets—Sheet 1.



WITNESSES:

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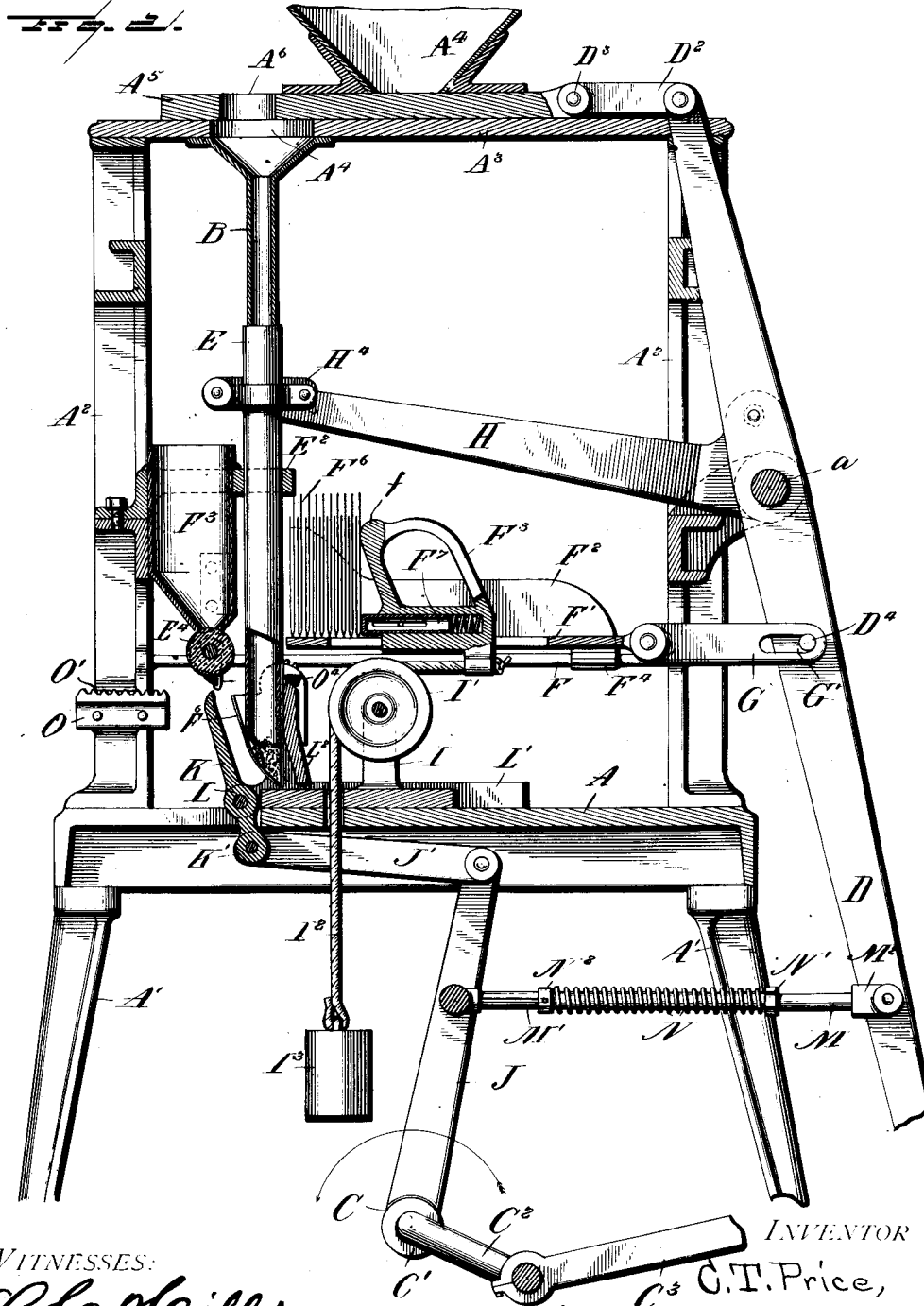
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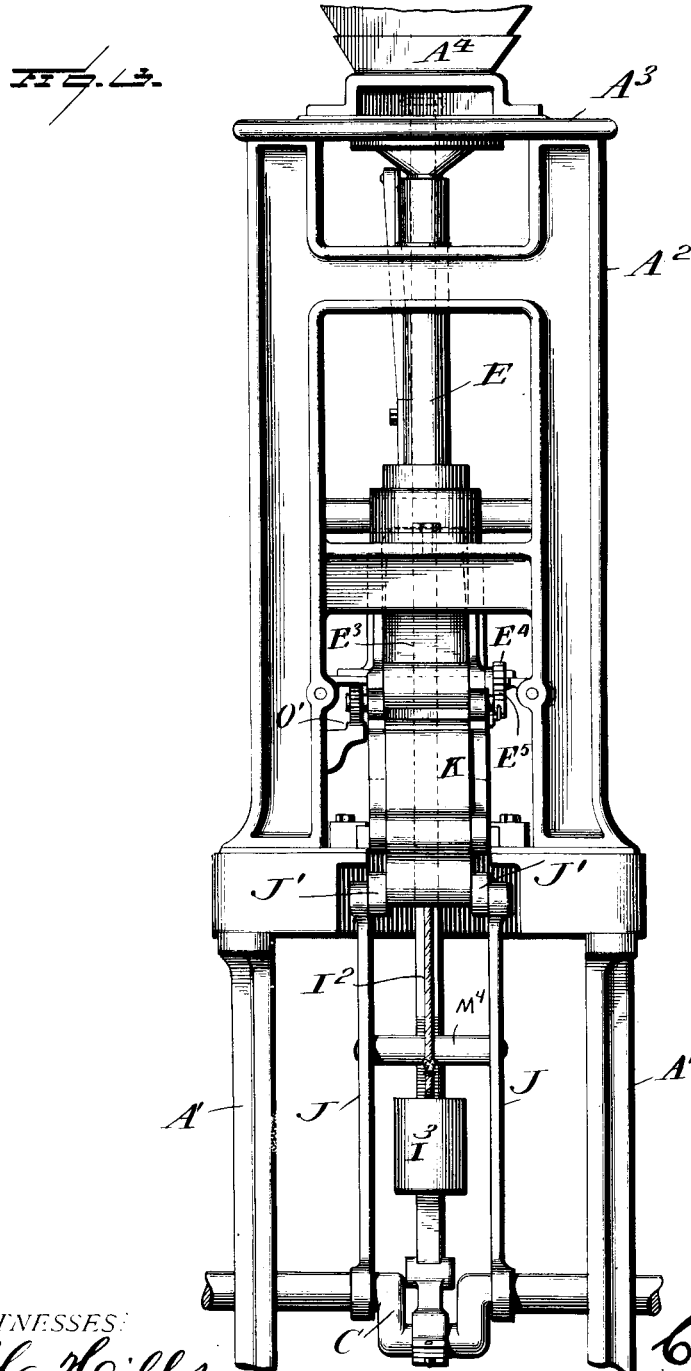
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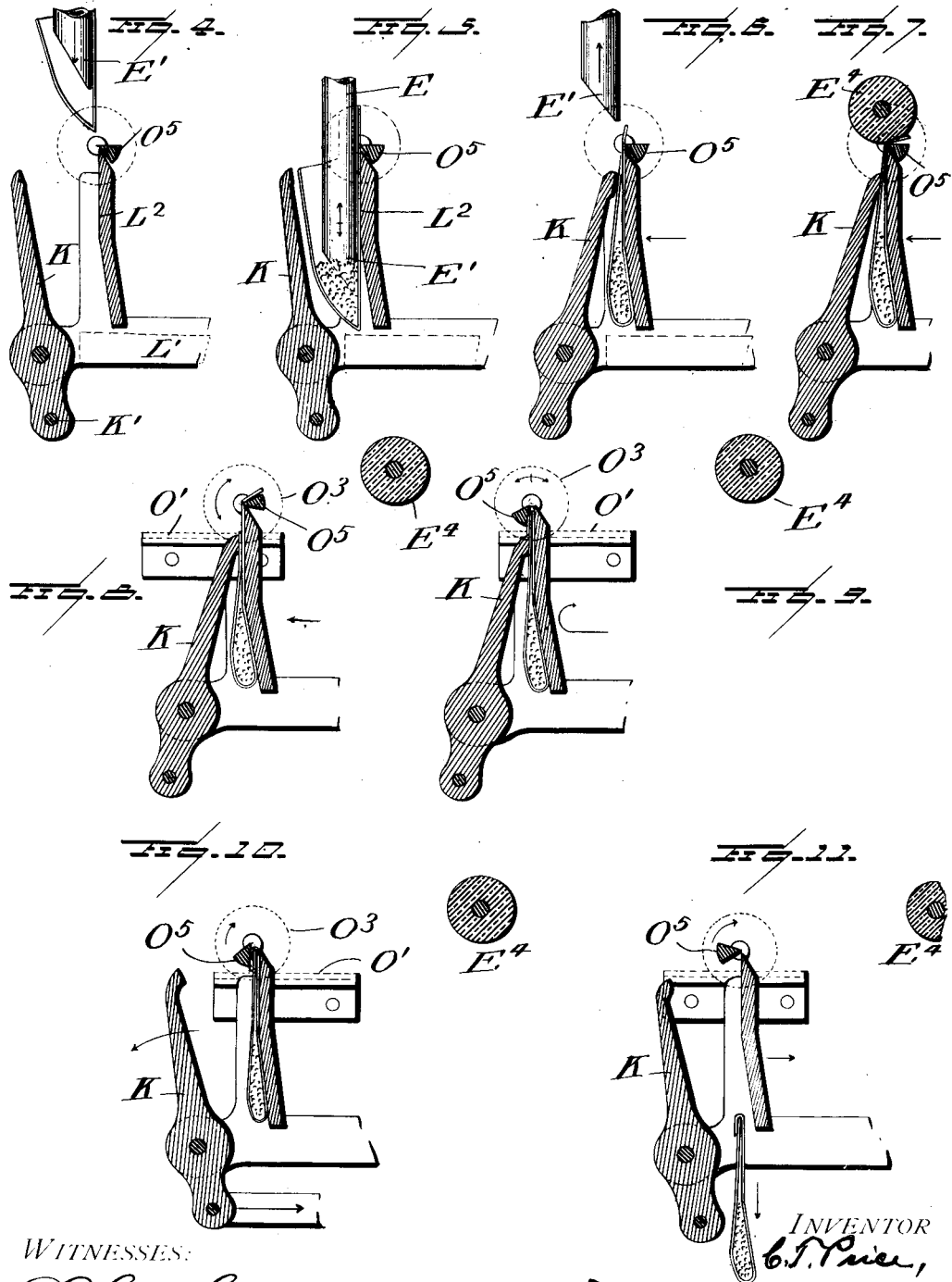
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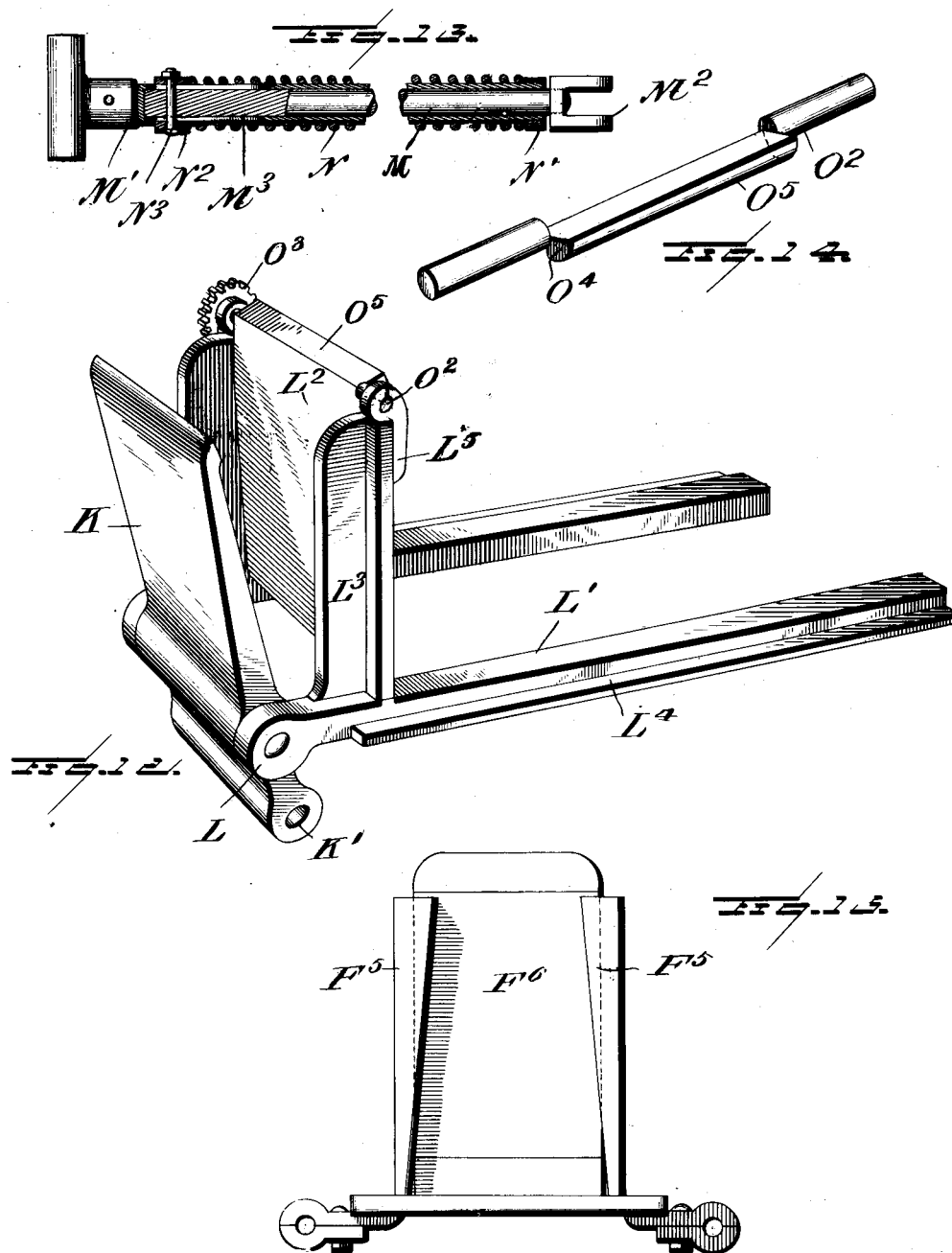
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5 Sheets—Sheet 5.



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UNITED STATES PATENT OFFICE.

CORWIN T. PRICE, OF WASHINGTON, DISTRICT OF COLUMBIA.

MACHINE FOR FILLING SEED BAGS OR PACKETS.

SPECIFICATION forming part of Letters Patent No. 676,048, dated June 11, 1901.

Application filed October 11, 1900. Serial No. 32,765. (No model.)

To all whom it may concern:

Be it known that I, CORWIN T. PRICE, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Machines for Filling Seed Bags or Packets; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

15 This invention relates to new and useful improvements in machines for filling bags, and especially to a mechanism for automatically filling seed-bags and pasting the flap after being filled.

20 The invention will be hereinafter more fully described, and then specifically defined in the appended claims, and is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form part of this application, and in which drawings similar letters of reference indicate like parts throughout the several views, in which—

Figure 1 is a vertical central sectional view through my improved bag-filling machine, parts of the device being shown in elevation. Fig. 2 is a similar view showing the operative parts of the machine in slightly different relation than in Fig. 2, said figure showing the positions that the various operative parts of the machine assume in the second step of the filling operation of the bags. Fig. 3 is an end elevation of the machine. Fig. 4 is a detail sectional view showing the relative positions of the bag-filling tube and the rack holding the bag, the parts being shown in their proper relative positions before the bag is filled. Fig. 5 is a similar view showing the second step in the filling operation of the bags, said figure showing a bag-filling tube depressed into a bag. Fig. 6 is a similar view showing the next step in the filling operation, said figure showing the bag filled and held by means of a clamping member. Fig. 7 is a view showing the bag held closed by a clamping member and the flap of the bag folded. Fig. 8 is a detail view showing the next step

in the operation, in which the bag is held by a clamping member and the folding member in operation, said view showing the bag held 55 by a carriage in an advance relation to that assumed in Fig. 4 of the drawings. Fig. 9 is a detail sectional view showing the flap folded against the bag. Fig. 10 is a detail view showing the bag as folded and the clamping member withdrawn from the bag. Fig. 11 is a detail view showing the bag as having been pasted and folded and dropping from the machine. Fig. 12 is an enlarged detail in perspective of the carriage which carries 65 the filled bags forward. Fig. 13 is an enlarged detail view, partly in section, of the telescoping members, which are spring-actuated for the purpose of holding the bag before it is advanced to have its flap pasted 70 and sealed. Fig. 14 is an enlarged detail in perspective of the flap-turning member, and Fig. 15 is an end elevation in detail of the rack carrying the empty sacks.

Reference now being had to the details of the drawings by letter, A designates the platform of the machine, which is supported on suitable legs A'. Rising from said platform are the upright posts A², which have a cross-piece A³ at their upper ends, said cross-piece 80 being apertured at A⁴ to allow seed to fall into the upper filling end of the tube or chute B. Mounted on the cross-piece A³ is a hopper A⁴, and sliding under said hopper in the space intervening between the outlet end of 85 said hopper and the upper face of the cross-piece is a block A⁵, which is apertured at A⁶. This block is provided for the purpose of carrying a sufficient quantity of seed from the hopper to a location over the upper flaring 90 end of the tube or chute B, from which the seed fall by gravity into the bag directly underneath the bottom of said tube. The main operating-shaft C is mounted in suitable bearings C', and journaled to a crank C², 95 formed out of said shaft, is a link C³, which has pivotal connection at its outer end to the lower end of the lever D at D'. Said lever D has pivotal connection with one of the uprights A² on the pivot a. (Shown clearly in 100 Figs. 1 and 2 of the drawings.) The upper end of said lever D has pivoted thereto a link D², which at its opposite end is pivoted to the slide A⁵ by means of a pivot D³, whereby

as said lever D is rocked on its pivot a the seed-feeding slide A^5 is reciprocated back and forth on the cross-piece A^3 .

Mounted about and telescoping over the tube B is a tubing E, the lower end of which is tapered or beveled, as at E' , and works through an aperture in the bracket E^2 , which is supported on one of said upright posts A^2 . Said bracket surrounds and supports the paste-receptacle E^3 , adjacent to the lower outlet end of which is mounted a paste-roller E^4 , and a pawl E^5 of any ordinary construction may be secured to a projecting portion of said receptacle and have its free end engage with the teeth of a ratchet-wheel at the end of the paste-roller and prevent the latter from rotating in but one direction. This paste-roller may be given partial rotary movements by the flaps of the bags coming in contact therewith.

Mounted upon a cross-piece F of the machine is a carriage F' , having side wings F^2 and handle F^3 . Said carriage has integral apertured lugs F^4 , which slide on the cross-pieces F. The forward ends of the flanges F^2 are bent at right angles, as shown at F^5 , and taper from their upper ends toward the bottom of the carriage, as shown clearly in Fig. 15 of the drawings. Behind said angled flanges the paper bags F^6 are adapted to be held in vertical positions, as shown clearly in the drawings, with their flaps away from the seed-filling tube. The outer of said bags is supported by the forward projecting end f of the handle F^3 and by the spring-actuated member F^7 , mounted in the base portion of the handle. Pivotal connection to the rear end of said carriage is a link G, having an elongated slot G' near its outer end, in which a lug D^4 , mounted on the lever D, is adapted to travel and by striking against the opposite ends of said slot cause the carriage to travel in opposite directions.

H is a lever which has pivotal connection with the pin a at its angled portion, also pivotal connection with the lever D at a location slightly above the pivot a , as at H' . Said lever H has pivotally connected to its opposite end a link H^2 , which in turn is pivotally connected to the ends of a collar H^3 , which collar surrounds and is fastened to the tubing E, as at H^4 , whereby as the lever D is tilted on the pivot a the tubing E is raised and lowered over the inner seed-tube B.

Mounted on the platform A is a standard I, upon which a pulley I' is mounted, and passing over said pulley is a rope I^2 , having a weight I^3 at its lower end, while its opposite end passes through and is held by a projecting lug on the handle F^3 , as shown at I^4 . This weighted connection with the handle is provided for the purpose of advancing slightly the pile of bags and holding the same so that the forward one of said bags will be held against the inner faces of the flanged ends F^5 on the carriage in readiness to receive the lower end of the seed-introducing spout as the

latter is depressed and by so doing opens the bag in readiness to receive the seed.

Pivotaly mounted upon the main operating-shaft C are levers J, which have a rocking motion on said shaft, said motion being imparted by connections with the lever D. The upper ends of the levers J have pivotal connection with the links J' , the outer ends of which are pivotally connected to the lower end of the clamping member K at K' . Said clamping member K is pivoted to the projecting ends L of the rack L' . (Shown in detail in Fig. 12 of the drawings.) Said rack has an upright solid portion L^2 , having right-angled flanges L^3 at its ends, and said rack has longitudinal flanges L^4 on its outer faces which are adapted to slide in grooves in the table A.

The connections between levers J and D, before referred to, consist of the rods M and M' , an enlarged detail view of which is shown in Fig. 13 of the drawings. Said rod M has pivotal connection at its forked end M^2 , Fig. 13, with the lever D and telescopes within the hollow portion of the rod M' and has a longitudinal movement within said hollow portion equal to the length of the slots M^3 , the ends of which serve as stops to the bolt N^3 , which is mounted on a collar N^2 and which passes through the solid portion of the rod M. Interposed between said collar N^2 and the nut N' , mounted on the rod M' , is a coiled spring N. This spring is provided for the purpose of allowing the rod M to have a slight longitudinal movement with the lever D for the purpose of raising the lower beveled end of the tube E from the bag which rests upon the sliding rack, so that the clamping member K will not interfere with the lower end of said tube when said clamping member is thrown frictionally against the bag to hold it to the rack as the rack is carried forward to the position in which the flap-folding member is brought into play. After the bolt carried by the rod M strikes against the end of the slot nearest to the levers J it will be observed that the two rods M and M' (the latter of which has pivotal connection with a T-rod M^4 , extending between the two levers J and shown in side elevation in Fig. 3) will serve the purpose of a single rod for advancing the levers J, which will cause the clamping member K to contact with the bag and advance the same with the rack to positions underneath the paste-roll and bring into play the gear mechanism which will cause the flap to be folded.

Mounted horizontally on one of the uprights A^2 is a rack-bar O, having rack-teeth O' on its upper edge, and mounted in the integral arms L^2 of the upright L^2 is a shaft O^2 , on one end of which is mounted a pinion-wheel O^3 , which is adapted to mesh with the teeth of the rack-bar O as the carriage carrying said pinion-wheel is worked backward and forward. Integral with said shaft O^2 is an offset or cam portion O^4 , which is flat on

one edge and provided with a curved surface O⁵. Said cam portion is located directly over the upper end of said upright L², and as the pinion O³ travels over the rack-bar O it will be observed that said cam portion will turn against the flap of the bag and fold said flap, which has been previously pasted, against the forward face of the bag, the various positions assumed by said flap-folding member being clearly shown in the detail views of the drawings.

In order to hold the bag on the rack upon which it has been depressed from the carriage as the telescoping tube E reaches its lowest limit and commences to return, I have provided a flexible arm E⁴, (shown clearly in Fig. 1 of the drawings,) which arm is held to any stationary part of the frame, being flexible, and, if desired, may have a rubber at its free end, which sweeps against the outer face of the bag as the latter is depressed to said table, and after the upper end of the bag passes said arm the free end thereof will project above the bag and prevent the same from being lifted with the telescoping tube E as it returns to its starting position.

In operation the seed is fed from the hopper by means of the reciprocating block A⁵, which carries the seed which has fallen by gravity in the aperture A⁶ on the cross-piece A³ forward to a position over the upper flaring end of the feeding-tube B. As the block A⁵ is fed forward by the tilting of the lever D it will be observed that the outer telescoping tube E will be depressed and the lower tapering end of the seed-tube will enter a bag, which is shown in Figs. 1 and 2 of the drawings opening said bag. As the lower end of the tube enters the bag the aperture in the sliding block A⁵ will have reached the aperture registering with the upper flaring end of the tube B and the seed will fall through the tubes and into the bag underneath the lower ends thereof. When the lower end of the telescoping tubing reaches a location adjacent to the upper face of the carriage F⁷, it will be observed that the lug D⁴, carried by the lever D, will strike against the outer end of the recess in the link G and cause the carriage to be drawn backward slightly a sufficient distance to allow the filling-tube E⁷ which enters the foremost of the bags to clear the front edges of the carriage as it lowers with the bag being filled to the block on which the standard I is mounted and on the opposite sides of which block the rack L⁷ is adapted to reciprocate. As the bag is depressed with the filling-tube the weight I⁸ and the spring-actuated member F⁷ will cause the presser-block having handle F³ to push the bags forward, so that the outermost thereof will contact against the inner faces of the flanges F⁵ of the carriage, as shown in Fig. 15. It will be observed that the presser-block and carriage have movements independent of each other. After the seed has been depressed in the bag and the bag lowered

to the position shown in Fig. 2 of the drawings, on the return movement of the telescoping tubing E the clamping member K is thrown against the outer face of the bag and holds the latter against the uprights L², said clamping member being thrown so as to frictionally hold the bag in an upright position. The bag being thus held and as the tubing E³ returns to its starting position, the lower end of the lever D will force the rod M forward until the shoulder of the forked member M² strikes the end nut N⁷ on the end of the rod M⁷, after which the two rods M and M⁷ will move together and force the lever J forward and with it the carriage L⁷ and connecting-link and clamping member. As the flap of the bag passes underneath the paste-roller E⁴ said flap will be coated with paste preparatory to its being folded against the bag. As the pinion-wheel carried by the carriage L⁷ comes into mesh with the teeth O⁷ it will be observed that the offset or cam portion O⁴ will begin to rotate with the shaft on which the pinion is mounted and against the flap, turning the latter successively into the positions shown in detail views, Figs. 6 to 9, inclusive. After the cam portion O⁴ has reached its farthest outward limit, in which the pasted flap is held tightly against the face of the bag, the tube E will have reached its highest limit and the bag will be in readiness to be deposited from the machine. On the outer swing of the lower end of the lever D the spring N will contact slightly, which will cause the clamping member K to be released from the bag and allow the latter to fall by gravity, as shown in Fig. 11 of the drawings. As the lower end of the telescoping tube E enters the bag it will be observed that the outer face of the bag near its upper open end will be contracted, which will allow the bag to pass freely by the inclined angled flanges F³, (shown in Fig. 13 of the drawings,) and in order to force the bottom portion of each bag forward to the edge of the carriage the spring-actuated block or member F⁷ comes into play. On the return movement of the carriage which has carried forward the filled bag to be pasted and folded it will be observed that the offset or cam portion of the shaft will return to its starting position and be in readiness to receive the next bag.

From the foregoing it will be noted that the various movements in my improved bag-filling machine are all automatic, the movement of each part being previously determined, so that the various parts will accomplish the desired end without interfering with one another.

What I claim is—

1. In a bag-filling machine, the frame, a horizontally-mounted carriage on which bags are designed to be held, a stationary seed-filling tube vertically disposed and held adjacent to the bags to be filled, means for advancing said carriage, a second tube with lower end beveled, telescoping over said fill-

- ing-tube, and designed to open and enter the bag, as said tube is lowered, means for operating the latter, and for withdrawing said carriage as the bag is filled, and mechanism 5 for pasting and folding the flap, as set forth.
2. In a bag-filling machine, the frame, a horizontally-movable carriage on which bags are designed to be held and means for advancing said carriage, a vertically-disposed seed- 10 feeding tube adjacent to the free end of said carriage, a telescoping tube with lower end beveled working over said stationary tube, said beveled end of tube designed to open and enter a bag, and means for dropping the 15 seed as the tube enters the bag, and for withdrawing the carriage to allow the bag to lower with the beveled tube onto a table, and mechanism for pasting and folding the flap.
3. In a bag-filling machine, the frame, a horizontally-disposed carriage on which open- 20 ended bags are held on end, with flaps projecting above same, means for advancing said carriage, a vertically-disposed seed-feeding tube mounted adjacent to and above the free 25 end of said carriage, a telescoping tube with lower end beveled working over said feed-tube and designed to open and enter the outer of the bags, and means for holding said outer bag on the carriage until said beveled tube 30 enters the bag and mechanism for withdrawing the carriage, as the bag is being filled, as set forth.
4. In a bag-filling machine, the frame, the horizontally-movable carriage designed to 35 hold the bags on end, the vertically-disposed stationary feed-tube, a bevel-ended telescoping tube working over said stationary tube, a sliding block for feeding the seed from a hopper on the frame to an aperture leading to said 40 feed-tube, and means for operating same.
5. In a bag-filling machine, a reciprocating feed-block mounted on the frame of the machine, a pivoted lever mounted on the frame, 45 pivotal link connection between the upper end of said lever and said feed-block, a stationary filling-pipe into which the seed is fed from the feed-block, a telescoping pipe working over said stationary pipe, a collar secured to the telescoping pipe, pivotal link connections between said collar and an arm of said 50 lever, the bag-holding carriage and connections between same and the operating-lever, as set forth.
6. In a bag-filling machine, the frame, a carriage for holding the bags, the seed-feeding 55 tubes, one stationary, the other telescoping, the sliding feed-block, a lever pivoted on a stub-shaft carried by the frame of the machine, and having link connection with said 60 feed-block, an angle-lever mounted on said stub-shaft, and pivoted to said feed-block-operating lever, link connections between said angle-lever and the telescoping feed-tube, and means for imparting an intermittent motion 65 to the bag-carrying carriage, as set forth.
7. In a bag-filling machine, the combination with the mechanism for filling the bags, a reciprocating rack and means for depositing the filled bags thereon, a pivoted clamp mounted 70 on said rack and means for throwing said clamp to frictionally hold a bag against an upright portion of the rack as the latter is 75 driven forward, and means for pasting and folding the flaps of the bags, as set forth.
8. In a bag-filling machine, a horizontally- 80 movable rack, a folding member carried thereby, a clamping member, and means for throwing same against a filled bag and holding said bag against said rack, as the latter is moved 85 forward, and means for operating the clamping member and rack, as set forth.
9. In a bag-filling machine, the combination with the frame, a horizontally-movable rack, a rotary flap-folding member journaled in the 90 upright portion of said rack, and means for rotating said flap-folder, a clamping member pivoted to the rack and mechanism for throwing said clamping member to frictionally en- 95 gage and hold a bag against the rack as the bag is fed forward, as set forth.
10. In a bag-filling machine, a horizontally- movable rack, a clamping member mounted 100 thereon, means for operating said rack and clamping member, a flap-folding member and pinion mounted thereon, a stationary rack- 105 bar designed to mesh with said pinion as the clamping member and rack carrying same are fed forward, as set forth.
11. In a bag-filling machine, a horizontally- movable rack mounted in the frame of the 110 machine, a clamping member pivoted to projecting lugs on said rack, means for operating said rack and clamping member, a flap- folding member carried by said rack and 115 means for turning said flap-folding member as the rack is reciprocated, as set forth.
12. In a bag-filling machine, the frame, a horizontally-movable rack sliding in grooves 120 in said frame, an upright portion on the outer end of said rack, a folding member mounted in said upright portion, a clamping member 125 pivoted to projections of said rack, means for operating the rack and clamping member, and means for rocking said flap-folding member as the rack is reciprocated.
13. In a bag-filling machine, the combina- 130 tion with the frame, the sliding rack and clamping member mounted thereon, the flap-folding shaft journaled in an upright portion of said rack, a pinion-wheel mounted on and 135 rotating with said shaft, a rack-bar on the frame of the machine, the teeth of which bar are designed to be engaged by said pinion-wheel as the rack is reciprocated, as set forth.
14. In a bag-filling machine, the combina- 140 tion with the horizontally-movable rack and clamping member pivoted thereto, a shaft having an offset or cam projection journaled in an upright portion of said rack, a pinion- 145 wheel mounted to turn with said shaft, a stationary rack-bar secured to the frame of the machine, with the teeth of which bar said pinion is designed to mesh, as the rack is re- 150 ciprocated, as set forth.

15. The combination with the sliding rack, the clamping member pivotally held to the projections on said rack, the lever D pivoted to the frame of the machine, the main operating-shaft and link connections between the latter and one end of said lever, a second lever having pivotal connection with the main operating-shaft, and link connections with said clamping member, and the telescoping spring-actuated connections between said levers, as set forth.

16. In combination, in a bag-filling machine, the horizontally-movable carriage, a handle secured to the latter, a spring-actuated block in said handle, angled flanges with inclined edges at the forward end of the carriage.

17. In a bag-filling machine, the combination with the stationary and reciprocating filling-tubes and means for operating said reciprocating tube, the horizontally-movable rack, the clamping member pivoted thereto, the pivotal levers J and main operating-shaft on which said levers are mounted, and a T-rod connecting the latter, link connections between said levers and the lower end of the

clamping member, the lever D and telescoping rods between the latter and said T-rod, a nut on the outer of said telescoping rods, a collar carried by the inner rod, and a spring interposed between said collar and nut, whereby said rods are allowed to move a short distance independent of the movement of the levers J, as set forth.

18. In a bag-filling machine, the horizontally-movable carriage having an elongated slot therein, a handle with forwardly-projecting upper end, a spring-actuated block held in a recess parallel with the bottom of the carriage, a rope secured to a projecting lug on said handle, and passing over a pulley, and a weight secured to the other end of the rope, said carriage and handle having independent motions, and means for operating said carriage, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CORWIN T. PRICE.

Witnesses:

HARVEY M. FRIEND,
A. L. HOUGH.