(No Model.)

T. H. HILL.

AUTOMATIC PAPER BAG FILLER.

No. 277,133. Patented May 8, 1883.

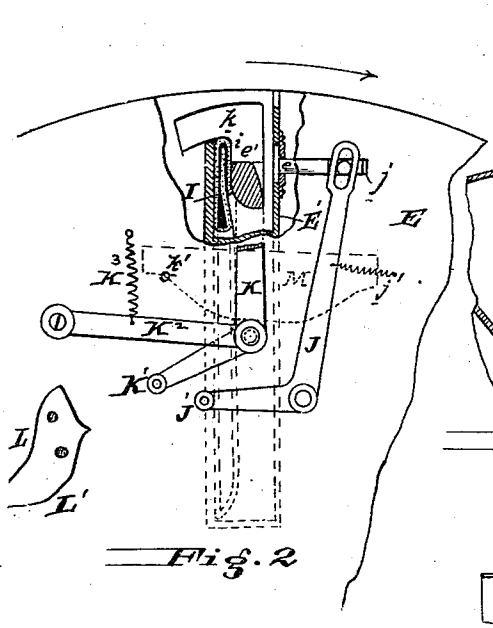


Fig. 2

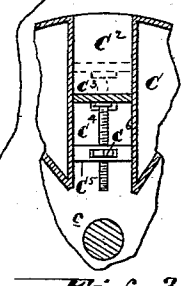


Fig. 3

Fig. 1

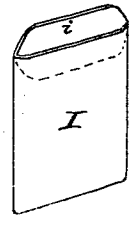


Fig. 4.

Attests:
Wm. McWade
L. Mason

Inventor
Thomas H. Hill
By his atty.
[illegible]

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

THOMAS H. HILL, OF PHILADELPHIA, PENNSYLVANIA.

AUTOMATIC PAPER-BAG FILLER.

SPECIFICATION forming part of Letters Patent No. 277,133, dated May 8, 1883.

Application filed March 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, THOMAS H. HILL, of the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Automatic Paper-Bag Fillers, of which the following is a specification.

My invention has reference to automatic paper-bag fillers; and it consists in certain improvements in machines for automatically filling bags with seed or other substance and sealing the same, as fully set forth in the following specification and shown in the accompanying drawings, which form part thereof.

The object of my invention is to automatically measure the substance to be sealed up in the bags, and then place it therein, and finally seal up said bags with their measured contents, the said machine being adapted to take the place of hand labor and increase the capacity and reduce the expense of filling bags with seed, &c.

In the drawings, Figure 1 is a side elevation of my improved bag-filling machine with part in section. Fig. 2 shows a side elevation of part of the bag receiving and sealing apparatus. Fig. 3 is a section of part of the measuring apparatus, and Fig. 4 shows a perspective view of the form of paper bag used.

A is the frame.

B is an inclosing-cylinder for the measuring-wheel C, and supports the seed-hopper B′, which is provided with a scraper, *b*, of rubber, wood, or a brush. The measuring-wheel C is supported on a shaft, *c*, and has one or more tubular orifices, C^2, extending from the periphery toward the center. In this tube an adjustable bottom, C^3, is placed, which may be moved to or from the periphery by a screw, C^4, and nut C^6, supported in a frame, C^5. By this means the tube C^2 may be adjusted in depth so as to measure off any desired amount of seed from the hopper B′. The measuring wheel or cylinder may be rotated intermittently by a ratchet-wheel, C′, secured to shaft *c*, and provided with as many teeth as there are measuring-tubes in its periphery, and a pivoted pawl, G′, pivoted to a vertically-reciprocating bar, G, guided by bearing *g*, the said pawl being pressed against the ratchet-wheel by a spring, *g′*. A spring-piece, *b*, may be used to press flat upon the teeth of the ratchet-wheel, as shown, to prevent premature turning of said measuring-wheel.

The bottom part of the case B is provided with a chute, B^2, into which the seed from the measuring-wheel is intermittently discharged, and is retained therein until the proper moment by a bottom, B^3, and slide-piece B^4, the former being secured to a pivoted arm, B^5, hinged to a bracket, A′, and is drawn upward to close the bottom of chute B^2 by a spring, g^3. A lug, g^2, on rod G strikes the arm B^5 in its downward movement, and depresses the bottom B^3, as shown, to discharge the seed into the bag held in cylinder E.

The bag-cylinder E is supported on a shaft, D, intermittently revolved by any suitable means—as, for instance, a ratchet-wheel, D′, with which a pawl engages, the latter being reciprocated by a crank, D^3, rotated by a band-wheel, D^4, and held against the ratchet-wheel by a spring, *d*. This bag-cylinder, as shown, has supports for six bags; hence it moves a sixth of a revolution, and then comes to rest.

Secured, also, to the shaft D is a cam-wheel, F, which has six projections, *f*, which actuate the pivoted lever F′, hinged at its outer end to the bottom of the vertically-reciprocating rod G, thus imparting the requisite motion to the feed or measuring wheel and chute bottom.

N is the feed-table for the empty bags, and P the discharge-chute for the filled bags.

The bag I, having flaps *i*, is fed into the flattened box E′, carried by the cylinder E, and is then carried around one-sixth of a revolution and brought below the mouth of chute B^2. The flap *i*, resting against the sealing-bar *e′* during its passage, receives paste from the brush *h*, attached to the paste-vat H, and when brought to rest below chute B^2 this flap is held back by one or more spring-fingers, *h′*. During its advancement the bag is opened by a blast of air from a nozzle, R, and fan R′, and the cam F then lowers the bottom B^3 and slide B^4 of the chute B^2, bringing the seed close to the bag, and as the bag is brought to rest, the bottom still descends, the plate B^4 remaining stationary, and discharges the measured seed into the bag, as shown in Fig. 1. As the cylinder E moves on to repeat the operation the

bar G is raised, closing the bottom of the chute just as it receives a fresh measured quantity of seed, and simultaneously therewith the closing-plate *e*, guided by the slots *j*, is projected forward to close in the top of the bag, the said movement being effected by a bell-crank, J, carrying on its free leg a friction-roller, J′, which works against a cam-face, L, secured to the frame A between the chute B^2 and discharge P. The plate *e* may be moved in and out by the cam, or may be withdrawn by a spring, *j*′. While the plate *e* is advancing to close the mouth of the bag the sealing-bar *e*′ is thrown forward in its slot *k* by the bell-crank K, carrying on its free leg a friction-roller which works against the cam-face L. The pivotal point of the bell-crank K is pivoted to a radial bar, K^2, held up against a pin, *k*′, by a spring, K^3, and now that the mouth of the bag has been closed in and the flap has been turned partly over, the pivoted bell-crank K is drawn down by the cam M, causing the sealing-bar *e*′ to be drawn toward the center of the cylinder E, being guided in the right-angled slots *k*, and thereby closes the flap *i* and seals the bag tightly. As soon as relieved of the cams L and M the springs K^3 and k^2 bring the sealing-bar *e*′ back to its original place in the top of slot *k*, and allow the bag in its sealed condition to be discharged.

In place of the radial bar K^2, guides for the pivot of the bell-crank K may be used, as shown at S. The closing-plate *e* and sealing-bar *e*′ may be operated by any other suitable mechanism.

I do not limit myself to the particular construction shown, as it may be modified in various ways without departing from my invention.

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

1. In an automatic bag filling and sealing machine, means to receive and support the bag, in combination with a feed-chute, means to control the discharge of the material from said chute, and mechanism adapted to seal said bag after being filled, substantially as and for the purpose specified.

2. In an automatic bag filling and sealing machine, means to receive and support the bag, in combination with a feed-chute, a measuring device to feed uniform charges to said chute, means to control the discharge of the material from said chute, and mechanism adapted to seal said bag after being filled, substantially as and for the purpose specified.

3. In an automatic bag filling and sealing machine, means to receive and support the bag, in combination with a feed-chute, means to control the discharge of the material from said chute, an air-blast pipe to open said bag, and mechanism adapted to seal said bag after being filled, substantially as and for the purpose specified.

4. In an automatic bag filling and sealing machine, means to receive and support the bag, in combination with a feed-chute, a measuring device to feed uniform charges to said chute, means to control the discharge of the material from said chute, an air-blast pipe to said bag, and mechanism adapted to seal said bag after being filled, substantially as and for the purpose specified.

5. The combination of a traveling support for the bag, a pasting device to paste the flap during the travel of the bag with the frame, means to open said bag, mechanism to feed uniform or measured quantities of seed, &c., to the bag, and mechanism to automatically seal said bag when filled, the whole forming an organized machine, substantially as and for the purpose specified.

6. An organized machine for filling and sealing bags, which consists of the following parts in combination: an intermittently-rotating bag-receiving cylinder, means to rotate it, a pasting device, and a blast pipe or nozzle to open the bag, a feed-chute to supply the seed, &c., to the bag, a hopper, a measuring device to intermittently feed uniform quantities of seed, &c., from said hopper to the chute, a valve to discharge the contents of the chute into the bags, sealing mechanism carried by the bag-receiving cylinder to seal the bags when filled, and connecting mechanism to impart the requisite motion to all of said parts at the proper time, substantially as and for the purpose specified.

7. A measuring device for a bag-filler, which consists of a cylinder, C, having one or more tubes, C^2, in combination with one or more movable bottoms, C^3, means to adjust said bottoms, casing B, and hopper B′, substantially as and for the purpose specified.

8. A measuring device for a bag-filler, which consists of a cylinder, C, having one or more tubes, C^2, and means to rotate said cylinder, in combination with one or more movable bottoms, C^3, means to adjust said bottoms, casing B, chute B^2, valved bottom B^3, and hopper B′, substantially as and for the purpose specified.

9. The sealing devices for a bag filling and sealing machine, which consist of a receiving-case, E′, for the bag, in combination with closing-plate *e*, sealing-bar *e*′, means to give the plate *e* a reciprocating motion, and means to give the bar *e*′ a right-angled reciprocating motion, substantially as and for the purpose specified.

10. The sealing devices for a bag filling and sealing machine, which consist of a receiving-case, E′, for the bag, in combination with closing-plate *e*, sealing-bar *e*′, means to give the plate *e* a reciprocating motion, and means to give the bar *e*′ a right-angled reciprocating motion, paste-brush *h*, paste-vat H, and spring *h*′, substantially as and for the purpose specified.

11. The sealing devices for a bag filling and sealing machine, which consist of a receiving-

case, E′, for the bag, in combination with closing-plate *e*, sealing-bar *e′*, means to give the plate *e* a reciprocating motion, means to give the bar *e′* a right-angled reciprocating motion, paste-brush *h*, paste-vat H, spring *h′*, and blast-pipe R, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

THOMAS H. HILL.

Witnesses:
R. M. HUNTER,
ISAIAH MATLACK.