3 Sheets—Sheet 1.

J. B. FARRAR.

MACHINES FOR PACKING TOBACCO IN BAGS.

No. 169,533. Patented Nov. 2, 1875.

Fig. 1.

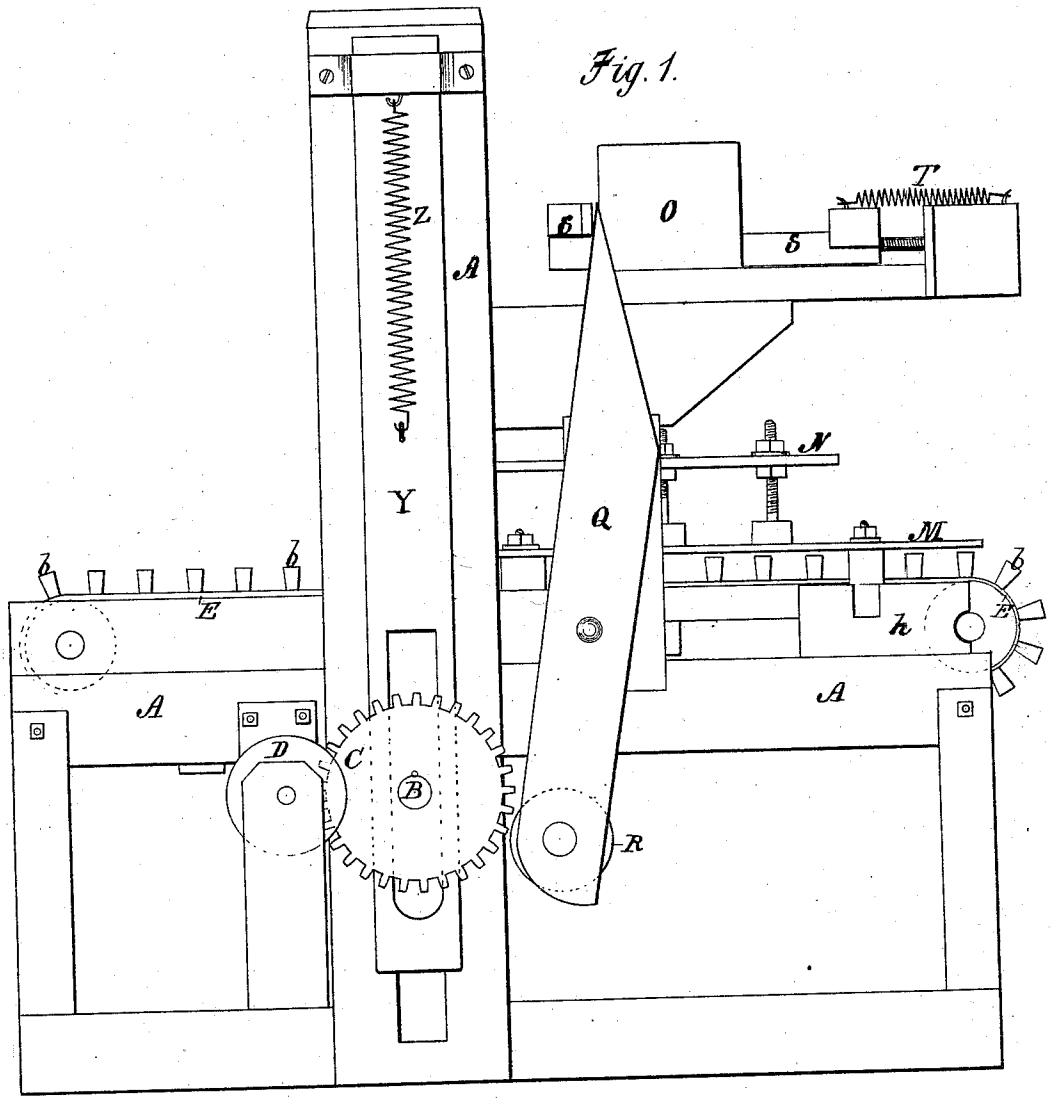

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Fig. 2.

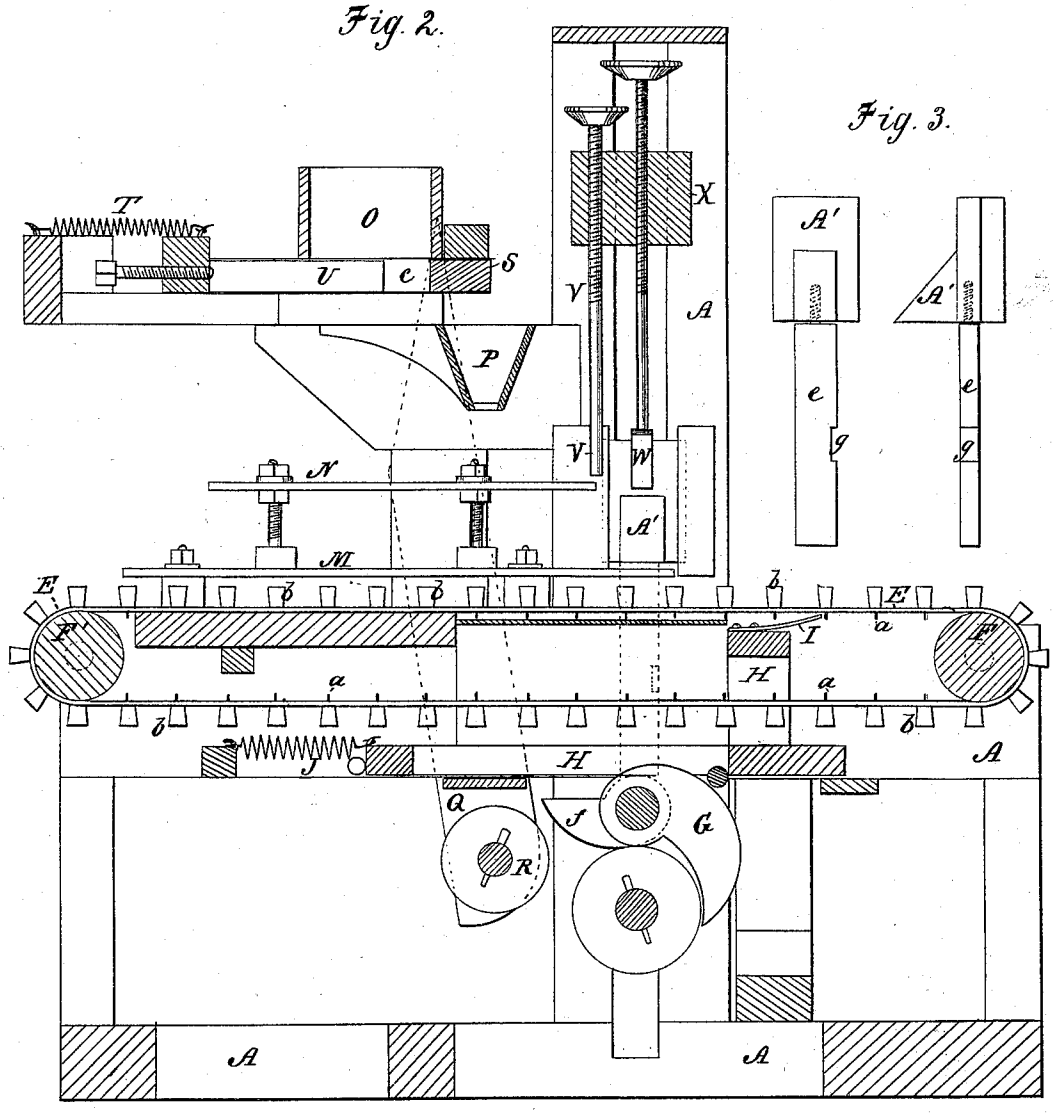

Fig. 3.

Fig. 4.

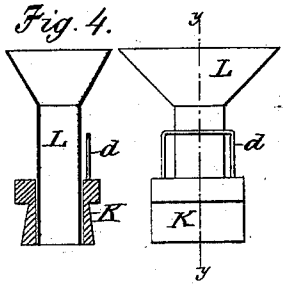

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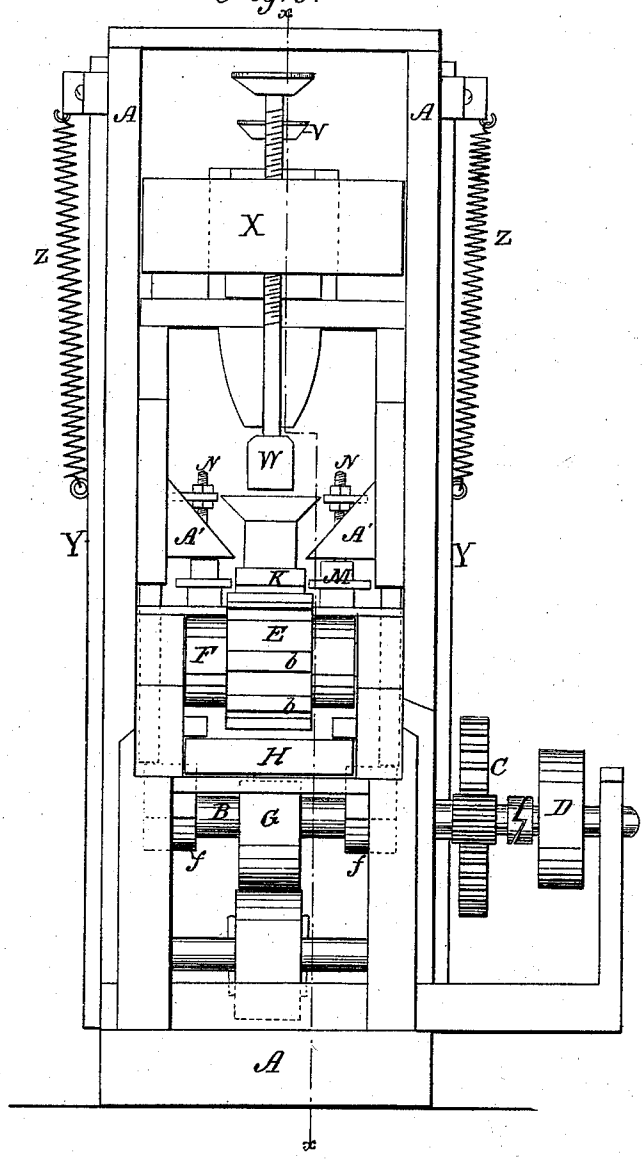
Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES B. FARRAR, OF CARY, NORTH CAROLINA.

IMPROVEMENT IN MACHINES FOR PACKING TOBACCO IN BAGS.

Specification forming part of Letters Patent No. **169,533**, dated November 2, 1875; application filed August 23, 1875.

To all whom it may concern:

Be it known that I, JAMES B. FARRAR, of Cary, in the county of Wake and State of North Carolina, have invented a new and Improved Machine for Filling and Packing Smoking-Tobacco; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a side elevation; Fig. 2, a vertical longitudinal section through line *x x;* Fig. 3, details of the bag-shaped lifters; Fig. 4, details of the bag-shape and bag-holder; Fig. 5, a vertical front elevation.

The object of this invention is to provide a machine for filling packages or bags with measured quantities of smoking-tobacco, and packing it ready for tying. It consists of an intermittently-revolving belt having seats thereon, into which slide the bag-holders which contain the bags and bag-shapes. This belt has upon its inner surface a series of catches with which a pawl upon a reciprocating slide engages to give the intermittent rotary motion to the belt, the said slide being operated by a cam upon the main shaft. As the belt revolves, the bag holders and shapes are brought beneath the hopper containing the tobacco, beneath which is a chute or spout for directing the tobacco into the bag-shape, and between the chute and the hopper an adjustable cut-off and measuring-slide, operated by the said cam upon the main shaft through the instrumentality of a pair of levers. The bag thus filled passes then upon the belt to two vertically-moving plungers, the first of which settles and presses the tobacco from the bag-shape into the body of the bag, and the second of which packs the same. Both these plungers are attached to a cross-head, which is depressed by the cam upon the main shaft, and retracted by spiral springs. At the same time that the bag is being pressed by the second plunger, a set of lifters moving in vertical guideways catch beneath the flared mouths of the bag-shapes and lift them out into a convenient position to be removed by hand, the said lifters being operated by an independent set of cams upon the main shaft, which engage with the lower ends of the lifter-standards. Upon the sides of the belt are located guides, which hold the bag-holders always in proper position to be filled and receive the plungers, which said guides are adjustable to suit the size of the bag-holders.

In the drawing, A represents the framework of the machine, and B is the main shaft, which is driven through the gearing C and the band-wheel D, provided with an ordinary clutch-coupling. E is the intermittently-revolving endless belt, running over pulleys F F′, and provided with inwardly-projecting catches *a*. G is a cam upon the main shaft, which, as it revolves, strikes a roller in a slide, H, and gives it a reciprocating motion, which causes a pawl, I, which it carries, to engage with the catches *a* of the belt, and revolve it intermittently, the said slide being operated in one direction by the cam, and retracted by the spiral spring J. Upon the outer surface of the belt are placed, at equal distance apart, blocks *b*, which form between them seats which receive the bag-holders K, to be slid therein. Inside the bag-holder is placed the ordinary form of sheet-metal bag-shapes L, with flared top, which shapes enter the bag and hold it distended inside the bag-holder. M is an adjustable guide, which determines the distance the bag-holders must go in the seats upon the belt, and steadies the same in its passage. N is a second guide, supported upon M, and arranged to be adjusted either vertically or horizontally to steady the tops of the bag-shapes. Upon the opposite side of the belt is a similar set of guides, of which the lower one is made shorter, to admit of the insertion of the bag-holder. As the belt revolves, the bag-holders, bags, and bag-shapes pass in their seats upon the belt beneath the spout P of the hopper or supply-box O, and are filled, the tobacco being measured and delivered by the following devices: A set of levers, Q, carrying a roller, R, are operated by the cam G to move a slide, S, in one direction, and a spring, T, to retract it. Said slide moves in the bottom of the hopper, and has a hole, *c*, which constitutes in the hopper a cup that contains a sufficient amount of tobacco for one package. When the said slide is moved by the action of the levers, the cup carries out its contents, and having, when outside the

hopper, no bottom, the tobacco falls into the spout P, and from thence into the flared mouth of the bag-shape. Inside the slide S is a second slide, U, regulated by a binding-screw, to make the hole *c* either large or small, according to the different sizes of the packages required.

After the bag-shapes are filled, they pass onto the plungers V W, both of which are fixed in a cross-head, X, with an adjustment in vertical direction to adapt them to large or small packages. The said cross-head moves vertically in guides, and is attached to slide-bars Y Y, which are connected below and provided with a roller upon which the cam G operates to depress the plungers, the said cross-head, slides, and plungers being restored to their elevated position by spiral springs Z. At the same time that the plunger W descends to press the tobacco fully into the bag, a set of wedge-shaped lifters, A′, one upon each side, rise, and, catching beneath the flared sides of the bag-shape, withdraw it from its place and leave it resting against a support, *d*, upon the bag-holder, from which position it is readily removed by hand. The said lifters move vertically in guides in the frame-work, and have detachable standards *e*, which are acted upon by the cams *f f* upon the main shaft, to raise said lifters, the weight of the latter restoring them to their former position. The standards of these lifters are made detachable, so that different sizes may be introduced to regulate the throw of the lifters to suit the length of the bag-shapes, and are also provided with a recess or shoulder, *g*, which receives a catch to prevent them from descending the full throw of the cams when smaller bag-shapes are employed. Upon one end of the machine is an adjustable frame, *h*, in which is journaled one of the pulleys F′, and by means of which the band may be tightened when necessary, or removed for repairs.

In operating the above-described machine, the bag-holders, with the bags and bag-shapes, are inserted at the rear end of the machine, in the seats upon the belt, by hand, and, after being filled and packed, are removed in a like manner, the bags tied, and the holders and shapes replaced upon the belt with a new bag.

Having thus described my invention, what I claim as new is—

1. In a tobacco-packing machine, an endless belt, E, having seats *b* thereon, in combination with the bag-holders K and the guides M N, substantially as and for the purpose described.

2. The combination, with the endless belt, having catches *a*, of the pawl I, slide H, cam G, and spring J, substantially as described, for the purpose of operating the belt.

3. The combination, with the endless belt, carrying seats, and the bag-holders K, of the two plungers V W, attached to the same cross-head, and located the same distance apart as the bag-holders in the seats, whereby a single movement is made to effect the packing of one bag and the shaking down or settling of the tobacco in the next following, substantially as described.

4. The combination, with the endless belt and the bag-holders, of the plungers V W, the cross-head X, slide-bars Y, springs Z, and the cam G, as and for the purpose set forth.

5. The combination, with the bag-holder, of a support, *d*, as and for the purpose described.

The above specification of my invention signed by me this 14th day of August, A. D. 1875.

J. B. FARRAR.

Witnesses:
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SOLON C. KEMON.