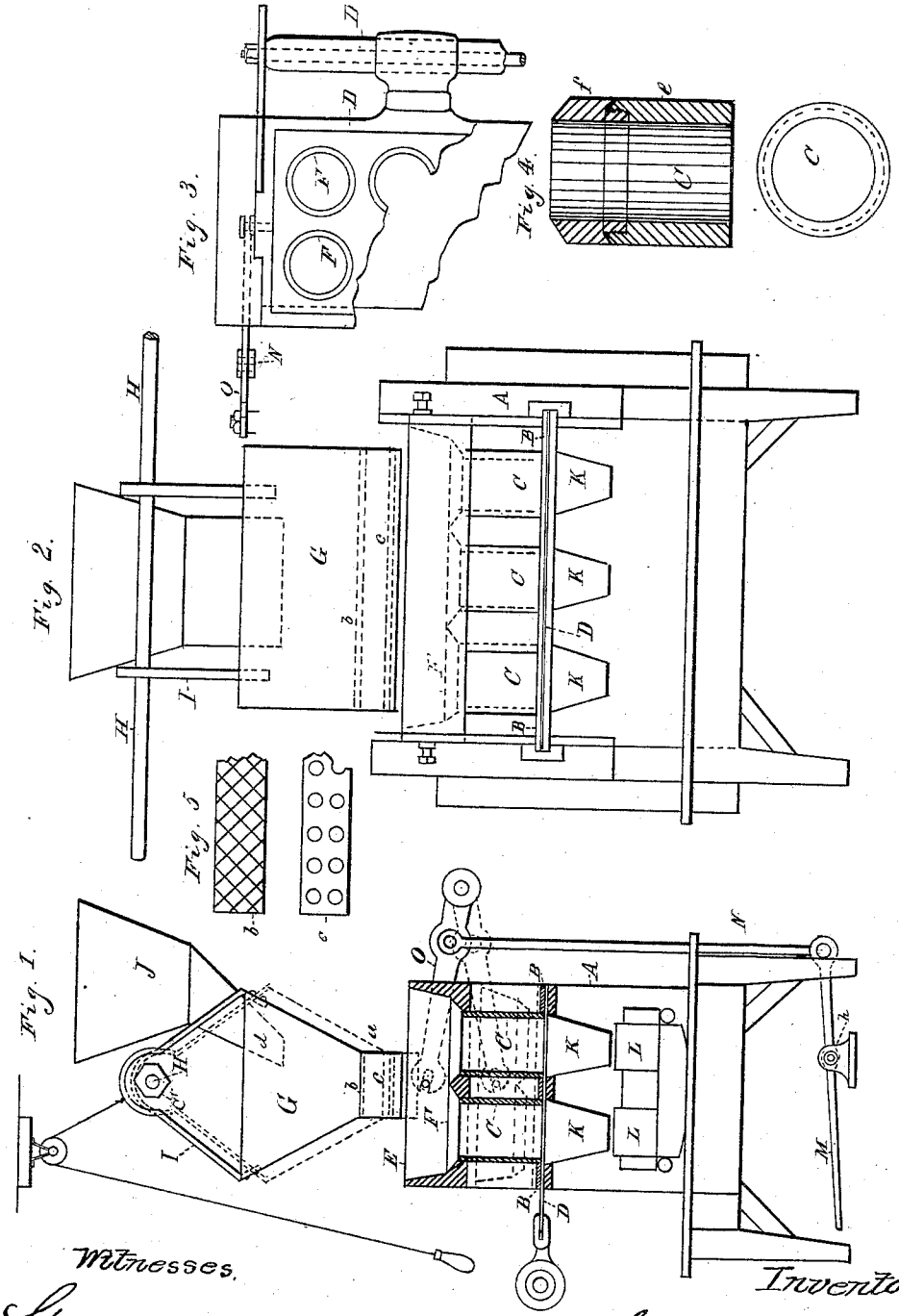
(No Model.)

C. E. BOLTON, F. H. STRIEBY & M. RANKIN.

BOX AND PACKAGE FILLER.

No. 277,540. Patented May 15, 1883.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES E. BOLTON, FRANK H. STRIEBY, AND MATTHEW RANKIN, OF CLEVELAND, OHIO.

BOX AND PACKAGE FILLER.

SPECIFICATION forming part of Letters Patent No. 277,540, dated May 15, 1883.

Application filed August 30, 1881. (No model.)

To all whom it may concern:

Be it known that we, CHARLES E. BOLTON, FRANK H. STRIEBY, and MATTHEW RANKIN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Box or Package Fillers; and we do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to a machine for filling boxes, and is especially adapted for use in coarse articles—such as brads, screws, tacks, &c.—where it is impractical to use a slide or cut-off, on account of the danger of injuring the said articles, or on account of the largeness of the articles to be packed.

In the drawings, Figure 1 is a side elevation of our machine, partly in section. Fig. 2 is a front elevation of the same. Figs. 3, 4, and 5 are enlarged detached views, showing more clearly the construction of some of the parts of the machine.

A is a frame, in which is mounted a plate, B, in which are fitted a number of measuring-tubes, C, open at their upper and lower ends.

D is a shut-off, which slides under the plate B, and serves to close the lower ends of the measuring-tubes C.

E is a feeding-tray, the bottom of which is provided with a number of openings, F, through which the measuring-tubes C slide vertically. These openings F may be countersunk or made flaring, as shown in the drawings, so as to allow the tubes C to be more easily filled. The feeding-tray E is adapted to slide up and down to such a distance that when the tray E is at its highest point the top of the tubes C will be even with the bottom of the said tray E, as shown in Fig. 1 of the drawings; but when the tray E is at its lowest point the top of said tray E will be about even or on a level with the top of the measuring-tubes C.

G is a hopper, the spout *a* of which is suspended over the feeding-tray E. This spout *a* is provided with two screens, *b* and *c*, the screens *b* and *c* being preferably formed as shown in Fig. 5. This hopper G is provided with suitable mechanism whereby it may be shaken or agitated at suitable intervals or when desired. One method of constructing the same is shown in the drawings, Fig. 1.

H is a shaft, which is provided with a cam, *c'*. Suspended on the said cam *c'* is the yoke or handle I, which is attached to the hopper G. Now, as the cam *c'* is revolved on the shaft H, it agitates the hopper G through the yoke or handle I. In Fig. 1 the hopper is represented in dotted lines as resting on the cam, and in full lines as being held out of engagement with the cam. To this yoke or handle I may be attached a string or suitable device for raising the yoke from the cam *c'*, and thus stop the shaking of the same when the feeding-tray E is sufficiently full.

J is another hopper, which is suspended above the hopper G by any suitable means, (not shown,) in such a manner that its spout *d* is somewhat below the upper part of the hopper G.

The measuring-tubes C are preferably formed as shown in Fig. 4, so that they may be enlarged, if desired. The part *e* of the measuring-tube is formed with a screw-thread on its inner circumference, and the part *f* is provided with a screw-thread on its outer circumference. It is obvious that the manner of uniting the parts *e* and *f* may be different from the foregoing, if desired, the manner shown being the one we prefer to use.

K are funnels, and L packages, which are placed under the tubes C.

M is a foot-lever, which is pivoted at *h*, one end being attached to a rod, N, said rod N in turn being attached to another lever, O, near its center, one end of said lever being pivotally attached to the frame of the machine, and the other end being adapted to engage with a pin on the tray E, and when the free end of the lever M is depressed the lever O rises, and with it the tray E, as shown in Fig. 1, and vice versa.

The spout *a* may be made either round, or in any suitable shape to conform with the shape of the tray E, and evenly distribute the screws or like articles in said tray.

The operation of our machine, when used for packing screws, is as follows: The hopper J is first filled with screws, which fall through the spout *d* into the hopper G, where they are prevented from falling through by the screens *b* and *c*. When the hopper G is filled up as high as the mouth of the spout *d*, the screws stop the flow from the hopper J. The yoke I is now lowered until it comes in contact with the cam *e*, which acts to agitate the hopper G, and the screws fall through the screen *b* onto the screen *c*, where they are distributed over the surface of said screen *c*, and fall through into the feeding-tray E. When the feeding-tray E is sufficiently full, the yoke I is disengaged from the cam *e*, and the agitation is stopped. Now, as the screws fall into the feeding-tray E, they lower in the hopper G and open the mouth of the spout *d*, which again allows the screws to fall into the hopper J, this being kept up each time the hopper G is shaken. The feeding-tray E is preferably filled until the screws or other articles to be packed are even with the upper ends of the measuring-tubes C, when the feeding-tray is down to its lowest point. Now, as the feeding-tray is raised by means of a lever or any suitable device, the screws fall into the measuring-tubes C, and the said tray E and tubes C being well shaken, the screws are tightly packed within the tubes C. The feeding-tray E is now lowered, and the overflow of the tubes falls into the said tray again. The shut-off D is now pulled out from under the tubes C, and the screws fall into funnels K, and from thence into their respective packages L, which are placed beneath the said tubes in such a manner that a funnel and package is directly under a tube, C. The packages are then removed and sealed, and others placed under the tubes to be filled.

What we claim is—

1. In a package-filling machine, the combination, with the hopper G and means for imparting a shaking action thereto, of the hopper J, retained in a stationary position, and arranged with its spout entering the upper portion of the hopper G, substantially as set forth.

2. The hopper G, provided with a spout at its lower end, and two screens, *b* and *c*, located one above the other in said spout, in combination with mechanism for agitating or shaking the hopper, substantially as set forth.

3. In a package-filling machine, the combination, with the measuring-tubes, of a tray adapted to be adjusted vertically with relation to said measuring-tubes, substantially as set forth.

4. In a package-filling machine, the combination, with the measuring-tubes, of a vertically-adjustable tray constructed to receive the upper ends of the measuring-tubes, and a cut-off slide located below the measuring-tubes, substantially as set forth.

5. In a package-filling machine, the measuring-tubes made in sections, so as to be enlarged or contracted in size, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

CHARLES E. BOLTON.
FRANK H. STRIEBY.
MATTHEW RANKIN.

Witnesses:
JNO. CROWELL, Jr.,
ALBERT E. LYNCH.