

A. RALPH.
Packing-Machines.

No. 142,651.

Patented September 9, 1873.

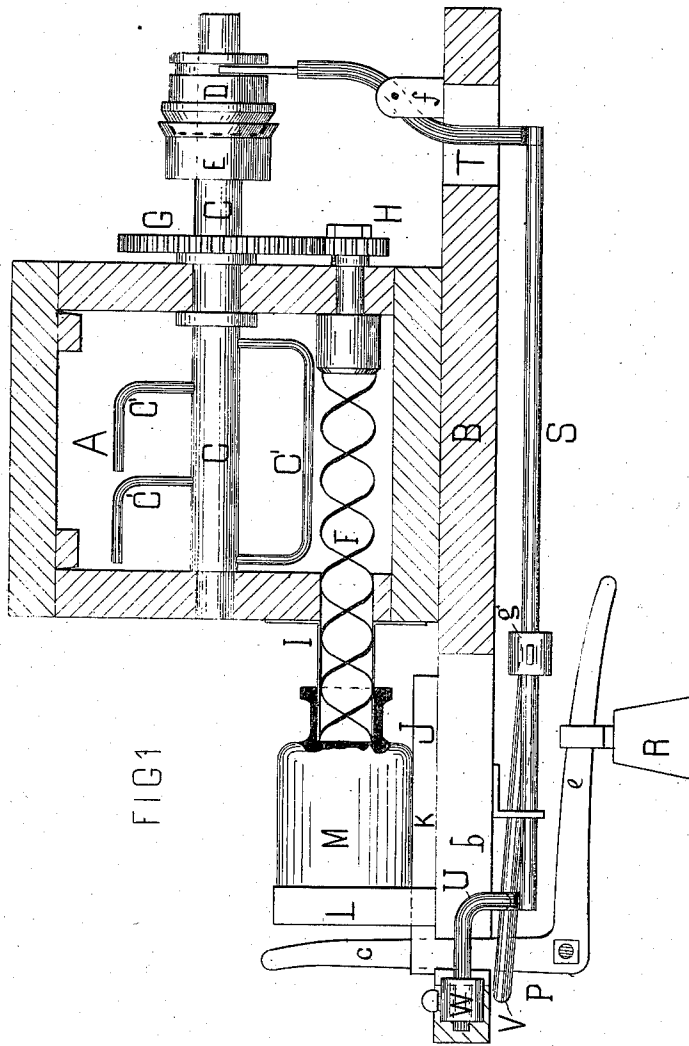


FIG 1

WITNESSES

Edmund P. Cochran
Robert Carr

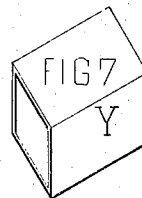
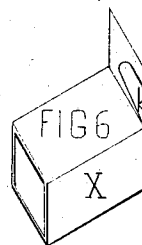
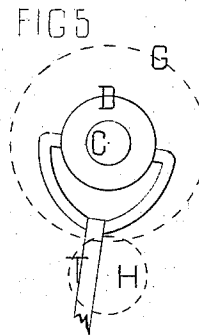
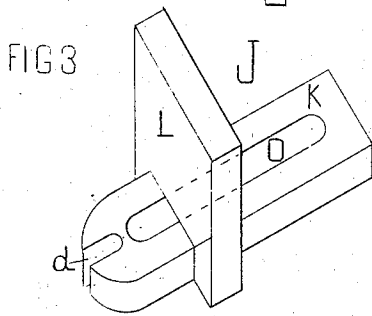
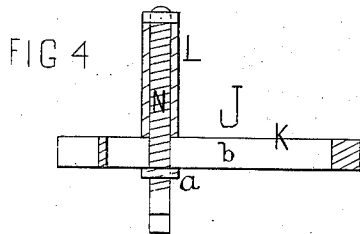
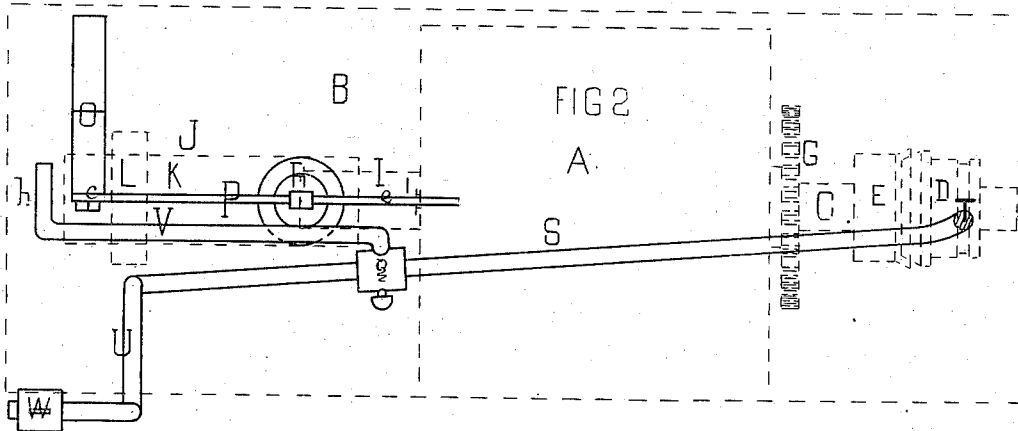
INVENTOR

Alexander Ralph
by Francis D. Pastorius
Attorney

A. RALPH.
Packing-Machines.

No. 142,651.

Patented September 9, 1873.



INVENTOR

Alexander Ralph
by *Francis D. Pastorius*
his Atty

WITNESSES

Edmund P. Cochran
Robert Carr

UNITED STATES PATENT OFFICE.

ALEXANDER RALPH, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN PACKING-MACHINES.

Specification forming part of Letters Patent No. 142,651, dated September 9, 1873; application filed August 6, 1873.

To all whom it may concern:

Be it known that I, ALEXANDER RALPH, of the city and county of Philadelphia and State of Pennsylvania, have invented an Improved Packing-Machine, of which the following is a specification:

My invention relates to a machine for packing bottles and packages with flour, snuff, spices, and other material. It is so fully and accurately described hereafter that a preliminary description is not requisite.

Figure 1 is a side elevation, partly sectioned, of a machine which embodies my invention. Fig. 2 is a plan view of the operative parts situated beneath the top or stand of the machine; the stand and the parts above it are shown in dotted lines. Fig. 3 is a perspective view of the bottle and package holder or follower. Fig. 4 is a longitudinal vertical section of the bottle and package holder or follower. Fig. 5 is an end view of the friction-cone pulleys and shifting-clutch. Figs. 6, 7, are perspective views of the devices employed when filling packages.

A is a rectangular-shaped hopper on the stand B. C is a horizontal shaft placed lengthwise with the machine, partly within and partly without the hopper. Its outer end carries the friction-cone pulleys D E for transmitting motion. The length within the hopper has one or more whippers or agitators, O', of any construction radiating from it. F is a feed and packing screw in the hopper below and parallel with the whipper-shaft C, with which it is connected, and from which it receives motion by means of the spur-gear and pinion G H, respectively, on the said shafts. I is a feed-spout extending horizontally from the front of the hopper. It contains the prolongation of the screw F, and serves for a support, guide, and feeder for the bottles and packages to be filled. J is a bottle and package holder and follower. It is constructed substantially as shown at Figs. 3, 4. The bed or base K rests on the top B of the stand in front of and in a line with the spout I. Its butting-rest L, against which the base of the bottle or package M bears when filling, is arranged vertically and transversely to the bed. A screw-bolt, N, which is inserted either in its bottom edge, or extended its length with a nut at top and bottom, takes through a

longitudinal slot, O, in the bed, and enables the butting-block to be adjusted at any required part of the bed K to suit the follower to the varying lengths of the bottles and packages. The rectilinear motion of the follower is preserved by the bolt head or nut *a* in a corresponding groove, *b*, in the top B. P is a compressing lever, Figs. 1, 2, which turns on a fulcrum, Q, depending from the under side of the top B. Its vertical leg *c* extends a suitable distance above the stand, and takes into a notch or slot, *d*, in the continuation of the bed K or the follower J. Its horizontal leg *e* is longitudinally beneath the top. It carries an adjustable weight, R, for giving the necessary force to the leg *c*. S is a shifting-bar placed lengthwise, and also beneath the top. One end of it joints with the friction-clutch lever T, which turns on the fulcrum *f*, and engages with friction-pulley D. Its other end is connected with the bent weighted lever U. V is a trip-rod attached to an adjustable collar, *g*, on the shifting-bar S. Its bent or turned end *h* takes directly behind the vertical leg *c* of the compression lever P.

The cones or friction-pulleys D E are as follows: The cone D turns with the shaft C, and has also a sliding motion on it by means of a feather. Its conical or tapering end, dotted lines, Fig. 1, takes into a similar cone-shaped recess in the friction-pulley E, which turns loosely on the shaft, and is belted with the driving-pulley. When the pulleys are in contact, as shown, the machine can be run, but when apart it will be quiescent. The degree of compression or closeness of packing of the material in the bottle or package is governed by the weight or number of ounces of it to be packed in the said bottle or package. When this is determined the weight R is adjusted on the leg *c* of the lever P to exert that degree of resistance to the retreat of the bottle to attain the desired compression or closeness of packing. The collar *g* is also set at a point of the shifting-bar S to permit the leg *c* to strike the bent or turned end *h* at the proper time for stopping the machine. The first few bottles filled are usually trial ones to enable the operative parts to act in conjunction, so that the machine may do its work perfectly without stoppage or interruption. After the bottle or

package M on the carrier or follower J has been passed a suitable distance over the spout I, and the snuff, spice, or other material filled in the hopper A, the machine is started. The agitators C' thoroughly stir up and keep the material fed to the screw F, which carries and packs it in the bottle or package. As the packing proceeds the bottle gradually recedes until it is filled, when the leg c of the lever P strikes the bent end h of the trip-rod V, and throws back the shifting-bar S, which causes the clutch-lever T to separate the friction-cones D E, and to thus stop the machine. After the bottle has been taken from the carrier J, and all resistance removed, the weight W of the bent lever U acts by vibrating it and reversing the position of the shifting-bar S, which causes the clutch-lever T to throw the friction-pulleys again in contact.

When packages are to be filled the process is the same, excepting that forms are used. The first form X, Fig. 6, has the paper or other wrapping material formed over it. The form-retainer Y, Fig. 7, is then slipped over all, and the whole passed over the spout, and secured from turning by the slot k taking over a button, l, at the front of the hopper.

When the machine is in operation the lid of the hopper must be kept in place, otherwise the agitators will scatter it. The bottom of the hopper, when shelving or inclined, causes the screw to run, as it were, in a trough.

I claim as my invention—

1. A machine for packing bottles and packages, in which the desired compression is ob-

tained by means of a feed-screw and a weighted lever acting in opposite directions.

2. Stirring the material in the hopper and feeding it to the feed-screw by rapidly-revolving whippers or agitators.

3. The hopper A, shaft C, and the agitators C', when combined and arranged for the purpose shown and described.

4. The shaft C, in combination with the cone-friction pulleys D E, for the purpose shown and described.

5. The shaft C, pulleys D E, gear-wheels G H, and the screw F, as and for the purpose shown and described.

6. The follower J, when constructed as described.

7. The screw F, follower J, lever P, and the weight R, constructed and arranged, as shown.

8. The shifting-bar S, in combination with the clutch-lever T and the trip-rod V, as shown.

9. The shifting-bar S, in combination with the clutch-lever T, trip-rod V, and the friction-pulleys D E, as shown.

10. The trip-rod V, in combination with the clutch-lever T, the weighted lever U, and the cones D E, as shown.

11. The former X, in combination with the form-retainer Y, for the purpose shown and described.

In testimony whereof I hereunto sign my name in presence of two subscribing witnesses.

ALEXANDER RALPH.

Witnesses at signing:

EDMUND P. COCHRAN,

FRANCIS D. PASTORIUS.