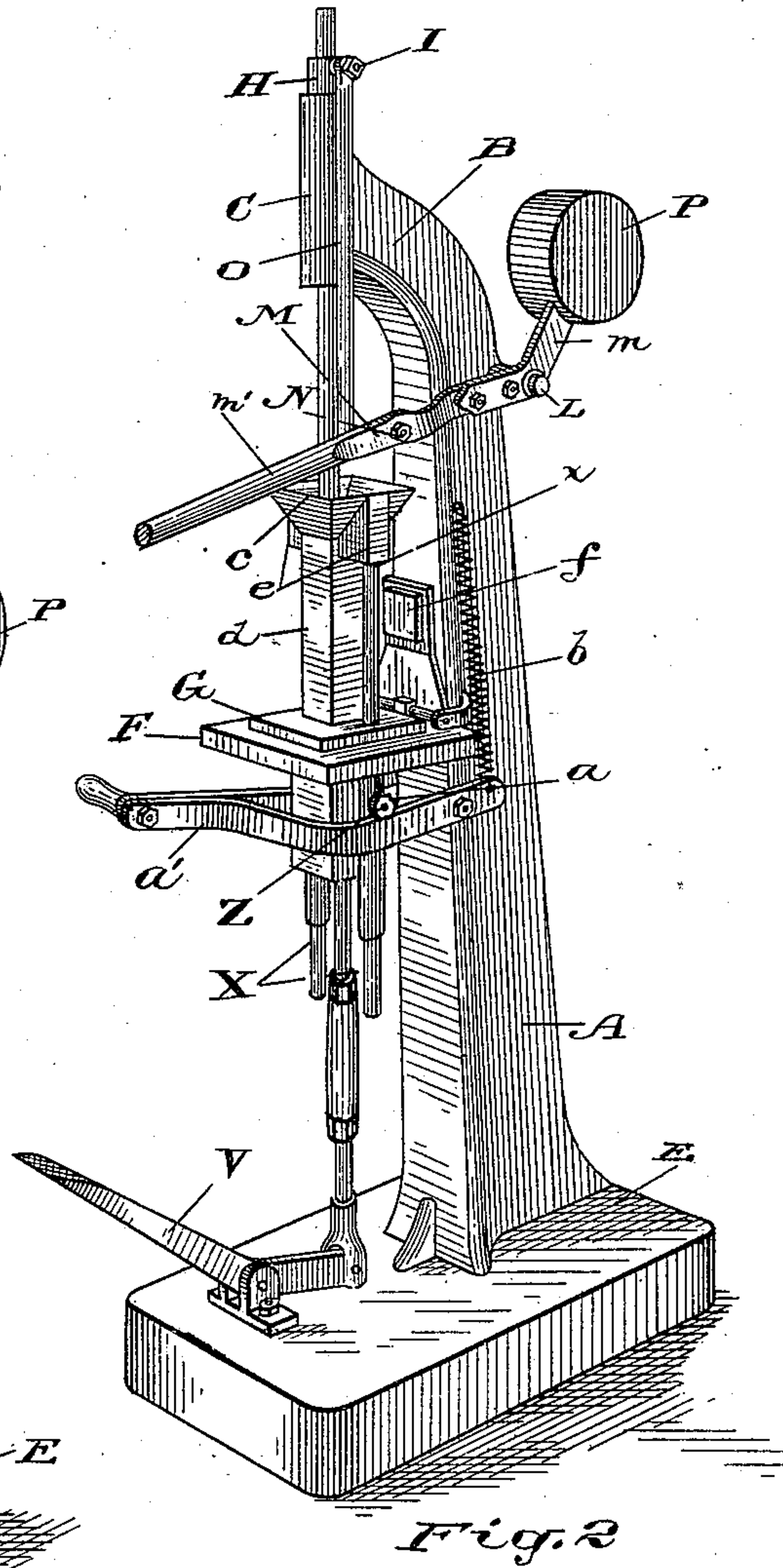
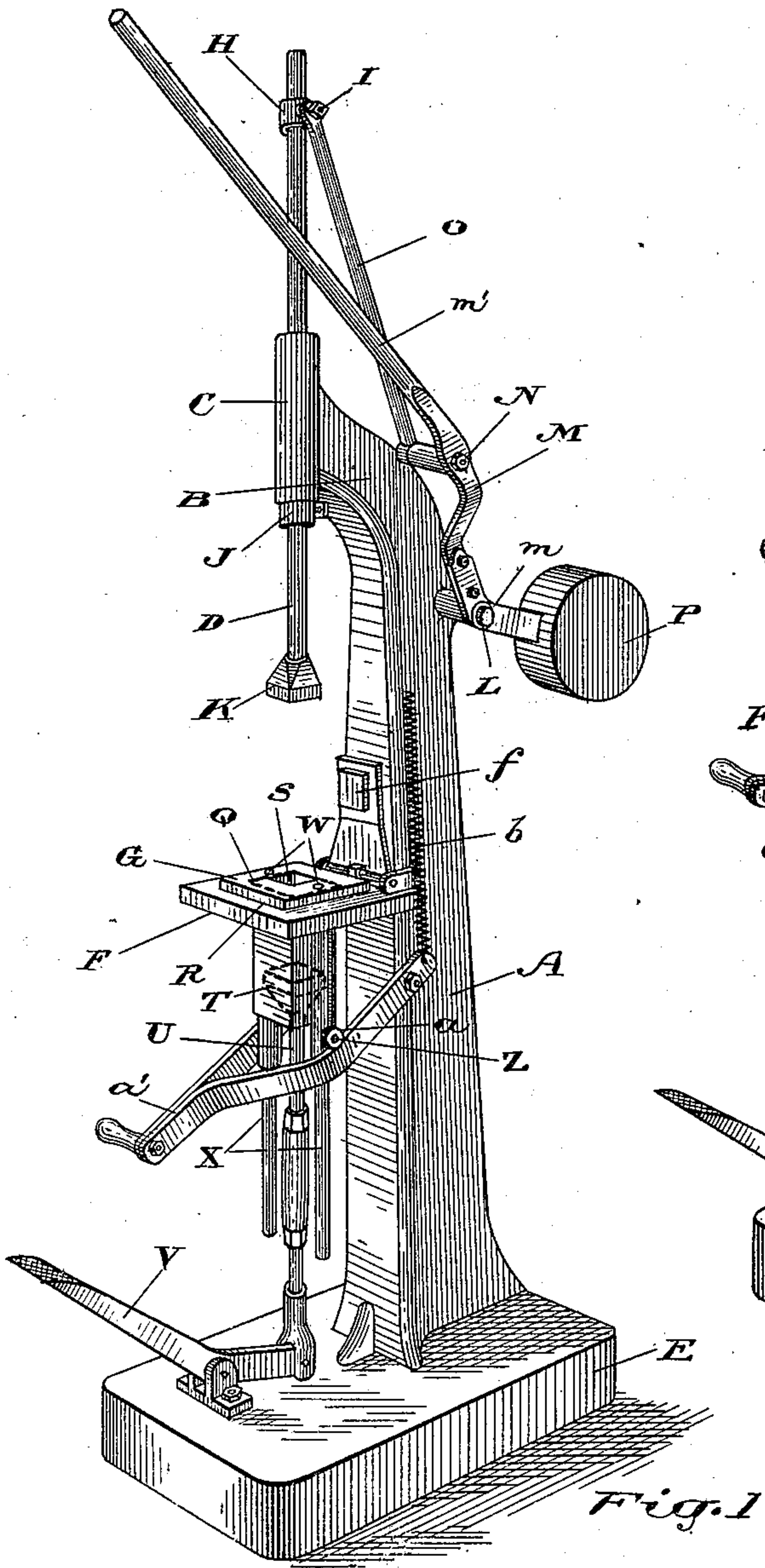


(No Model.)

P. C. LARKIN.
PACKING MACHINE.

No. 567,145.

Patented Sept. 8, 1896.



Witnesses

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UNITED STATES PATENT OFFICE.

PETER C. LARKIN, OF TORONTO, CANADA.

PACKING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 567,145, dated September 8, 1896.

Application filed October 11, 1895. Serial No. 565,363. (No model.)

To all whom it may concern:

Be it known that I, PETER CHARLES LARKIN, of the city of Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Packing-Machines; and I hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to certain new and useful improvements in packing-machines; and the object of the invention is to provide the machine with a packing-plunger which can be easily operated with great force to reduce the bulk of the contents of the package, and which, on its release from the application of power, will automatically and instantaneously return to its normal position; to so arrange the funnel and its operating parts that immediately after the filling of the package the funnel can be easily and expeditiously removed, leaving the top of the package in such a condition that it can be readily closed; to provide a means for pressing the closed top on the contents to hermetically seal the package and prevent the admission to its contents of the atmosphere, with the various elements with which it is laden, and to provide a means for easily discharging the filled package from the machine, the whole device being hereinafter more fully set forth, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of the packing-machine, showing the packing-plunger in a position about to descend. Fig. 2 is a perspective view showing the packing-plunger after having descended and the funnel lifted from the package.

Like letters of reference refer to like parts throughout the specification and drawings.

The packing-machine consists of a standard A, having a crane-shaped top B. In the front of the crane-shaped top B is a vertical guide C for the packing-plunger D.

Connected to the front of the standard A, about midway between the crane-shaped top B and the base E, is a table F to receive the changeable molds G.

Working vertically in the guide C is the packing-plunger D. Connected to the top of the packing-plunger D is a collar H, from the side of which projects a pin I. Mounted

on the packing-plunger D, below the vertical guides C, is a collar J to arrest the upward movement of the packing-plunger D on the completion of its stroke during its return to its normal position. The lower end of the plunger D is fitted with a removable head K, constructed to fit the interior of the funnel. Projecting from the side of the standard A, between the table F and the under side of the crane-shaped top B, is a pin L, and mounted on the pin L is an L-shaped lever M. The short arm *m* makes with the long arm *m'* of the said lever an angle of approximately one hundred and twenty-five degrees, and projects to the rear of the packing-machine. The long arm *m'* of the L-shaped lever M, when in its normal position, is set at an angle of about forty-five degrees to the perpendicular of the machine. Thus the short arm *m* will be substantially horizontal. When the long arm *m'* of the lever M is depressed to operate the plunger D, it moves over an arc of approximately sixty-five degrees, which would bring the short arm *m* into a nearly perpendicular position, and when the short arm is fitted with its counterbalance the nearer to the perpendicular that the short arm is brought the less force it requires to counteract the weight of the counterbalance, thus enabling the operator to apply his full strength in forcing the head of the packing-plunger on the contents of the package. In addition to enabling the operator to exercise his full strength where the greatest force is required, the arrangement of the arms relieves the operator from an unnecessary application of strength where force is not required.

Projecting from the inner side of the long arm *m'* of the lever M, between the pin L and the end of the lever, is a pin N, and connected to the pins I N is a pitman O, by means of which the plunger D is operated by the movement of the L-shaped lever M. Mounted on the short arm *m* of the L-shaped lever M is a counterbalance P to return the lever and plunger to their normal position when released from the application of power.

Formed through the table F is an opening Q to receive the mold G. Projecting outward from the top of the mold G is a rectangular flange R, which rests on the metal of

the table F, surrounding the opening Q. The flange R supports the mold in position. The opening S of the mold G extends completely through the mold, and located in the bottom of the opening S is the head T and upper end of a plunger U, to which the head T is connected. The lower end of the plunger U is connected to one end of an L-shaped treadle V and is adapted to be raised thereby during the depression of the opposite end of the treadle. Formed through the flange R, on opposite sides of the middle of the opening S, are two openings W.

Located within the openings W are the upper ends of two vertical rods X, supported in suitable guides connected to the frame A below the table F. Connected to each of the rods X is a pin Z, and mounted on each of the pins Z is a roller *a*. Pivoted to the standard A are the forked ends of a bifurcated lever *a'*, the forked ends of which are so arranged as to be contiguous to the vertical rods X. The rollers *a* are located on the top of the forked ends of the bifurcated lever *a'*, and by raising the bifurcated lever the vertical rods X are lifted to their fullest capacity, and on the release of the lever *a'* from its lifting force the lever and rods X fall by gravity into their normal position. To cause the sharp return of the lever *a'* to its normal position, I connect to each of the forked ends a spring *b*, which is also connected to the standard A. Hinged to the standard A, contiguous to the top of the table F, is one end of a spring-operated presser-leaf *f*, which is adapted to press down the top of the package after it has been folded. The funnel consists of a funnel-shaped top *c* and a sleeve or box-shaped former *d*, connected with the funnel-shaped top *c*. Each side of the former *d*, contiguous to the top *c*, is provided with a lug or projection *e*, against which is adapted to operate the upper ends of the vertical rods X.

The operation of the machine is as follows:
 45 The package is formed on the box-shaped former *d* with the bottom of the package securely closed. The funnel is then inserted into the tea-mold G, with the bottom of the package resting on the head T of the plunger U. The contents are then poured into the funnel-shaped top *c* and descend into the package. The L-shaped lever M is then operated to bring the head of the packing-plunger sharply down on the contents of the package and compress them into a smaller bulk. The bifurcated lever *a'* is then lifted and during its lifting motion lifts the vertical rods X, which in turn lift the funnel from the package. The L-shaped lever M is then released
 60 and the counterbalance P returns the L-shaped lever M and packing-plunger D to their normal position. The funnel is then removed and the top of the package is folded and closed. The presser-leaf *f* is then turned
 65 down on the top of the package and the lever M is again operated to bring the packing-plunger D with force on the presser-leaf *f* and

cause the presser-leaf *f* to tightly close the top of the package. The treadle V is then operated to cause the plunger U to throw the package from the mold G, after which it is labeled and sealed.

While this machine is intended to be used as a tea-packing machine, still I do not confine myself to using it solely for this purpose, as I may employ it for the purpose of packing any other compressible unbreakable substance which it is required to reduce into the smallest possible bulk.

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

1. A packing-machine, comprising a standard having a crane-shaped top, a packing-plunger, guided in the upper end of the standard, a table secured to and supported by the standard, a mold having projected flanges and supported by the table and adapted to receive a funnel, said funnel having at its upper portion laterally-projecting lugs, vertical rods adapted to contact with the lower surface of said lugs, and a bifurcated lever pivoted to the standard and adapted to support the vertical rods, and a spring connected at one end to the upper end of the bifurcated lever and the other end connected to the standard, said spring serving to return said lever to its normal position, substantially as shown and described.

2. A packing-machine, comprising a standard having a crane-shaped top and carrying a guide, a packing-plunger supported in said guide, means for receiving and supporting a package and funnel, a counterbalanced L-shaped lever having a pitman connection therewith for operating said plunger, a table carried by the standard for supporting a flanged mold, vertical rods for contacting with projections on the upper portion of the funnel, the flanged mold having perforations serving as guides for said vertical rods, a bifurcated lever pivoted to the standard and adapted to support and operate the rods, and a spring connected to the lever and to the standard for returning the lever to its normal position, substantially as shown and described.

3. A packing-machine, comprising a standard, carrying a guide, a packing-plunger, a table carried by the standard, said table being adapted to receive and support a flanged mold, a presser-leaf hinged to the standard and adapted to fold and press the top of the package, vertical rods passing through perforations in the flanged mold, a laterally-projecting roller, a bifurcated lever for supporting and operating said rods and adapted to contact with said roller, and a spring connected to the lever and standard, substantially as shown and described.

4. A packing-machine consisting of a standard, a crane-shaped top for the standard, a vertical guide carried by the crane-shaped top, a packing-plunger vertically movable in the said guide, a table supported by the stand-

ard, an opening through the table to receive
a funnel, two vertical rods below the table, a
bifurcated lever pivoted to the standard be-
low the table, and adapted to operate the ver-
5 tical rods, a spring connected to the standard
and to the bifurcated lever to cause its return
to its normal position when the application
of power is released, a treadle, a plunger con-
10 nected to one arm of the treadle, adapted to
discharge the package from the machine, an
L-shaped lever pivoted to the standard above

the table, a counterbalance fitted to the short
arm of the lever, a pitman connected to the
lever and to the packing-plunger, and a
presser-leaf adapted to fold the top of the 15
package on the contents, substantially as
specified.

Toronto, September 28, A. D. 1895.

P. C. LARKIN.

In presence of—

DONALD C. RIDOUT,
J. E. CAMERON.