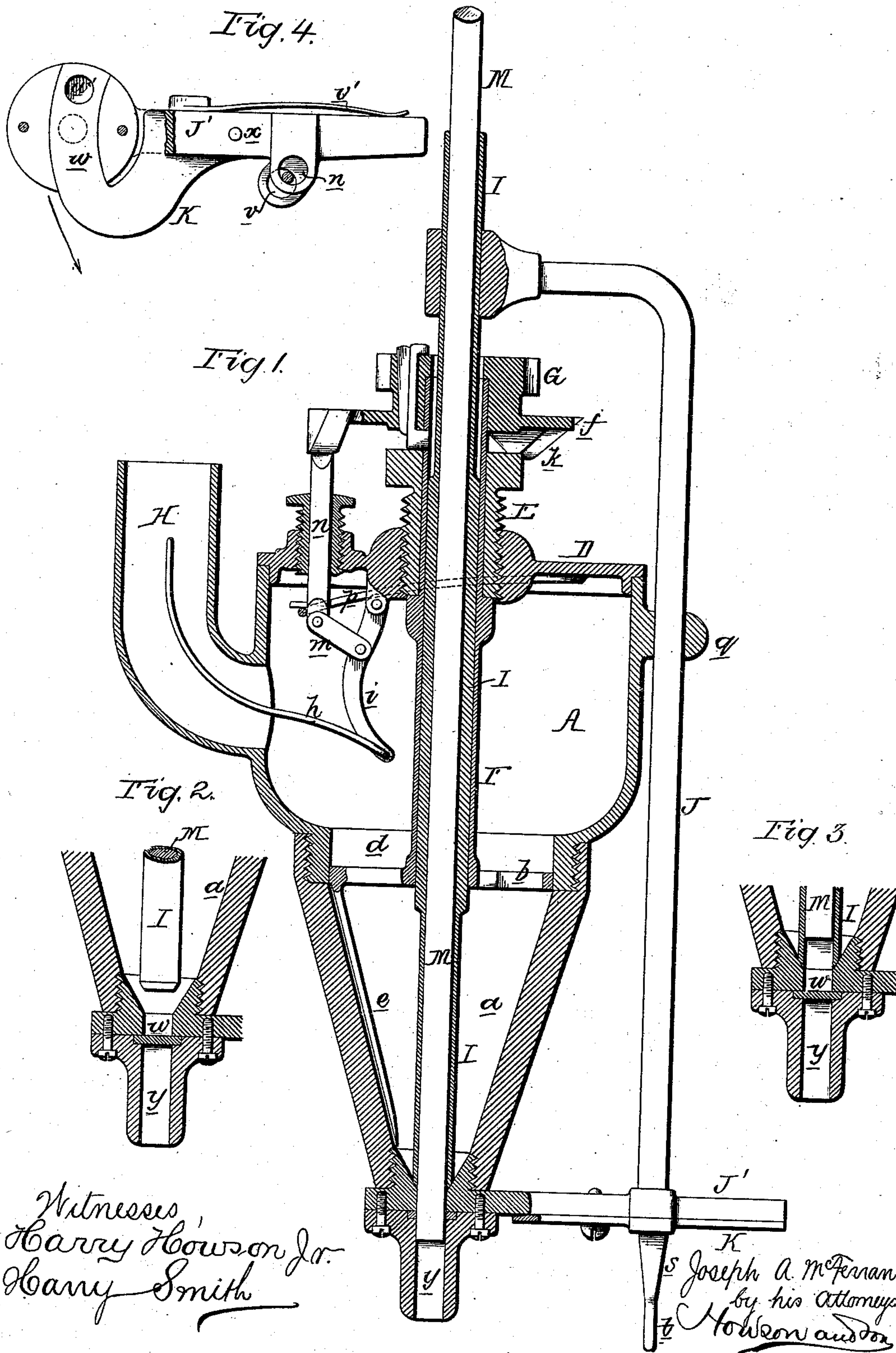


**J. A. McFERRAN.**

FEEDING DEVICE FOR PILL MACHINE.

**No. 177,867.**

Patented May 23, 1876.



Witnesses,  
Harry Howson Jr.  
Harry Smith

5 Joseph A. McFerran  
by his Attorneys  
7 Horton and Son



# UNITED STATES PATENT OFFICE.

JOSEPH A. McFERRAN, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN FEEDING DEVICES FOR PILL-MACHINES.

Specification forming part of Letters Patent No. 177,867, dated May 23, 1876; application filed April 28, 1876.

*To all whom it may concern:*

Be it known that I, JOSEPH A. McFERRAN, of Philadelphia, Pennsylvania, have invented certain Improvements in Feeding Devices for Pill-Machines, of which the following is a specification:

My invention relates to feeding devices connected with machines for the manufacture of pills by compressing the powdered drugs into molds; and the object of my invention is to provide a pill-making machine with certain automatic feeding mechanism, by which the powder can be fed to the molds in determinate quantities, and by which the quantity of powder can be regulated to accord with the size of the pill to be made.

In the accompanying drawing, Figure 1 is a vertical section of the feeding device; Figs. 2 and 3, detached sectional views of the same, showing the operating parts in different positions, and Fig. 4 a plan view of the lower portion of the feeding mechanism.

A is a hopper, the top of which is furnished with a cover, D, the lower portion of the hopper consisting of a conical chamber, *a*. To the cover D is secured, in the manner illustrated, or otherwise, a bearing, E, for the tubular shaft F, to the upper end of which is secured a cog-wheel, G, to be driven by any suitable gearing, and the lower portion of this shaft carries a ring, *b*, arranged to turn in the portion *d* of the hopper. From this ring projects a scraper, *e*, so adapted to the lower conical portion of the hopper that it will prevent the adhesion of the powder to the same as the shaft revolves. The powder is fed to the hopper through a pipe, H, into which projects a rod, *h*, secured to the lower end of an arm, *i*, which is hinged to the under side of the cover D, the arm being connected by a link, *m*, to the lower end of a rod, *n*, which is arranged to slide in the said cover. On the under side of a flange, *f*, attached to or forming part of the wheel G, or attached to the tubular shaft, are projections *k*, which, as the wheel revolves, depress the sliding rod *n*, the upward movement of which is caused by a spring, *p*, so that when the machine is in operation a reciprocating motion is imparted to the rod *n*, which insures the passage of the powder through the

pipe H into the hopper. Within the rotating shaft F is another sliding tube, I, to which a vertical reciprocating movement is imparted by any suitable mechanism, and to this tube I is secured a rod, J, arranged to slide in a guide, *q*, on the hopper, the rod being made conical near its lower end *s*, and at its extreme lower end *t* cylindrical. This lower portion of the rod passes through an eye, *u*, in an arm, J', secured to the lower portion of the hopper, and also through an eye, *v*, on an arm, K, hinged at *x* to the stationary arm J'. The two eyes are so situated in relation to each other that as the tapering portion *s* of the rod J passes down through them it will tend to move the arm K outward in the direction of the arrow, but as the rod rises a spring, *v'*, will move the arm K in a contrary direction. The outer portion *w* of this arm K forms a gate, which passes through and slides in a slot made at the junction of the lower portion of the hopper with the discharge-tube *y*, and this gate has an opening, *w'*, which, when the rod J is depressed, coincides with the interior of the said discharge-tube. A rod, M, passes through the sliding tube I, and has a reciprocating motion imparted to it by any suitable mechanism, the motion being independent of that imparted to the said tube.

The combined action of the rod M, tube I, and gate *w*, in conjunction with the lower portion of the hopper and discharge-tube, is illustrated by Figs. 1, 2, and 3.

In Fig. 2 both the tube I and rod M have been elevated, and the powder has free access to the space below them, and rests on the gate *w*. The sliding tube I now descends, bears with its lower edge on the bottom of the hopper, and acts as a valve for cutting off the supply of powder in the said hopper from that contained within the lower portion of the tube below the rod. While the tube I remains in this position the gate *w* is moved until its opening *w'* coincides with the interior of the discharge-tube, when the rod M descends and forces that portion of the powder which has been cut off from the mass in the hopper through the said discharge-tube into the mold or receptacle where the charge has to be compressed. After this the tube I and rod M are

raised to their former position, and the gate *w* closed preparatory to a repetition of the above-described movement.

The quantity of powder taken from the mass in the hopper and forced from the discharge-tube will depend upon the height to which the tube *l* and rod *M* are permitted to rise, and this height can be easily regulated by different devices, which it has not been deemed necessary to illustrate in the drawing.

I claim as my invention—

1. The combination, with a hopper and discharge-tube, of a sliding tube, *l*, sliding rod *M*, and gate *w*, operating together substantially in the manner described.

2. The combination, in a pill-machine feeder, of the hopper *A*, its lower conical portion

*a*, and the revolving scraper *e*, adapted to the said conical portion, all substantially as and for the purpose set forth.

3. The combination of the hopper *A*, its feeding-pipe *H*, and reciprocating rod *h*, substantially as set forth.

4. The combination of the reciprocating rod *J*, tapering portion *s*, the eye *n* in the fixed arm *J'*, and the eye *v* in the gate-lever *K*, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH A. McFERRAN.

Witnesses:

HARRY HOWSON, Jr.,

HARRY SMITH.