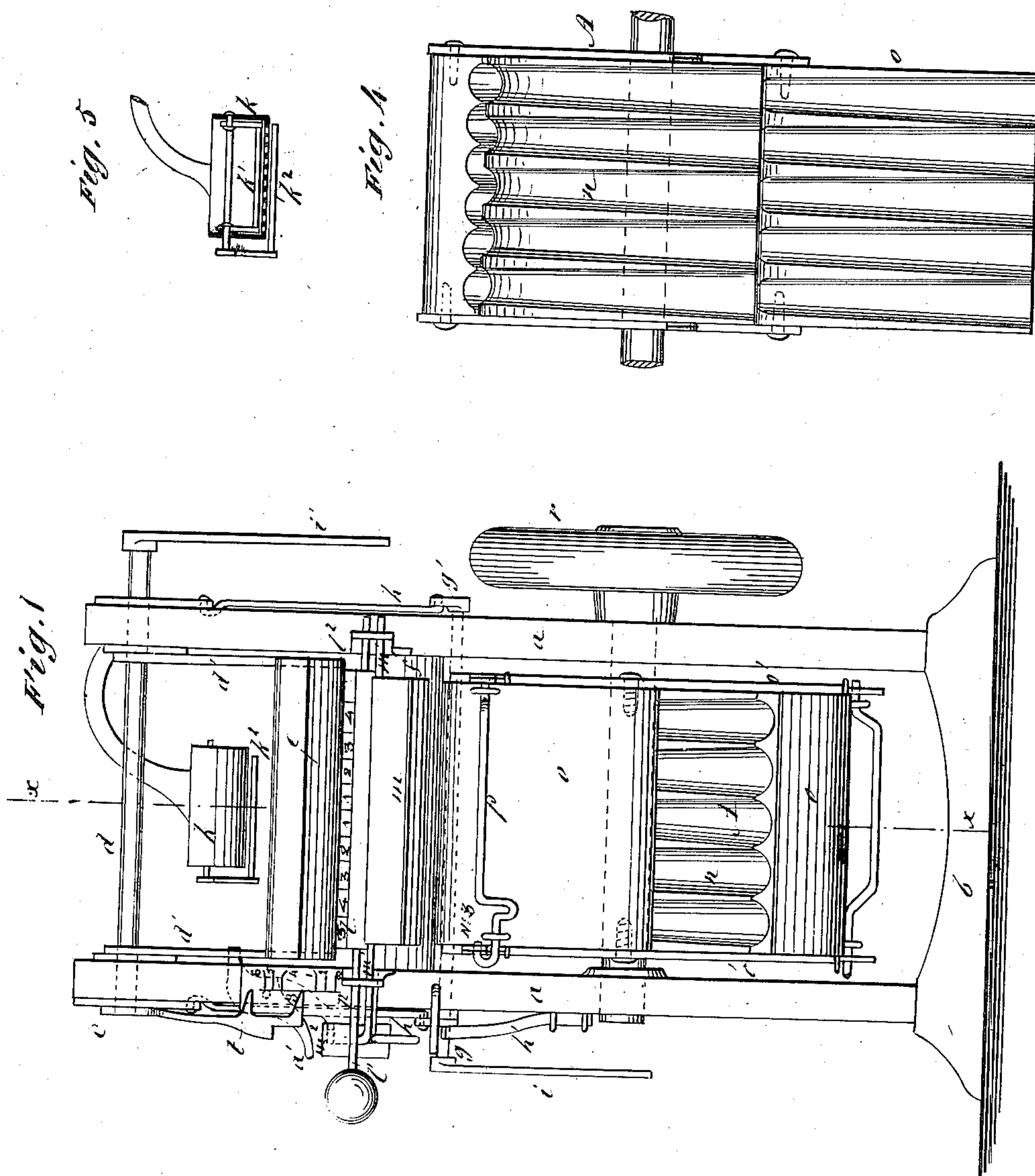


J. THOMPSON.  
Pill-Machine.

No. 227,320.

Patented May 4, 1880.



WITNESSES:

C. Nevins  
C. Seaguirick

INVENTOR:

J. Thompson

BY

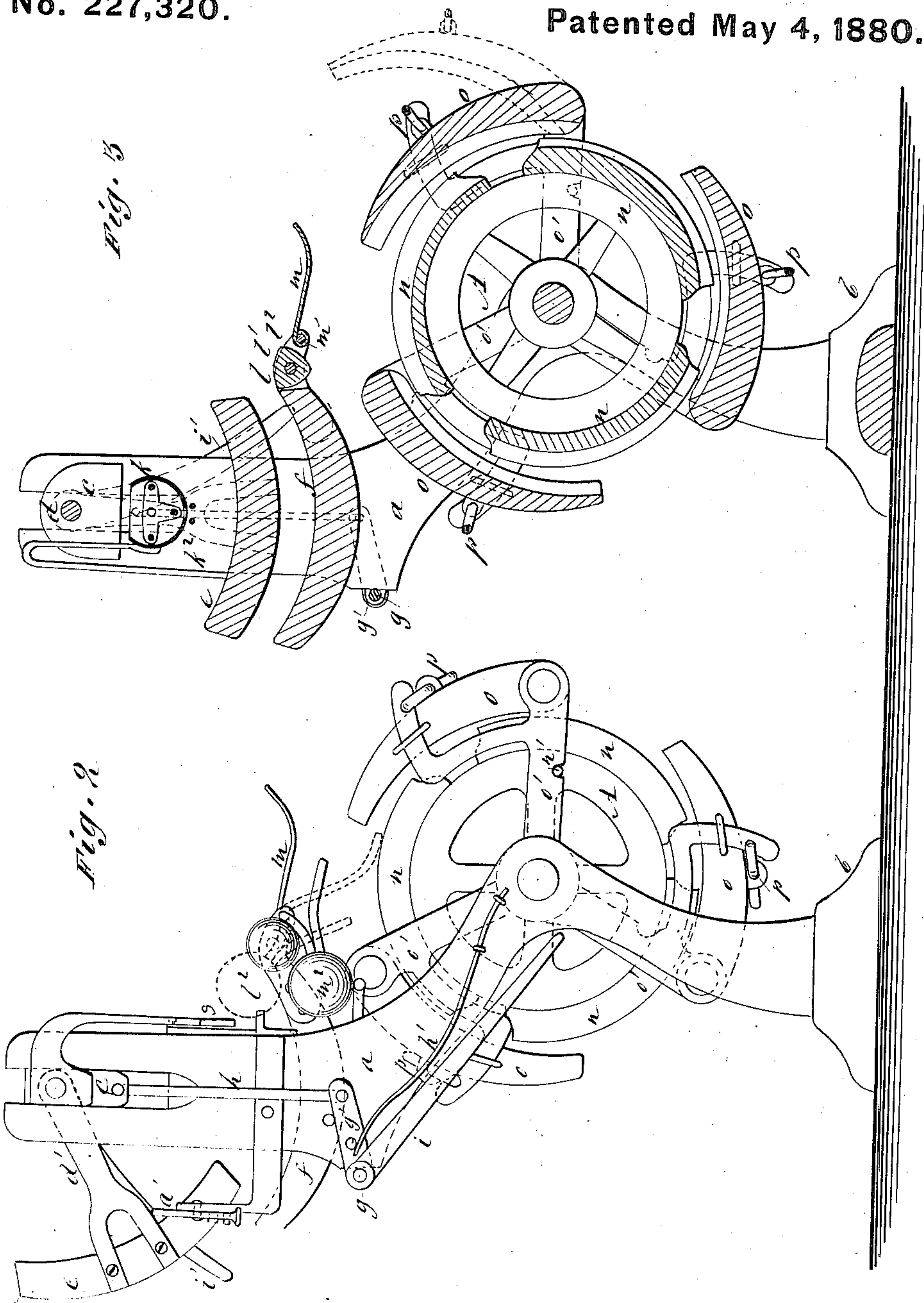
Munn & Co.

ATTORNEYS.

J. THOMPSON.  
Pill-Machine.

No. 227,320.

Patented May 4, 1880.



WITNESSES:  
*C. Vaux*  
*C. Sedgwick*

INVENTOR:  
*J. Thompson*  
BY *Munn & Co.*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

JOHN THOMPSON, OF OAKLAND, MARYLAND.

## PILL-MACHINE.

SPECIFICATION forming part of Letters Patent No. 227,320, dated May 4, 1880.

Application filed August 25, 1879.

*To all whom it may concern:*

Be it known that I, JOHN THOMPSON, of Oakland, in the county of Garrett and State of Maryland, have invented a new and useful Improvement in Pill-Machines, of which the following is a specification.

My improvements relate to machines for rolling pills; and the invention has for its object to furnish a compact and convenient machine adapted for the use of druggists in putting up prescriptions in pill form of any usual size.

The invention consists in certain novel features of construction and combination, which will be hereinafter described in connection with the accompanying drawings, and pointed out in the claims.

In the drawings, Figure 1 is a front elevation of the machine. Fig. 2 is a side elevation. Fig. 3 is a vertical longitudinal section of the machine on line *xx* of Fig. 1. Fig. 4 is a plan view of the rolling-cylinder, with one plate thrown back. Fig. 5 is a section of the powder-sifting box.

Similar letters of reference indicate corresponding parts.

The operative parts of the machine are all carried by the side frames or standards, *a a*, that rise from the base *b*. The upper ends of the standards *a* are slotted to receive the sliding boxes *c* of a rock-shaft, *d*, from which is hung, by arms *d'*, the upper rolling-plate, *e*. The lower rolling-plate, *f*, is fixed between the standards *a*, and both plates *e f* are of curved form or sectors of a cylinder, of which shaft *d* is the axis.

At the back of the machine, in suitable bearings, is a rock-shaft, *g*, having crank-arms *g'*, from which rods *h* connect to the sliding boxes *c*. One crank-arm *g'* bears upon a spring, *h'*, that tends to throw the boxes *c* upward and raise the upper plate, *e*. Upon the end of shaft *g* is a handle, *i*, by which the plate *e* is brought down by hand, as required, and upon shaft *d* is a handle, *i'*, for use in swinging the plate *e*. Upon one standard *a* is a weighted stop, *a'*, which, by engagement with one arm, *d'*, of plate *e*, holds the plate back to give access to the mass on plate *f* before or after rolling.

Above the plate *e* is fixed the powder-box *k*. This has a semicircular or rounded bot-

tom perforated with fine holes, and is fitted with inner and outer scrapers, *k' k''*, that act to force the powder through the perforated bottom and scatter it over the mass of material on plate *f*.

Upon the forward edge of the lower rolling-plate, *f*, a shaft, *l'*, is hung in suitable bearings *l''*, upon which is a three-sided or triangular rule or guide, *l*.

The machine shown is fitted with three sets of rolling-plates, and the guide *l* is therefore made three-sided; but the machine may be made with four or more rolling-plates, and the guide made to correspond. The guide *l* is as long as plate *f* is wide, and is shorter than the space between the bearings of its shaft *l'*, so that it may be moved lengthwise with its shaft, for purposes hereinafter described. Each side is marked by lines into spaces of equal length, the spaces on each side varying in length from those on the other sides. These spaces are numbered consecutively from the center to each end, from 1 upward, as shown, and for convenience the sides of the guide *l* are numbered 1, 2, and 3.

In front of guide *l* is hung a plate or shelf, *m*, on a shaft or pivots, *m'*, that are sustained in the bearings *l''*. The shaft *m'* is fitted with a counter-weight, *m''*, that rests on a stop, so that the shelf *m* is sustained in a horizontal position, and may be swung down as required.

Beneath the shelf *m*, in bearings formed in standards *a*, is hung the revolving cylinder A, that is used for rolling the pills. This cylinder is fitted upon its periphery with three segmental plates, *n*, that are formed with grooves, the grooves on each plate differing in number and width from those on the other plates, and corresponding with spaces on one side of the guide *l*. Upon the outside of each plate *n* is a plate, *o*, having its inner surface grooved to correspond and slightly eccentric to plate *n*. The plates *o* are sustained by arms *o'* at each side from loose hubs on the axis of cylinder A, which arms retain the plates *o* in contact, or nearly so, with plates *n*, and permit movement of plates *a* independent of cylinder A. This movement is limited by a stop-pin, *n'*, that projects from the side of A and comes in contact with arms *o'*. The plates *o* are each pivoted to their respective arms *o'*, so that they may be swung out from the cylinder A, as



shown by dotted lines in Fig. 3, to give access to plates *n*. A sliding catch, *p*, is made use of to retain the plates *o* upon *n*.

The grooves upon the plates *n o* are formed tapering, as shown clearly in Fig. 4, the taper of one plate running in direction opposite to that of the other. The rib between the grooves of *n* and *o* comes to a sharp edge, so as to cut the roll of material readily.

By having the grooves tapered the machine will make a number of pills at once of the size required.

In operation the pills pass from the wider end of the groove to the narrower, being thus made smaller and more solid gradually, and any slight variation in the quantity of material will not prevent the pill from being properly formed.

Upon the shaft of cylinder *A* is a hand-wheel, *r*, by which the cylinder is to be turned for bringing either plate *n* to a position for receiving the material and for forming the pills.

The machine is to be used as follows: The material to be made up is to be placed upon the plate *f* and powdered from box *k*, as before described. The plate *e* is then reciprocated by means of handle *i'*, and at the same time pressed down by handle *i* until a roll is produced of the desired size and length.

Suppose eight pills of size No. 1 are to be made. When the roll is reduced small enough the plate *e* will be turned back, and by the guide *l* (using the side marked 1) it may be seen whether the roll is of sufficient length to cover eight spaces, and if not the material may be further rolled. The material is then brought forward upon the shelf *m*, the cylinder *A* turned until the grooved plates *n o*, adapted for No. 1 pills, are at the front, and the shelf *m* turned down so that the material will roll upon plate *n*. The operator then, holding plate *o* stationary with one hand, reciprocates the cylinder *A* with the other hand, by means of wheel *r*, until the pills are formed.

The plate *o* may be opened from time to time to inspect the pills, and when completed they may be allowed to drop out at the bottom into a suitable receptacle. By these means the pills are made rapidly of the size required, and without handling.

To facilitate the work in making prescription-pills, a pointer, *s*, is connected to one of the sliding boxes *c*, so as to move down with plate *e*, and upon one standard *a* is fixed a scale (marked 1, 2, and 3) in such position that the pointer *s* will indicate when the material is rolled to the proper size. For instance, if the prescription calls for twenty pills, the operator first turns the No. 1 side of guide *l* and rolls down the mass until pointer *s* is at 1. If, then, by use of the guide it is found that the roll of material is not long enough to make twenty pills, No. 2 side of guide *l* will be turned up and the material rolled until the pointer *s* is at 2 on the scale.

The roll is then adapted for the No. 2 grooved plates *n o*.

For making cathartic or other standard pills containing a specified number of grains, I make use of a second pointer, *t*, and scale, and dispense with guide *l*. The scale is marked to indicate four, five, and six grains, which correspond with the numbers 1, 2, and 3 of the other scale. The mass will be rolled down till the pointer indicates the number of grains, and then rolled in the proper plates *n o*.

A movable stop may be provided for arresting the downward movement of plate *e* at the desired point.

It is to be understood that many sizes of pills may be made with each set of groove-plates *n o*, the object being to adapt the machine to making prescription-pills which vary in size with each prescription.

I do not limit myself to the details of construction exactly as shown and described, as they may be varied without departing from my invention.

I am aware that it is not new to use a rolling-cylinder provided with grooved plates and pawls pivoted to arms on each side of the cylinder; but

What I claim as new and of my invention is—

1. In pill-machines, the fixed sector *f*, swinging sector *e*, sliding boxes *c*, shaft *d*, crank-shaft *g*, rods *h*, spring *h'*, and handles *i i'*, combined for operation substantially as described and shown, and for the purposes set forth.

2. In pill-machines, the powder-box *k*, fitted with scrapers *k' k''*, combined with the rolling-plates *e f*, substantially as described and shown.

3. The guide *l* and shaft *l'*, in combination with the rolling-plates *e f*, substantially as and for the purposes described.

4. The weighted shelf *m*, in combination with the rolling-plates *e f* and rolling-cylinder *A*, substantially as and for the purpose described.

5. In pill-machines, the combination, with the cylinder and its grooved peripheral plates *n*, of the grooved plates *o*, hinged to their sustaining-arms *o'*, substantially as described and shown, and for the purposes set forth.

6. In pill-machines, the rolling-plates *n o*, formed with tapering grooves, substantially as described and shown, and for the purposes specified.

7. The combination, with the rolling sector-plates *e f* and shaft *d*, of the pointer fitted for use in connection with a fixed scale, as and for the purposes set forth.

JOHN THOMPSON.

Witnesses:

DANIEL CHISHOLM,  
GEORGE W. MERRILL.