F. L. SEELY.

APPARATUS FOR MEASURING, DELIVERING, AND WRAPPING POWDERS.

(Application filed May 29, 1899.)

Inventor:
Fred L. Seely.
F. L. SEELY.

APPARATUS FOR MEASURING, DELIVERING, AND WRAPPING POWDERS.

(Application filed May 20, 1899.)

2 Sheets—Sheet 2.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Witnesses

Inventor:

Fred L. Seely.

By

James L. Norris.

THE WORMS PETERS CO., PHOTO-GRAPHIC, WASHINGTON, D.C.
To all whom it may concern:

Be it known that I, FRED L. SEELY, a citizen of the United States, residing at Asheville, in the county of Buncombe and State of North Carolina, have invented new and useful Improvements in Apparatus for Measuring, Delivering, and Wrapping Powders, of which the following is a specification.

My invention is designed for the production of an apparatus for measuring, delivering, and wrapping medicinal compounds in pulverized or granulated form, the object of the same being to simplify and otherwise improve the construction of devices of this kind by means of which greater accuracy of measurement and speed of operation may be obtained and whereby the powder or granulated material may be conveniently wrapped in packages of uniform size and shape.

The invention consists of a bed-plate, a reciprocating measurer mounted thereon, a hopper, connections between the hopper and the measurer, and means for holding the parts against which the measurer bears in contact with each other.

The invention also consists in an improved form of wrapping-plate which is adapted to be used in connection with the foregoing parts.

The invention also consists in certain details of construction, combinations of parts, and arrangements of instrumentalities which will be hereinafter more fully described and claimed.

In the drawings forming part of the specification, Figure 1 is a perspective view of the device complete. Fig. 2 is a sectional elevation showing the measuring-plate in its normal position. Fig. 3 is a similar view showing the measuring-plate in its dumping or delivering position. Fig. 4 is a detail view of the wrapping-plate, showing one of the papers partially folded thereon. Fig. 5 is an end view of the same, showing one of the papers completely folded thereon.

Like reference-numerals indicate like parts in the different views.

The illustration in the drawings represents one embodiment of my invention, shows the essential features thereof, and serves to indicate how the invention may be carried out.

I do not care to be limited, however, to the exact construction and arrangement of parts, as of course these may be varied indefinitely within the scope of the protection prayed for.

The operative parts of the device are mounted upon a base 1, as shown, the same being provided with an opening 2 at one point therefrom. The bed-plate 3 is conveniently formed of a strip of metal bent to form two horizontal portions, the lower of which is screwed or otherwise secured to the base 1 and the upper of which constitutes the bed-plate proper. The connecting-web between the two horizontal portions referred to is provided with a slot 4, as shown. The bed-plate proper is perforate and has secured to the side edges thereof guide-strips 5, which project above the upper surface of said plate and form a rectilinear guideway for a rectilinearly-reciprocating measurer 6. The said measurer, as shown, is made of an oblong plate having an opening 7 extending therethrough at one point and provided with laterally-extending stoppins 8, which are adapted to engage the forward ends of the guide-strips 5 for the purpose of limiting the inward movement of said reciprocating measurer. At the rear end of the plate 6 are laterally-extending hooks or projections 9, 9, each connected at its outer end to a coil-spring 10, which is attached at its lower end to the base 1, the said spring serving to hold the plate 6 at all times in close contact with the upper surface of the bed-plate 3. Supported upon a bracket 11, secured to the base 1 and provided with a ring or eye 12 at its forward end, is a funnel-shaped hopper 13, which has a flexible tube 14, leading from the lower end thereof and connected with a nipple 15 upon the upper end of a discharge-mouth composed of a perforated block 16, normally held in close contact with the upper surface of the plate 6 by means of springs 17, 17, secured to the guide-strips 5 at one end and bearing upon the upper surface of said block at the other end.

When the plate 6 is in its normal rearward position, its forward end lies flush with the forward end of the bed-plate 3 and the opening 7 therein registers with the opening in the block 16, from which the nipple 15 thereon leads.

18, 19 represent a toggle-lever, the upright
member 18 of which is fulcrumed upon the base 1 and the laterally-extending member of which is pivoted to the rear end of the plate 6. A spring 20, connected to the base 1 and to the upper end of the upright member 18 of said toggle-lever, serves to hold the plate 6 normally in its rearward position. Connected to the member 18 is a strap or cord 21, which passes through the slot in the bed-plate 3, around a guide-pulley 22 on the base 1, and through the opening 2 in said base, the lower end of said strap or cord being connected to a threadle 23, by means of which said toggle-lever and the parts connected therewith may be operated by foot-power.

Secured to the base 1 beneath the forward end of the bed-plate 3 is a wrapping-plate 24, which extends forwardly some distance beyond said bed-plate. The wrapping-plate 24 is formed with a flat upper surface and a convex or rounded lower surface, the sides and end of said plate being beveled down to sharp edges.

In using the device I proceed as follows, it being understood of course that the hopper 13 is supplied with powdered or granulated material and that the plate 6, which constitutes the measurer, is in its normal rearward position with the opening 7 therein directly beneath the opening in the block 10, with which said hopper communicates. The opening 7 is made of such size as to hold the exact quantity of material which is to be wrapped up. The threadle 23 being now depressed the toggle-lever is moved forwardly against the action of the spring 20 and carries with it the plate onto the opening 7 therein, projects beyond the forward end of the bed-plate 3. The powder in the opening 7 being now without support drops down upon the wrapping-plate 24, and upon releasing the threadle 23 the parts return to their normal positions, and another charge is received in the opening 7. As the plate 6 is held at all times in close contact with the bed-plate 3 by the springs 10 and as the block 10 is held in close contact at all times with the plate 6 by the springs 17, it will be obvious that leakage of material between said plates and block is effectively avoided, so that at each operation of the threadle 23 an exact predetermined quantity of the material will be delivered upon the wrapping-plate 24. Previous to this delivery of material upon the wrapping-plate, however, there is inserted paper of proper size in which the material is to be wrapped. This is laid loosely upon the upper surface of said wrapping-plate, and the measured material is delivered thereto. The same is then folded longitudinally in the usual manner, and the ends thereof are bent down upon the under side of the plate 24, the side edges of said plates serving as guides, whereby the packages may be made of the same size at all times, and for producing a crease therein. The under side of the plate is made rounded, and the forward end thereof is beveled for the purpose of enabling the folded package to be readily slipped off from the plate 24 at its front end.

By the construction described it will be seen that sediments or other powders may be accurately measured in predetermined quantities fed upon the papers in which they are to be wrapped and the papers themselves folded up into equal sizes and shapes.

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

1. The combination of a bed-plate, a rectilinear guideway, a rectilinearly-reciprocating measurer-plate having an opening, means for holding the measurer-plate in contact with the bed-plate, a hopper having a discharge-mouth resting on the reciprocating measurer-plate, and a spring acting upon and yieldingly holding said discharge-mouth in contact with said measurer-plate, substantially as described.

2. The combination of a bed-plate, a movable measurer-plate having an opening and resting on a bed-plate a hopper having a yielding discharge-mouth resting against said movable measurer-plate, and a spring acting upon and yieldingly pressing said hopper discharge-mouth against said movable measurer-plate, substantially as described.

3. The combination of a bed-plate having a rectilinear guideway, a reciprocating measurer-plate resting on the bed-plate, engaging the guideway and having an opening, a hopper having a discharge-mouth bearing against the measurer-plate, a spring for yieldingly pressing said discharge-mouth against the measurer-plate, a treadle mechanism for advancing the measurer-plate to place its opening beyond one end of the bed-plate, means for retracting the measurer-plate, and a washer-support arranged below and extending in advance of said end of the bed-plate, substantially as described.

4. The combination of a bed-plate, a reciprocating measurer-plate, a spring having one end connected to and moving back and forth with the measurer-plate to hold it in contact with the bed-plate, and a hopper having a discharge-mouth bearing against the reciprocating measurer-plate, substantially as described.

5. The combination of a bed-plate, a reciprocating measurer-plate having an opening, a spring having one end connected to and moving back and forth with the measurer-plate, a hopper having a discharge-mouth resting against the reciprocating measurer-plate, and a spring for pressing said hopper discharge-mouth against said measurer-plate, substantially as described.

6. The combination of a bed-plate, a movable measurer-plate arranged thereupon having an opening, means for supplying the opening with material, treadle mechanism for advancing the measurer-plate to place its opening beyond one end of the bed-plate,
means for retracting the measurer-plate, and a wrapper-plate arranged horizontally below and extending in advance of said end of the bed-plate, substantially as described.

7. The combination of a bed-plate, a rectilinear guideway thereupon, a rectilinearly-reciprocating measurer-plate moving in engagement with said guideway and having an opening, a hopper having a spring-pressed discharge-mouth yieldingly bearing against the measurer-plate supplying the opening with material, a treddle mechanism for advancing the measurer-plate to place its opening beyond one end of the bed-plate, and means for retracting the measurer-plate, substantially as described.

8. The combination of a bed-plate, a measurer-plate movable thereupon and having an opening, a hopper having a discharge-mouth resting against the movable measurer-plate, means for advancing the measurer-plate and placing its opening beyond the bed-plate, and a flat-surfaced wrapper-supporting plate arranged below the bed-plate, and extending in advance thereof, substantially as described.

9. In an apparatus for measuring and delivering powders or granulated material, a bed-plate, a rectilinearly-reciprocating measurer thereon having an opening therein, a block above said measurer having an opening therein normally registering with the opening in said measurer, a hopper communicating with said block, independent springs for holding said block, measurer and bed-plate in frictional contact with each other, and means for moving said measurer to place the opening therein out of line with the opening in one end of said block and beyond said bed-plate.

10. In an apparatus for measuring and delivering powders or granulated material, a stationary imperforate bed-plate, guides thereon, a reciprocating measurer movable between said guides having an opening therein, and provided with stops adapted to engage said guides for limiting the movements of said measurer in opposite directions, a toggle-lever connected to said measurer, foot-actuated mechanism for operating said toggle-lever in one direction, a spring for operating the same in the other direction, a block upon said measurer having an opening therein which registers with the opening in said measurer when the latter is in its normal position, a hopper communicating with said block, and springs for holding said block, said measurer and said bed-plate in frictional contact with each other.

11. The combination with measuring and delivering mechanism for powder or granulated material, of a wrapping-plate located beneath the delivery end of said mechanism, said plate having a flat upper surface, a rounded or convex lower surface and parallel sharpened side edges.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRED L. SEELY.

Witnesses:
S. R. KEPLER,
P. C. COCKE.