H. S. MAYNARD.

Device for Coating Pills with a Semi-Fluid.

No. 229,544. Patented July 6, 1880.

Fig. 1.

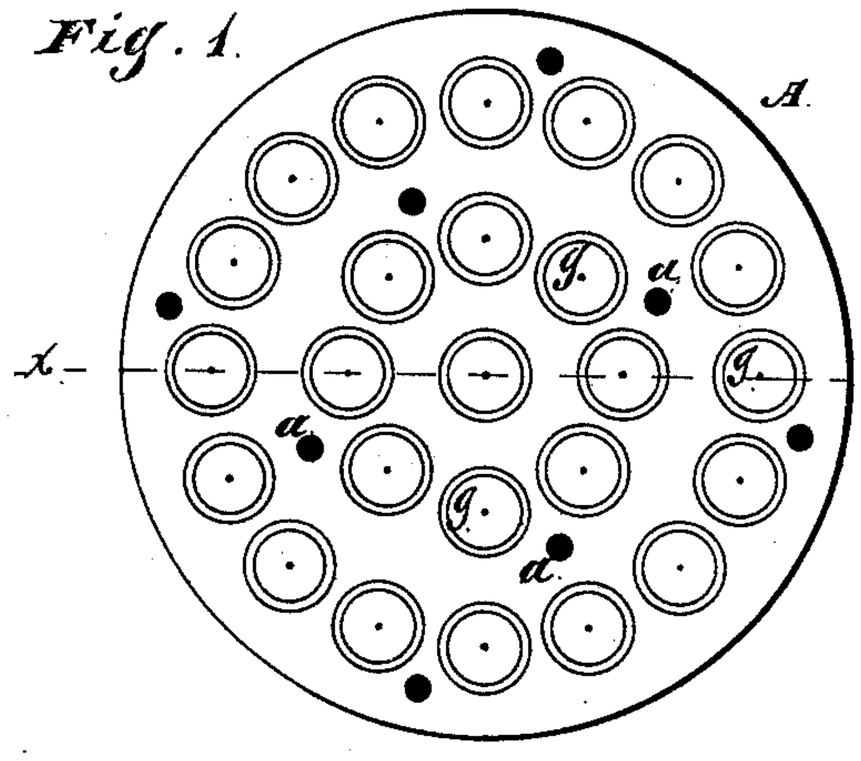


Fig. 2.

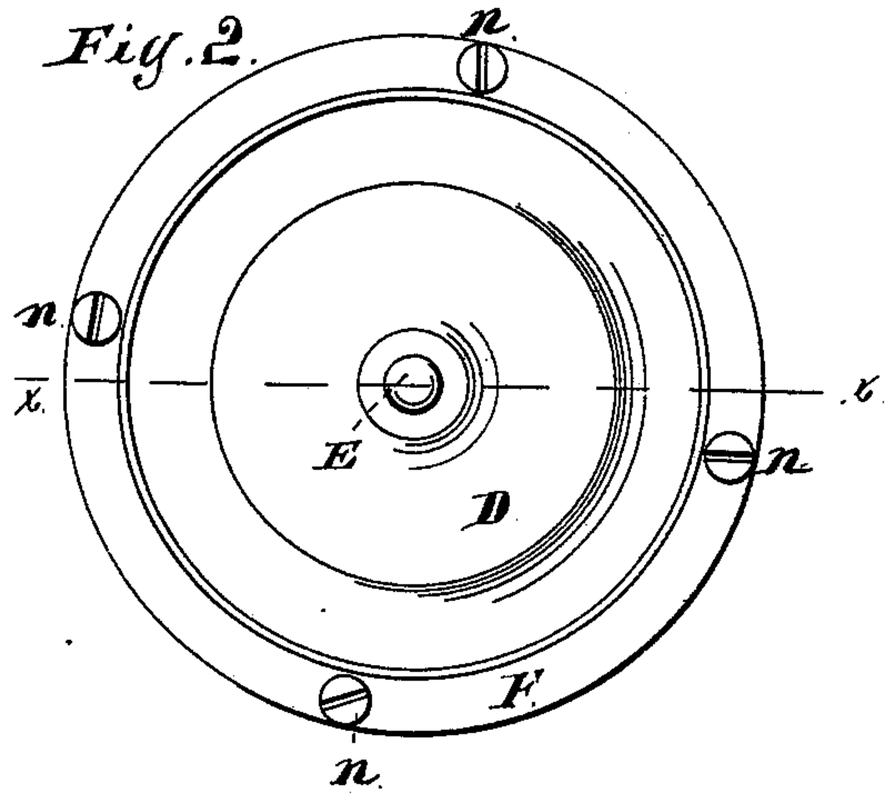
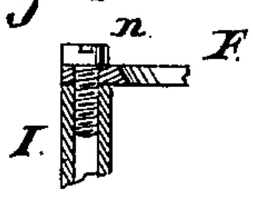


Fig. 7.



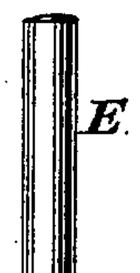


Fig. 3.

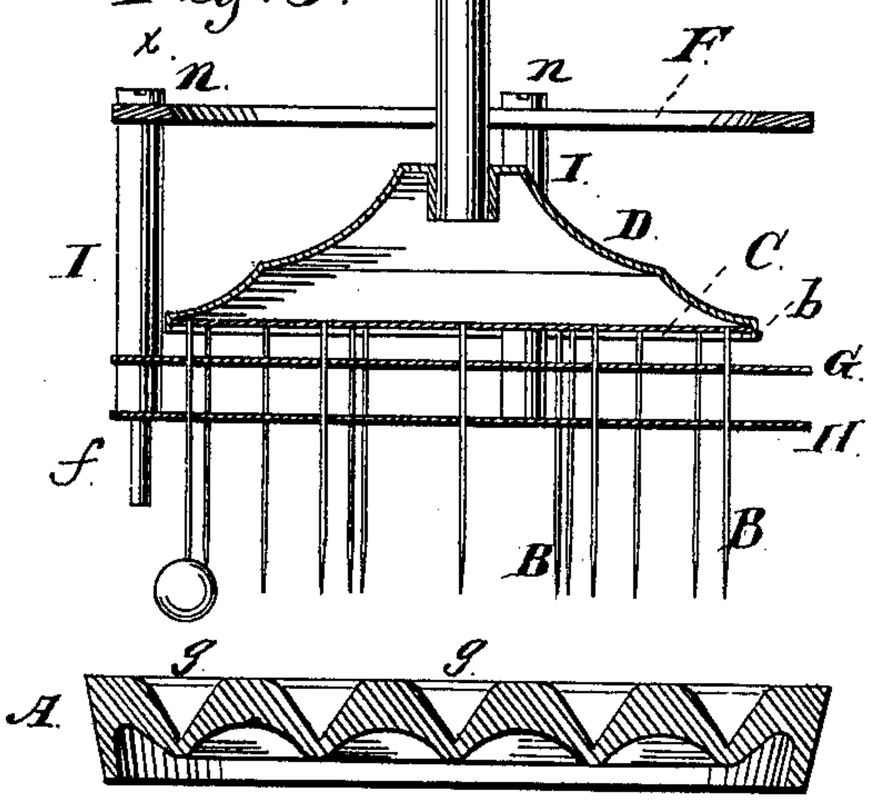
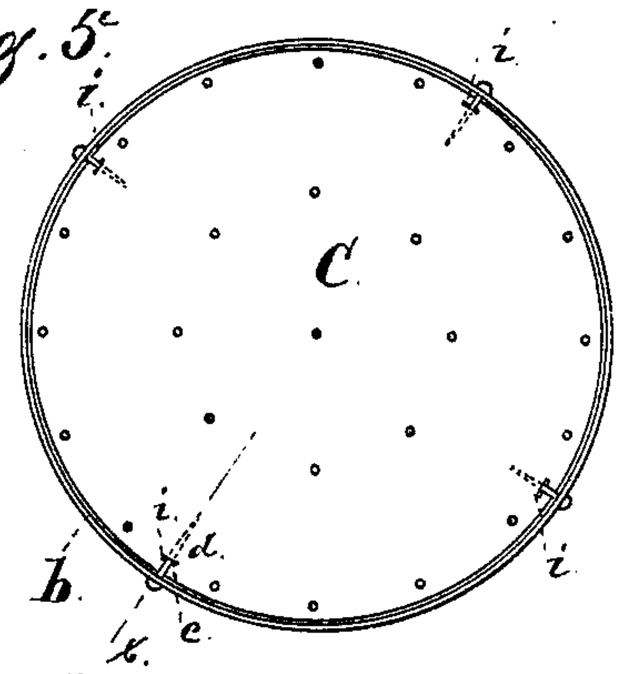


Fig. 5.



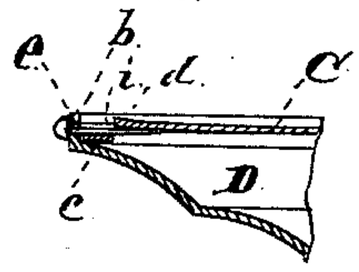


Fig. 6.

Fig. 4.

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HENRY S. MAYNARD, OF CHICAGO, ILLINOIS.

DEVICE FOR COATING PILLS WITH A SEMI-FLUID.

SPECIFICATION forming part of Letters Patent No. 229,544, dated July 6, 1880.

Application filed February 6, 1880.

To all whom it may concern:

Be it known that I, HENRY S. MAYNARD, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the United States, have invented new and useful Improvements in Devices for Coating Pills with a Semi-Fluid, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a plan of the pill-plate; Fig. 2, a top view of the needle-holder; Fig. 3, a section at *x* of Fig. 2; Fig. 4, a section at *x* of Fig. 1; Fig. 5, a bottom view of the needle-plate in place in the head; Fig. 6, a section at *x* of Fig. 5, enlarged; Fig. 7, a section at *x* of Fig. 3.

Various mechanisms are used in coating pills. My improvements relate to the construction of such devices; and they consist, first, in a guide-plate, a stripping-plate, and an upper ring or plate, all connected to posts, and combined with a needle-holder located within such posts and below such upper ring, such needle-holder having a handle extending above such upper ring or plate; second, in the peculiar means used for securing the needle-plate to a head; third, in providing the pill-holding plate with holes to receive guide-pins, combined with the plates G and H and ring F and needle-holder, all as hereinafter more fully described.

In the drawings, A represents a metal plate of suitable size, the face of which is provided with a number of recesses, *g*, which are conical in form and adapted to receive and hold pills of various sizes. *a* are small holes in the face of the plate or disk A. This disk A is detached from all other parts of the device.

B are the needles, which, at their upper ends, are permanently secured to a disk, C, which I make of thin sheet metal.

D is a head, having a flange, *b*, within which the needle-disk C is secured in such a manner that it can be easily removed for the purpose of replacing the needles in case any should be broken, which is liable to happen in use. I secure this disk in the head D in the following manner: I first cut a number of short slits through the disk C and near the edge thereof. I then bend that portion of metal *c* which is between each slit and the edge of the disk in one direction and up, as the instrument appears in Fig. 3, and also bend a portion of the metal on the opposite side of the slits in the opposite direction, as shown at *d* in Fig. 6. I thus provide openings into and through which pins can be horizontally inserted. There are holes *e* in the flange *b*, which register with the openings described in the disk C, and this disk is held securely in the head D by means of pins, which pass through such holes *e* and into the openings *i* provided in the disk C. These pins have heads, and are so inserted that they can be easily withdrawn to permit the removal of the needle-disk C.

E is a handle on the head D. F is an annular ring of metal, within which the head D is located. G is a guide plate or disk, and H is a stripping plate or disk. I are pillars, to which the ring F and the plates G and H are permanently secured. The plates G H are provided with holes, through which the needles pass.

The parts are so arranged that when the head D and the needles are at their highest point the needles will project but very little, if any, below the plate H. Two of the pillars I extend down below the plate H, and the holes *a* in the plate A are so arranged that these extensions *f* of the pillars I can be made to enter two of such holes on opposite sides of the plate A, preferably. The needles are so arranged in the plate C that when the extensions *f* are in the holes *a* each needle will be over the center of one of the recesses *g* in the plate A.

The head D and ring F are of such size and are so located relatively to each other that when the head D is at its highest point it comes in contact with the ring F, but cannot escape from it, so that the ring F and all the parts connected therewith—that is to say, the pillars and the plates G H—can be lifted up by and with the head D. The head D can also be moved up and down within the pillars I, carrying the needles with it.

It is advisable to have the head D of such size that it will just fit within the pillars I, which will then serve as guides and aid in maintaining the parts in position in use, preventing the lateral movement of the head D.

The operation is as follows: A number of pills to be coated are placed in the conical recesses *g* in the plate A. The device contain-

ing the needles is to be placed on and over the plate A and the pills therein, the extensions *f* being placed in the holes *a* in the plate A, the needles and head D being then raised to their highest point. In this position each needle will be over the center of a pill if all the holes *g* are occupied, and the plate H will rest on the plate A if the pills are small. If unusually large this plate H will then rest on the pills. Then by pushing down the head D the needles will be forced into the pills. Then the device carrying the needles is to be lifted up by taking hold of the ring F, which will remove the pills from the plate A, a pill being upon the point of each needle. Then the head is to be pushed down as far as possible, which will carry the pills away from the plate H. Then the pills can be dipped into the semi-fluid coating. When removed from such coating the device can be held by the handle, and can be partially rotated back and forth until the coating becomes sufficiently dry to allow the removal of the pills, which can be done by placing the device over a suitable plate provided with indentations to receive the pills, and drawing up the head and needles, when, by the plate H, with which the pills will come in contact, they will be stripped from the needles.

In Fig. 3 the needles are shown pushed down preparatory to dipping the pills into the coating.

The ring F might be a plate having a central hole for the handle E. This ring is secured to the posts I by means of screws *n*.

Needle-holders of different sizes may be used with the plate A.

In Fig. 4 the holes *a*, which are inside of the outer row of pill holes or recesses *g* are designed to receive guide-pins *f* on a small needle-holder, adapted to be used only in connection with the inner row of recesses *g*.

The section-line on which Fig. 3 is taken is so located that but one guide-pin *f* is shown; but, in fact, there is a post, I, exactly opposite to the one shown on the left of Fig. 3, which is provided with a guide-pin, *f*. These guide-pins may be made with or separate from the pillars I.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. The combination of the plates G H, ring or plate F, and posts I with a needle-holder and needles, substantially as and for the purposes specified.

2. The needle-plate C, provided with openings *i* to receive pins, in combination with a head, D, having a flange, *b*, substantially as specified.

3. In a device for coating pills, the plate A, provided with recesses to receive pills, and with two or more holes, *a*, in combination with a needle-holder provided with guide-pins, and a stripping-plate. H, permanently secured to the guide-pins, which extend below such stripping-plate, substantially as and for the purposes specified.

HENRY S. MAYNARD.

Witnesses:
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O. W. BOND.