

(No Model.)

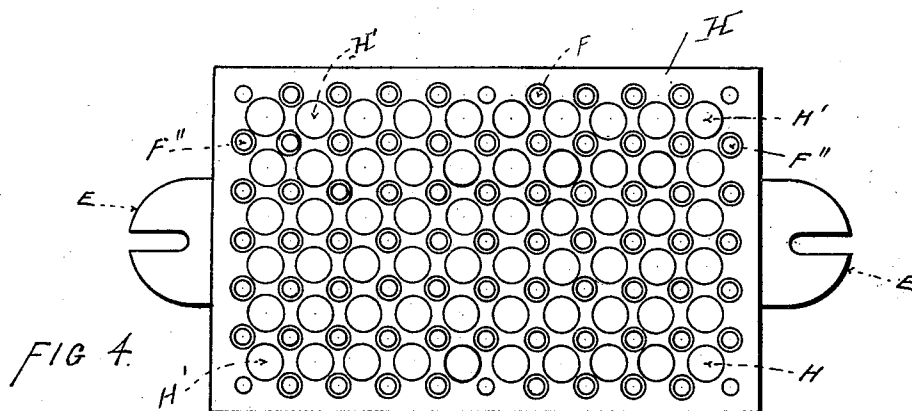
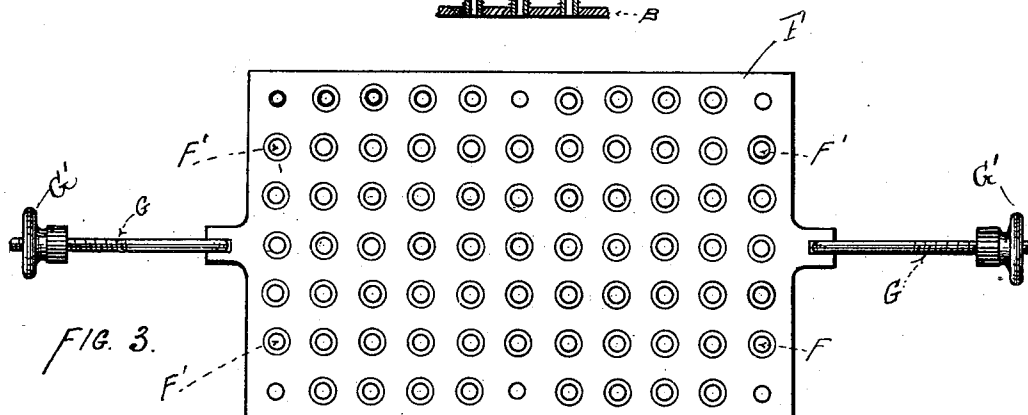
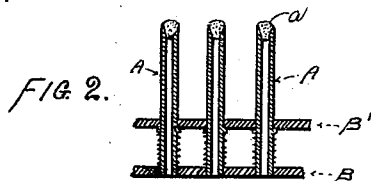
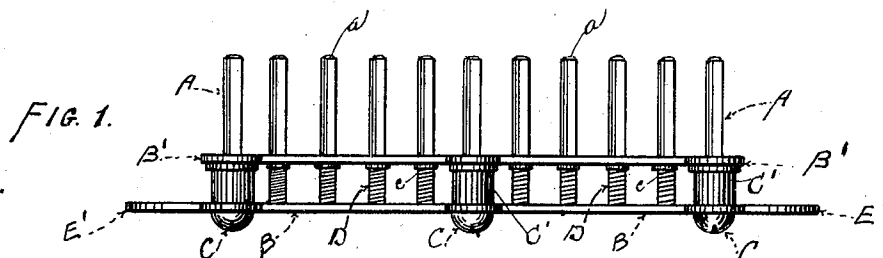
2 Sheets—Sheet 1.

G. STORIE & J. MOSS.

DEVICE FOR HOLDING AND DIPPING PILLS OR TABLETS.

No. 592,839.

Patented Nov. 2, 1897.



Witnesses
Sarah Phillips
Anna Phillips

Inventors
Geo. Storrie
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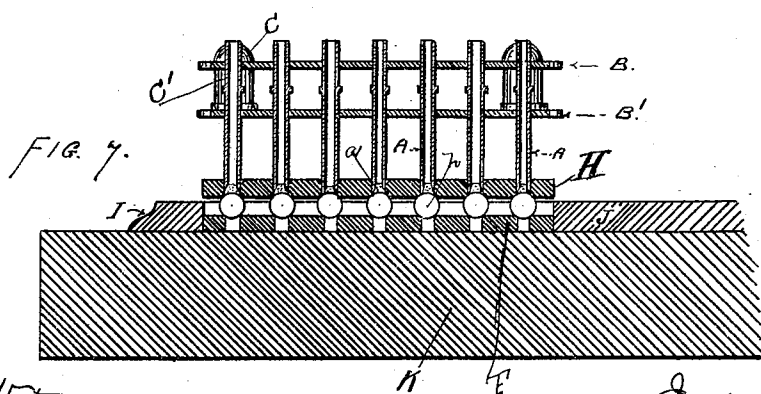
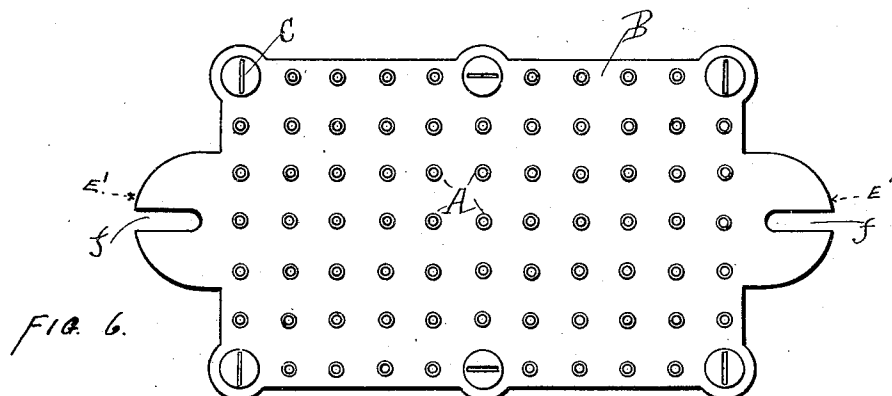
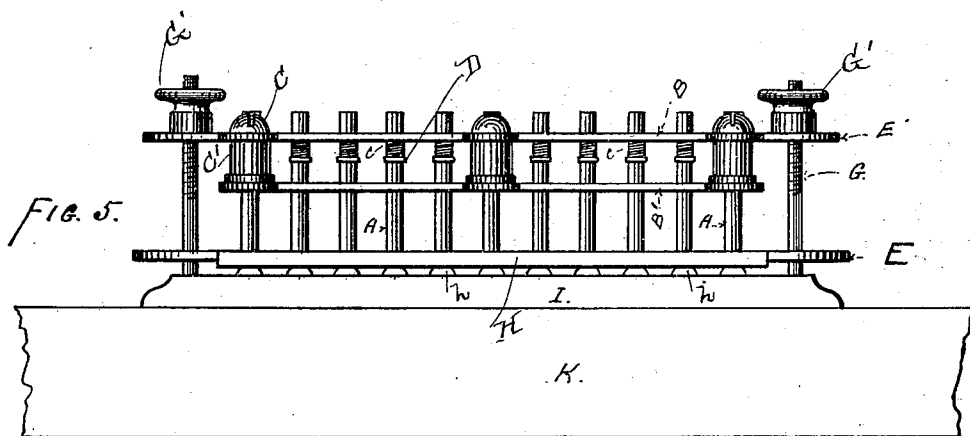
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Sarah Phillips.
Carroll Phillips.

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UNITED STATES PATENT OFFICE.

GEORGE STORIE AND JULIAN MOSS, OF DETROIT, MICHIGAN.

DEVICE FOR HOLDING AND DIPPING PILLS OR TABLETS.

SPECIFICATION forming part of Letters Patent No. 592,839, dated November 2, 1897.

Application filed October 20, 1896. Serial No. 609,441. (No model.)

To all whom it may concern:

Be it known that we, GEORGE STORIE and JULIAN MOSS, citizens of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Devices for Holding and Dipping Pills or Tablets; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in devices for holding and dipping pills and tablets; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out in the claims.

The object of the invention is to provide simple and effective means for picking up and retaining pills while applying a coating thereto, so as to facilitate the operation of coating and enable said coating to be evenly and perfectly applied to the pills. This object is attained by the device illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the adjacent parallel plates in which are mounted the spring-actuated nipples. Fig. 2 is a detail in vertical section through a number of said nipples and their supporting-plates. Fig. 3 is a plan view of the bed-plate, having a series of countersunk openings therein which form seats for the pills. Fig. 4 is a plan view of the stripping-plate, having perforations therein which register with the perforations in the base-plate. Fig. 5 is a side elevation of the device as when in position of applying the adhesive ends of the nipples to the pills upon the base-plate. Fig. 6 is an inverted plan of Fig. 1. Fig. 7 is a transverse section of Fig. 5.

It is the general practice now to hold the pills while being dipped in gelatin by means of needle-bars, which engage the pills, and by means of hollow tubes in which a vacuum is formed to cause the pills to adhere thereto. These means are expensive and unsatisfactory, and the objectionable features thereof are entirely overcome by our improved de-

vice, in which the pills are held upon the ends of the nipples while being dipped by means of an adhesive plug carried thereby.

Referring to the letters of reference, A designates a series of nipples of even length, of which there may be any number desired. These nipples are placed in rows a suitable distance apart and are loosely mounted in the retaining-plates B B', which stand approximately parallel by means of screw-bolts C, passing through said plates and through the interposed sleeves C'.

The nipples A, as shown, are tubular, but this feature is not essential, as they may be made solid. Said nipples are provided in their outer ends with suitable recesses, in which are seated adhesive plugs *a*. These plugs may be of any absorbent substance, which is saturated with any of the well-known adhesives, but are preferably made of rubber, to which a small quantity of naphtha or analogous substance is applied to render said rubber gummy and adhesive. Said nipples are loosely seated in the plates B B' and are adapted to move vertically, being held in place by means of the coiled springs D, which surround said nipples and bear against the collars *c* thereon, whereby said nipples are normally held extended, but are adapted to recede against the action of said springs. This arrangement admits of the taking up of different sizes of pills and allows said nipples to yield to overcome any inequality, insuring the contact of the adhesive plug on each nipple with the pills thereunder when said nipples are placed upon the pills in the operation of picking them up, as hereinafter set forth.

F designates the bed-plate, adapted to be placed upon a suitable operating-table K. In this plate there are drilled a number of holes F', which are so placed as to register perfectly with the series of nipples A, said holes being slightly countersunk to form a seat for the pills which are placed thereon. Hinged to the opposite ends of said bed-plate are the bolts G, carrying upon their outer threaded ends the thumb-nuts G'.

H designates the stripping-plate, adapted to strip the partially-coated pills from the adhesive ends of the nipples. This plate corresponds in area with the bed-plate F and

with the area described by the series of nipples A and is provided with a series of holes F'', which register exactly with the holes F' in said bed-plate and with the series of nipples A. These holes F'' are adapted to freely receive the nipples A, which pass there-through, and said holes are slightly countersunk from opposite sides of said plate to form a seat for the pills. Projecting from the opposite ends of said plate H are the slotted ears E. These ears afford means for manipulating said plate, and the slots therein permit the hinged bolts G to swing upward to a vertical position when said plate H is placed upon the pills in the bed-plate.

H' designates a series of large holes drilled through the plate H intermediate the holes F''. These holes allow any of the pills accidentally falling from the nipples to pass through and out of the way and also serve to lighten said plate H.

In the operation of this improved device the bed-plate F is placed upon the table K and is surrounded by a suitable molding I to prevent the pills from rolling off. The pill-board J, from which the pills are taken, is located at the rear. A perforated board (not shown) having holes bored therein to register exactly with the holes F' on the bed-plate and of a size slightly larger than the pills to be coated is placed upon said bed-plate. A sufficient number of pills are then taken from the pill-board and passed downward through the holes in said perforated board, so as to place one pill upon each of the seats or countersunk holes F' in the bed-plate. The perforated board is then removed, leaving the pills upon the bed-plate. The stripping-plate H is then placed upon the pills, which enter the countersunk apertures F'' in the under face thereof, thus holding them steadily in place. The nipples A, carried by the plates B B', are then passed downward through the apertures F'' in the stripping-plate, so that the adhesive plugs *a* in the ends thereof bear upon the pills *b*, as shown in Fig. 7. The hinged bolts of the bed-plate F are then swung upward to a vertical position, their upper ends entering the slots *f* in the ears E', projecting from the opposite ends of the plate B, upon the upper face of which the thumb-nuts G' are adapted to bear, as clearly shown in Fig. 5. By the turning of these thumb-nuts pressure is brought to bear upon the nipples, so as to force their adhesive ends into contact with the pills, causing said pills to adhere thereto when said thumb-nuts are loosened and the bolts thrown outward to release the nipple-carrying plates. The strip-

ping-plate H is then slid upward upon the nipples by grasping the ears E thereof until said plate strikes the nipple-carrying plate B', when said nipples are raised, lifting the pills with them. In this position the pills are dipped in a gelatin-bath as deeply as possible without permitting the gelatin to come in contact with the nipples. After dipping a slight rotary motion is given to distribute the gelatin evenly, when the device, with the coated pills adhering to the nipples, is placed upon a suitable table with the nipples pointing upward. The operator then grasps the ears of the plate H and removes said plate from the nipples, thus stripping the pills therefrom, which lie in the countersunk openings F'' therein. Said stripping-plate is then placed on a suitable rack to enable the coated pills to dry. By using a number of the stripping-plates the operation may be made continuous. When the coating shall have become dry, the plate H, with the partially-coated pills thereon, is laid upon the bed-plate and another stripping-plate is placed upon the pills thereon and the former operation repeated, whereby the uncoated portion of the pills is dipped and dried, as before.

Having thus fully set forth our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a device for coating pills, the combination of the nipple-carrying plates, the movable nipples seated in said plates, and means for applying said nipples to the pills substantially as set forth.

2. In a device for coating pills, the combination of the nipple-supporting plates, the movable nipples seated in said plates, said nipples carrying an adhesive substance at the ends thereof.

3. In a device for coating pills, the combination of the nipple-carrying plates, the movable nipples seated in said plates, the adhesive plugs in the ends of said nipples, the coiled springs engaging said nipples, and means for applying said nipples to the pills.

4. In a device for coating pills, the combination of the bed-plate carrying the hinged bolts, the nipple-carrying frame, the series of spring-actuated nipples therein, the perforated stripping-plate adapted to pass over said nipples, the nipple-carrying frame having projections adapted to be engaged by said hinged bolts to bind said parts together.

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