(No Model.)

G. F. CHAPPELL.

PILL COATING MACHINE.

No. 281,973. Patented July 24, 1883.

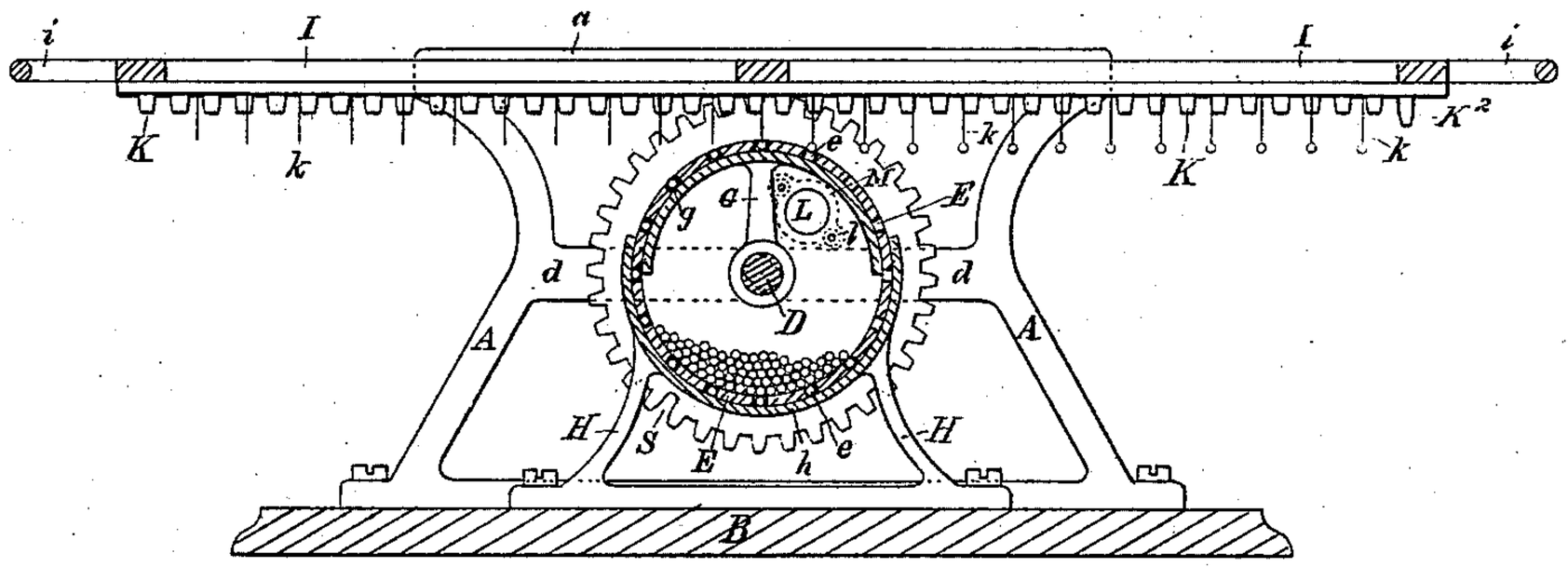

Fig. 1.

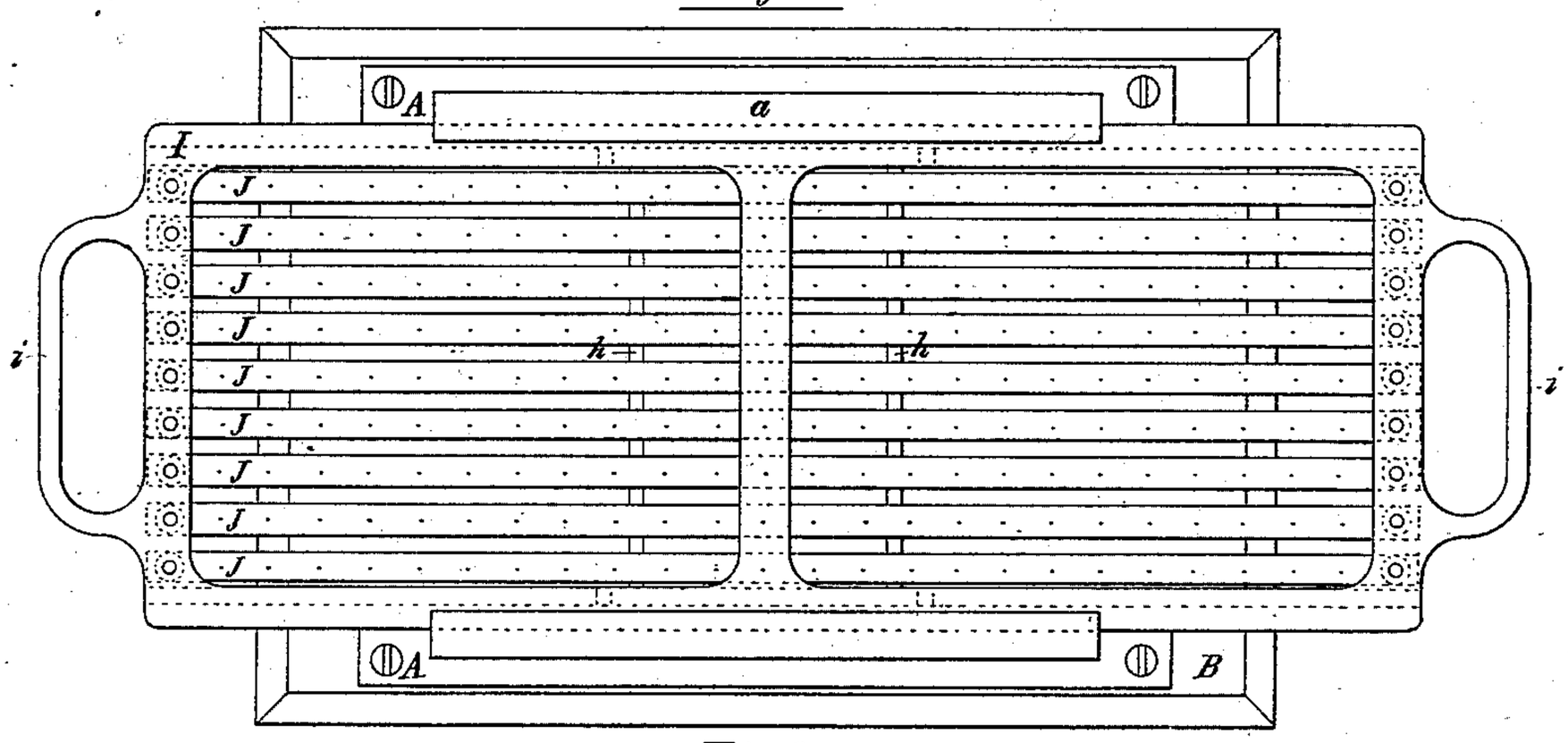

Fig. 2.

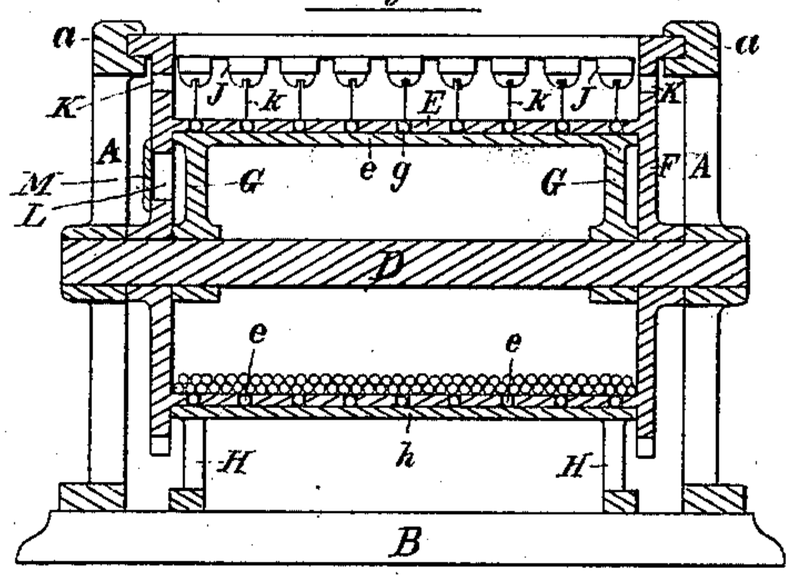

Fig. 3.

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GEORGE F. CHAPPELL, OF NEW YORK, N. Y.

PILL-COATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 281,973, dated July 24, 1883.

Application filed January 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. CHAPPELL, a citizen of the United States of America, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Pill-Coating Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to apparatus for coating pills without flattening or otherwise injuring them.

The invention consists in a novel construction, arrangement, and combination of a hollow cylinder, in which the pills are placed, provided with perforations, into which they drop when the cylinder is revolved, and a sliding framework, which moves over the cylinder, and is provided with pins or needles, which, in the operation of the machine, are inserted into the perforations of the cylinder, impale the pills, and remove them; also, in the combination therewith of other auxiliary parts, which are hereinafter more fully described.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of an apparatus constructed according to my invention. Fig. 2 is a top view of the same, and Fig. 3 is a transverse vertical section.

Similar letters of reference indicate corresponding parts.

A A designate the sides or frames. They are bolted or otherwise secured to a base, B, and are connected and steadied by the shaft D. The shaft D, around which the cylinder E freely revolves, and which holds in position the upper half-cylinder, is rigidly secured to the frames A A.

E is a hollow cylinder, the ends of which are provided with gear-wheels for engagement with a rack, K, as hereinafter described. The cylinder is provided with perforations or openings *e*, arranged at regular intervals, and of about the same size as the pills. The cylinder is also provided with an aperture, L, for the introduction of the pills, which aperture may be closed by a cover, M, which swings on a pivot, *l*, or in any other suitable way.

Fitting closely to the outside of the under part of the cylinder E is a part-cylinder, *h*, supported by frames H, which are secured to the base B.

Attached to the shaft D by supports G is a part-cylinder, *g*, which fits closely to the upper half of the inside of the cylinder E.

I is a frame having on each end handles *i*. On the under part of the sides of said frame are racks K, which engage with the gear-wheels F of the cylinder E, and cause it to revolve when the frame is moved.

J are bars or slats, the ends of which are attached to the under side of the frame I, as shown in Fig. 2, and which have inserted in their lower sides pins or needles *k*, which are set at regular intervals corresponding to the perforations *e* in the cylinder E. The frame I slides in ways *a*, which are secured to or made in one piece with the frames A.

The operation of my invention is as follows: The pills to be coated are introduced into the cylinder E through the aperture L, which is then closed by the cover M. The end of the frame I, bearing the long tooth K^2, is then inserted in the ways and pushed forward. The long tooth K^2 of the rack K is made long, and one deep space S, to correspond with this tooth, is made in the gear-wheel. By this means the rack and gear-wheels can engage together only in one place, and that is so adjusted in making that the needles of the carrier will correspond and engage with the perforations in the cylinder and with the pills therein contained. The rack K engages with the toothed flanges F of the cylinder E and causes it to revolve. As the cylinder revolves, the pills drop into the perforations *e*, but are prevented from dropping entirely through by the part-cylinder *h* below. As the cylinder revolves, the pills are carried around, being kept from falling back into the cylinder, as they near the top, by the part-cylinder *g* on the inside of the cylinder E. When the pills arrive at the top they are impaled and removed from the perforations by the pins or needles *k*. When the whole length of the frame I has passed over the cylinder and each of the pins or needles has secured a pill, the frame is held by the handles *i*, and the pills are dipped into the coating-mixture, and then the frame is laid on its upper side until the coating is dry, when the pills can be removed. When the

first frame is taken from the ways, another can be immediately inserted and the process repeated.

Although my invention has been described with reference to the use of a sliding carrier, the pill-holding cylinder can be used with a revolving or any other suitable carrier.

The advantages of my invention are as follows: First, the spherical shape of the pills is not only not altered by the manipulation, but, if defective, is made more perfect by the rolling to which they are subjected in the cylinder; second, the process can be performed very quickly and easily.

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

1. The combination, with a perforated cylinder, E, having an aperture, L, for introducing pills, and revolving on a shaft, D, and provided with gear-wheels F, a part-cylinder, *h*, on the outside lower half, and a part-cylinder, *g*, on the inside upper half, said shaft and part-cylinders being supported by suitable frame-work and supports, A G H, of a frame, I, sliding in ways *a*, and provided with racks K, bars or slats J, and pins *k*, substantially as and for the purposes herein described.

2. The combination, with a perforated revolving cylinder, E, of part-cylinders *g* and *h*, the whole being supported and connected by a suitable frame-work and supports, A, G, and H, arranged and constructed as and for the purposes herein described.

3. The combination, with a perforated revolving cylinder supported by frames A, and provided with gear-wheels, of a sliding frame, I, provided with a rack, K, slats or bars J, and pins or needles *k*, substantially as and for the purposes herein described.

4. The frame I, provided with slats or bars J and pins or needles *k*, substantially as and for the purposes herein described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE F. CHAPPELL.

Witnesses:
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