

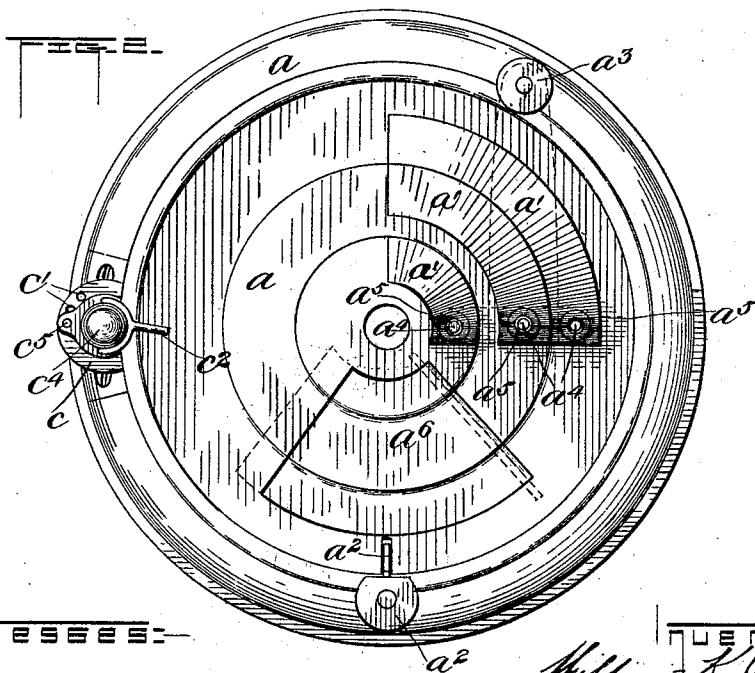
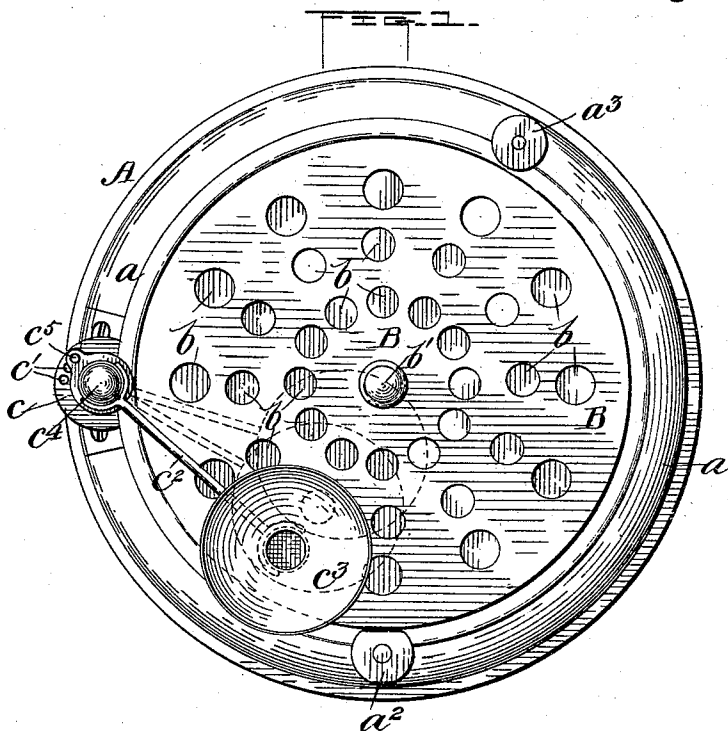
(No Model.)

2 Sheets—Sheet 1.

W. K. JOHNSTON.
CAPSULE FILLING MACHINE.

No. 479,812.

Patented Aug. 2, 1892.



Forverance
C. Hines.

William K. Johnston
by his Attorney
Mason Hewcock & Co.

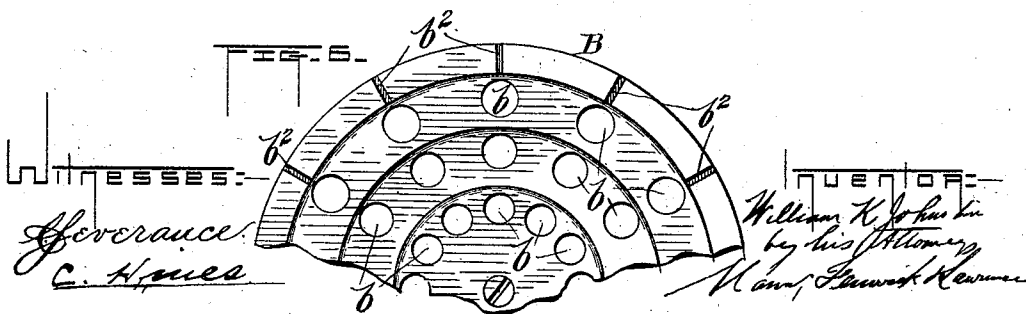
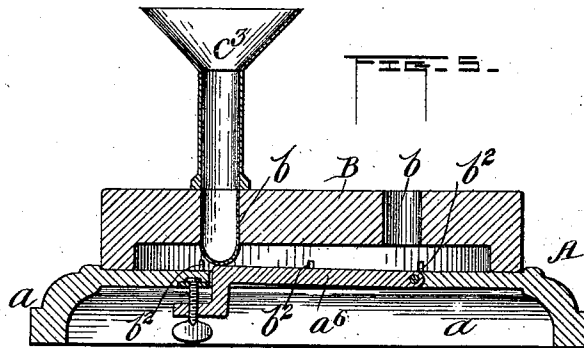
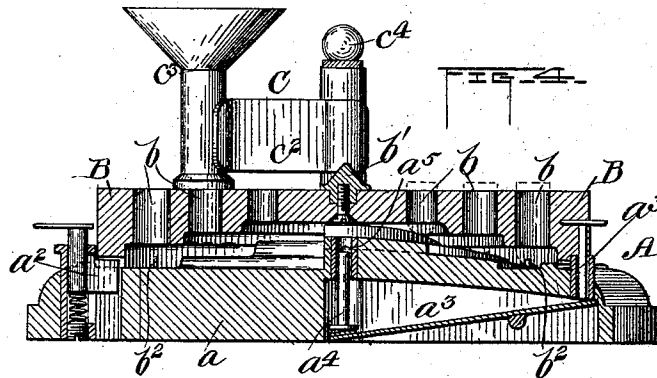
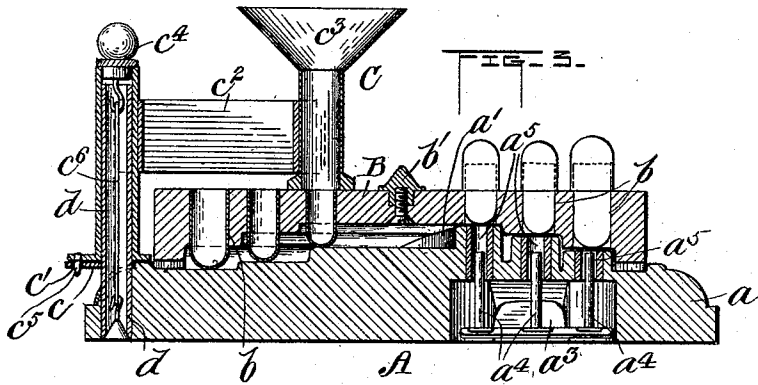
(No Model.)

2 Sheets—Sheet 2.

W. K. JOHNSTON.
CAPSULE FILLING MACHINE.

No. 479,812.

Patented Aug. 2, 1892.



UNITED STATES PATENT OFFICE.

WILLIAM K. JOHNSTON, OF CORDOVA, ILLINOIS.

CAPSULE-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 479,812, dated August 2, 1892.

Application filed November 13, 1891. Serial No. 411,803. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM K. JOHNSTON, a citizen of the United States, residing at Cordova, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Capsule-Filling Machines; and I do hereby 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.

My invention relates to certain new and useful improvements in capsule-filling machines; and it consists in a machine having a stationary base portion, preferably cylindrical, and provided with one or more raised inclines for automatically raising the filled cups of the capsules to be capped, a revolving capsule-carrying plate provided with capsule-receptacles, an auxiliary hand-operated ejector; and a stop or catch which works in conjunction with stop-notches on the under side of the revolving plate; and it further consists in the combination, with a revolving capsule-carrying plate, of a pivoted swinging filler, which as the capsule-plate revolves registers with any one of the circle or row of holes or receptacles in said revolving plate; and it also consists in certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter described, and specifically claimed, whereby a machine is produced in which unfilled capsules, which are bent out of proper shape, can be restored to such shape and capsules of different sizes placed in receptacles in different circles or rows may be readily filled, and after being filled conveniently capped and removed from the machine.

In the accompanying drawings, Figure 1 is a top view of the capsule-filling machine. Fig. 2 is a top view of the base portion, showing the raised inclines for elevating the filled capsules and also showing an auxiliary ejector and means for holding and releasing the revolving perforated plate. Fig. 3 is a vertical section of the machine, showing more clearly the construction of the pivot connection of the swinging filler, the auxiliary capsule-ejector, some of the filled capsules in a raised position to be withdrawn by the fingers, and other unfilled capsules in their normal or lowered position. Fig. 4 is a vertical section of

the machine and showing very clearly the raised inclined capsule-ejectors and the auxiliary pivoted capsule-expeller. Fig. 5 is a vertical section of the machine, showing the platform for bringing the empty cups of the capsules close up to the filler; and Fig. 6 is a view of the under side of the revolving plate and showing the stop-notches and the holes for receiving the cups of the capsules.

A in the drawings represents my improved capsule-filling machine, which is constructed with a stationary base *a*, preferably cylindrical in form, and provided on its top surface with an annular retaining-flange and one or more raised inclines *a'*, which cause the filled cups of the capsules passing over them to be pressed up through the holes, receptacles, or openings *b* in a revolving plate *B* in a manner and for a purpose, as will be hereinafter described. In the upper outer edge of this base portion I provide a spring-actuated catch *a²*, which either releases or holds the revolving perforated plate *B*, accordingly as the catch is depressed or allowed to resume its normal raised position. The base portion is also provided with a pivoted gravitating auxiliary ejector *a³*, which latter is operated by the hand and is provided with one or more pintles *a⁴*, which, when the operating end of this ejector is depressed, are forced up through the openings *a⁵* in the raised inclines *a'* and serve to completely expel the filled capsules in the event of the capsules clinging in the openings, holes, or receptacles *b* in the revolving plate *B*. This ejector is only used, as just stated, when the capsules hang in the receptacles *b*, as in most instances the capsules will be sufficiently forced through the receptacles or openings in passing over the inclines to be readily removed by the fingers.

In Figs. 2 and 5 I have shown a quadrantal-shaped platform *a⁶* pivoted at one end and provided with a thumb-screw at its other end, whereby it can be adjusted to any desired degree, and the empty capsules passing over this platform to be filled are brought very close up to the lower end of the filler, and thus the spilling of any of the medicine avoided. For instance, if a five-grain capsule is to be filled, the platform would be adjusted by the thumb-screw to the proper height, or, if desired to fill a three-grain capsule, the

platform will be slightly raised to bring it closer to the lower end of the filler.

The revolving perforated plate B is circular in form, and is constructed with an annular pendent rim below its under surface and provided with one or more circles of holes or receptacles *b* for receiving the cups of the capsules, each circle containing the same number of holes—say twelve—and all the holes of a given circle being of the same diameter, while those of the respective circles are of different sizes. In the drawings I have shown three circles of holes, the inner one of which being for, say, one-grain capsules, the middle for two-grain capsules, and the outer for three-grain capsules. The depth of the capsule-receptacles is equal to the thickness of the plate, but less than that portion where the flange depends therefrom, as shown. In the center of this revolving plate I have shown a conical-shaped projection *b'*, which is found very useful for properly shaping or spreading the lower end of the cap of the capsules when they have become slightly bent or mashed, and this is done by placing the cap over this conical projection and pressing lightly the bent or mashed portion upon it. The plate is also provided on its under surface, as shown in Fig. 6, with a series of notches *b''*, corresponding in number and position to the holes or receptacles in each circle—say, twelve—which, as heretofore described, work in conjunction with the catch *a''* for holding the revolving plate at any desired point.

On the upper outer edge of the base portion, out of the way of the revolution of the plate, I secure a filler C, which comprises a hollow vertical post *d*, having at its base a flange *c*, provided with one or more small holes *c'*, corresponding in number to the number of circles of holes in the revolving plate, this post *d* also having on its outside a sleeve carrying a horizontal arm *c''*, provided with a funnel-shaped filler *c'''*, and said sleeve being provided at its lower end with a pin *c''''* and adapted to slide vertically and horizontally, being held from becoming disconnected from the hollow post by means of an elastic cord or spring *c'''''*, passed down inside of the hollow post and secured at its lower end, while its upper end is secured to a plug or cap *c''''''*, which fits over the top of the hollow post and over the end of the sliding and revolving sleeve, as clearly shown in Fig. 3. The small holes *c'* on the flange *c* correspond to the number of rows of holes in the revolving plate B and are arranged in the arc of a circle in such a manner that by placing the vertical pin *c''''* in the outer adjusting-hole or the one farthest from the periphery of the revolving plate the lower end of the capsule-filler will be brought and locked centrally over one of the holes in the outer row of holes in the revolving plate, and by raising the pin and placing it in the middle adjusting-hole the lower end of the capsule-filler will be locked centrally over one of the holes in the middle row of holes in

the revolving plate, and by placing the pin in the hole nearest the periphery of the revolving plate the lower end of the capsule-filler will be locked centrally over one of the holes in the middle row of holes on the revolving plate, and by turning the revolving plate when the filler is in any one of these positions the respective holes in any one of the rows will be brought successively beneath the filler, the spring-catch *a''* being operated to release and stop the revolving plate as the respective holes or receptacles are brought under the filler.

The mode of using my invention is as follows: Usually it is only desired to fill one size of capsules at one operation, in which case the empty cups will be placed in one of the rows. If three-grain capsules are desired the outer row will be used, and the medicine to be placed in the capsules will be put into the funnel-shaped filler after the latter has been adjusted to coincide with the receptacles in that row. The spring or elastic cord in the hollow post holds the filler so close to the holes that no medicine will be wasted. By pressing on the spring-catch *a''* it will be disengaged from one of the notches on the under side of the revolving plate and the plate permitted to revolve; but the catch will only be depressed long enough to permit the revolving plate to move the length of the space between two notches, which will bring the next hole in this row directly under the filler, and so on until all the cups of the capsules are filled. As the filled cups pass from under the filler they are carried around by the revolving plate to the raised inclines on the base portion, whereupon they begin gradually to rise out of the holes, and when they have risen sufficiently they are capped by hand. In case the capped capsules hang or stick in the holes, the auxiliary ejector is brought into use and the capsules loosened or completely expelled. The operation of filling capsules placed in either of the other rows of holes or receptacles is precisely the same as that just described.

What I claim as my invention is—

1. A machine for filling capsules, comprising a stationary base provided with a raised incline, an auxiliary capsule-ejector, a revolving capsule-carrying plate, and a filler, which latter is adjusted over capsules to be filled, substantially as described.

2. A machine for filling capsules, comprising a stationary base, a revoluble capsule-carrying plate having a plurality of rows of holes, a horizontally-swinging and vertically-sliding filler, and means whereby the filler can be adjusted to register with any one of a plurality of rows of holes in the revoluble capsule-carrying plate, substantially as described.

3. In a capsule-filling machine, the combination of the stationary base, the revoluble capsule-carrying plate having stop-notches on its under side, a catch working in conjunction with said notches and adapted for holding and

releasing the revoluble plate, and a filler, substantially as described.

4. A capsule-filling machine comprising a stationary base, revoluble capsule-carrying plate, and a filler, substantially as described.

5. In a capsule-filling machine, the combination of the capsule-carrying plate provided with capsule-cup receptacles, a horizontally-swinging and vertically-sliding filler, adjusting-holes whereby the filler may be made to register with the holes in any one of the rows of receptacles in the plate and held in such position, a spring depression cap or plug for keeping the parts of the filler together and holding it down on the top of the plate, substantially as described.

6. In a capsule-filling machine, the combi-

nation of the stationary base, a platform for bringing the capsule close up to the filler, a revoluble capsule-carrying plate, and a swinging filler, substantially as described.

7. A machine for filling capsules, comprising a stationary base having a raised incline, a revolving capsule-carrying plate, and a filler, which latter is adjusted over the holes in the capsule-carrying plate, substantially as described.

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

WILLIAM K. JOHNSTON.

Witnesses:

WILLIAM R. FREEK,
ORLANDO C. HANDELL.