

(No Model.)

R. P. HOBBS.
CAPSULE PIN AND CAPSULE.

No. 525,844.

Patented Sept. 11, 1894.

FIG. 1.

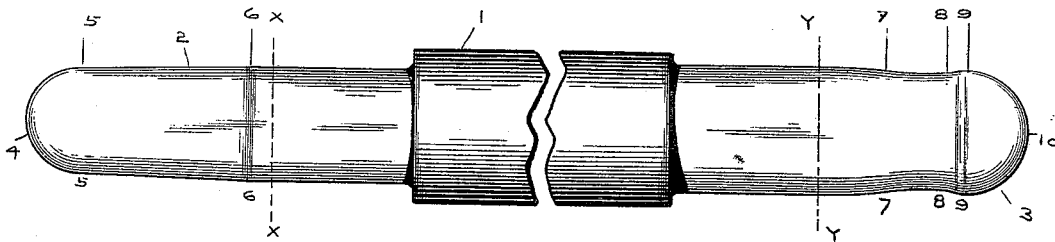
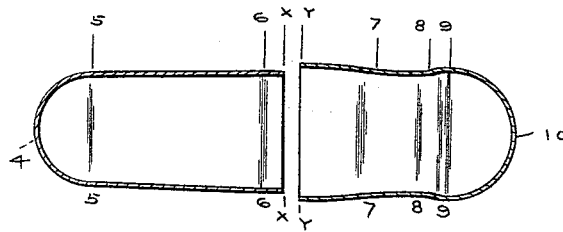


FIG. 2. FIG. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

RILEY P. HOBBS, OF INDIANAPOLIS, INDIANA.

CAPSULE-PIN AND CAPSULE.

SPECIFICATION forming part of Letters Patent No. 525,844, dated September 11, 1894.

Application filed January 31, 1893. Serial No. 460,433. (No model.)

To all whom it may concern:

Be it known that I, RILEY P. HOBBS, of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful
5 Improvements in Capsule-Pins and Capsules; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters and figures refer to like parts.

My invention relates to improvements in the form of capsule pins and of capsules made thereon, the chief object being the production of capsules which can be readily joined,
15 by machinery if desired, and when joined there will be a lock fit between the cap and the body of the capsule, which will prevent the cap from rebounding during the joining, and prevent its escape after joining without
20 a considerable pull on it and which will render the capsule air and fluid tight.

Figure 1, is a side elevation of a rotary capsule pin with a pin on one end to form the body and on the other to form the cap of the capsule, the middle part of such rotary pin being partly cut away. Fig. 2, is a side elevation of the body, and Fig. 3 of the cap of my improved capsule. These figures present a large size for the purpose of defining the form of the
30 pin and capsule more clearly.

1 is the round body to which are attached the pin 2 on which the body of the capsule is formed and the pin 3 on which the cap is formed. The common rotary body to which
35 the pins are connected is here shown but I do not desire to limit my invention to pins so mounted as the rotary body is no part of my invention and other ways may be resorted to for holding the pins. The pins are dipped in
40 gelatine and when cooled the gelatine is cut around the pins at $x-x$ and $y-y$. Thus the body of the capsule will have the form of the end of the pin to the left of $x-x$, and the cap that to the right of $y-y$. Fig. 2 shows the
45 body and Fig. 3 the cap of a capsule after they have been cut on the pins and removed. Since the body and cap of the capsule must have the identical shape of the pins on which they are formed, the description following
50 will apply equally to both.

The pin 2 on which the body of the capsule is formed and which I call the body-pin for

convenience, has a semicircular end 4, but this end may be conical or of other shape as it forms no part of my invention. From the
55 point 5 to the point 6 the diameter of the body-pin regularly but slightly increases, so as to increase the diameter of the capsule of the usual size at this point, say about three thousandths of an inch. From the point 6 to the
60 point $x-x$ the diameter is the same, and the distance between these points in a pin for a capsule of the usual size is preferably about one sixteenth of an inch.

The other or cap-pin 3 on which the cap of
65 the capsule is formed has a diameter at $y-y$ somewhat larger than the diameter of the body-pin at $x-x$, in order that the mouth of the cap will be large enough to be readily slipped over the mouth of the body of the cap-
70 sule, that is the diameter of the cap-pin at $y-y$ should be enough greater than the diameter of the body-pin at $x-x$ to make the cap of the average sized capsule about three thousandths of an inch greater in diameter
75 than the body of the capsule at this point. From the point $y-y$ to the point 7 the diameter of the cap-pin decreases, preferably so that the linear form will be substantially that of an ogee, and the diameter of the cap-pin
80 must be enough larger than the diameter of the body-pin at $x-x$ to allow for the thickness of the gelatine, and so there will be a reasonably tight fit between the body of the capsule near the mouth and the part of the
85 cap at 7, as the latter is being slipped over the former. From the point 7 to the point 8 of the cap pin the diameter is the same. The distance between these points may be proportionally less than shown, but as shown
90 there is a considerable binding surface between the cap and body which is desirable. From the point 8 the diameter rather rapidly increases to 9, the increase in a capsule of the usual size being preferably about two
95 thousandths of an inch. From the point 9 to the end 10 of the cap-pin is semi-circular but may be of any desired form. The distance from 8 to 9 is about the same as the distance from 6 to $x-x$ on the body-pin, that is to say,
100 the distance from 8 to the point where the mouth of the body of the capsule will contact with the end 10 of the cap, is greater than the distance from 6 to $x-x$ on the body of

the capsule, so that when joined the point 6 of the body of the capsule will pass beyond and to the right of the point 8 of the cap a slight distance and spring outward in the enlarged space and the cap will thus be locked or held on the body of the capsule firmly, as the outside diameter of the body at 6 is slightly greater than the inside diameter of the cap at 8.

Heretofore the bodies of capsules have been made to begin tapering at the mouth, the diameter from that point beginning to decrease immediately. The form of the cap has been usually made to taper in the same way and decrease in diameter regularly to the end. This construction, if a tight fit be desired, does not permit the mouth of the cap to be enough larger than the mouth of the body to enable them to be readily joined, and if the mouth of the cap be made large enough to be slipped over the body readily, the capsules would not be tightly joined, as the bearing between the body and cap would be only at the point $x-x$, and the cap would rebound during the joining, or if joined the parts would separate in shipping and handling because the slightest independent movement of either part would release the cap from its bearing on the body at the point $x-x$.

An advantage of my capsule is that it has a bearing surface on the body from the point 6 to the point $x-x$, which if joined with the ordinary cap would bind and hold tightly; and the contracted portion of my cap, if slipped over the body of an ordinary capsule, would hold on because the inside diameter of that part of the cap is less than the outside diameter of the mouth of the body of the capsule.

The mouth of my cap is so large proportionately that a person or machine can readily slip it over the body. The ogee shape of the mouth of the cap permits the body to get well in the cap before it begins to encounter the contracted portion of the same, so that the body cannot escape during the first part of the process of joining. As the cap at the point 7 passes over the body it binds the body from 6 to $x-x$ gently but positively. This continues until the point 8 of the cap passes over $x-x$ of the body, when the cap will quickly spring on the body until the mouth of the body contacts with the closed mouth of the cap. This is due to the form of the cap and body at this point and the ability of the air in the capsule to escape when the mouth of the body passes the point 8 of the cap, leaving an angle between the cap through which

the air can force itself. When joined the cap will be held on the body tightly because of the long surface from 7 to 8 binding the body of the capsule to the left of 6 and especially because the outside diameter of the body at 6 is greater than the inside diameter of the cap at the point 8 which it has passed. This tight fit or lock fit will prevent separation during joining or handling. It will keep out air and keep in any fluid which will not destroy the capsule. The mouth of the body will always necessarily contact with the closed end of the cap wherefore the joined or filled capsules will always be of the same length not only giving them a uniform appearance but is a great assistance in counting them which is done by measure. These capsules too being uniform in size every one will hold the same amount of medicine which is one of the most important requisites in a capsule.

What I claim as my invention, and desire to protect by Letters Patent, is—

1. A capsule consisting of a cap contracted between its ends, and a body which is straight for some distance from its mouth.

2. A capsule consisting of a cap whose form near its mouth is substantially an ogee shape and whose diameter is less near the closed end of the cap than it is at the closed end or at the mouth, and a body straight for some distance from its mouth and tapering therefrom toward the closed end.

3. A capsule mold consisting of a shank and a pin mounted thereon for forming the cap, such pin being contracted between its ends, in combination with a shank and a pin for forming the body, such pin being straight for some distance from the point where the capsule is to be cut.

4. A capsule mold consisting of a shank and a pin thereon adapted to form a cap, such pin being substantially an ogee shape near the point where the capsule is to be cut and having a diameter near its end which is less than the diameter of the end or the point where the capsule is to be cut, in combination with a shank and a pin adapted to form the body of the capsule, such pin being straight for a portion of the distance from the point where the capsule is to be cut thereon and slightly tapering therefrom to the rounded end.

In witness whereof I have hereunto set my hand this 1st day of December, 1892.

RILEY P. HOBBS.

Witnesses:

H. D. NEALY,
E. B. GRIFFITH.