B. T. WINCHESTER.

CAPSULE ASSEMBLING MACHINE.

APPLICATION FILED JULY 19, 1911.

1,155,023.

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Fig. 1.

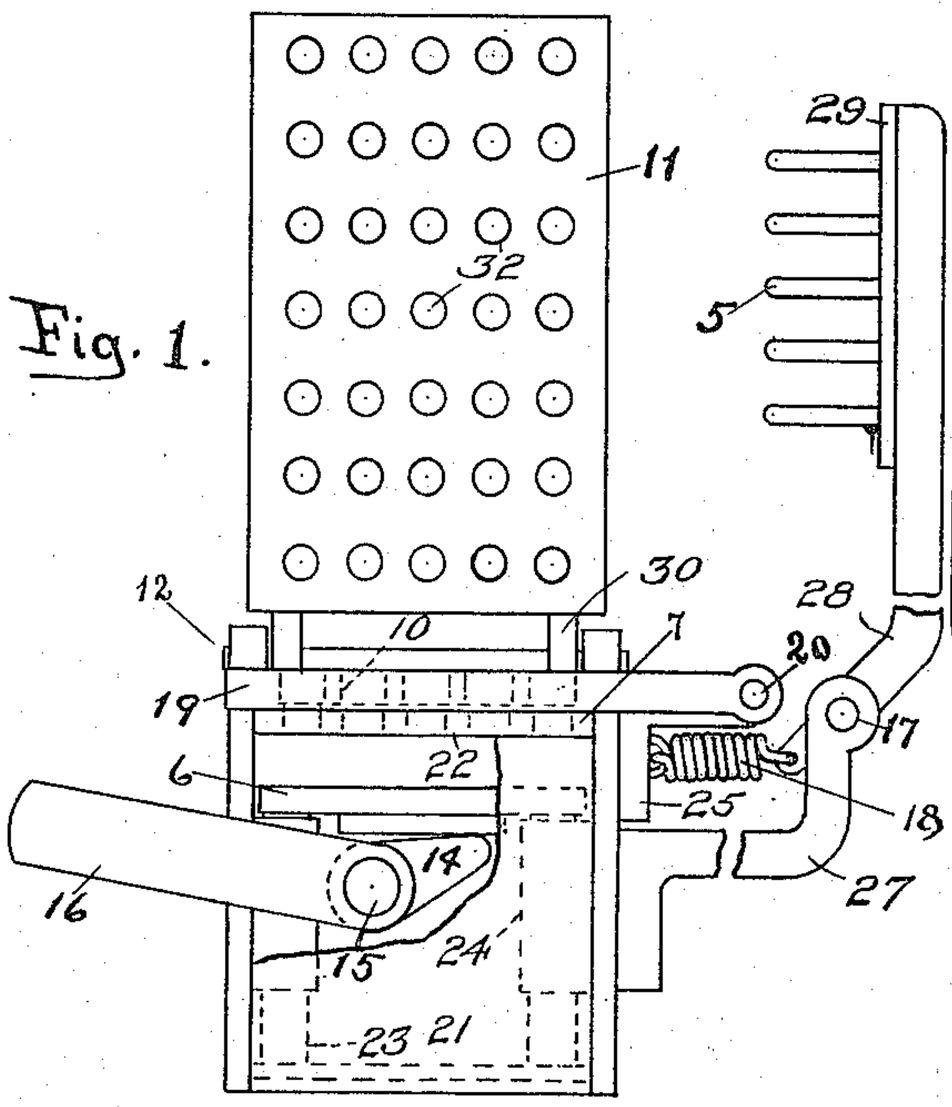


Fig. 2.

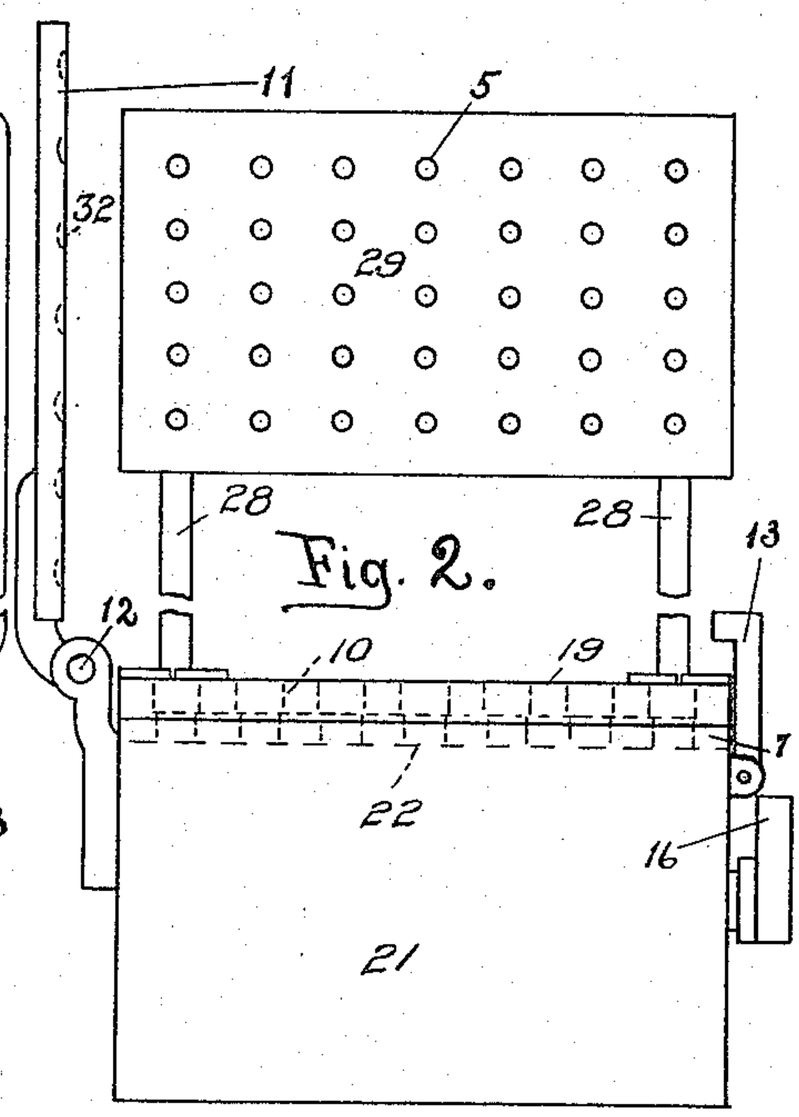


Fig. 4

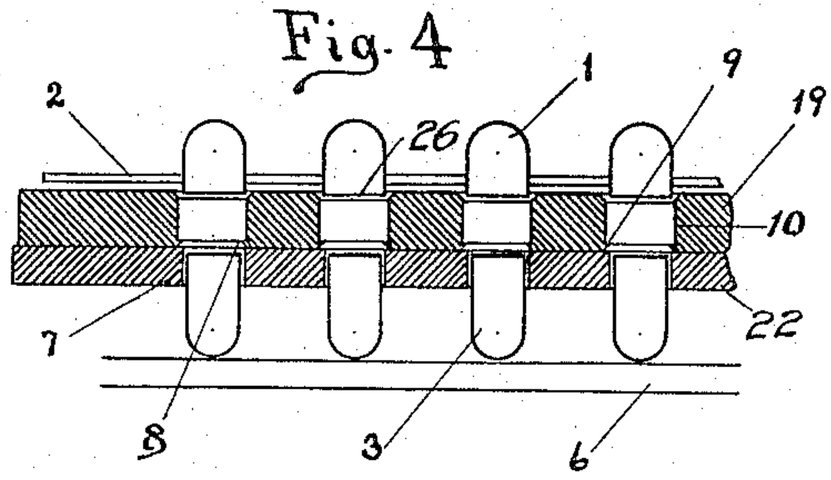
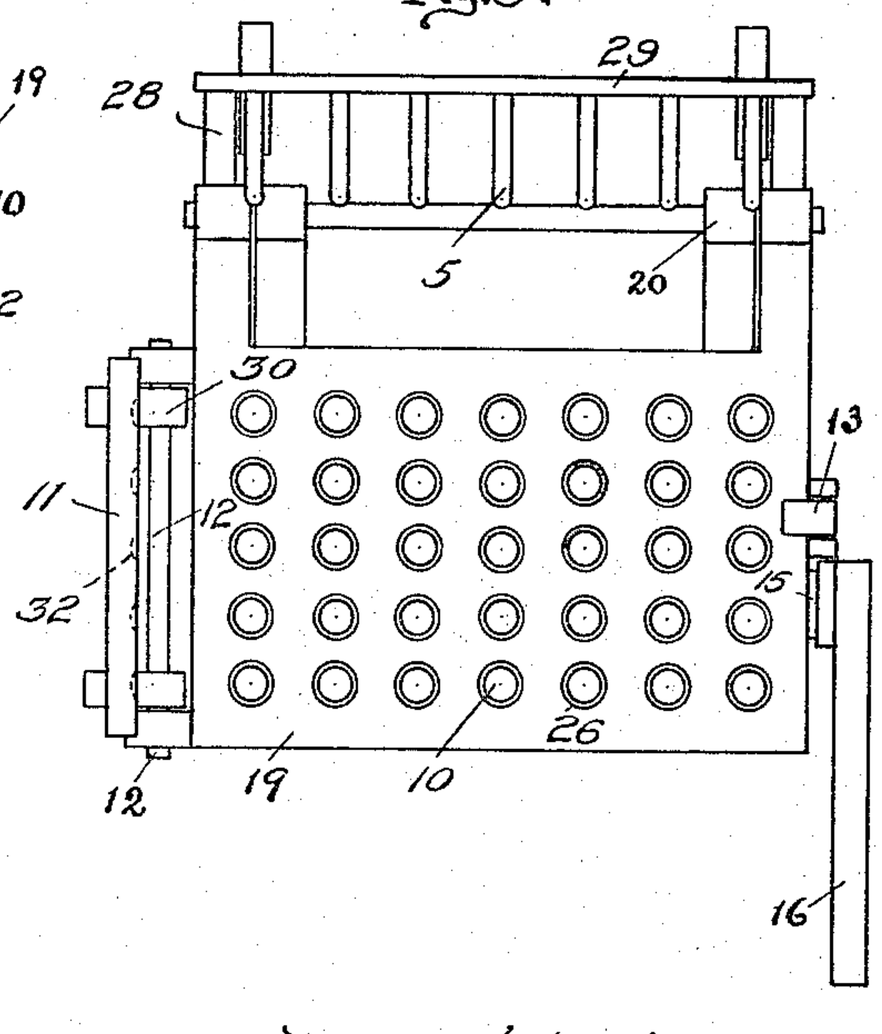


Fig. 3.



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BENJAMIN THOMAS WINCHESTER, OF WINDSOR HILLS, MARYLAND, ASSIGNOR, BY MESNE ASSIGNMENTS, TO SHARP AND DOHME, OF BALTIMORE, MARYLAND, A CORPORATION OF NEW JERSEY.

CAPSULE-ASSEMBLING MACHINE.

1,155,023. Specification of Letters Patent. Patented Sept. 28, 1915.

Application filed July 19, 1911. Serial No. 639,242.

To all whom it may concern:

Be it known that I, BENJAMIN THOMAS WINCHESTER, a citizen of the United States, residing at Windsor Hills, in the county of Baltimore and State of Maryland, have invented a new and useful Capsule-Assembling Machine, of which the following is a specification.

This invention relates to improvements in capsule assembling machinery and has particular reference to a machine for bringing together the two parts of a capsule and telescopically engaging the same.

One object of the invention is to provide an improved construction of machine which will accommodate a receiver containing a plurality of capsules, into which receiver the capsules were placed when discharged from the forming machine and which retained the same during the cutting operation thus retaining the capsules during the several steps in the operation.

Another object is to provide an improved machine in which the two capsule parts may be readily placed in gangs and which will retain a series of one of said parts while the series of the other of said parts may be moved into telescopic engagement with the former.

A further object of the invention is to provide a machine having a movable platform on which a plurality of capsule parts may rest and provide another member for retaining a plurality of the other capsule parts—said parts being so arranged with respect to each other that they may bring the two parts of the capsules into register so that the platform may be moved to telescopically engage the capsule parts.

Another object of the invention is to provide improved means for removing the capsule parts from the receivers and retain them in the machine in such relation that a plurality of capsules may be assembled at one operation.

With these and other objects in view the invention is illustrated in the accompanying drawings, in which—

Figure 1 is an end view in elevation of my machine; Fig. 2, is a front view in elevation taken at right angles to that shown in Fig. 1; Fig. 3, is a plan view of my improved assembler; and, Fig. 4, is an enlarged sectional view of the capsules in the receivers in position.

Referring to the drawing by numerals, 21, designates a hollow base which in the present instance is of a rectangular shape. The base has a horizontal top, 22, with a series of vertical perforations, 7, therein and below the top, and on the interior of the base there is provided a horizontal platform, 6, which latter has position directly beneath the perforations, 7, in the base top. Rods or bars, 23, depend from the bottom side of the platform, 6, and pass through guides, 24, which are rigid with the base so that the platform may be moved vertically toward or from the top.

To effect a vertical movement of the platform the base sustains a horizontal shaft, 15, which has position below the platform and a cam, 14, is carried on the shaft so that when the latter is oscillated the cam will swing and by raising or lowering as the case may be, impart a like movement to the platform. To facilitate the movement of the shaft the outer end of the latter is provided with an operating lever 16, which may be grasped by the hand or otherwise operated.

Above the top, 22, there is provided a plate, 19, which is hinged at, 20, to a bracket, 25, and said plate, 19, has a series of perforations, 10. The lower ends of the perforations, 10, are provided with a bevel, 8, and immediately above the bevel each perforation has a shoulder, 9. The upper end of each perforation is also provided with a bevel, 26, which facilitates the entrance of the capsule parts as will presently be more fully explained.

At one side the base carries suitable brackets, 27, which have bearing eyes, 17, therein and arms, 28, are pivotally sustained from said bearing-eyes and said arms sustain a pin plate, 29, from which a series of pins, 5, project. The extreme ends of the arms, 28, are connected by coiled springs, 18, which latter serve to keep the plate, 29, and pins, 5, normally swung up. The num-

ber of pins, 5, on the plate, 29, correspond to the number of perforations, 7, in the top, 22, and the pins are so located on the plate that when the latter is swung down the pins will register with and enter said perforations in the top.

A retaining or backing plate, 11, has hinge eyes, 30, at one edge which are pivotally engaged by a horizontal rod, 12, at one end of the hollow base so as to be swung down over the plate, 19, for a purpose presently to be explained. This backing plate, 11, has a series of concave recesses, 32, in one face thereof, as shown by broken lines in Figs. 2 and 3 of the drawings and the recesses are so disposed as to take position directly over the perforations, 10, in plate, 19, when said backing plate is turned down.

A suitable latch, 13, is provided on the hollow base to engage the backing plate, 11, when the latter is down to prevent upward movement of the latter when the capsule parts are brought together as will be explained.

The larger or female part of the capsule is designated, 1, in the drawing while the smaller or male part of the capsule is designated, 3, and in Fig. 4 of the drawing the female parts of a plurality of capsules are shown as passing through a receiver plate which latter is designated, 2.

Prior to the assembling of the capsule parts the latter are passed through a cutting machine which trims them and during this operation the capsule parts are held in a perforated receiver or plate which is designated, 2. This plate is preferably made of a fiber sheet and the perforations therein in which the capsule parts are confined are so spaced that they will register with the perforations, 10, and, 7, in plates, 19, and, 22, of the machine.

In operation, a sheet or plate, 2, containing a series of the smaller male capsule parts, 3, is first laid on the top, 22,—the closed ends of said male parts entering the perforations, 7. The plate, 19, is then swung down on top of the sheet or plate, 2, and the upper open ends of the male capsule parts will enter the perforations, 10. The pin plate, 29, is next swung down on plate, 19, and the pins, 5, will pass through perforations, 10, and enter the open ends of the male capsule parts. As the pins and plate, 29, are lowered, the pins will pass down inside of the male capsule parts and push said capsule parts down into the perforations, 7, in the top, 22, so as to project the lower closed ends of said male capsule parts below the top as shown in Fig. 4 of the drawing and leave said lower closed ends resting upon the platform, 6, which forms a stop for said capsule parts.

It will be noted that when the male capsule parts are seated on the platform, 6, that the upper open ends thereof have position slightly below the upper surface of the top, 22, thus said capsule parts will have been pushed entirely out of the receiver plate which held them and after the pins, 5, are withdrawn the plate, 19, may be raised and said receiver plate will be removed from top, 22. The plate, 19, will again be turned down on the top, 22, so as to bring the guide perforations, 10, into position over the upper open ends of the male capsule parts. When this plate, 19, is in place, as shown in Fig. 4 of the drawing, the upper edge of the male capsule will have position just below the bevel, 8, in the lower ends of the perforations, 10, and below the shoulders, 9, in said perforations above said bevels, 8. Another receiver plate or sheet, 2, containing a plurality of female capsule parts, 1, is then laid on top of the plate, 19, so that a female capsule part, 1, will be in register with the bevel, 26, at the upper end of the guide perforations, 10, also as seen in Fig. 4. The retaining plate, 11, is next swung down on top of the closed ends of the female capsule parts, pushing said female parts down past the bevel, 26, through the receiver plate or sheet, 2, in plate, 19, and into the guide perforations, 10, in said latter plate so that the lower open ends of said female capsule parts will have position on or close to the shoulders, 8, and above the open ends of the male parts. When the retaining plate, 11, has forced the female capsule parts down into perforations, 10, it will be engaged by lock, 13, and held rigidly. The lever, 16, will next be operated to oscillate shaft, 15, and throw cam, 14, up which latter elevates platform, 6, and pushes all of the male capsule parts, 3, up past bevel, 8, and into the open ends of female capsule parts, 1, thus assembling or telescopically engaging said capsule parts.

After the capsule parts have been assembled and brought together, the retaining plate, 11, is raised; the receiver plate or sheet, 2, is removed and plate, 19, is elevated so as to entirely withdraw the lower portions of male capsule parts, 3, which are then engaged with the female parts, from the perforations in top, 22, and to enable said assembled capsules to be pushed out of the perforations, 10, in plate, 19, after which the operation may be repeated.

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

In a machine for assembling capsules the combination with a hollow base having a perforated top to receive the male capsule parts, of a platform in the base below said perforations; a plate hinged so as to swing over the top and having perforations for the female capsule parts which are brought into register with the perforations in the top; a pin plate having a plurality of pins,—

said plate being movable from the upper side downwardly toward the top to project the pins into the male part receiving perforations of the top; a backing plate also movable downwardly toward said top to engage the female capsule parts that are in register with said perforations and means for moving the platform upwardly toward the top of the base to push the male capsule parts upwardly into the female parts.

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