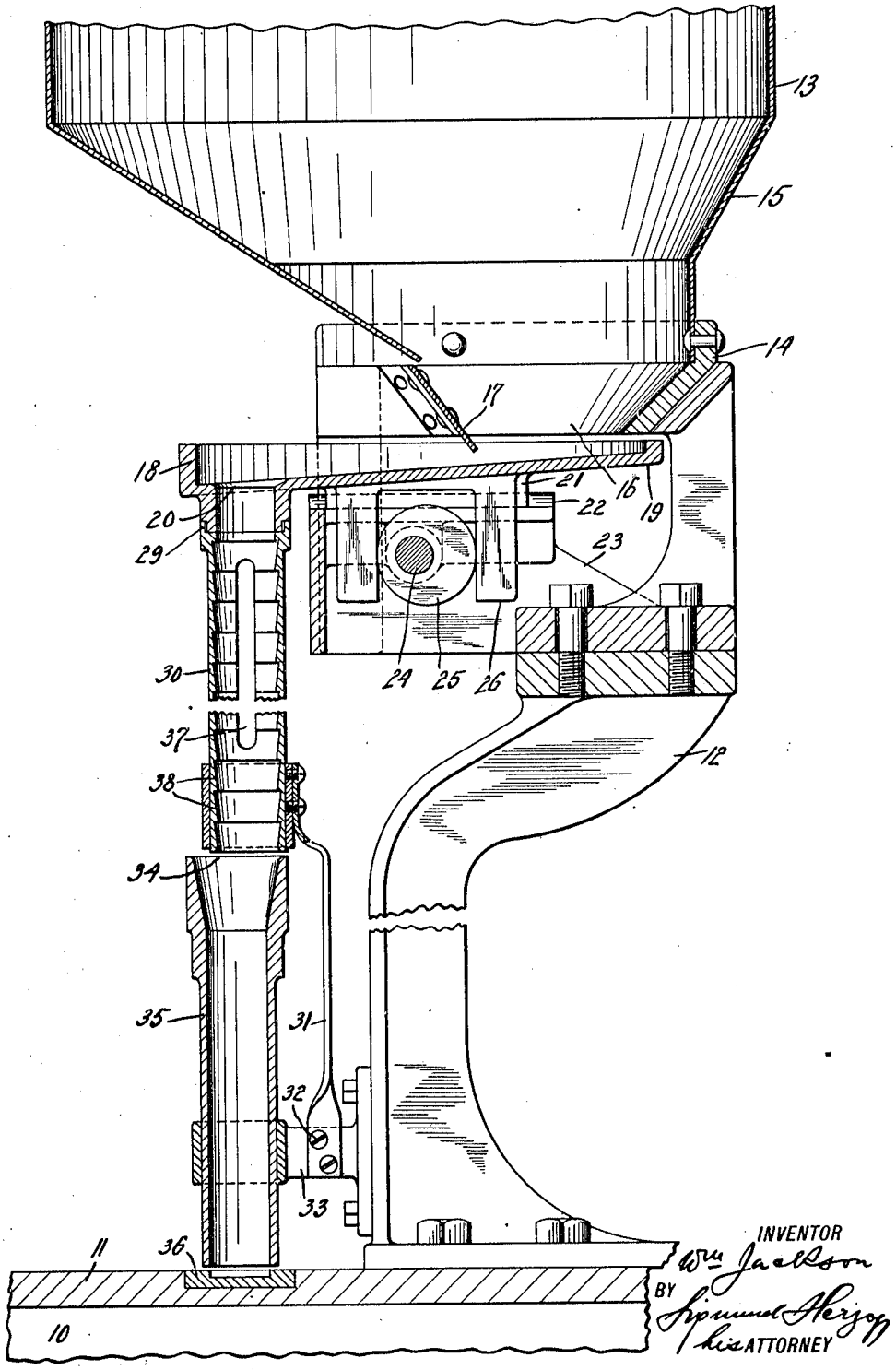
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FEEDING ATTACHMENT FOR CROWN CORK MAKING MACHINES.

APPLICATION FILED AUG. 17, 1918.

1,313,990. Patented Aug. 26, 1919.



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FEEDING ATTACHMENT FOR CROWN-CORK-MAKING MACHINES.

1,313,990. Specification of Letters Patent. Patented Aug. 26, 1919.

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To all whom it may concern:

Be it known that I, WILLIAM JACKSON, a citizen of the United States, and a resident of the city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Feeding Attachments for Crown-Cork-Making Machines, of which the following is a specification.

The present invention relates to machines for manufacturing bottle-, can-, and like closures of the cap variety, including those termed crown corks. The invention pertains more particulary to means for feeding the sealing disks of cork or similar material of the closures to the assembling devices of the machine.

In one type of these feeding attachments, a hopper is used into which the sealing disks are placed indiscriminately, in combination with means which feed the disks into a vibrating tube that stacks the same. With these tubes difficulties have been experienced in that the sealing disks are apt to travel therein edgewise, which necessitates almost continuous supervision by the attendant, in order to insure an uninterrupted operation of the device.

The main object of the present invention is to so construct the stacking tube that the disks therein are arranged continuously and automatically one on top of another, or in other words in proper position to be removed by the transporting means of the assembling devices.

With these and other objects in view, which will more fully appear as the nature of the invention is better understood, the same consists in the combination, arrangement and construction of parts hereinafter described, pointed out in the appended claims and illustrated in the accompanying drawing, it being understood that many changes may be made in the size and proportion of the several parts and details of construction within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

One of the many possible embodiments of the invention is illustrated in the accompanying drawing, which represents a central vertical section taken through a feeding attachment constructed in accordance with the present invention.

In the drawing, the numeral 10 indicates a portion of the frame of a crown cork assembling machine, having upon its table portion 11 mounted an upwardly extending support 12, which carries a hopper 13. This hopper may be of any suitable construction, for instance in the case illustrated in the drawings, it comprises a cast iron member 14, held upon the support 12, and to the said member is attached a hopper body 15, preferably made of sheet iron. The outlet of the hopper is denoted by the numeral 16, and is constituted by part of the member 14 and by an inclined substantially diametrically extending plate 17, the latter being attached in any suitable manner to the said member and projecting below the lower edge thereof, for a purpose hereinafter to be described. The hopper discharges into a shallow receptacle 18, that is disposed below the same and is provided with a slanting bottom 19, having a circular discharge opening 20, the diameter of which is slightly larger than that of an individual sealing disk. The discharge opening is formed, preferably, in the lowermost portion of the slanting bottom of the receptacle 18 and is out of alinement with the outlet of the hopper, the latter discharging onto a higher portion of the slanting bottom of the said receptacle. The inclined plate 17 projects into the receptacle 18, but stops short a suitable distance above the bottom of the latter, thereby permitting the sealing disks to pass toward the discharge opening 20, preventing, however, too many of the same to pass at a time toward the said opening. The plate 17 thus divides the receptacle 18 into a disk receiving portion and a discharging portion.

The receptacle 18 is oscillated or reciprocated in relation to the hopper. For this purpose there may be provided any suitable means, for instance there may be formed upon the bottom of the receptacle 18 dove-tailed projections 21, fitting similarly shaped guides 22 upon a bracket 23, the latter being carried by the support 12. In this bracket is rotatably mounted a shaft 24, provided with a cam 25, the latter coöperating with lugs 26 upon the bottom of the receptacle 18. This shaft may be rotated by any suitable means. In the case illustrated in the drawings, the dove-tailed projections 21 and the guides 22 extend horizontally, so that the receptacle 18 will be reciprocated in

a horizontal plane. It is however, obvious that it may be reciprocated in a slightly inclined plane in relation to the hopper, without departing from the invention. Attention is also called to the fact that, instead of reciprocating the receptacle 18 rectilinearly, it may be oscillated in a curved path, or in other words it may be vibrated or shaken in any suitable manner, for a purpose that will appear hereinafter.

The outlet of the receptacle 18 is constituted by a short tubular extension 29, that projects below the bottom thereof and fits somewhat loosely into a tube 30. The lower end of this tube is attached to the upper end of a resilient support 31, the lower end 32 of which is fixed to a bracket 33, the latter being secured to the support 12, above described. The outlet of the tube 30 is in alinement with the mouth 34 of a stationary, preferably, vertically extending tube 35, leading to the transporting means 36 of the machine, which conveys the sealing disks one after the other to the assembling mechanism. The tube 35 is held above the transporting mechanism by the bracket 33. The tube 30 is provided with longitudinal slots 37, permitting of an insertion of a pointed instrument for the purpose of properly arranging the disks therein, should, by accident, some of the disks travel therein edgewise.

The inner face of the tube 30 is constituted by a plurality of superimposed inverted frusta 38 of a cone, or in other words, the inner face of the tube 30 has annular downwardly sloping projections. This arrangement aids in stacking the disks, that is, if any one travels in the said tube in inclined position, it will be caused, as the said tube vibrates, to assume a horizontal position. This is mainly due to the fact that the inclined disks are retarded by the sloping projections. The smallest diameter of the tube 30 is larger than the diameter of the disks to be stacked, thereby permitting the disks to be brought in said tube into horizontal position.

The operation of this device is as follows: A mass of sealing disks is placed indiscriminately into the hopper, part of the same sliding through the outlet 16 into the receptacle 18. When now this receptacle is reciprocated, the tube 30 is caused to move therewith and to swing around the point 32 of the resilient member 31. The disks in the said receptacle are thus caused to pass toward the discharge opening 20 therein, finding their way into the tube 30, the continuous vibration of which causes a proper stacking of the disks therein. No matter in what position they arrive in the said tube, they will be brought, by the continuous vibrating motion, before they reach the mouth of the tube 35, into substantially horizontal positions and into exactly horizontal positions as they pass into the stationary tube 35. The thickness and more or less curved shapes of the disks do in no way affect the proper operation of the device.

The inclined plate 17 prevents a clogging of the discharge opening of the receptacle 18, in that it permits, at a time, only a limited number of disks to move toward the said opening. The said plate, in coöperation with the reciprocating receptacle 18, serves also to agitate the mass of disks, and thereby insures a continuous operation of the feeding device.

The outlet of the hopper is comparatively smaller than the horizontal cross-section of the receptacle 18, so as to prevent the whole mass of sealing disks from resting upon the bottom of the said receptacle and to interfere with the proper operation of the device.

It is obvious that, while herein a particular device has been described for feeding the sealing disks into the vibrating stacking tube, any other means may be employed without departing from the invention, which lies mainly in the provision of a vibrating stacking tube, the inner face of which is provided with projections, for the purpose set forth.

What I claim is:—

1. In a device for stacking disks, the combination with a receptacle having a discharge opening, of a downwardly extending tube connected with said receptacle and into which the latter is adapted to discharge through said opening, the inner face of said tube being constituted by a plurality of superimposed inverted frusta of a cone, and means for shaking said receptacle and tube.

2. A device for stacking disks, including a tube having an inner face constituted by a plurality of superimposed inverted frusta of a cone, and means for shaking the said tube.

3. In a device for stacking disks, the combination with a receptacle having a discharge opening, of a downwardly extending cylindrical tube connected with said receptacle and into which the latter is adapted to discharge through said opening, the inner face of said tube being provided with annular downwardly sloping projections, and means for shaking said receptacle and tube.

4. A device for stacking disks, including a cylindrical tube having its inner face provided with annular downwardly sloping projections, said projections being fixed to said tube and the smallest diameter of said tube being larger than the diameter of the disks to be stacked, and means for shaking said tube.

5. In a device for stacking disks, the combination with a receptacle having a discharge opening, of a downwardly extending cylindrical tube connected with said receptacle and into which the latter is adapted to discharge through said opening, the inner

face of said tube being provided with slanting projections, and means for shaking said receptacle and tube.

6. A device for stacking disks, including a cylindrical tube having its inner face provided with slanting projections, said projections being fixed to said tube and the smallest diameter of said tube being larger than the diameter of the disks to be stacked, and means for shaking said tube.

7. In a device for stacking disks, the combination with a receptacle having a discharge opening, of a downwardly extending tube connected with said receptacle and into which the latter is adapted to discharge through said opening, said tube contracting and expanding alternately and gradually, the smallest diameter of said tube being larger than the diameter of the disks to be stacked.

8. A device for stacking disks, including a tube that contracts and expands alternately and gradually, the smallest diameter of said tube being larger than the diameter of the disks to be stacked, and means for shaking said tube.

Signed at New York, in the county of Kings and State of New York, this 15th day of August, A. D. 1918.

WILLIAM JACKSON.