C. F. JENKINS.

MACHINE FOR INSERTING CLOSURES IN RECEPTACLES.

APPLICATION FILED DEC. 26, 1908.

985,900. Patented Mar. 7, 1911.

Fig. 1.

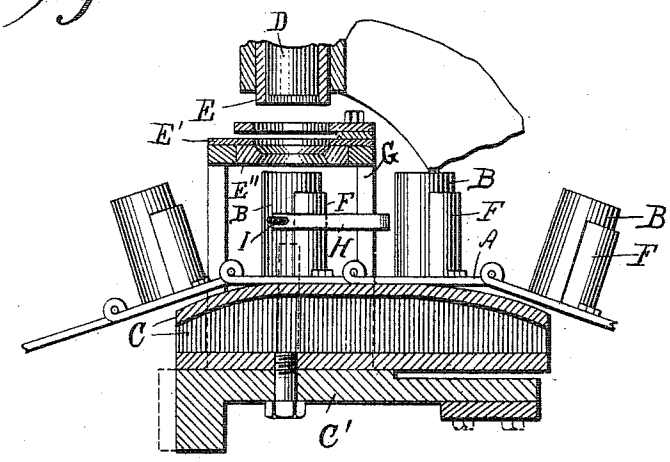


Fig. 2.

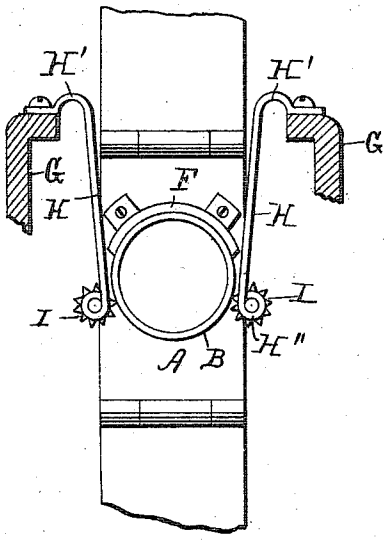
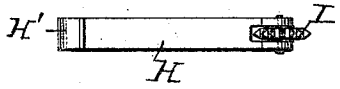


Fig. 3.



Witnesses

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MACHINE FOR INSERTING CLOSURES IN RECEPTACLES.

985,900. Specification of Letters Patent. Patented Mar. 7, 1911.

Application filed December 26, 1908. Serial No. 469,421.

To all whom it may concern:

Be it known that I, CHARLES FRANCIS JENKINS, citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Machines for Inserting Closures in Receptacles, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in machines for inserting closures or bottoms in receptacles by means of a reciprocating plunger or the like. In such machines the receptacle itself often tends to accompany the retreating plunger, and when it is thus displaced serious evil results follow. The object of this invention is to provide for resisting this displacement, and to provide for returning the receptacle to proper position before undesirable results follow, when such displacement occurs.

In the accompanying drawings, Figure 1 is a side elevation, partly in section of a portion of a closure inserting machine provided with my devices. Fig. 2 is a section on the line 2—2, Fig. 1. Fig. 3 is a detail view showing a certain receptacle-engaging spring and toothed wheel.

In these views, A represents a belt made up of plates hinged together and adapted to carry a series of receptacles B, B step by step between a rigid chain support C C′ and cutting, forming and inserting members above the support. The inserting device is shown as a plunger D adapted to draw a plane disk, cut by co-acting members E, E′, into cup form by forcing it through a ring die E″ and insert it in one of the receptacles which has been brought to rest in the plunger's path. The belt carries a series of rigidly attached forwardly concave projections F to support the rear side of the advancing receptacles. None of the devices thus far described has any novelty herein claimed.

To press each receptacle back against its supporting projection while at rest below the plunger, I secure to the die support, G, springs H converging forwardly from opposite sides toward the path of the receptacle and each bearing at its free end a receptacle engaging device shown as a wheel I provided with somewhat sharp, short teeth or spurs, which as the receptacles advance engage their walls, rotating as well as springing apart to allow the receptacle to advance and at the same time forcing the receptacle accurately against its rear support. The springs are such that they may spring, although with moderate resistance, in a vertical direction, and preferably they are bent as shown at H′ so that the moving of the wheels away from the belt exerts mere torsional force on the springs. The springs resist lifting the receptacle, but if the plunger in retreating after inserting a closure does lift the receptacle the latter is arrested when it reaches the annular die E″ a little above it, and as soon as the receptacle is released by the plunger the springs instantly pull it down to place upon the belt, and in time to prevent injury to the receptacle by its being advanced with the belt before it is free from the parts above. The gain in the time of the receptacle's descent is slight, but as the machine usually inserts sixty closures a minute this gain is highly important.

While I prefer to use the toothed rotary wheels for engaging the receptacles, I do not wish to limit myself thereto.

What I claim is:

1. The combination with a support for a receptacle and a reciprocally moving device for inserting closures in receptacles carried by said support, of spring devices adapted for non-slipping engagement with receptacles so supported and yieldingly resisting movement of the receptacles which it engages in the direction of retreating movement of the inserting devices, and means for limiting said movement of the receptacles.

2. The combination with a receptacle-carrying belt, of a transversely movable plunger in position for inserting closures in receptacles carried by said belt, a spring provided with a device for engaging the wall of each receptacle during the insertion of its closure and adapted to yield without releasing the receptacle when the latter is displaced by the retreating plunger.

3. The combination with a receptacle carrying belt and a reciprocating plunger for inserting closures in receptacles carried by the belt, of springs secured upon opposite sides of the path of receptacles carried by the belt, provided with non-slipping de-

vices for engaging the receptacles, and adapted to yield readily and allow the engaged receptacle to move with the retreating plunger, substantially as set forth.

4. The combination with a receptacle support, of an annular die above the position of a receptacle resting on said support, a co-acting plunger arranged for passing through said die to form and insert a receptacle closure, toothed wheels for engaging the exterior of the receptacle and springs holding said wheels in engagement and yieldingly resisting their movement from said support.

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

CHARLES FRANCIS JENKINS.

Witnesses:

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