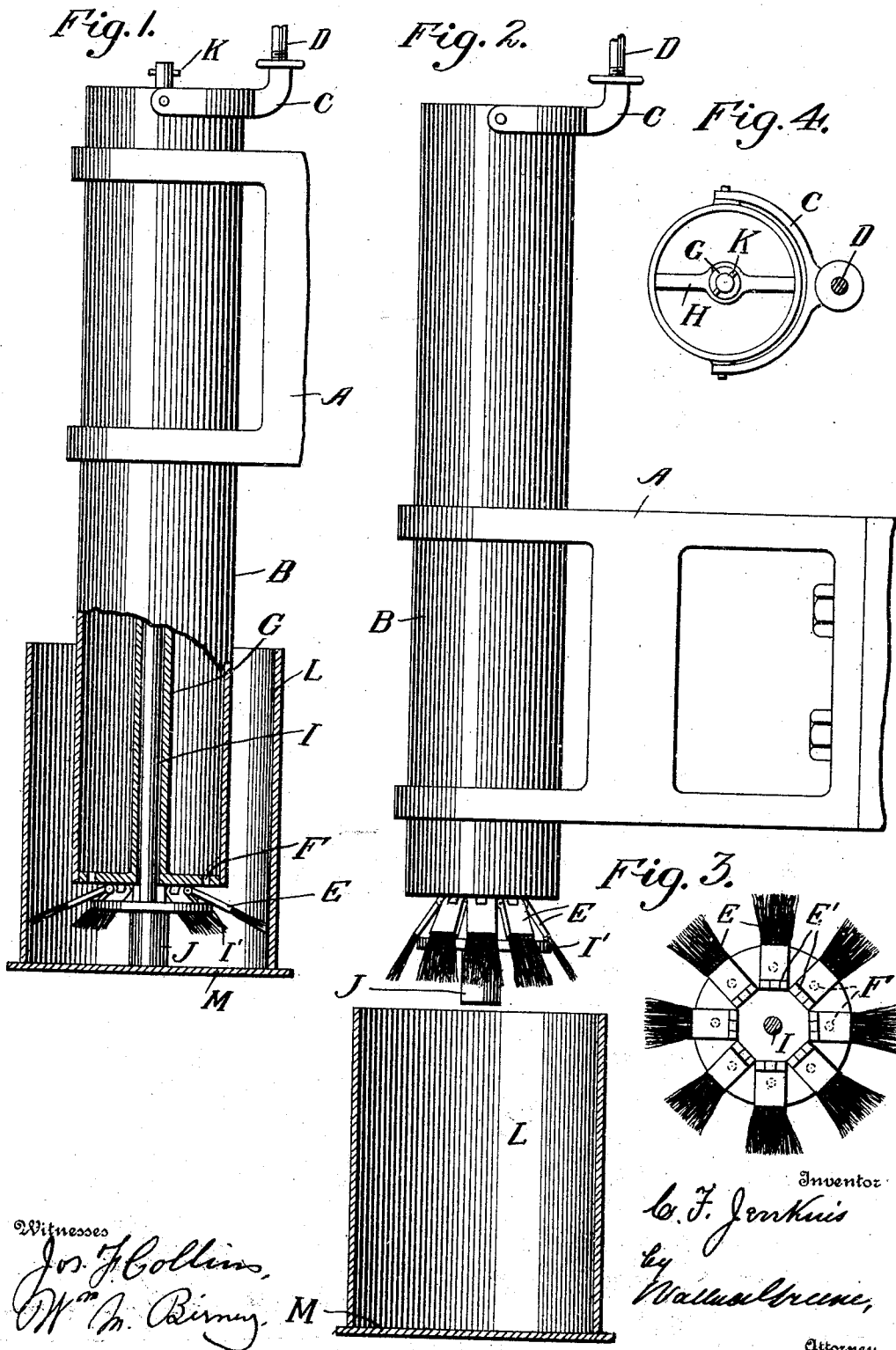


C. F. JENKINS,
 APPARATUS FOR SECURING CLOSURES IN PAPER TUBES.
 APPLICATION FILED MAY 18, 1909.

954,108.

Patented Apr. 5, 1910.



Witnesses
 Jos. F. Collins,
 Wm. A. Birney

Inventor
 C. F. Jenkins
 by
 Wallace Greene,
 Attorney,

UNITED STATES PATENT OFFICE.

CHARLES FRANCIS JENKINS, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
TO SINGLE SERVICE PACKAGE CORPORATION OF AMERICA, OF NEW YORK, N. Y.,
A CORPORATION OF NEW JERSEY.

APPARATUS FOR SECURING CLOSURES IN PAPER TUBES.

954,108.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed May 18, 1909. Serial No. 496,744.

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 Apparatus for Securing Closures in Paper Tubes, of which the following is a specification, reference being had therein to the accompanying drawing.

In making paper receptacles of certain kinds it is desirable to insert a bottom or top at one end of a tube, push it to the opposite end and there secure it by means of glue or other adhesive. To apply the glue by rapid automatic devices has proved a somewhat difficult problem, and while this invention is not limited to the conditions suggested, it is especially adapted to avoid the evils incident to many proposed plans for applying glue under such circumstances. In many paper bottle or box machines reciprocating devices form and insert bottoms and tops by successive steps, the bottle being moved step by step from one mechanism to another, and with such machines it is usually possible to add a gluing mechanism in position to apply glue to one bottle while it awaits its turn to be operated upon by reciprocating devices which at the moment are acting upon the next bottle of a series.

The devices include a bottle body support, a reciprocating glue receptacle at some distance above the support, carrying at its lower end a series of hinged brushes normally in position to pass with the receptacle into a bottle body without contact, and means whereby the brushes on approaching a given point are spread, umbrella like, and thus thrown against the surrounding bottle wall.

In the accompanying drawings, Figure 1 is a side elevation, partly in axial section, showing a bottle body resting on a support and the novel devices. Fig. 2 is a side elevation showing the same devices in a different position. Fig. 3 is a bottom plan view of the bottom plate of the glue receptacle and its brushes. Fig. 4 is a top plan view of the glue receptacle and the device by which it is supported.

In these figures, A represents a fixed bearing, usually attached to a press frame, and B is a cylindrical glue receptacle sliding vertically in the bearing and carried by a piv-

otally attached fork C secured to a reciprocating rod D, usually carried by reciprocating parts of a closure forming an inserting press. The bottom of the receptacle carries a series of brushes E hinged at E' to swing against the bottom where each covers an aperture F through which glue escapes from the tank to the brush. The space occupied by the glue is annular, a tube G extending from top to bottom of the receptacle, in its axis and being held in central position above by a cross bar H (Fig. 4). Through this tube passes a loose rod I having below the bottom of the receptacle a disk I', or the like, which extends beyond the hinges of the brushes and prevents their falling to vertical position, and below the disk is a preferably heavy projection J. The lowest position of the rod and its disk is fixed by stop K upon the rod above the upper end of its inclosing tube, and this distance is such that the outer ends of the brushes never fall beyond a certain position which may be that shown in Fig. 2 where the brushes are so inclined that when they descend they are clear of the walls of a properly placed bottle body L, which rests upon a suitable support M and is alined with the receptacle. This bottle support is commonly one of a chain of plates by which the bottles are intermittently advanced from point to point. Now, when the reciprocating rod D descends, the receptacle and connected devices are carried down into the bottle body without touching the same until the projection J meets the support M and the motion of the rod and disk is arrested. The further descent of the receptacle presses the body of each brush against the disk and thereby swings it outward against the wall of the bottle body applying glue thereto with a slight wiping movement of the brush thereon. As the receptacle is lifted by the rod D, the rod I remains stationary until its stop is engaged by the central tube, and meantime the brushes fall to initial position, at some distance from the bottle, and therefore no glue is applied in withdrawing the brushes. Obviously if now, before the glue sets fully, a closure be pushed down in the bottle body and left at the point where glue has been applied, it will be held. In practice this is done automatically by the machine to which the devices described are attached as a synchronously working device

operating on each bottle after it is in the machine and necessarily awaiting the action of the machine on the next preceding bottle; and thus the glue is automatically applied without adding labor and without delaying the main machinery.

It is plain that the exact construction set forth is merely one embodiment of my invention, and I wish therefore to claim the invention as broadly as the state of the art will permit.

What I claim is:

1. In apparatus of the class described, the combination with a reciprocating brush support, of an annular series of outwardly and forwardly inclined brushes hinged to swing outward from said support, and a movable member projecting in the line of movement beyond the ends of the brushes and adapted to press all of them outward when its distance from the plane of their hinges is materially lessened.

2. In apparatus of the class described, the combination with a reciprocating adhesive receptacle having apertures in its lower end, of a set of brushes carried by the receptacle below its bottom and hinged to swing toward and from its axis, and means whereby the brushes are swung from said axis as the receptacle approaches a predetermined point in its path.

3. In apparatus of the class described, the combination with a longitudinally reciprocating adhesive receptacle having apertures

in its bottom, of an annular series of brushes hinged at their inner ends to swing in radial planes, and a brush-swinging device adapted to swing the brushes outward from the axial line of said receptacle as it approaches a predetermined point in its path.

4. The combination with a suitable bottle support, of an axially reciprocating adhesive receptacle having discharge apertures below and bearing at its bottom a set of brushes hinged to swing outward, of a movable brush swinging device carried by the receptacle and having an actuating projection extending below the plane of the brushes, and a suitable bottle support obstructing the path of said projection.

5. The combination with a longitudinally reciprocating glue receptacle having discharge apertures in its bottom, of an annular set of brushes hinged to the bottom of the receptacle, around its center, to swing in the axial planes of said apertures, respectively, an axially movable disk within the circle of brushes, normally supporting them in oblique position and provided with a projection extending below the brushes, and a bottle support in the path of said projection.

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

CHARLES FRANCIS JENKINS.

Witnesses:

JAMES L. CRAWFORD,
WM. M. BIRNEY.