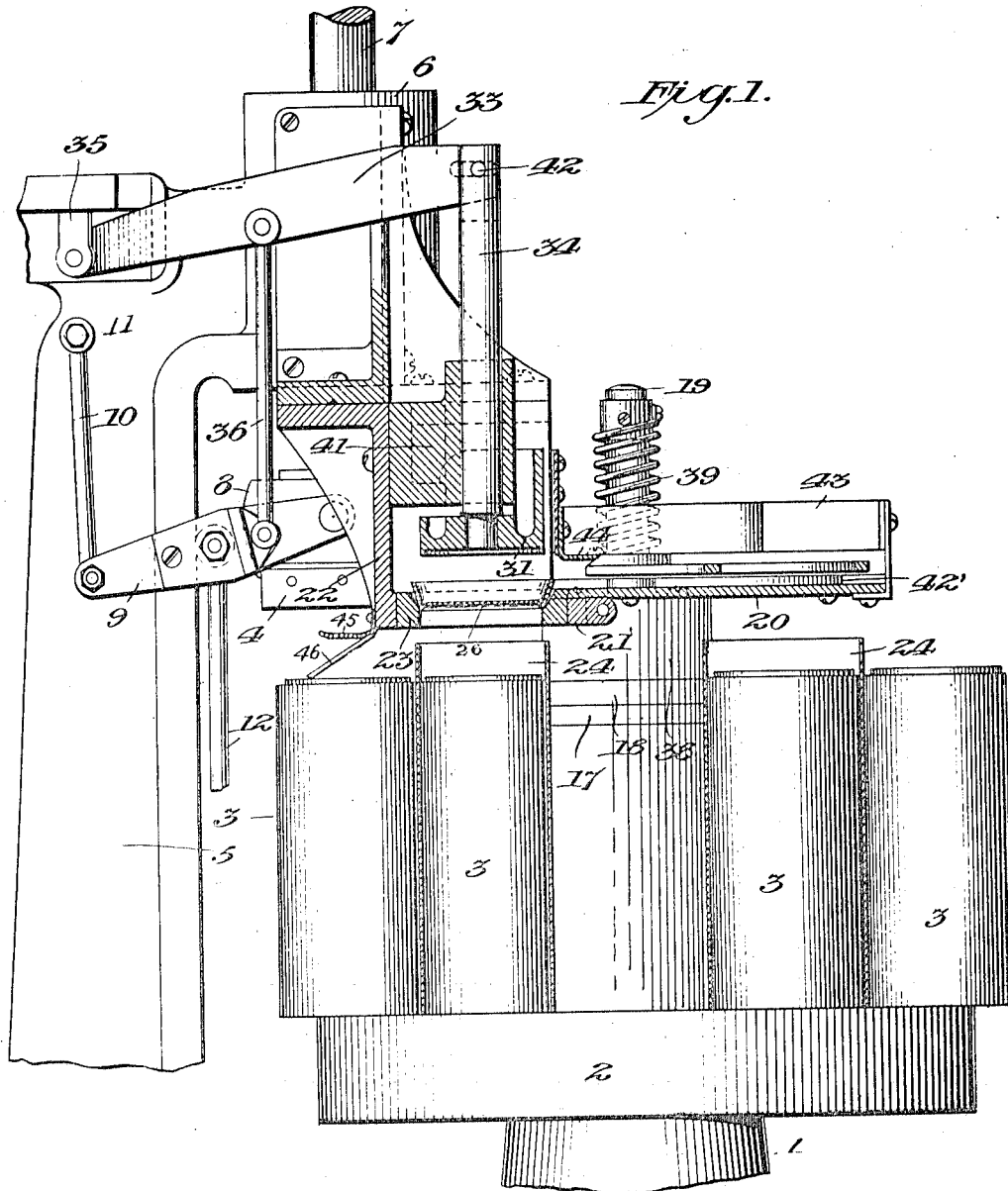


J. T. BOND.
MACHINE FOR MAKING PAPER RECEPTACLES.
APPLICATION FILED MAR. 20, 1911.

1,053,702.

Patented Feb. 18, 1913.

3 SHEETS—SHEET 1.



Witnesses:

J. L. O'Rand.
W. Parker Reinold

Inventor:

J. T. Bond.
By D. P. Remick
attorney.

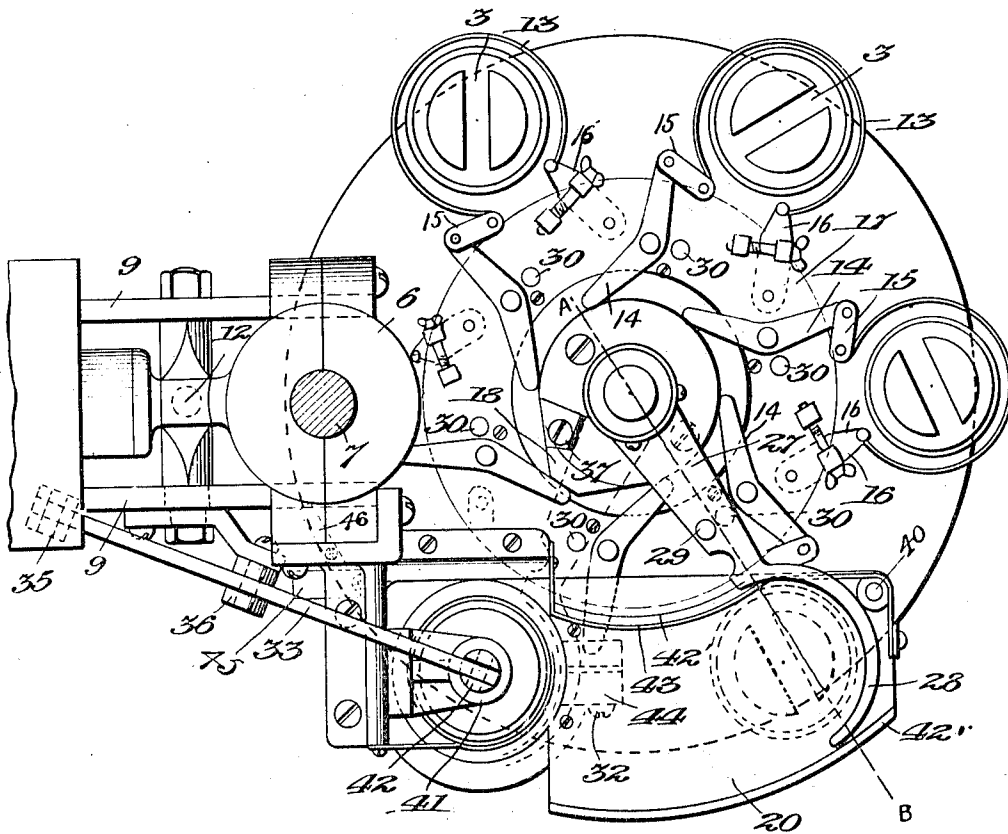
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Fig. 2.



Witnesses:

F. L. Ostrander
W. Parley Reinohl

Inventor:

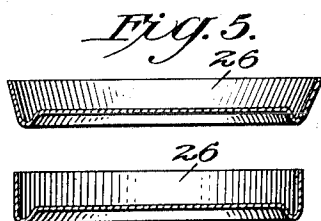
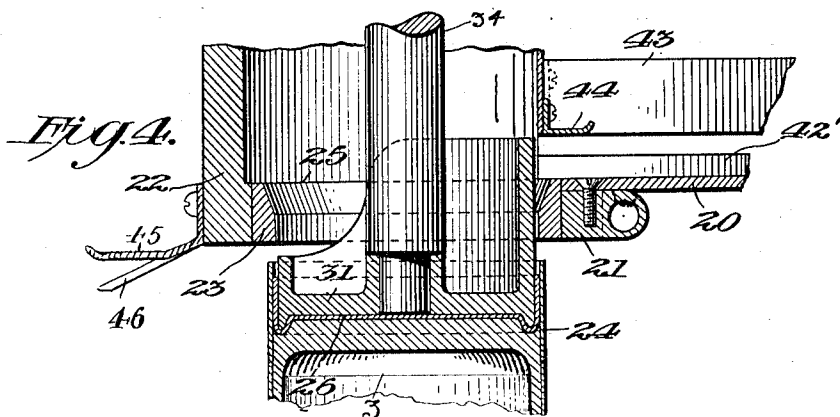
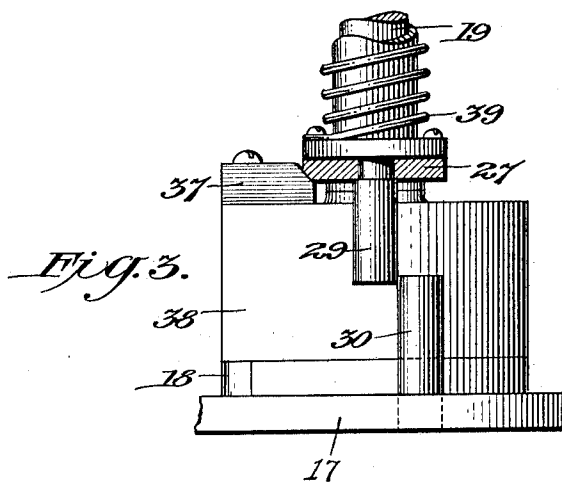
J. T. Bond.
W. D. Reinohl
Attorney.

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3 SHEETS-SHEET 3.



Witnesses:

J. L. Ourand.
W. Parker Reinold.

Inventor:

J. T. Bond.
By W. C. Reinold.
Attorney.

UNITED STATES PATENT OFFICE.

JOSEPH T. BOND, OF SPENCERVILLE, MARYLAND, ASSIGNOR TO PURITY PAPER BOTTLE CORPORATION, OF WASHINGTON, DISTRICT OF COLUMBIA.

MACHINE FOR MAKING PAPER RECEPTACLES.

1,053,702.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed March 20, 1911. Serial No. 615,574.

To all whom it may concern:

Be it known that I, JOSEPH T. BOND, a citizen of the United States, residing at Spencerville, in the county of Montgomery and State of Maryland, have invented certain new and useful Improvements in Machines for Making Paper Receptacles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates primarily to paper packing or storage vessels, has especial reference to machines for making paper receptacles, has for its object improvements in the machine disclosed in U. S. Patent #941,085 granted November 23, 1909, and the invention consists in certain features which will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification:—Figure 1 represents a side elevation of so much of the machine as is necessary to illustrate the invention. Fig. 2 is a top plan view. Fig. 3 is an elevation on line A—B, Fig. 2. Fig. 4 is a detail vertical section on an enlarged scale illustrating the transforming ring and the plunger. Fig. 5 is a transverse section of the cap or closure as it comes from the press, and Fig. 6 is a like view of the same after it has been conformed to fit the end of the body of a receptacle or cover.

Reference being had to the drawings and the designating characters thereon, the numeral 1 indicates the upper end of the column of the machine. 2 the revoluble platen or table supported on the column, 3 the mandrels attached to the table and on which the bodies and the covers of the receptacles are supported while the cap or closure is inserted and secured thereto by a lock-joint.

4 indicates the revoluble and vertically movable crimping-head, 5 the extension or bracket of the machine having a bearing 6, through which extends shaft 7 to which the head 4 is secured.

8 is the roller-bearing casing engaged by links 9, pivotally connected to links 10, which are pivotally connected to the bracket 5 at 11, as shown in Fig. 1 of the drawings, only one of the links 9 and 10 being shown.

12 indicates the rod attached to links 9 for imparting vertical motion to the head 4,

revoluble motion being imparted thereto by a pulley not shown, attached to shaft 7.

13 indicates the clamping-bands for securing the bodies or covers of receptacles to the mandrels 3, while the cap or closure is being inserted. 14, 15, and 16, the operating levers for the clamping-bands, 17, the supporting-plate to which said levers are secured, 18 the cam for operating the levers 14 and 15, for applying the clamping-bands, and 19 the cam supporting-shaft. The clamping-bands and their operating levers have been omitted from Fig. 1 to make improvements more conspicuous.

All of the foregoing parts are fully described in the application of Joseph T. and Charles E. Bond, Serial Number 613,337, and form no part of the present invention and need not therefore be further herein elucidated.

In operating the machine, great difficulty has been experienced in placing the caps or closures in the ends of the bodies or covers of the receptacles by hand, and it not infrequently occurred that through the carelessness of the operator, more than one cap was placed in position for entering a body, and that the cap would not enter the body under pressure by the hand, thereby resulting in waste of the cap and the body, for the reason, the improperly placed cap and body passed on in the revolution of the table to the crimping-head, which in its descent crushed and destroyed the cap and the body, resulting in great waste of material and frequently injury to the machine by choking. To remedy this serious defect a cap conveyor and conformer has been provided, whose construction will be described.

20 indicates a horizontal plate or cap-support which is secured to an extension 21 of the bracket 22, which supports the conforming ring 23, whose internal diameter is equal to the internal diameter of the body 24 of the receptacle or the flange of a cover of a receptacle. The bore of the ring 23 is enlarged or beveled at its upper end 25 to facilitate the entrance of the cap 26, (the flange of which cap, in its normal condition is flared, as shown in Fig. 5) to the interior of the ring.

27 indicates an arm attached to the shaft 19, is provided with a curved outer end 28 to conform to the external diameter of the caps, and is intermittently operated in the

revolution of the table 2, by a projection 29 extending from the underside of the arm 27 and successively engaging projections 30 on the supporting-plate 17, and the cap properly placed on the plate 20 is conveyed by the arm 27 into position over the conforming ring 23, where it is engaged by the plunger 31 and forced through the ring 23 and inserted in the upper end of the body of a receptacle 24, as shown in Fig. 4. The ring 23 is secured in the bracket 22 by means of clamping-bolt 32, shown in Fig. 2.

Vertical motion is imparted to the plunger 31, by means of an arm 33 secured to the upper end of the plunger-rod 34, pivotally secured to the bracket 5 at 35, and connected by rod 36 to one of the links 9, as shown in Fig. 1, by which connections the vertical motion of the crimping-head 4 and the like motion of the plunger 31 is synchronous. The arm 27 is arrested at the proper time by the lower side thereof engaging a cam 37 on block 38, raising the arm and disengaging the projections 29 and 30, as shown in Figs. 2 and 3, when the torsional spring 39 on shaft 19, instantly returns the arm 27 to its normal position against stop 40, see Fig. 2. The plunger-rod 34 is supported in a bearing 41 on bracket 22, and is pivotally connected at 42 to the arm 33, as shown in Figs. 1 and 2.

42' indicates a rail or flange on each edge of the cap supporting-plate 17, to prevent caps being pushed off the plate by the operator when inserting them on the plate.

43 is a top-guard-rail which acts in conjunction with rails 42', and 44 is a guide or guard to prevent the caps tipping in their approach and entrance to the forming-ring 23.

45 indicates a resilient member attached to the bracket 22 in the path of revolution of the mandrels 3, and serves to press down or return any receptacle bodies which may have been raised by frictional contact or engagement of the plunger 31 with the inner wall of the vertical flange of the caps 26, as the plunger rises.

46 indicates means for wiping-off or displacing caps 26, which may rest on the upper end of the mandrels 3, on which failure has been made to place bodies 24, and remove them from the path of travel of the mandrels in the revolution of the table 2. The member 46, which is preferably a resilient arm may be secured to the bracket 22 or to any other part of the machine found convenient or preferable.

It is obvious that changes may be made in details of construction, without departing from the spirit of my invention.

Having thus fully described my invention, what I claim is—

1. In a machine of the class described, a revoluble member, mandrels on said member

for supporting the bodies of receptacles, means for conveying caps or closures, a graduated cap conforming member, means for projecting caps through said conforming member and into one end of each body engaging a mandrel, and a revoluble and vertically movable member for forming a joint between the body and the cap.

2. In a machine of the class described, a revoluble member, mandrels on said member for supporting the bodies of receptacles, means for conveying a cap or closure, a graduated conforming member, a plunger for projecting caps through said conforming member and inserting the caps in one end of the bodies and means adjacent to said mandrels for forming a joint between the body and the cap.

3. In a machine of the class described, a revoluble member, mandrels on said member for supporting the bodies of receptacles, means for conveying a cap or closure, a graduated cap conformer adjacent to the mandrels, means for projecting a cap through said conformer and means for inserting a cap in one end of each body, and a revoluble and vertically movable member for forming a lock-joint between the body and the cap.

4. In a machine of the class described, means for supporting bodies of receptacles, means for conveying caps or closures, a graduated cap conformer, means for projecting caps through said conformer and inserting them in one end of said bodies, and a revoluble and vertically movable member for forming a lock-joint between the body and the cap and operating in unison with the means for inserting the caps in the bodies.

5. In a machine of the class described, means for supporting the body of a receptacle, means for conveying a cap or closure, means including a ring and a plunger for conforming and inserting a cap or closure in one end of said body, a revoluble and vertically movable member for forming a lock-joint between the body and the cap, and means for connecting the plunger of the conformer and the support of said revoluble member.

6. In a machine of the class described, a revoluble table, supports for the bodies of receptacles, clamping-members for engaging said bodies, means for operating the clamping-members, means for conveying caps or closures operatively connected with the means for operating the clamping-members, means for conforming and inserting said caps in the bodies of the receptacles, and means for forming a lock-joint between the bodies and the caps.

7. In a machine of the class described, a revoluble member, mandrels on said member for supporting the body of a receptacle,

means for conveying a cap or closure, a cap conformer, means for projecting a cap through said conformer and inserting the cap in one end of said body, means for displacing superfluous caps, and means for forming a joint between the body and the cap.

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

JOSEPH T. BOND.

Witnesses:

D. C. REINOHLE,
W. PARKER REINOHLE.