

J. T. BOND.
MACHINE FOR MAKING PAPER RECEPTACLES.
APPLICATION FILED NOV. 9, 1910.

984,067.

Patented Feb. 14, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

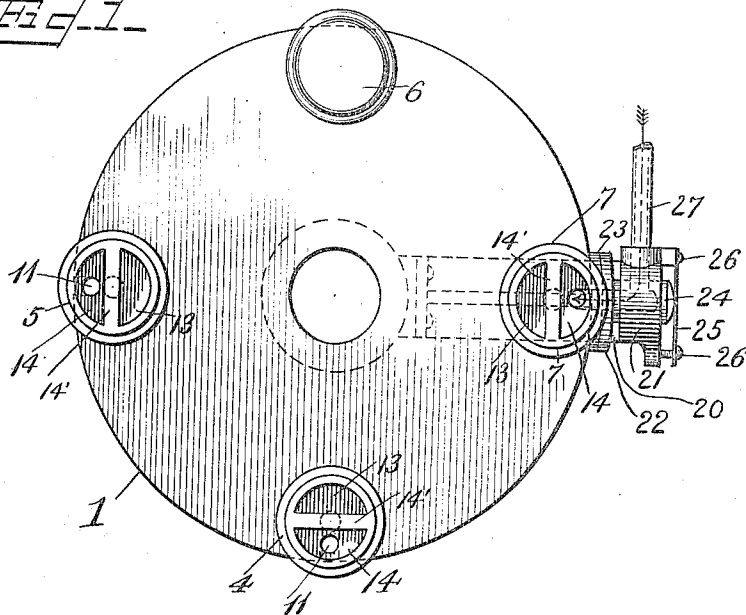
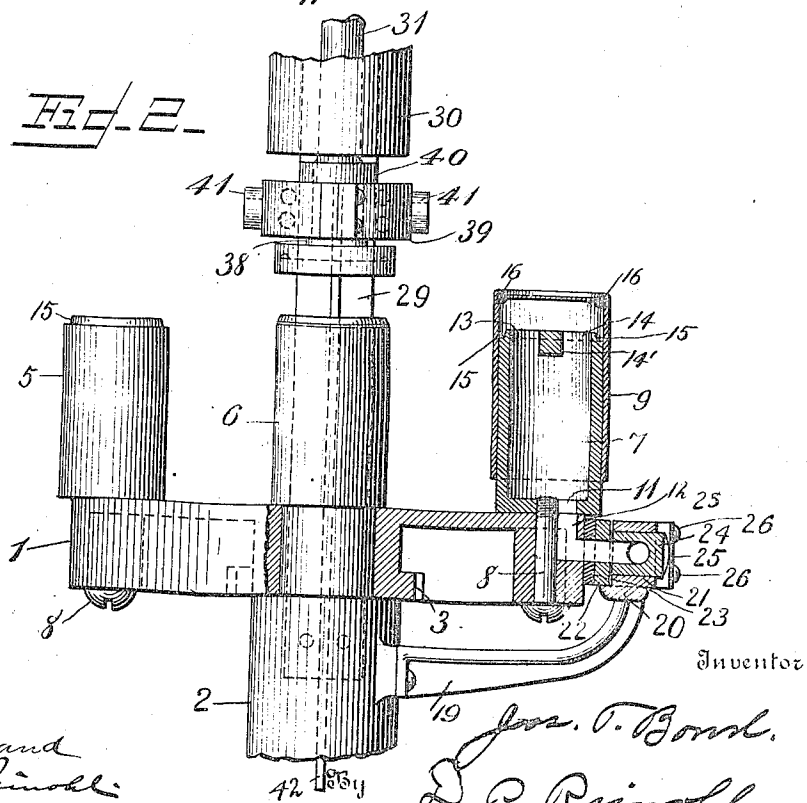


Fig. 2.

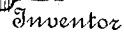


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2 SHEETS—SHEET 2.



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MACHINE FOR MAKING PAPER RECEPTACLES.

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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.

My present invention relates primarily to packing or storage vessels or receptacles, preferably made of paper or the like, has especial reference to machines for securing the ends or closures in the receptacles, such as shown in U. S. Patent #941,085, November 23rd, 1909, has for its object economy in the manufacture of such receptacles; and the invention consists in certain improvements in construction, 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 top plan view of a machine embodying my invention, the clamps, the crimping-head and its support being omitted. Fig. 2 is an elevation partly in section. Fig. 3 is an elevation partly in section on an enlarged scale, showing the upper part of the machine. Fig. 4 is a detail on a further enlarged scale, showing part of the die or crimping-head in position above part of a receptacle and its supporting mandrel before the closure is secured to the receptacle. Fig. 5 is a detail showing part of the die in section with one of the crimping-pins in position in the die and views of a pin detached, and Fig. 6 is a vertical transverse section on a further enlarged scale, showing a cover of a receptacle on a mandrel and the closure secured to the cover.

Reference being had to the drawings and the designating characters thereon, the numeral 1 indicates the table of the machine revolubly supported on a column 2, and is provided with a spur-gear wheel 3, which is engaged and revolved by a pinion, not shown, and driven in like manner as the table in the patent to which reference has been made.

4, 5, 6, and 7 are hollow mandrels, prefer-

ably cylindrical, as shown, arranged in a circle equidistant and properly secured to the table, as by screw bolts 8, to receive the body 9 or a cover 10 of a receptacle and support them while the closure is being secured thereto. In the lower end of each mandrel is an opening or port 11 which registers with a duct 12 in the table, and in the upper end of the mandrel are passages 13, 14, separated by a transverse bar 14', and surrounding said upper end of the mandrel is a concentric recess or seat 15 to receive the bent portion 16 of the closure 17, while the vertical flange 18 thereof extends upward and fits against the interior of the body or cover of a receptacle, as shown in Figs. 4 and 6.

19 indicates a bracket secured to the column 2 and is provided with a flange 20, which supports a chest 21 and extends under and supports an annular washer 22, to the face of which is secured a leather or other packing 23, which engages the periphery of the table 1 in its revolution and forms a tight joint, the packing being held or pressed against the periphery of the table by a tubular stud 24 engaged at its outer end by a spring 25 secured to the chest 21 by screw bolts 26, 26, as shown in Figs. 1 and 2.

27 indicates a pipe for supplying air under pressure, from any suitable source, such as a reservoir, not shown, and communicates with the interior of each mandrel successively for removing a receptacle body and its closure or a cap or cover and its closure, communication with the interior of the mandrels being had through the passages 28, 12 and 11.

29 indicates an arm or bracket extending from the column 2, is provided with an enlarged part 30 in which the die or crimping head is supported on a vertical and revoluble shaft 31 which extends through a sleeve 32 of a driving pulley, not shown, and the two, the shaft and the sleeve are secured together at their upper ends, to revolve synchronously.

33, indicates a ball-bearing for the sleeve 32, which bearing rests on an annular flange 34 at the lower end of the chamber 35 in the part 30.

36 indicates the die or crimping-head which is secured to the shaft 31 by a screw threaded connection 37, and on the shaft is a collar 38 which supports the ball bearing 39 and its casing, which bearing is secured in

position on the shaft 31, and its collar 38, by a nut 40. The crimping-head is adjusted vertically by means of pivoted links 41 and a rod 42, connected to the driving mechanism of the machine, not shown, to be automatically raised and lowered for crimping one end of the receptacle and one end of the cover for attaching the closure or bottom and top thereto respectively.

The die or crimping-head is provided with an annular flange 43, an annular and concentrically arranged projection 44, extending beyond the inner face of the head, a groove 45 between said flange and projection and transverse pins 46, which cross the groove 45, are each provided with a transverse groove 47 whose width is equal to the width of the groove 45, inclined on its bottom at 48, and are secured in radial openings 49 by screw threaded bolts 50, which bear against the flat seats 50' so that the angle of the groove 47 may be accurately adjusted to turn the upper end of the receptacle or a cover and the flange 18 of the closure and spin them into the bead like lock-joint 51, shown in Fig. 6.

In spinning the stock, the extreme end of the receptacle or the cover, and the extreme end of the flange of the closure are bent in opposite directions toward each other, a complete bead formed at 52 and a lock-joint produced which is inseparable under ordinary usage and absolutely proof against leakage.

In spinning the stock or material, the inclined groove 47 slides over the end of the body or cover of the receptacle and effects a gradual initial bending thereof, and produces a neat and workmanlike finish without leaving ragged edges on the bead.

In the operation of the machine, a body or cover of a receptacle is placed on the mandrel 4, of the intermittently revoluble table 1, when in the position shown in Fig. 1; when the mandrel 4 reaches the position indicated by mandrel 5, the closure-blank has been or is inserted and pushed down until it is seated on the upper end of the mandrel; when in the revolution of the table, the mandrel with the body or cover and the inserted closure-blank reaches the position indicated by mandrel 6, the crimping-head 36, is automatically lowered and the lock-joint formed, and when the receptacle or cover reaches the position indicated by mandrel 7, they are automatically displaced or blown off the mandrel by a blast of air supplied through pipe 27 and intermediate connections with the interior of the mandrel. This operation is repeated in each cycle of the machine.

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

1. In a machine of the class described, a horizontal and revoluble table, a hollow mandrel on the table for supporting the body of a receptacle, a revoluble head for forming a lock-joint between the upper end of the body and a closure, and means for supplying a blast of air through the periphery of the table to the mandrel for removing the receptacle therefrom.

2. In a machine of the class described, a horizontal and revoluble table, hollow vertical mandrels on said table for supporting the bodies of receptacles, means for securing closures in said receptacles, a passage in the lower end of each of said mandrels, a passage in the table under each mandrel and extending to the periphery of the table, means for supplying air, a packing, and a resilient member for holding the packing in engagement with said table.

3. In a machine of the class described, a revoluble head having an annular flange, an annular projection concentric to said flange, an annular groove between the flange and the projection, a radial member crossing said groove and provided with a transverse groove whose width is approximately equal to the width of the groove in the head, and a mandrel provided with a recess at its upper end.

4. In a machine of the class described, a revoluble head having a vertically depending annular flange, an annular projection concentric therewith, an annular groove between said flange and projection, a radial member crossing said groove and provided with a transverse groove having an inclined bottom.

5. In a machine of the class described, a revoluble head having a vertically depending annular flange, an annular projection concentric therewith, an annular groove between said flange and projection, a radial member crossing said groove provided with a transverse groove having an inclined bottom, and means for securing said radial member in position.

6. In a machine of the class described, a revoluble crimping head having an annular groove, a radial member provided with a transverse groove and a flattened portion at one end, and a screw engaging the head and said flattened portion of the radial member.

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

JOSEPH T. BOND.

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