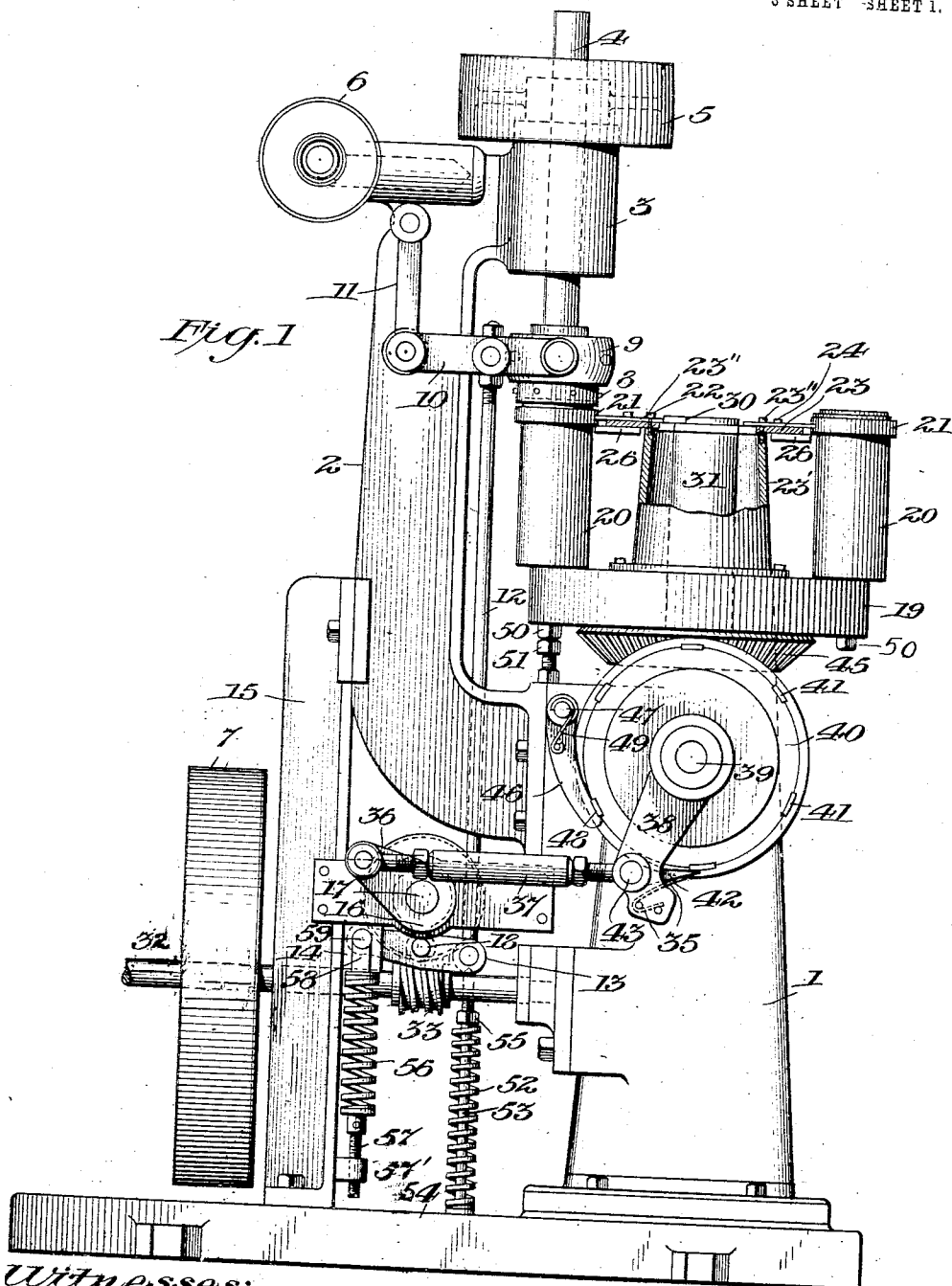


J. T. & C. E. BOND.
MACHINE FOR MAKING PAPER RECEPTACLES.
APPLICATION FILED MAR. 9, 1911. RENEWED JAN. 22, 1913.

1,055,702.

Patented Mar. 19, 1913

3 SHEET SHEET 1.



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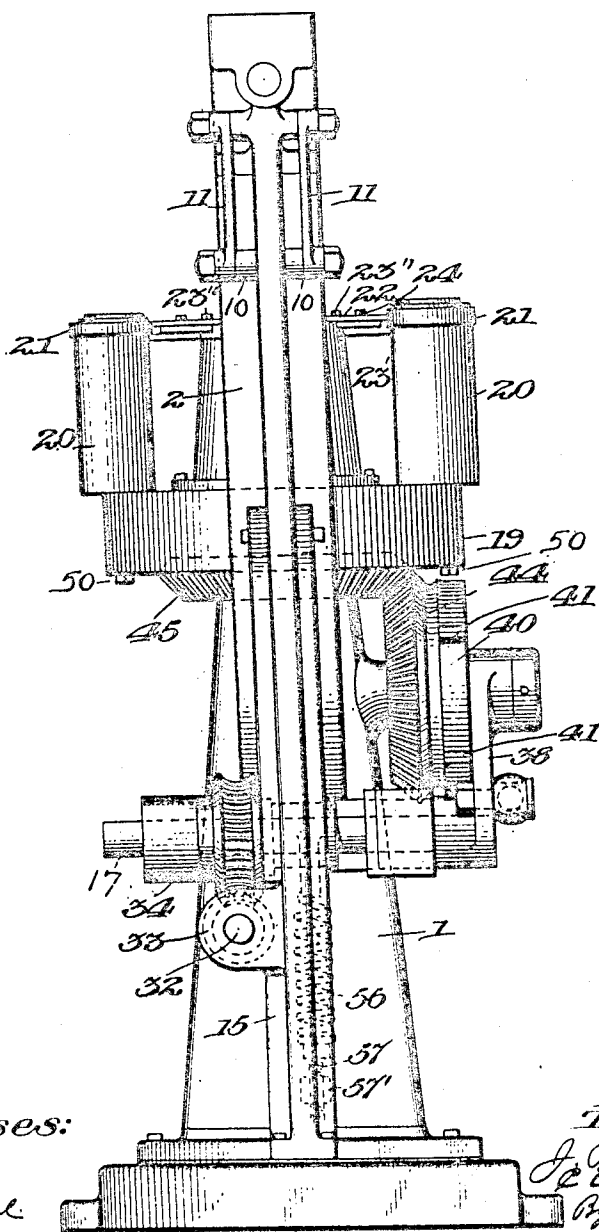
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3 SHEETS-SHEET 2.

Fig. 2



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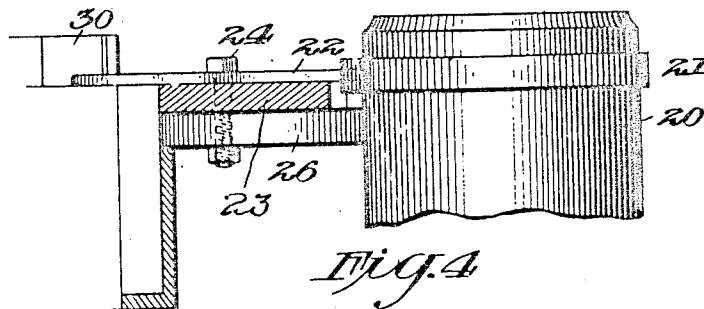
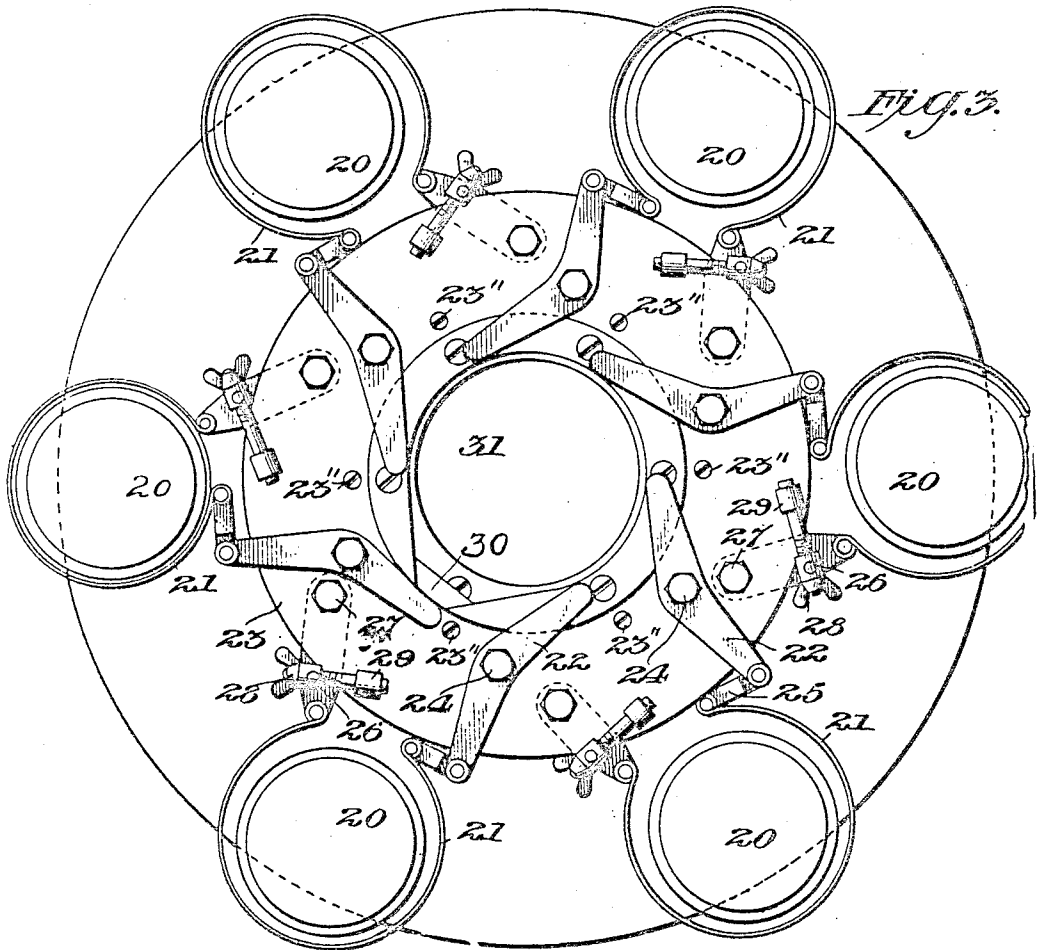
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3 SHEETS-SHEET 3.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR MAKING PAPER RECEPTACLES.

1,055,702.

Specification of Letters Patent.

Patented Mar. 11, 1913.

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To all whom it may concern:

Be it known that we, JOSEPH T. BOND and CHARLES E. BOND, citizens 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 we 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.

Our invention relates to machines for making paper receptacles, has especial reference to the machine disclosed in Patent 941,085, bearing date of November 23, 1909, has for its object increased efficiency and safety in its operation, and economy; and the invention consists in certain improvements 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 a machine embodying our invention. Fig. 2 is an end elevation, the main driving pulley at the lower end being omitted. Fig. 3 is a top plan view of the platen or table, showing the receptacle supports or mandrels, the clamping-members and their operating devices on an enlarged scale, and Fig. 4 is an enlarged detail showing one of the receptacle-supports and the clamping member.

Reference being had to the drawings and the designating characters thereon, the numeral 1 indicates the column of the machine, 2 a bracket extending therefrom, 3 a bearing on said bracket through which extends shaft 4, and on which shaft is a pulley 5, driven by a belt not shown, which passes over idler 6 and engages the main driving pulley 7.

8 indicates a revoluble and vertically movable crimping head supported in a roller-bearing casing 9; engaged by links 10, pivotally connected to links 11, which are pivotally attached to the bracket 2, and vertical motion is imparted to the head 8 by a rod 12 engaging one end of a rock-arm 13, whose opposite end engages a lug 14 connected to the frame 15, and motion is imparted to the rock-arm 13 by a cam 16 on shaft 17, and provided with a roller 18, as shown in Fig. 1.

19 indicates an intermittently revoluble platen on which are secured mandrels 20,

for supporting the bodies or the covers of receptacles while the closures are being secured thereto by a lock-joint formed by the head 8. Each mandrel is provided with a clamping-band 21 for securing the body or cover thereto while the lock-joint is being formed.

22 indicates bell-crank-levers pivotally secured to an annular plate or support 23 by bolts 24, and each lever is connected to said band by a link 25, and the opposite end of said bands is connected to a lever 26 pivotally secured to said plate or support 23 by a bolt 27. The tension of the bands is regulated by adjustable bolts 28 which engage nuts 29 on said plate. The plate 23 is supported on an annular bolster 23' resting on and secured to the platen 19. The levers 22 are operated intermittently and consecutively by a cam 30 on the extension 31 of the column 1 as the platen 19 is revolved to bring the mandrels and the receptacle bodies under the head 8.

32 indicates the shaft to which the pulley 7 is secured, and on said shaft is a worm gear 33 which engages a gear 34 supported on the shaft 17, on which shaft is a crank 36 connected by an adjustable rod or pitman 37 to a crank arm 38 on stub-shaft 39, and on said shaft is a disk 40, on whose periphery are projections 41 engaged by a pawl 42 supported on pin 43 and held in engagement with the periphery of said disk, and with the projections 41, by a spring 35 to impart intermittent motion to the bevel gears 44, 45, the latter being secured to the platen 19, which is also intermittently revolved.

46 indicates a pawl pivotally supported on pin 47, is provided with a recess 48, which intermittently engages the projections 41 by the tension of a spring 49, and locks each mandrel in position under the head 8, while the lock-joint is being formed on the receptacle. The pawl 46 is disengaged from each projection 41 successively by the crank-arm 38 striking the lower end thereof when the crank 36 is passing its outer horizontal center, and the pawl is automatically returned by the spring 49.

50 indicates projections on the underside of the platen 19, each being below the center of one of the mandrels 20, and engages an adjustable resistance anvil or member 51 on the upper end of the column 1 directly

under the center of each mandrel successively at the time the mandrel is under the crimping-head 8, to take the thrust and strain of the crimping operation which forms the lock-joint between the body of the receptacle and the closure.

52 indicates a helically coiled spring upon a rod 53 resting on the base 54, and is provided with an adjustable nut 55 for regulating the tension of said spring; the upper end of the rod 53 bears against the lower end of the rod 12, and automatically raises the head 8 after each crimping operation.

56 indicates a cushioning spring, adjustably supported on a set screw 57 engaging a lug 57' to regulate the tension of the spring, and the upper end of said spring engages a vertically movable jaw 58 in the lug 14 and bears against the pin 59 in the rock-arm 13. The function of the spring 56 is to take up the strain on the head 8 and the mandrel in the event of more than one closure being inserted in the upper end of the body of the receptacle, and prevent injury to the machine.

The annular plate 23 rests upon and is detachably secured to the annular bolster 23' by bolts 23'', shown in Fig. 3, the purpose of which is to admit of an exchange of the clamping-bands and their operative members to conform to mandrels of different diameters for the manufacture of receptacles of different diameters.

When mandrels of a predetermined diameter have been applied to the platen 19, the clamping-bands 21 and their operating levers 22 and 26, are properly adjusted for securing the body of the receptacle to be supplied with caps or closures. Heretofore, when it has been desired to operate upon receptacles of a different diameter, it has been necessary to readjust the levers 22 and 26 to conform to the different diameters of the mandrels and the receptacles at an expenditure of considerable time and then to restore them to their original adjustment.

By the use of the detachable and interchangeable plate 22, each plate is provided with a set of clamping-bands and levers properly adjusted for use with a given diameter of mandrels, and when the mandrels are changed, the plate 22 is detached and another substituted therefor provided with

clamping-bands and levers properly adjusted to suit the mandrels applied to the table to take the place of those removed.

Having thus fully described our invention, what we claim is—

1. In a machine of the class described, an intermittently and horizontally revoluble platen, mandrels on said platen, a revoluble and longitudinally movable crimping-head, projections on the under side of the platen opposite the center of each mandrel, and an adjustable resistance member on the frame of the machine adapted to engage said projections consecutively in the rotation of the platen for taking the thrust of the crimping-head and the mandrels in forming a joint.

2. In a machine of the class described, a revoluble platen, mandrels on said platen, a revoluble and longitudinally movable crimping-head, a rock-arm having a vertically movable jaw at one end thereof, a spring engaging said jaw, and a connection between said crimping-head and said jaw for relieving the head of excessive strain.

3. In a machine of the class described, a revoluble platen, interchangeable mandrels on said platen, a cam, clamping members surrounding said mandrels, levers connected to the clamping-members, and an annular interchangeable support for said clamping members and levers and an annular bolster resting on said platen to which said support is detachably secured.

4. In a machine of the class described, an intermittently revoluble horizontal platen, mandrels on said platen, a revoluble and vertically movable crimping-head, means for locking each mandrel consecutively under the crimping-head, projections on the platen under the center of each mandrel and an adjustable member on the frame of the machine in the line of rotation of said projections for resisting the thrust of the crimping-head and each mandrel consecutively in forming a joint.

In testimony whereof we affix our signatures, in presence of two witnesses.

JOSEPH T. BOND.
CHAS. E. BOND.

Witnesses:

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