

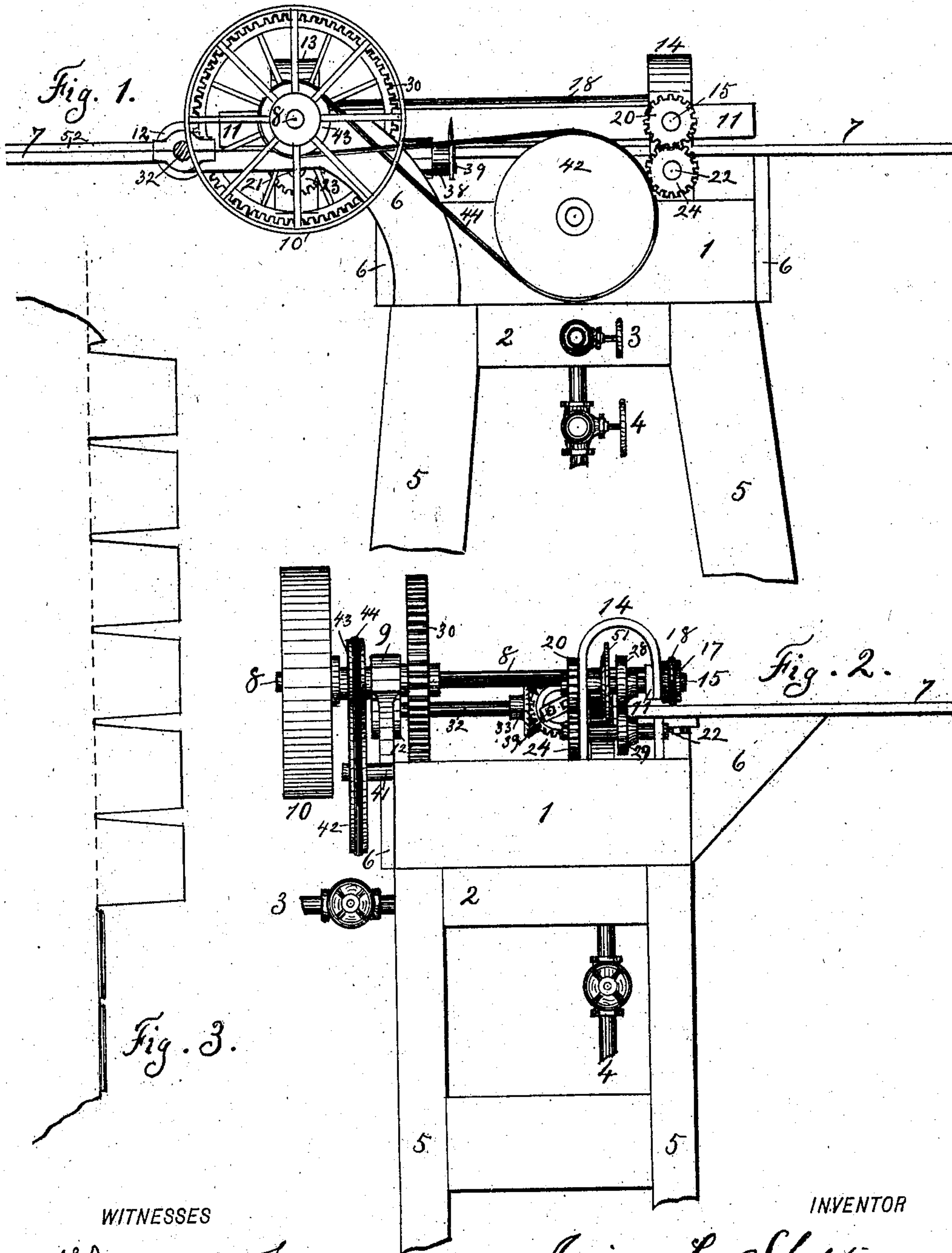
No. 815,479.

PATENTED MAR. 20, 1906.

I. L. SHELDON.
PASTEBOARD BENDING MACHINE.

APPLICATION FILED JUNE 25, 1904.

2 SHEETS—SHEET 1.



WITNESSES

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Brouson T. Burr.

INVENTOR

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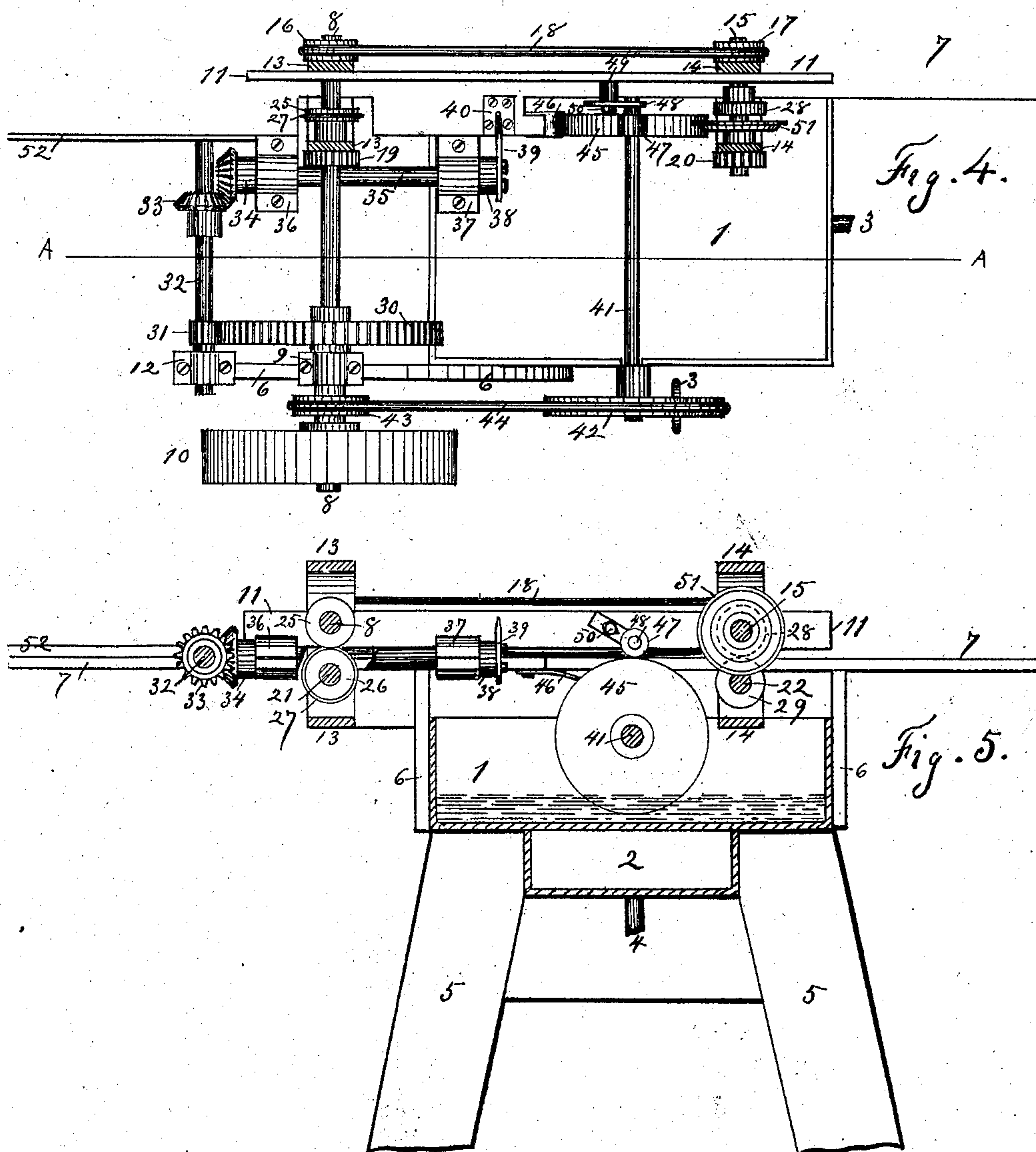
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UNITED STATES PATENT OFFICE.

IRVING L. SHELDON, OF FALL RIVER, MASSACHUSETTS, ASSIGNOR OF
ONE-HALF TO JAMES MARSHALL, OF FALL RIVER, MASSACHUSETTS.

PASTEBOARD-BENDING MACHINE.

No. 815,479.

Specification of Letters Patent.

Patented March 20, 1906.

Application filed June 25, 1904. Serial No. 214,133.

To all whom it may concern:

Be it known that I, IRVING L. SHELDON, a citizen of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Pasteboard-Bending Machines, of which the following is a specification; 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 invention relates to certain new and useful improvements in a machine of this class which will prepare and flange the top or bottom edges of the sides of a pasteboard box, so that the top or bottom pieces may be quickly and strongly joined to the sides. It applies more especially to the flanging of the sides of round or oval boxes, such as band or hat boxes, which require special preparation of the edges before they can be turned in a circle after flanging.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a side elevation of the improved machine; Fig. 2, an end elevation. Fig. 3 is a section of a box edge prepared by the machine for flanging and turning in a circle. A portion is shown flanged. Fig. 4 is a plan view. Fig. 5 is a vertical section substantially on line A of Fig. 4, certain portions of the frame and shafts being cut away to better show the interior mechanism.

Similar reference-numerals denote like parts in the several figures of the drawings.

1 is a tank, preferably of metal, for holding liquid glue, which is kept fluid by the steam-bottom 2, having a steam-supply pipe 3 and drip-pipe 4. The tank is supported by framed legs 5. Brackets 6, bolted to its sides, support an operating-table 7 and the end of the driving-shaft 8, journaled in box 9. The shaft is driven by pulley-wheel 10 from any convenient power. Its other end is journaled in a bar 11, which is supported clear of the operating-table by the subsidiary frames 13 14, which rise from and are secured to the sides of the metal tank. In frame 14 (see Fig. 2) is journaled a shaft 15 substantially parallel with the driving-shaft. Each of these shafts carries on its end outside of the frames (see Fig. 4, where the frames are shown in section) pulley-wheels

16 17 of the same diameter, which are belted together by the belt 18, so that they move in unison. Upon the shafts 8 and 15 on the near outside face of the arched frames 13 and 14 is placed corresponding gear-wheels 19 and 20. There is also journaled on both frames a lower series of shafts 21 22, (see Figs. 2 and 5,) which have on their ends gear-wheels 23 24 of the same diameter and meshing into gear-wheels 19 20. Thus the belt 18 when driven by the power-shaft causes all four shafts 8 15 21 22 to move in unison.

Within the frame 13 upon the shafts 8 and 21 is placed a pair of friction-wheels 25 26, (see Fig. 5,) the lower wheel having a raised cutting edge 27 and the upper wheel a corresponding depression for the purpose of scoring a bending-line on the underside of the pasteboard as it is drawn between the friction-wheels. Upon shafts 15 and 22 is placed a similar pair of friction-wheels 28 29, which deliver the pasteboard sheet clear of the machine upon the operating-table.

Upon the driving-shaft near its bracket-support (see Fig. 4) is placed a large gear-wheel 30, which operates a pinion-gear 31, secured to a parallel shaft 32, which is journaled at one end in a box 12, supported by the bracket 6, and at its other end in a box below the operating-table. To this shaft is secured a bevel-gear 33, meshing into a companion gear 34, which drives at right angles the shaft 35, journaled in boxes 36 37, attached to the operating-table and parallel with it. The other end of this shaft carries a cutter-head 38, to which is secured the cutter-blade 39, which in its sweep intersects and passes through an opening in the operating-table provided with a plate 40, having a knife-edge corresponding to the cutter edge. About midway of the tank 1 is arranged a shaft 41, journaled in the tank sides for easy removal, having at its outboard end a pulley-wheel 42, driven from a pulley 43 upon the driving-shaft by the belt 44 and at its other end, within the tank, a glue-wheel 45, which revolves in and raises the liquid glue upon its surface. A scraper-bar 46, attached to the table, removes any surplus glue. On top of the glue-wheel is arranged a small roller-wheel 47, which rests upon it and which is journaled in an arm 48, carried upon the stud 49 in the bar 11 and made adjustable by the nut 50. There is also arranged upon shaft 15

within frame 14 a flanging-wheel 51, whose purpose will be hereinafter stated.

The operation of the machine is as follows, (see Figs. 4 and 5:) A sheet of pasteboard being laid upon the operating-table, its edge in contact with the guide-piece 52 is moved forward until the friction-wheels 25 26 grip it. These move it forward, at the same time scoring a bending-line on the under side of the pasteboard sheet, until it encounters the cutter-blade 39, which is revolving through the table edge at any predetermined speed, governed by the arrangement of the gear and pinion wheels 30 and 31, and which blade will cut tapered slots in the edge of the pasteboard sheet, as shown in Fig. 3, at any desired distance apart. The slotted pasteboard then moves forward upon the glue-wheel 45 and is pressed down upon it by the roller 47, whereby the lower side of the slotted sections are coated with glue. As the sheet continues its forward movement these sections encounter the flanging-wheel 51, which bends them down at right angles between itself and the pair of friction-wheels 28 29, which now grip the sheet and deliver it beyond the action of the machine in readiness for the insertion of the top or bottom pieces.

I make no claim to the broad principle of slotting the edge of a sheet of pasteboard, believing that to be in general use. What I claim is the mechanism of a machine by which I score, slot, glue-coat, and flange the edge of a sheet of pasteboard in one continuous operation.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a paper-box machine, in combination, a frame, a tank supported by said frame, an operating-table supported above said tank, means for moving a sheet of pasteboard along said table, means for serrating the edge of said sheet at predetermined distances, means for coating the serrated sections with adhesive matter, and means for bending said sections at right angles to the sheet-surface, substantially as described and shown.

2. In a paper-box machine, in combination, a frame, an operating-table supported by said frame, means for moving a sheet of pasteboard along said table, means for scoring a bending-line on the lower side of said pasteboard sheet, means for dividing the edge of said sheet into sections abutting on said bending-line, and means for bending said sections at right angles to the plane of said sheet, substantially as described and shown.

3. In a paper-box machine, in combination, a frame, an operating-table supported thereby, means for feeding a sheet of paper

with its edge adjacent the edge of the table, a driving-shaft mounted on said table, means to rotate said shaft, a second shaft at right angles thereto and parallel with the edge of the table, bevel-gears connecting said shafts, a cutter-head on said second shaft, a revolving cutter-blade on said cutter-head, a fixed blade on said table cooperating with the revolving blade, means for applying adhesive to the edge of said sheet, and means for bending the gummed edge at right angles to the body of the sheet substantially as described and shown.

4. In a paper-box machine, in combination, a frame, an operating-table supported by said frame, a tank supported by said frame below said table for containing liquid adhesive matter, a wheel operating in said tank adapted to raise the adhesive matter to the level of the operating-table, means for moving a pasteboard sheet along said table, a cutter-head for dividing the edge of said sheet into sections, and a roller arranged above said wheel adapted to press one side of said sections upon the adhesive matter raised by said wheel, substantially as described and shown.

5. In a paper-box machine, in combination, a frame, an operating-table supported by said frame, a subsidiary frame overhanging the edge of said table, friction and scoring wheels supported by said frame and arranged in pairs to register with each other at the level of said operating-table, means for operating said wheels to move a sheet of pasteboard along said table, in combination with a cutting mechanism dividing the edge of said sheet into sections, and a flanging mechanism adapted to turn said sections at right angles to the body of said sheet, substantially as described and shown.

6. In a paper-box machine, in combination, a frame, an operating-table supported by said frame, a tank for containing adhesive matter supported by said frame below said operating-table, means for moving a sheet of pasteboard along said table, means for dividing the edge of said sheet into sections at predetermined distances, a wheel adapted to take adhesive matter from said tank, a roller for pressing said sections against said wheel, and a flanging mechanism adapted to turn said sections at right angles to the body of said sheet, substantially as described and shown.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 20th day of June, 1904.

IRVING L. SHELDON.

Witnesses:

THOMAS D. FORNEY,
BRONSON S. BURR.