(No Model.) 3 Sheets—Sheet 1.

D. E. MARSH & A. LAUBSCHER.

STRIP FOLDING MACHINE.

No. 351,452. Patented Oct. 26, 1886.

Fig 1

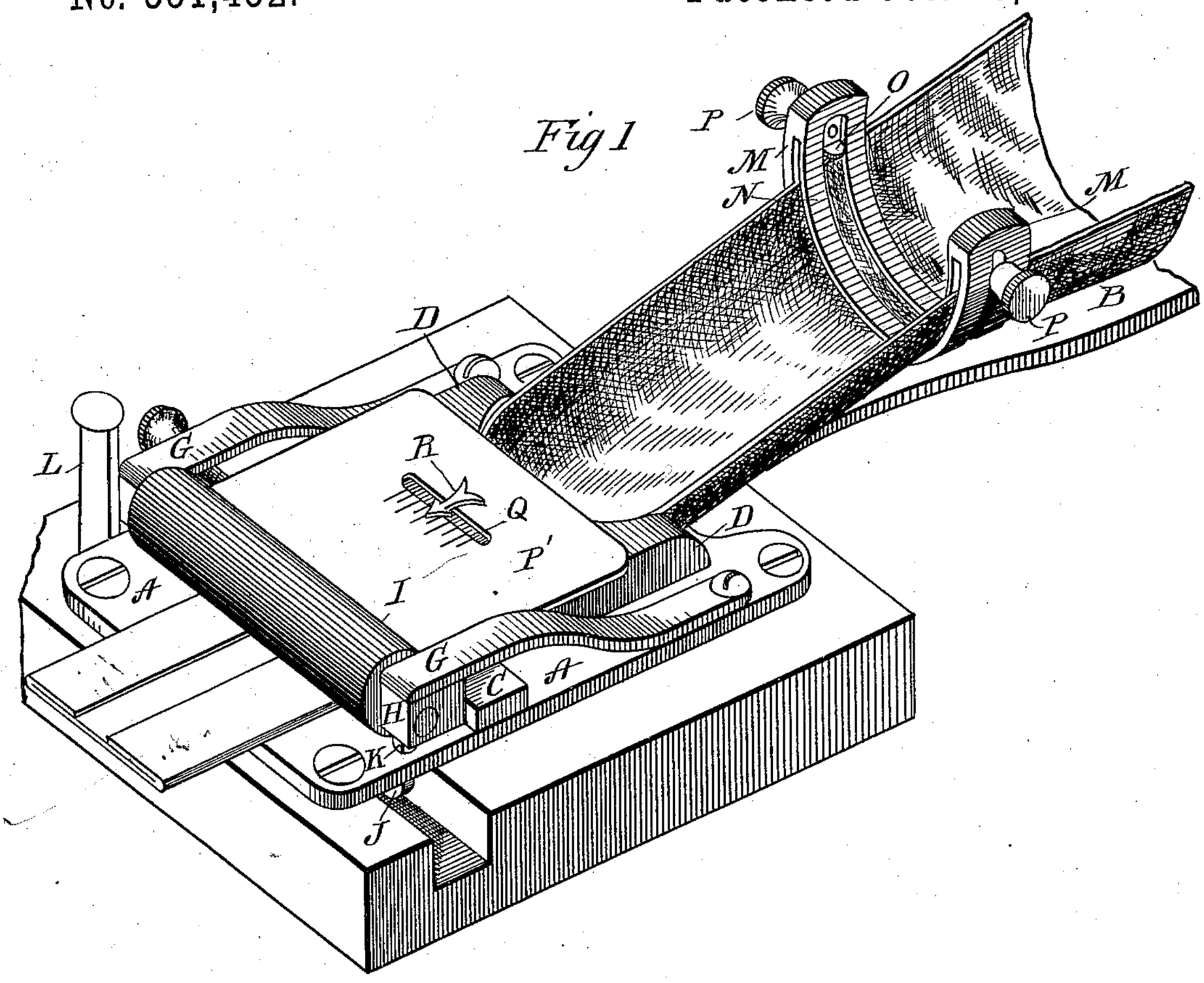
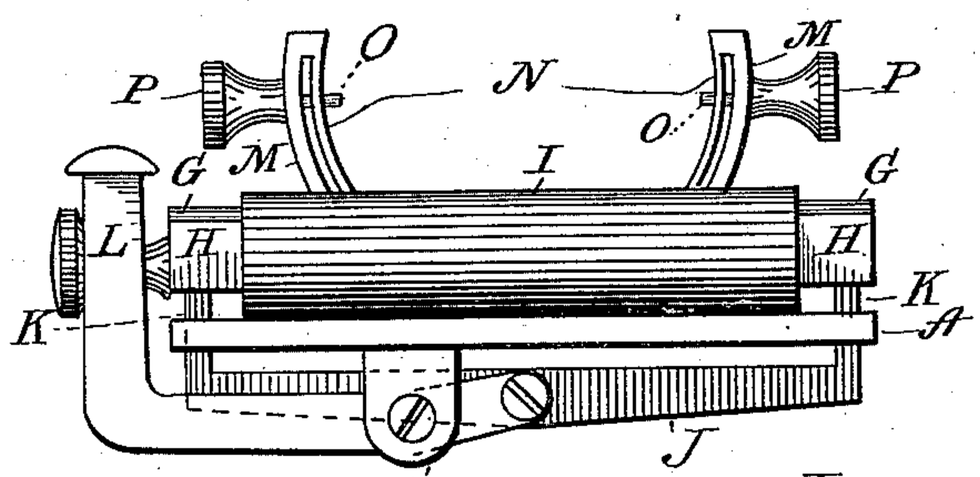


Fig 2



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(No Model.) 3 Sheets—Sheet 2.

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Fig 3

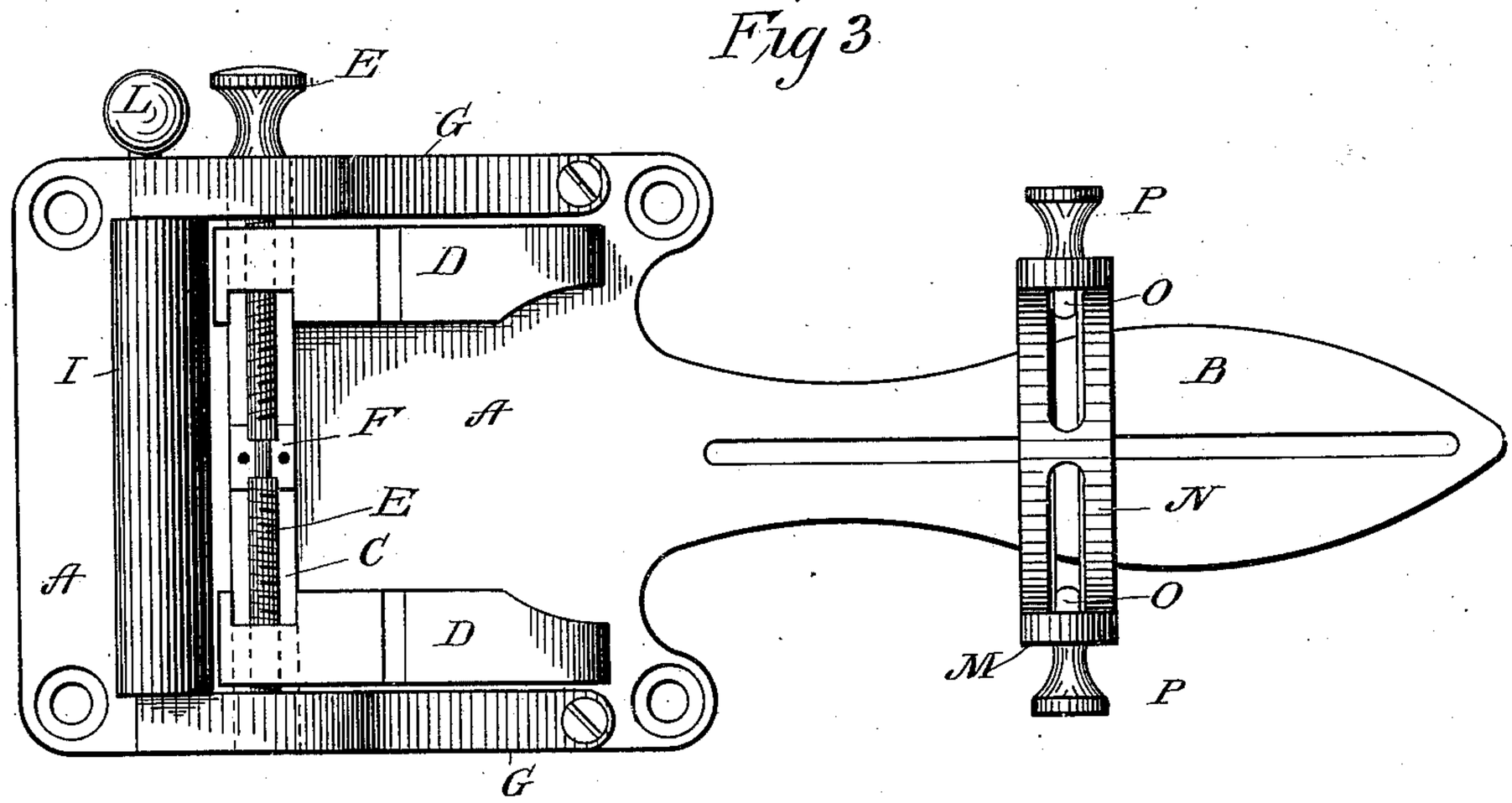
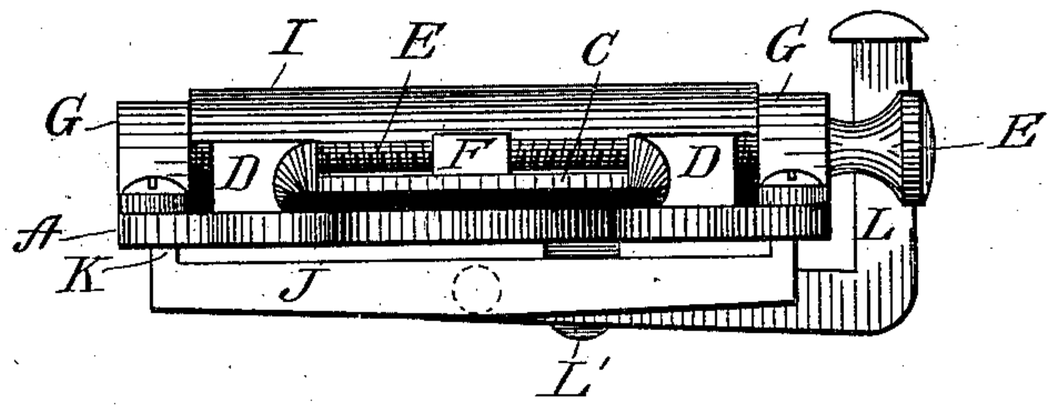


Fig 4



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D. E. MARSH & A. LAUBSCHER.

STRIP FOLDING MACHINE.

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Fig 5

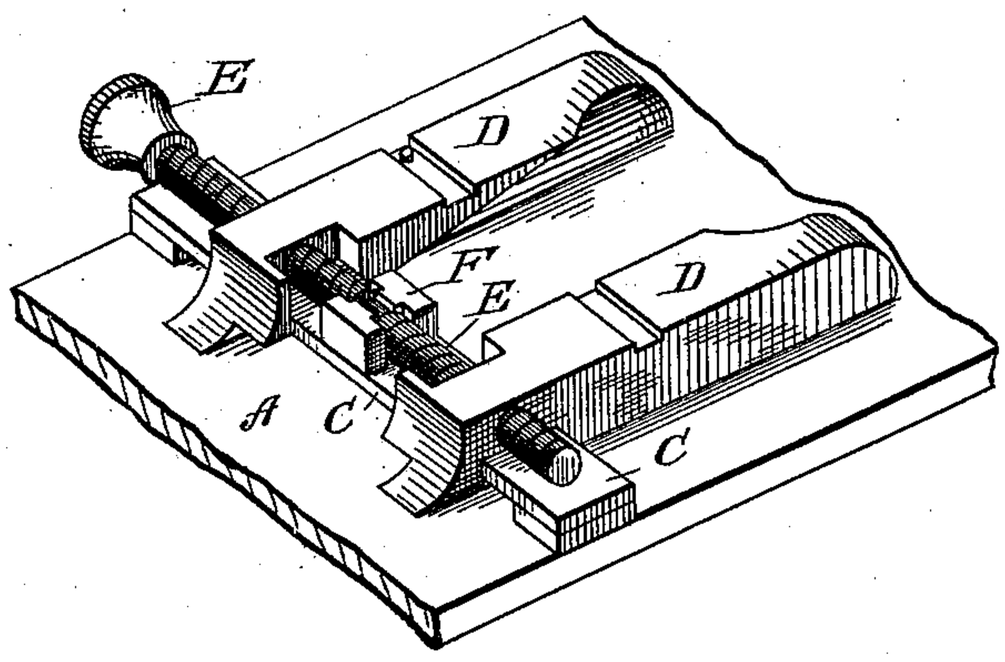
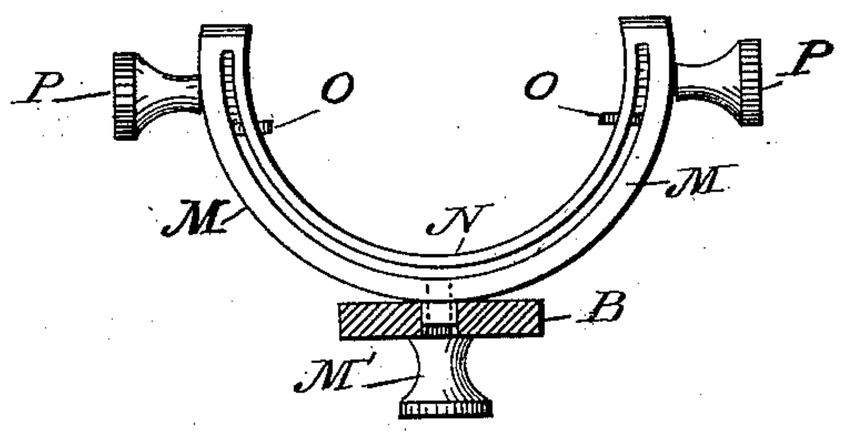


Fig 6



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UNITED STATES PATENT OFFICE.

DANIEL E. MARSH AND ALEXANDER LAUBSCHER, OF BRIDGEPORT, CONN.

STRIP-FOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 351,452, dated October 26, 1886.

Application filed May 22, 1886. Serial No. 202,981. (No model.)

To all whom it may concern:

Be it known that we, DANIEL E. MARSH and ALEXANDER LAUBSCHER, citizens of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Strip-Folding Machines; 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 strip-folders, and has for its objects, first, to provide a machine whereby either or both edges of strips of fabric—such, for instance, as neckties, seam-straps, and the like—may be folded down to any desired depth, and, second, to furnish a machine which shall be simple and compact in its construction, and which shall be readily adjustable in various directions for the proper accommodation and folding of strips of different width and material; and with these ends in view our invention consists in the details of construction and combination of elements, hereinafter fully explained and then recited in the claims.

In order that those skilled in the art to which our invention appertains may readily understand its construction and operation, we will describe the same in detail, referring by letter to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective of our machine with a strip in position therein and partially folded; Fig. 2, a rear end elevation; Fig. 3, a plan view with the gage-plate removed; Fig. 4, a front end view looking into the dies, the strip-guide and gage-plate being removed; Fig. 5, a detail perspective of the dies and the means for operating the same, and Fig. 6 a detail elevation of the strip-guide.

Similar letters denote like parts in all the figures of the drawings.

A is the bed-plate, upon which the operative parts of our machine are mounted, and B is a slotted extension thereon for the proper attachment of the strip-guide.

C is a bar, which extends the width of the bed-plate. It passes through openings in the folding-dies, which travel thereon, as will be presently explained, and is secured as against movement by screws passed through the bed-plate from beneath and threaded into its ends.

D are the folding-dies, and E is a right and left hand screw mounted at its center in a bearing, F, upon the top of bar C, and threaded through both folding-dies, as seen at Figs. 3, 4, and 5. A knurled head is secured upon one end thereof, whereby the screw may readily be turned. The folding-dies rest upon the bed-plate, and their operative surfaces are curved in cross-section and taper from their rear to their forward ends, as may be seen by reference to Figs. 4 and 5. By means of the screw the dies may be caused to travel upon the bar toward or from each other across the face of the bed-plate.

G are curved springs, whose rear ends are secured to the bed-plate, near the respective edges thereof, and to the forward extremities of said springs are attached a pair of journal-blocks, H, in which is mounted the presser-roll I, which, as will be readily understood, is normally held in contact with the bed-plate just forward of the dies by the resilience of the springs. The bed-plate has openings therethrough at each side, beneath the journal-blocks, and a bar, J, which extends across beneath the plate, is provided with projections K thereon, which extend upwardly through the openings and rest against the bottoms of the journal-blocks. An L-shaped lever, L, is fulcrumed to a bracket, L′, secured on the bottom of the bed-plate, and its extremity is pivoted to the center of the bar J. Pressure upon the button with which the vertical arm of the lever is provided raises the bar, and the upward projections thereon lift the journal-blocks and presser-roll against the action of the springs.

The strip-guide M, which is adjustably secured in the slotted extension by the thumb-screw M′, is U-shaped, and is slotted in the direction of its curvature. A curved retaining-plate, N, is arranged within the guide and concentric therewith, and is correspondingly slotted. Gages O are adjustably held in any desired position in the slots of the strip-guide by thumb-screws P, which bind upon the surface of the latter.

A gage-plate, P′, is screwed to the bearing upon the bar C, and a thin flat strip, Q, which

carries a pointer, R, on the gage-plate, is attached to and actuated by one of the dies. The pointer, in conjunction with a suitable scale arranged upon the gage-plate, indicates the width of strip which the dies are in position to fold.

The operation of our improvement is as follows: The gages upon the strip-guide are first adjusted to the width of the strip to be folded. If the fold is to be of equal depth upon each edge of the strip, the gages are set at the proper distance apart and equidistant from the center of the guide. If the fold is to be deeper upon one side than upon the other, then the gages are set one nearer, the other farther from, the center, in order that a greater and less width, respectively, of the strip may come in contact with the folding-dies. The guide is adjustable longitudinally of the plate, that the proper curve may be imparted to the strip before it is operated upon by the dies. In the folding of wide strips, it is set farther from, with narrow strips nearer to, said dies. After the strip has been properly adjusted in the guide its end is passed through the dies and beneath the bar and presser-roll, which latter, by means of the lever and bar, is raised to admit of its passage. It is then pulled through the machine by hand or other suitable means. The dies operate upon the strip by gradually sharpening the initial curve imparted by the strip-guide and rolling over the edges until, as the strip passes from the forward end of the dies and beneath the bar, the curve is so sharp as to amount to a fold. The passage of the strip between the spring-actuated presser-roll and the plate irons down the fold, so that it is permanently retained by the fabric.

As hereinbefore explained, unequal folding of the edges may be effected by the proper adjustment of the strip-guide. Now, if it is desired to fold the two edges so that one will overlap the other, this may be effected by securing the gage in one side of the strip-guide, close to the center of the latter, so that the strip will be operated upon by one die and not by the other. In folding after this manner the strip must be twice passed through the machine.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the bed-plate, of the curved-faced and tapering folding-dies, their bar, and means whereby they are caused to travel backward and forward across the plate, the gage-plate arranged above the dies, and the strip and pointer moved by one of said dies, the spring-actuated presser-roll mounted at the forward end of the dies, and the lever and bar, whereby the roll may be lifted against the action of the springs, substantially as set forth.

2. The combination, with the bed-plate, of the dies arranged thereon and means whereby they may be adjusted, the spring-actuated presser-roller and means for lifting the same, and the curved and adjustable strip-guide provided with gages, as described, and whereby different widths of fabric may be accommodated, substantially as set forth.

3. The combination, with the folding-dies adjustable to and from each other across the bed-plate, of the spring-actuated presser-roll, the bar beneath the plate engaging with the blocks in which said roll is journaled, and the pivoted lever whereby the bar and roll may be raised, substantially as set forth.

4. The combination of the bed-plate and the slotted extension thereon, the dies curved and tapered as to their operating-surfaces, the bar whereon they slide, and the right and left hand screw whereby they are adjusted to and from each other, the pointer receiving movement from one of the dies, and the graduated gage-plate whereon the pointer travels, the spring-actuated presser-roll and the bar and lever for raising the same, and the curved and adjustable strip-guide having gages, as described, and mounted on the extension of the bed-plate, all combined and adapted to operate substantially as and for the purpose herein set forth.

5. The combination, with the folding-dies and the presser-roll mounted in front of the same, of the curved strip-guide mounted upon the bed-plate and adjustable both toward and from the dies, and also adjustable in width for different widths of goods, substantially as specified.

6. The combination, with the bed-plate, of the curved and tapered dies mounted upon its surface, the bar whereon said dies travel, and the right and left hand screw whereby said dies are regulated as to their distance from the longitudinal center of the plate, the spring-actuated presser-roll, and the bar and lever whereby said roll may be lifted out of contact with the bed-plate, substantially as specified.

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

DANIEL E. MARSH.
ALEXANDER LAUBSCHER.

Witnesses:
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F. W. SMITH, JR.