

No. 686,573.

Patented Nov. 12, 1901.

H. F. BECHMAN.
PAPER FOLDING MACHINE.

(Application filed Mar. 7, 1901.)

(No Model.)

Fig. 1.

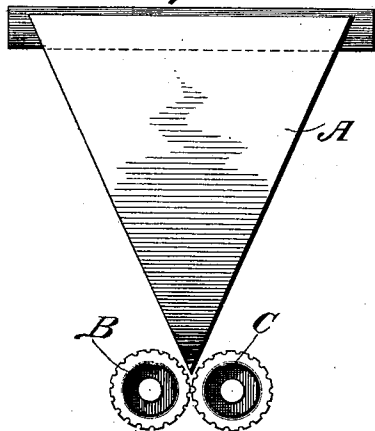


Fig. 2.

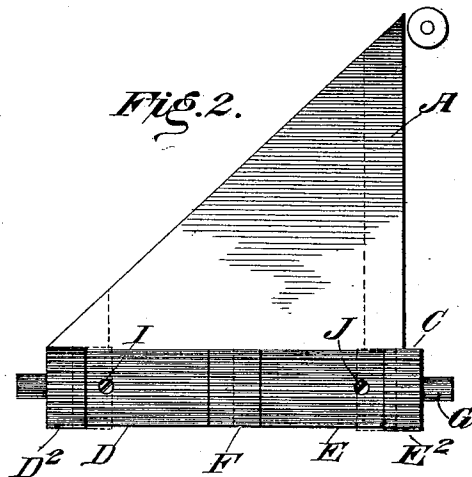


Fig. 3.

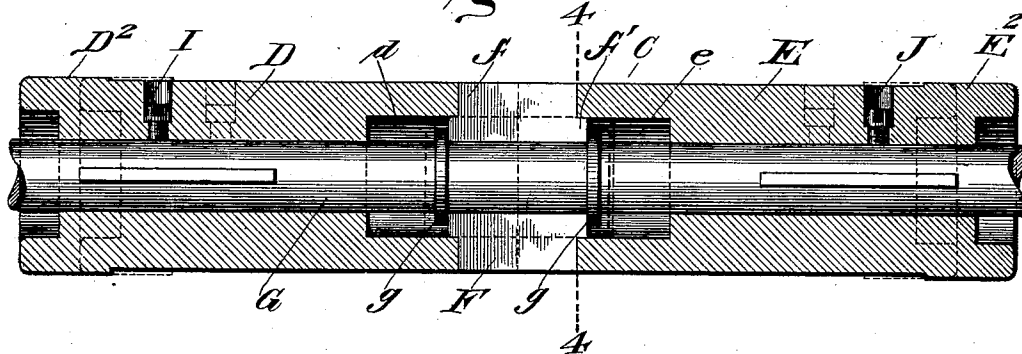
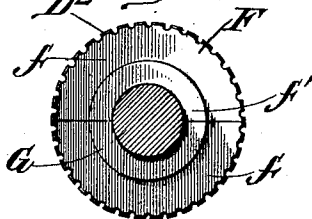


Fig. 4.



WITNESSES:

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PAPER-FOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 686,573, dated November 12, 1901.

Application filed March 7, 1901. Serial No. 50,250. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. BECHMAN, of Battlecreek, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Paper-Folding Machines; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improvement in paper-folding machines; and its object is to provide an adjustable or sectional folding-roller for use in such machines which can be adjusted with facility so as to properly operate on the margins of papers or webs of different sizes or widths. It is particularly applicable to machines in which a triangular "former" with two rollers at its apex is employed in making one of the folds.

It is desirable in order to prevent smutting that the folding-rollers shall pinch the paper on the unprinted margins. This is ordinarily accomplished by having one of the rollers provided with slight peripheral enlargements at the places where the margins come. Obviously solid rollers thus formed are only adapted to operate on one width of web, and if a different width of web is passed between such rollers it would be pinched on the printed surfaces.

The present invention therefore consists in constructing the folding-rollers in transverse sections, which may be adjusted so as to lengthen or shorten the roller, and thus bring the peripheral enlargements or "pinching" portions of the rollers into the desired position, adapting them to operate properly on the margins of various widths of webs or sheets. A simple and efficient construction of such a roller is illustrated in the accompanying drawings, in which—

Figure 1 is a front and Fig. 2 a side elevation of part of a folding-machine, showing the former and a pair of folding-rollers coacting therewith. Fig. 3 is an enlarged longitudinal section through the adjustable sectional folding-roller. Fig. 4 is a transverse section on line 4 4, Fig. 3.

A represents a triangular former of a folding-machine, and B C a pair of folding-roll-

ers, preferably fluted or grooved, as usual, located at the apex of the former and adapted to make a fold, as usual. One or both rollers B and C may be composite or sectional in construction. For instance, roller C consists of two end tubular sections D E and an intermediate section F, all strung upon a shaft G, as shown in Fig. 2. The central part F is preferably split and formed in two semicircular halves *f f* and is fitted between collars *g g* on shaft G, which prevent it moving endwise on the shaft. The parts D E are placed on the shaft G at opposite sides of part F, and said parts have annular recesses *d e* in their inner ends, which will allow the parts to slip over collars *g*, and when all the parts are assembled recesses *d e* receive short end flanges *f'* on the ends of part F and hold said parts upon the shaft, altogether forming a complete folding-roller. The outer ends of parts D E are provided with slight peripheral enlargements *D² E²*, which pinch the paper on its margins or unprinted portions. The parts D E are longitudinally adjustable on the shaft and may be secured in the positions to which they are adjusted by any suitable devices. For instance, locking-bolts I J may be tapped therethrough, as indicated in the drawings.

When all the parts are assembled as in Fig. 3, the roller is adapted to act on the widest paper. If part F be removed and parts D E moved toward each other until they impinge, then the roller will operate properly on a much narrower web.

By providing a number of interchangeable parts F of varying lengths the roller can be adjusted to suit any number of widths of web. The part F can be readily removed and replaced by simply loosening the parts D E and moving them apart until the flanges *f'* of pieces *f* disengage the recesses *d e*. Similarly the part F can be readily replaced by first separating parts D E, then placing pieces *f* in place, and then moving parts D E up against part F. By making part F in halves, as shown, the length of the roller can be readily adjusted without removing it from its bearings.

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

1. A paper-folding roller, comprising a shaft, and opposite roller-sections mounted on said shaft, and longitudinally adjustable toward or from each other and means for securing said roller-sections on the shaft, said sections forming a continuous roll when adjusted together on the shaft, substantially as described.

2. In a paper-folding roller, the combination of a central roller-section and opposite end roller-sections adjustable toward or from the central section, said sections forming a continuous roll when adjusted together on the shaft, substantially as described.

3. In a paper-folding roller, the combination of a central removable roller-section; with opposite end roller-sections adjustable toward or from the central section, substantially as described.

4. In a paper-folding roller, the combination of a shaft, tubular roller-sections mounted on said shaft, and adjustable toward or from each other, and an intermediate detachable roller-section, substantially as described.

5. In a paper-folding roller, the combination of a shaft, a central detachable split roller-section thereon, and longitudinally-

adjustable roller-sections on the shaft at opposite sides of the split section, substantially as described.

6. In a paper-folding roller, the combination of a central detachable split roller-section having end flanges; with end roller-sections adjustable toward or from the central section and having recesses adapted to receive the flanges of the split section to retain the latter in place, substantially as described.

7. In a folding-roller, the combination of a shaft having a pair of collars near its center, a split detachable roller-section fitted between said collars and having end flanges, and opposite longitudinally-adjustable end roller-sections on the shaft having recesses in their inner ends to receive the flanges on the central section, all substantially as and for the purpose described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HENRY F. BECHMAN.

Witnesses:

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FRANK W. DUNNING.