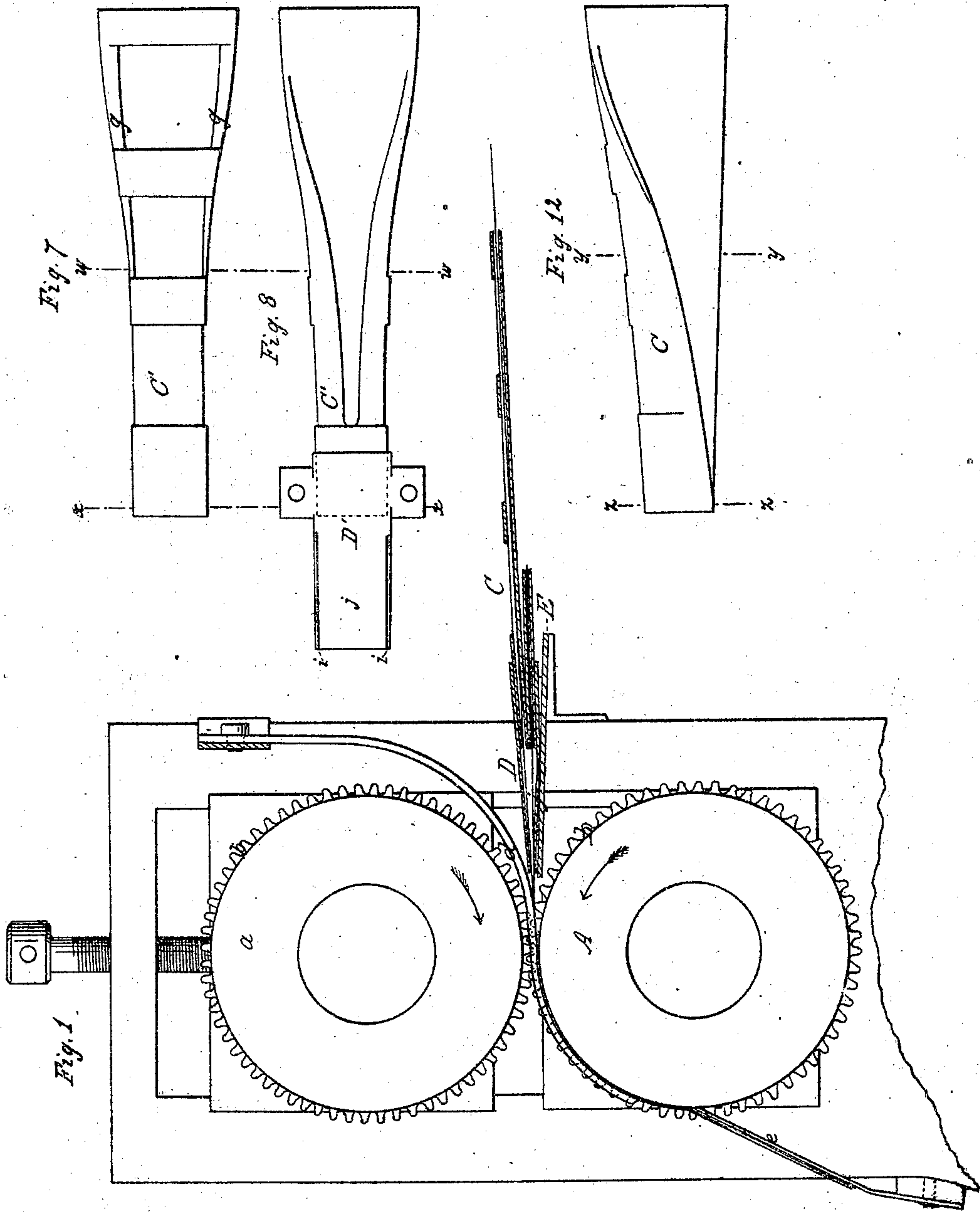


I. Robjohn.

Fluting Mach.

N<sup>o</sup> 42404

Patented Apr. 19. 1864



Witnesses

Jas P Hall  
Geo W Reed

Inventor

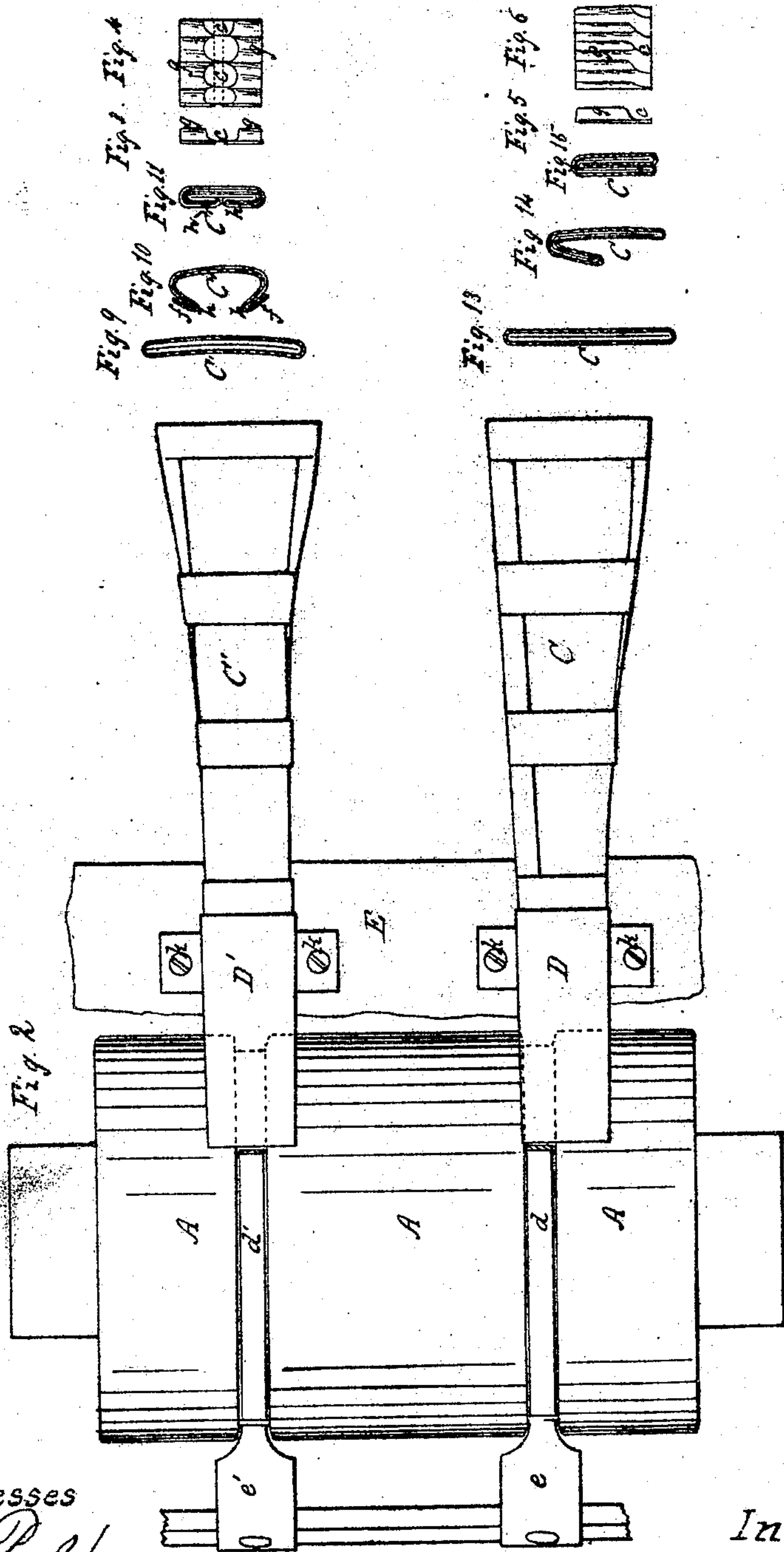
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# UNITED STATES PATENT OFFICE.

THOMAS ROBJOHN, OF NEW YORK, N. Y.

## IMPROVEMENT IN APPARATUS FOR MAKING FLUTED RUFFLES.

Specification forming part of Letters Patent No. 42,404, dated April 19, 1864.

*To all whom it may concern:*

Be it known that I, THOMAS ROBJOHN, of the city, county, and State of New York, have invented a new and useful Improvement in Machinery for Making Two-Ply Fluted Ruffles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical section of the principal parts of a fluting machine with my improvement. Fig. 2 is a horizontal section of the same above the lower fluting-roller. Fig. 3 is a transverse section of one kind of ruffle to be made by the machine. Fig. 4 is a back view of the same. Fig. 5 is a transverse section of another kind of ruffle to be made by the machine. Fig. 6 is a face view of the same. Fig. 7 is a top view of the folding-guide used in making the ruffle shown in Figs. 3 and 4. Fig. 8 is a bottom view of the said guide and of the socket in which it is held. Fig. 9 is an outer end view of the same. Fig. 10 is a transverse section of the same in the line *ww* of Figs. 7 and 8. Fig. 11 is a transverse section of the same in the line *xx* of Figs. 7 and 8. Fig. 12 is a bottom view of the folding-guide used in making the ruffle shown in Figs. 5 and 6. Fig. 13 is an outer end view of the same. Fig. 14 is a transverse section of the same in the line *yy* of Fig. 12. Fig. 15 is a transverse section of the same in the line *zz* of Fig. 12.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in the combination, with a fluting-machine, of a folding-guide so applied as to fold and double a strip of muslin, silk, or other fabric and deliver it in its folded state between the rollers, that the doubling and fluting may be performed by a continuous process.

It also consists in the combination, with a fluting-machine and folding-guide, of a flattening-guide interposed between the said folding-guide and the fluting-rollers.

It further consists in a folding-guide of novel construction for doubling a strip of muslin, silk, or other fabric by turning in both edges toward each other on the same side of the strip.

To enable others skilled in the art to make

and use my invention, I will proceed to describe its construction and operation.

A *a* are a pair of fluting rollers arranged horizontally one above the other, and having each two circumferential grooves, *b b'*, of a depth slightly greater than the depth of the flutes, the circumferential grooves of one being exactly opposite to those of the other, and of a width equal to that intended for the flattened portion of the ruffle shown at *cc* in Figs. 4 and 6. These grooves receive the two pressers, *d d'*, by which the flattening is produced, the said pressers being composed of elastic strips of metal attached to the upper part of the framing of the machine by a rigid bar, B, and pressing on the bottoms of the grooves in the rollers. The grooves also receive the strippers *ee*, by which the ruffles are stripped from the rollers in case of their adhesion thereto. These rollers, pressers, and strippers do not differ essentially from those described in Reissued Letters Patent No. 1,556, but there are two sets of grooves in them, and two pressers and two strippers are applied, as they are intended for making two ruffles at once.

C C' are the folding-guides applied, one opposite to the grooves *b b*, and the other opposite to the grooves *b b'*, for folding the strips of which the ruffles are to be made and delivering them to the rollers under the pressers. These guides are held in place by being inserted into taper-sockets D D', which are secured by screws *kk* to a horizontal supporting-plate, E, which is secured to the framing of the machine in front of the rollers.

The guide C is constructed to fold the strip along the center of its width as illustrated by the section, Fig. 5, and its form may be readily understood by a comparison of Figs. 12, 13, 14, 15, the transverse section of the strip being shown in red color in Figs. 13, 14, 15, which enables it to be seen how the folding is gradually produced by the drawing of the strip through the guide, effected by the fluting-rollers. The guide is so arranged laterally with respect to the grooves *b b* of the fluting-rollers that the two single edges of the folded strip will pass through the said grooves and the strip flattened at those edges, and the ruffle be formed with a single frill having a folded edge.

The guide C' is constructed to double the



strip by turning in both edges toward each other on the same side of the strip as required to make the two-ply ruffle, which is the subject of E. C. Wooster's Letters Patent No. 40,877. The entrance at one end of this guide is made in the form of a flat, or nearly-flat, tube of a width equal to the width of the strip to be folded, and to double the width of the ruffle. Commencing at a short distance from this end the upper side of this tube is open for a portion of its length, having only a narrow rim, *ff*, on each side, as shown in Figs. 7 and 10, and the sides of the guide are gradually turned under, as shown at *hh* in Figs. 10 and 11, till it assumes at or near the other end the form shown in Fig. 11. The strip in being drawn by the fluting-rollers through this guide has its two edges turned in toward each other on the under side, as illustrated by the representation of the transverse section of the strip in red color in Figs. 10 and 11, Fig. 11 showing the strip in the form in which it emerges from the guide, and Fig. 10 showing the turning in and doubling about half completed. This guide is so arranged laterally in relation to the grooves *d' d'* of the fluting-rollers as to deliver the doubled strip with the line in which its edges meet opposite to the centers of the said grooves, that the doubled strip may be flattened at the meeting of the edges and made with two fluted frills, one on each side of the flattened portion *e*, as shown at *gg* in Fig. 4. The two sides of this guide *C'* may be turned in equally to bring the meeting of the edges of the doubled strip in the center thereof, or at any distance from the two folded edges, according as the two frills of the ruffle are desired to be of the same or of different widths.

The sockets *D D'*, into which the folding-guides are inserted, and by which the said guides are held in place, have their outer

ends made of a form to correspond with the portions of the guides whence the folded strips issue, and the said sockets have their inner ends, which are very nearly close to the rollers, of the same form and construction as the guides which form the subject-matter of the fourth clause of the claim of Reissued Letters Patent No. 1,556, hereinbefore referred to—that is to say, they are flattened and constructed with slits *ii* and tongues *j*, to press and flatten the doubled strips as they pass from the folding-guides to the rollers. The slits *ii* and tongues are here represented as arranged on the under side of the tube instead of on the upper side, as described in the Letters Patent hereinabove referred to.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a fluting-machine, of a folding-guide constructed and arranged to deliver a strip of muslin or other fabric to the fluting-rollers, and to fold and double the said strip as it is drawn through it by the said rollers, substantially as and for the purpose herein specified.
2. The combination, with the fluting-machine and the folding-guide, of an interposed pressing-guide, substantially as herein specified.
3. Forming the said interposed pressing-guide as part of a socket which receives and holds in place the folding-guide, substantially as herein specified.
4. The combination, with a fluting-machine, of the folding-guide *C'*, constructed to turn in the two edges of a strip of muslin or other material toward each other on the same side of the strip, substantially as herein specified.

THOS. ROBJOHN.

Witnesses:

JAS. P. HALL,  
GEO. W. REED.