

No. 815,134.

PATENTED MAR. 13, 1906.

R. G. WOODWARD.

FOLDING AND GUIDING ATTACHMENT FOR SEWING MACHINES.

APPLICATION FILED JULY 31, 1902.

2 SHEETS—SHEET 1.

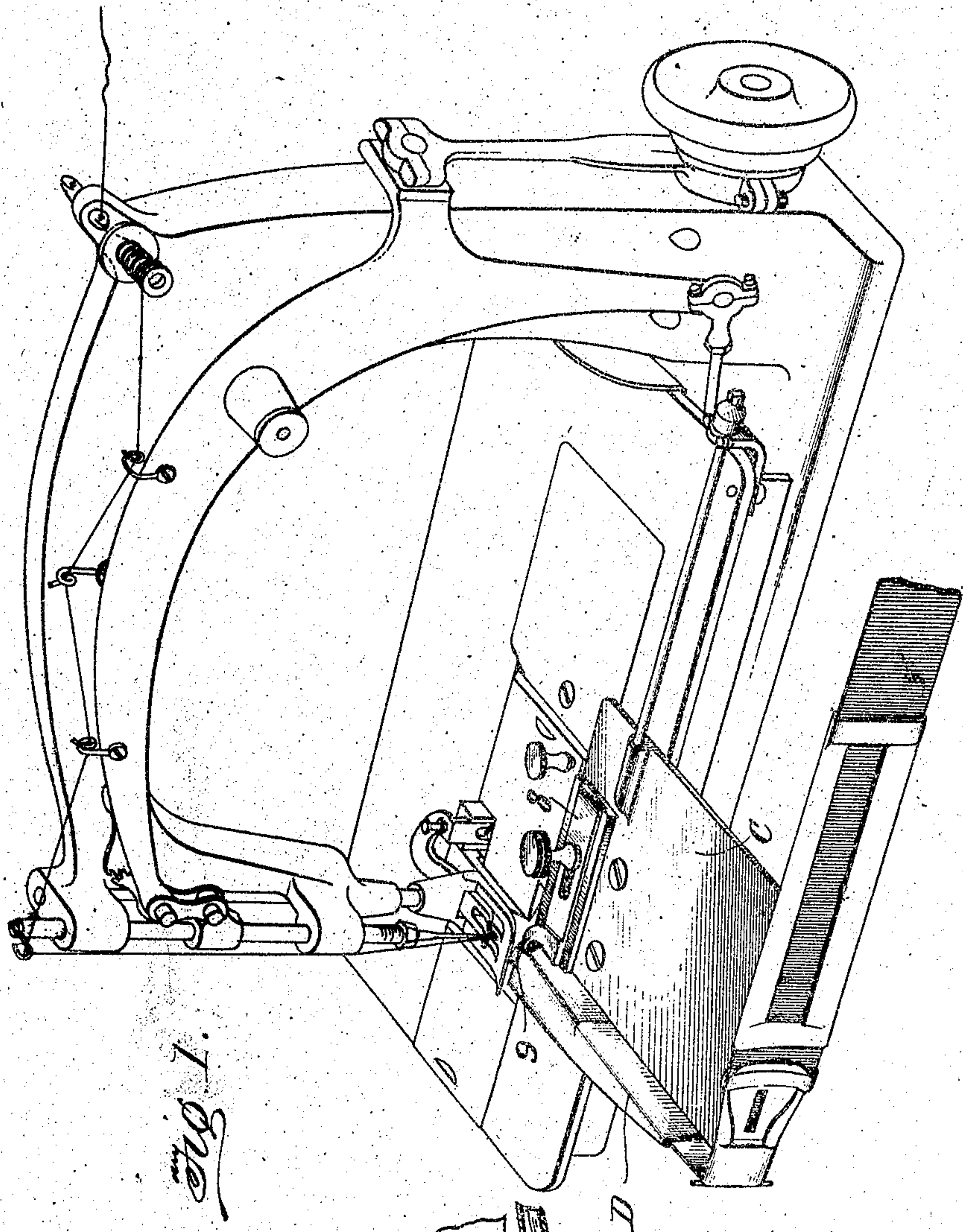
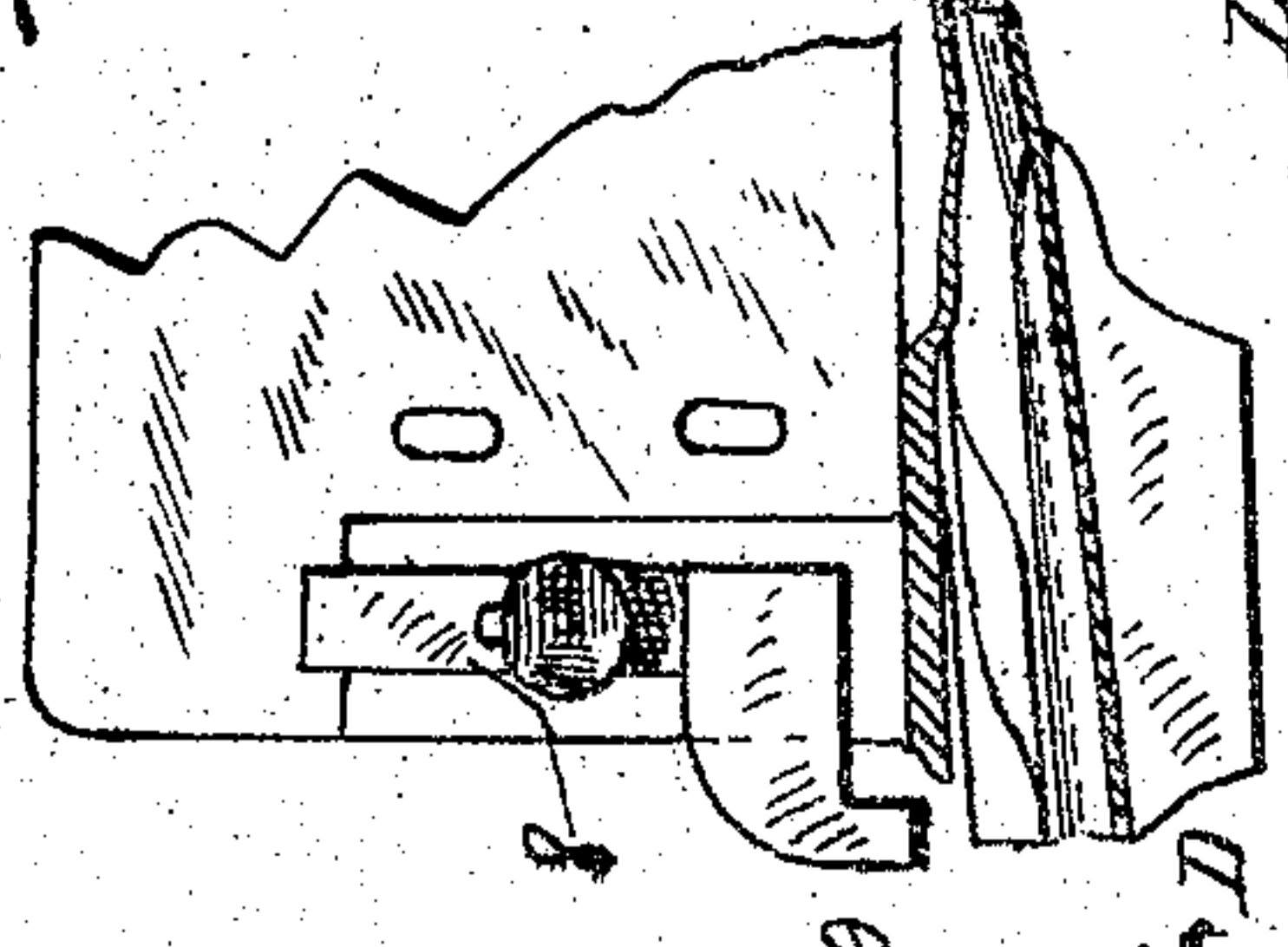


Fig. 1.

Fig. 4a.



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2 SHEETS—SHEET 2.

Fig. 2.

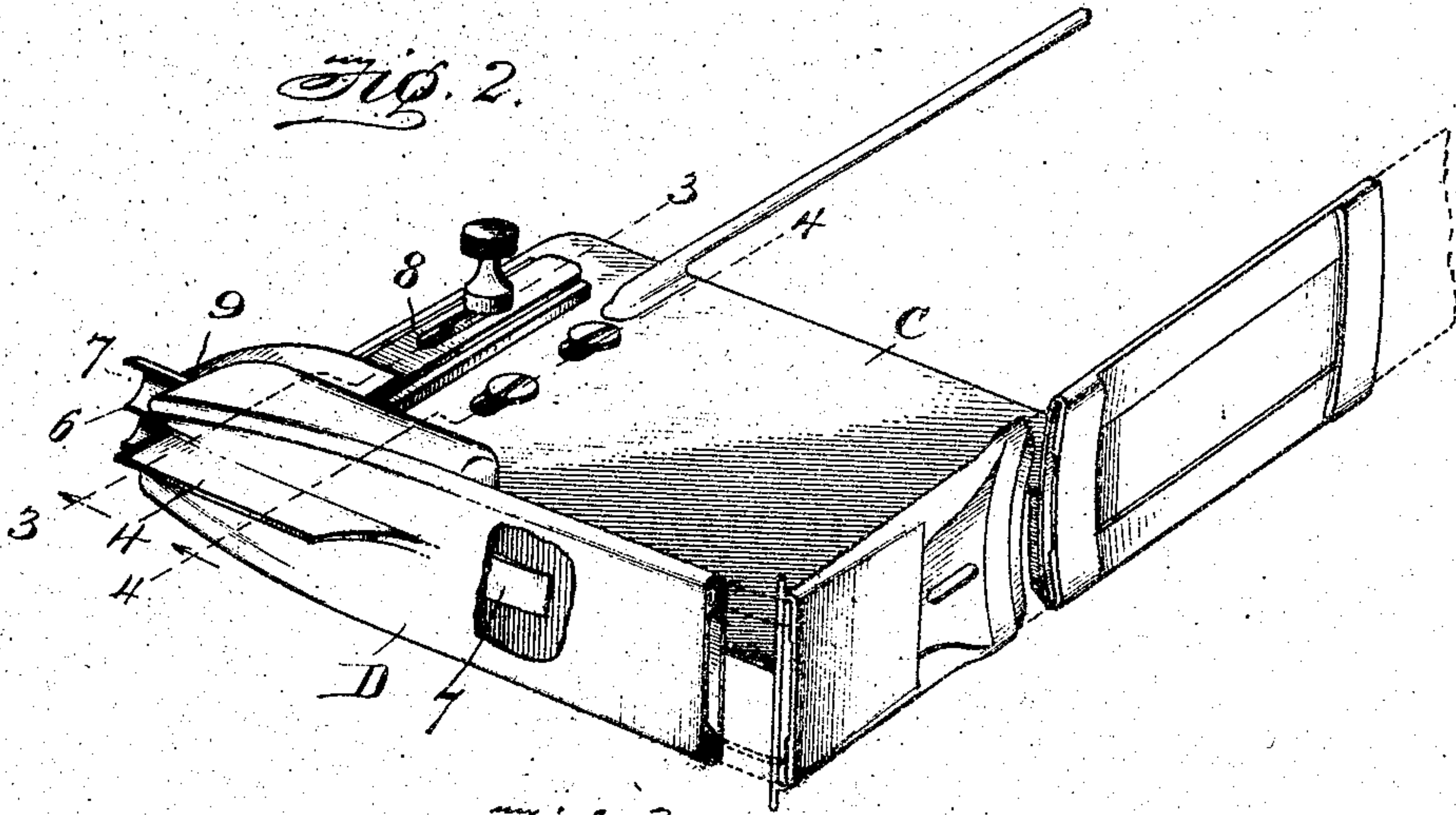


Fig. 3.

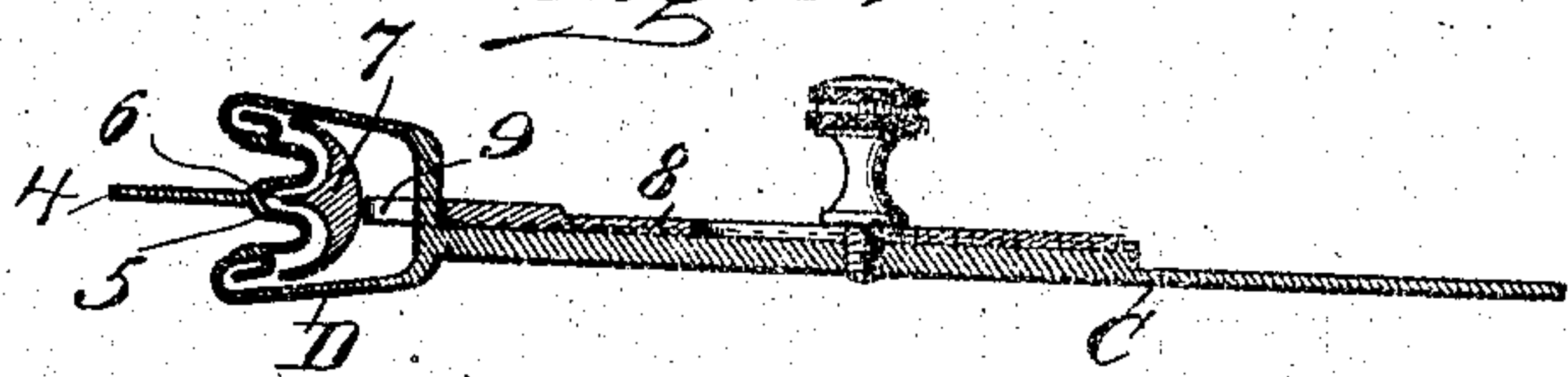


Fig. 4.

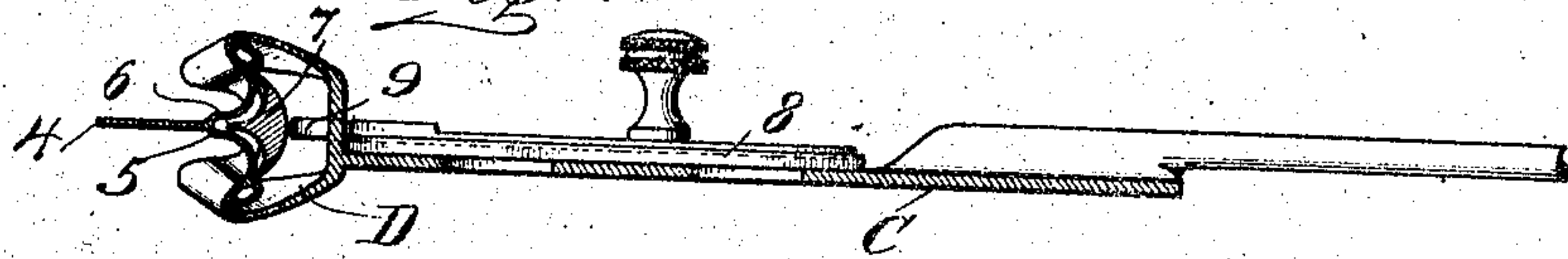


Fig. 5.

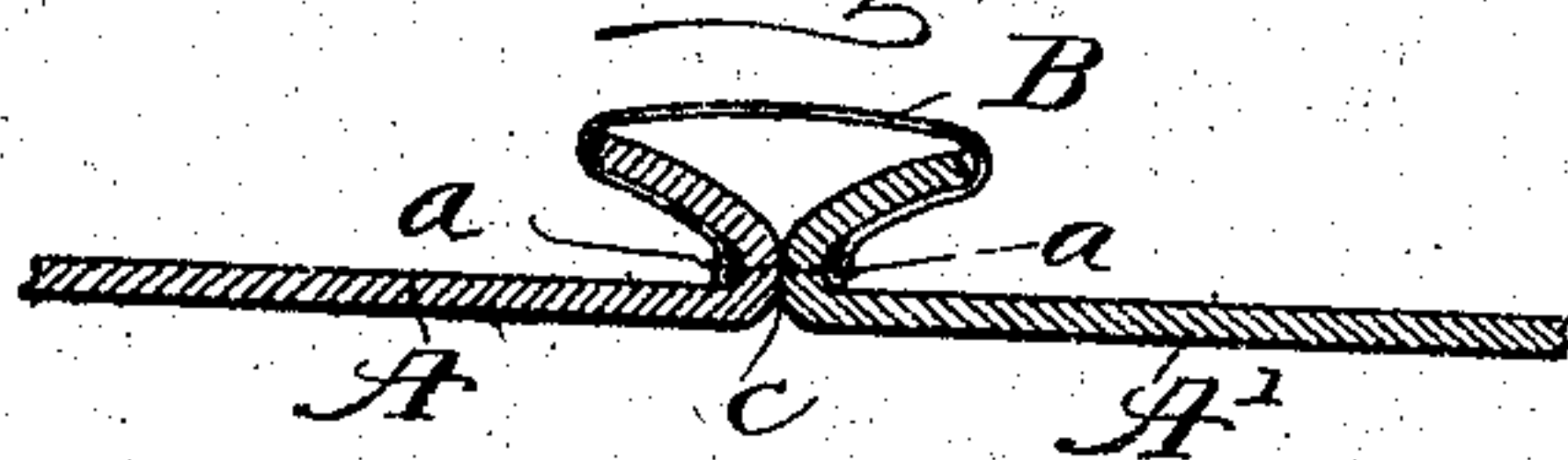


Fig. 6.

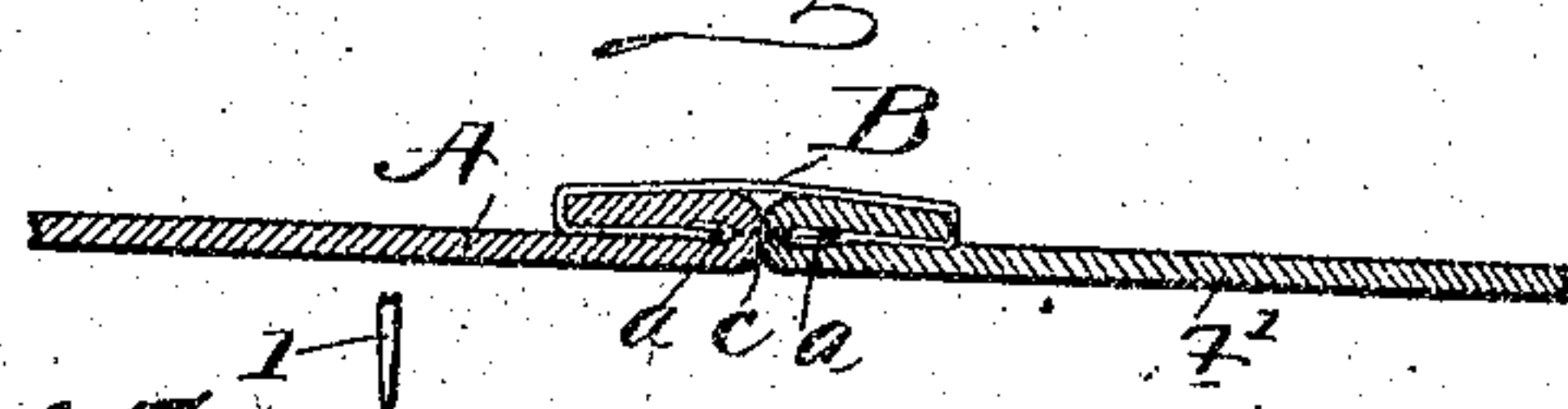


Fig. 7.

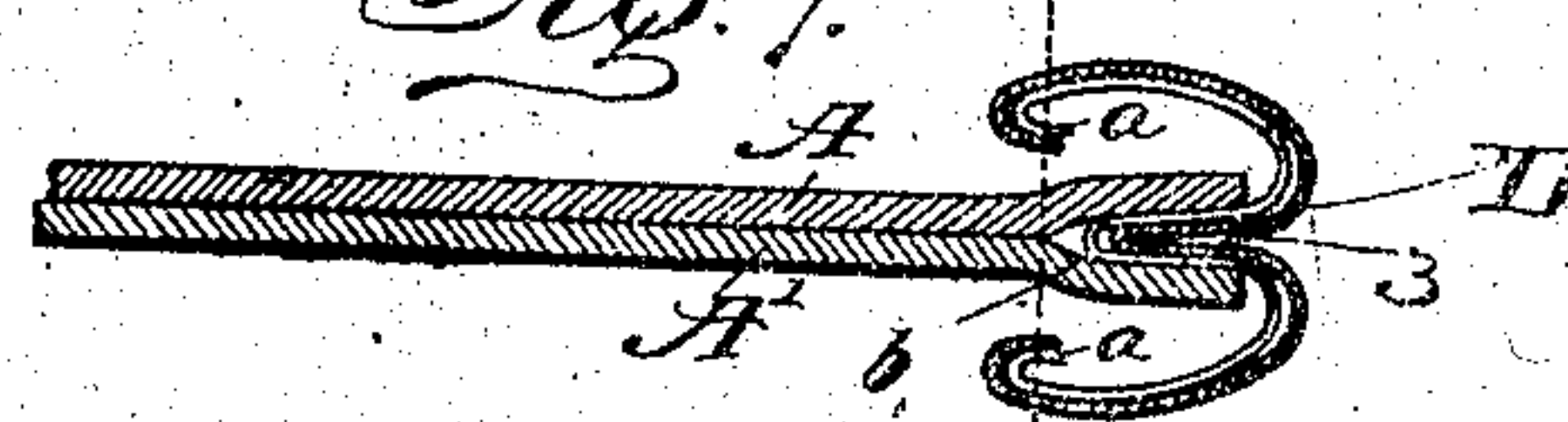
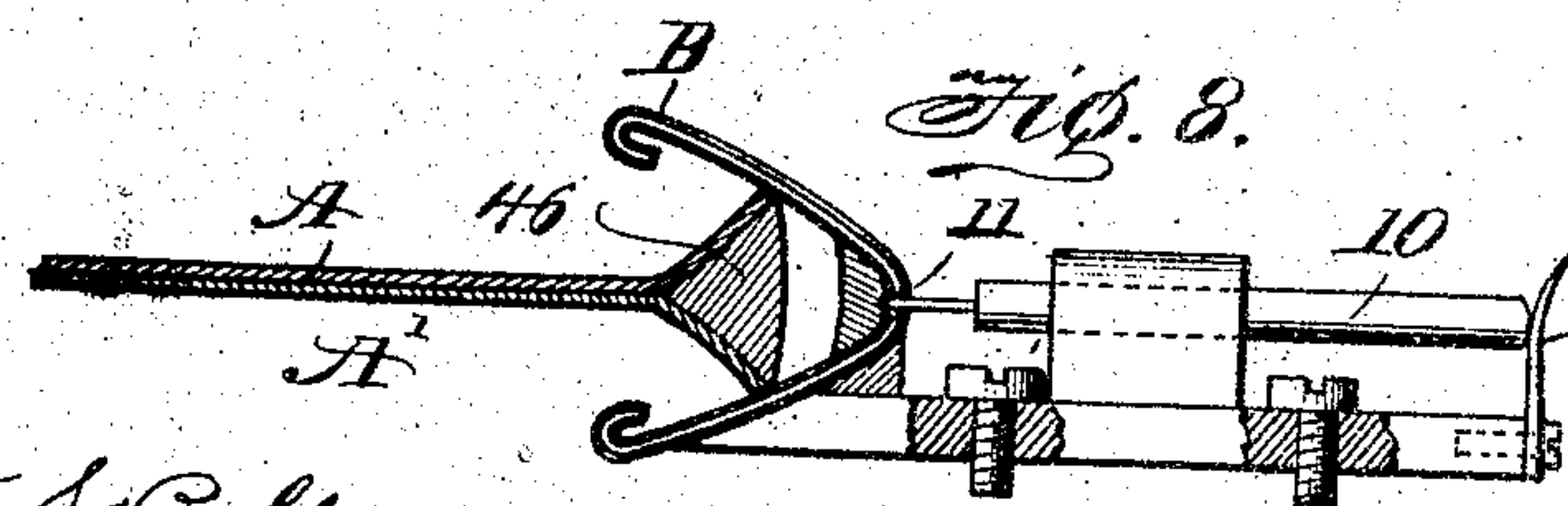


Fig. 8.



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UNITED STATES PATENT OFFICE.

RUSSEL G. WOODWARD, OF WAUKEGAN, ILLINOIS, ASSIGNOR TO UNION SPECIAL SEWING MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

FOLDING AND GUIDING ATTACHMENT FOR SEWING-MACHINES.

No. 815,134.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed July 31, 1902. Serial No. 117,840.

To all whom it may concern:

Be it known that I, RUSSEL G. WOODWARD, a citizen of the United States, residing at Waukegan, in the county of Lake, State of Illinois, have invented certain new and useful Improvements in Folding and Guiding Attachments for Sewing-Machines, of which the following is a description, reference being had to the accompanying drawings and to the letters and figures of reference marked thereon.

My invention relates to an improvement in sewing-machines, and particularly to a machine upon which is adapted to be made the seam illustrated in patent of Edward T. Allan, No. 718,943, January 20, 1903, said seam combining two fabrics whose edges are superposed, a binding-strip having its upper and lower edges overlapping the two pieces of fabric, respectively, and having its central body portion extending inwardly between the two edges of the fabric to separate the same, and a line of stitching passing through both edges of the fabric and both edges of the binding-strip, but not through the central body portion of the binding-strip, whereby when the seam is pressed out the raw edges of the goods are spread out flat and covered and bound, and a seam of great strength is provided which is flat, in which the stitches are entirely concealed, and the raw edges entirely covered.

The object of the present invention is to provide a sewing-machine with folding and guiding attachments for making the above-mentioned seam.

The invention consists in the matters hereinafter described, and referred to in the appended claims.

It will be understood that the broad term "divider" herein used is intended to cover a device which either passes in between the edges of the superposed pieces of fabric and is shaped so as to deflect them away from each other, so that when the seam is pressed out the edges will be flattened and not crowded one on the other, which is so arranged as to deflect the central body portion of the binding-strip in between the edges of the superposed fabrics, so that when the seam is spread out the crease in the body portion of the binding-strip will serve as a guide for the pressing-tool and the deflected portion of the

body portion of the binding-strip will separate the two edges.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a sewing-machine, showing my improved folding and guiding attachment applied thereto. Fig. 2 is a perspective view of the guiding and folding device detached. Fig. 3 is a cross-section on the line 3 3, Fig. 2. Fig. 4 is a cross-section on the line 4 4 of Fig. 2. Fig. 4^a is a horizontal cross-sectional view illustrating the connection between the fin and folder. Fig. 5 is a cross-section of the seam before it has been pressed. Fig. 6 is a similar view of the seam after it has been pressed out. Fig. 7 is a cross-section of a modification of the invention. Fig. 8 is a front view, partly in section, of another modification.

Referring first to the figures showing the seam, A A' represent, respectively, upper and lower pieces of fabric whose edges are superposed.

B is a binding-strip shown as folded around the raw edges of the two pieces of fabric and having a hem-fold *a* on each edge.

As shown in Figs. 1 to 4, inclusive, and Fig. 7, the binding-strip is provided with a central fold or crease *b*, which projects inwardly between the two edges of the material. The parts of the seam are held together by a single line of stitching *c*, passing through both edges or hem-folds of the binding-strip and through the two pieces of fabric, but not through the apex of the central fold or crease *b* of the binding-strip. It will be seen that by this arrangement when the seam is completed and ready to be ironed or otherwise pressed flat the central fold or crease in the binding-strip acts to separate the two edges, so that they will not fold over one on the other, but will be turned outwardly and flattened in opposite directions.

The preferred means for carrying out my invention are illustrated in Figs. 1 to 4, inclusive, in which the sewing-machine is of the type known as the "Union Special Top-Feed Machine," such as illustrated in patent granted to me October 12, 1897, No. 591,517, and need not be herein specifically referred to. I have found it most practical in making the seam above mentioned to use a top-feed machine, and the above-mentioned type of ma-

chine has been selected for the purpose of illustration. In these drawings, C represents the plate removably attached in any suitable manner to the bed-plate of the sewing-machine and carrying at its front edge the usual upright guide for the binding-strip B, extending along the front of the machine. This upright guide near its left-hand end folds the edges of the binding-strip and guides the binding-strip into the folder D, which gradually tapers vertically and broadens out laterally toward the position of the needle, the walls of the guide serving to form a hem-fold on each edge of the binding-strip B, said guide at its forward end being curved to cause its upper and lower edges, and therefore the binding-strip, to embrace the upper and lower edges of the fabrics A A', which are guided by the left-hand edge of the folder and are separated by the plate 4, which lies between the edges of the fabrics. The inside left-hand face of the guide D is substantially W-shaped, the central recess 5 receiving the central fin 6 of the flexible part 7, called a "divider," which is shown in detail in Fig. 4^a and is secured at its rear end by solder, as shown in Fig. 2, and which forms the right-hand inner edge of the guide D. The recess 5 lies substantially between the recesses 3^b which guide the inner edges of the two fabrics, so that the divider 6 forces a fold of the binding-strip into the recess 5, this central fold or crease b acting to separate the two edges of the fabric and allow ample width to the binding-strip to cover the raw edges of the fabric. One of the purposes of making this divider flexible or yielding is to allow the easy threading of the folder with the binding-strip, it being quite necessary that the divider be pulled back from the slot in the folder in order to get the binding-strip through it. To vary the depth of the crease in the binding-strip, means are provided for shifting the operative position of the divider 6, said means comprising an adjustable slide 8, having on its forward end a projection 9, which is adapted to be set against and hold the flexible or yielding plate 7 in desired position. In this preferred form of my invention the fin 6 acts as the divider to force the crease or fold b of the binding-strip in between the two edges of the fabrics to enable them to be oppositely turned when a pressing-tool is run over the seam after the fabrics have been turned out, the plate 4 acting to separate the fabrics also while in the machine.

In Fig. 7 is shown a modification of mechanism by which the seam may be conveniently made, 1 representing the needle, D the folding-guide having the W-shaped recess, the central wall 3 of the recess forming a dividing member which forms the crease b in the binding-strip B, and upon opposite sides of which the fabrics A A' are placed, the dividing-wall extending inwardly only so far as

to properly separate the two pieces of fabric A A' and not so far as to cause the central fold or crease of the binding-strip to be engaged by the needle in its descent. In this arrangement the wall 3 forms the divider.

In Fig. 8, which represents another modification, 46 is the divider for the goods and 10 is a bar holding a point 11 for making a line or crease on the binding-strip B, guided by the folder D, this point acting somewhat like a tuck-marker and held in position by pressure of the spring 12.

Various minor modifications and changes may be made in the construction of the parts of the apparatus without departing from the spirit of my invention, the object of the apparatus which I wish to cover broadly being to keep the raw edges separate and bind them so that in pressing the seam flat the raw edges will not fold in the same direction, but will turn in opposite directions, and it may not be absolutely necessary to form the central fold or crease b in the binding-strip, it being sufficient that the folding-guide accommodates a greater width of strip than is represented by the mere distance between its upper and lower edges, and to make the binding-strip entirely cover the edges of the pieces of fabric, to fold around said edges, and to be secured by the line of stitching c, and that means be provided to separate the raw edges of the fabric, so that they will turn in opposite directions.

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

1. In combination with a sewing-machine having suitable stitch-forming mechanism, means for guiding a plurality of superposed fabrics thereto, means for folding and guiding a binding-strip around the edges of the fabrics, and a divider independent of the folding means for separating the edges of the superposed pieces of fabric; substantially as described.

2. In combination with a sewing-machine having suitable stitch-forming mechanism, means for guiding a plurality of superposed fabrics to the stitch-forming mechanism, means for folding and guiding a binding-strip around the edges of the fabric, and means for deflecting the central body portion of the binding-strip inwardly between the edges of the fabric; substantially as described.

3. In combination with a sewing-machine having suitable stitch-forming mechanism, means for guiding a plurality of superposed fabrics to the stitch-forming mechanism, means for folding and guiding a binding-strip around the edges of the fabrics, and a guide for deflecting the central body portion of the binding-strip inwardly between the edges of the fabrics and for separating said edges; substantially as described.

4. In combination with a sewing-machine

having suitable stitch-forming mechanism, means for guiding a plurality of superposed fabrics to the stitch-forming mechanism, means for folding and guiding a binding-strip around the edges of the fabrics, and a yielding divider independent of the folding means; substantially as described.

5. In combination with a sewing-machine, having suitable stitch-forming mechanism, means for guiding a plurality of superposed fabrics to the stitch-forming mechanism, means for folding and guiding a binding-strip around the edges of the fabrics, and a swinging divider; substantially as described.

6. In combination with a sewing-machine, having suitable stitch-forming mechanism, means for guiding a plurality of superposed fabrics to the stitch-forming mechanism, means for folding and guiding a binding-strip around the edges of the fabrics, and an adjustable divider; substantially as described.

7. In combination with a sewing-machine, having suitable stitch-forming mechanism, means for guiding a plurality of superposed fabrics to the stitch-forming mechanism, means for folding and guiding a binding-strip around the edges of the fabrics, and an adjustable yielding divider; substantially as described.

8. In combination with a sewing-machine, a folding-guide comprising means for guiding a plurality of superposed fabrics to the stitch-forming mechanism, and having also means for folding the edges of a binding-strip around the edges of the superposed fabrics, and means independent of the folding means for deflecting outwardly the edges of the fabric; substantially as described.

9. In combination with a sewing-machine, a folding-guide comprising means for guiding a plurality of superposed fabrics to the stitch-forming mechanism thereof, and having also means for folding the edges of a binding-strip around the edges of the superposed fabric, said means including a device for forming a crease in the binding-strip between the two edges of the fabric; substantially as described.

10. In combination with a sewing-machine, a folding-guide comprising means for guiding a plurality of superposed fabrics to the stitch-forming mechanism thereof, and having also means for folding the edges of a binding-strip around the edges of the superposed fabrics, and means for forming a crease in the binding-strip; substantially as described.

11. In combination with a sewing-machine, a folding-guide comprising means for guiding a plurality of superposed fabrics to the stitch-forming mechanism thereof, and having also means for folding the edges of a binding-strip around the edges of the super-

posed fabric, and a divider to deflect a portion of the binding-strip between the edges of the fabric; substantially as described.

12. In combination with a sewing-machine, a folding-guide comprising means for guiding a plurality of superposed fabrics to the stitch-forming mechanism thereof, and having also means for folding the edges of a binding-strip around the edges of the superposed fabric, and a suitable wall for the guide, having a movable member to deflect a portion of the binding-strip between the edges of the fabric; substantially as described.

13. The herein-described guiding and folding attachment for sewing-machines, comprising means for guiding the edges of a plurality of pieces of fabric, a folding and guiding recess for a binding-strip formed to embrace the edges of the fabrics, and a deflecting-divider, forming a portion of the wall of the folding and guiding recess for the binding-strip to form a crease in the binding-strip; substantially as described.

14. The herein-described guiding and folding attachment for sewing-machines, comprising means for guiding the edges of a plurality of pieces of fabric, means for separating the fabrics, a folding and guiding recess for a binding-strip formed to embrace the edges of the fabric, and a deflecting-divider, forming a portion of the wall of the folding and guiding recess for the binding-strip to form a crease in the binding-strip; substantially as described.

15. The herein-described guiding and folding attachment for sewing-machines, comprising means for guiding the edges of a plurality of pieces of fabric, a folding and guiding recess for a binding-strip formed to embrace the edges of the fabrics, and a swinging deflecting-divider, forming a portion of the wall of the folding and guiding recess for the binding-strip to form a crease in the binding-strip; substantially as described.

16. The herein-described guiding and folding attachment for sewing-machines, comprising means for guiding the edges of a plurality of pieces of fabric, a folding and guiding recess for a binding-strip formed to embrace the edges of the fabrics, and an adjustable swinging deflecting-divider, forming a portion of the wall of the folding and guiding recess for the binding-strip to form a crease in the binding-strip; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

RUSSEL G. WOODWARD.

Witnesses:

CHESTER McNEIL,
CHAS. E. JOHNSON.