

O. W. Edson

Collar Mach.

28 sheets
Sheet 1.

N^o 14,308

Patented Feb. 26. 1856.

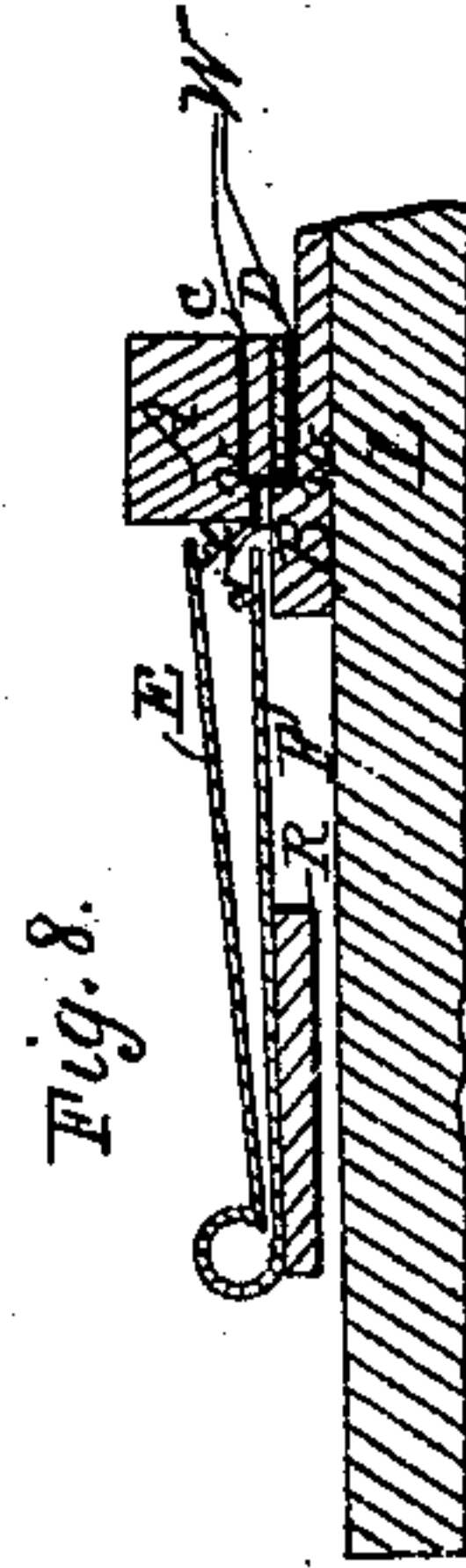
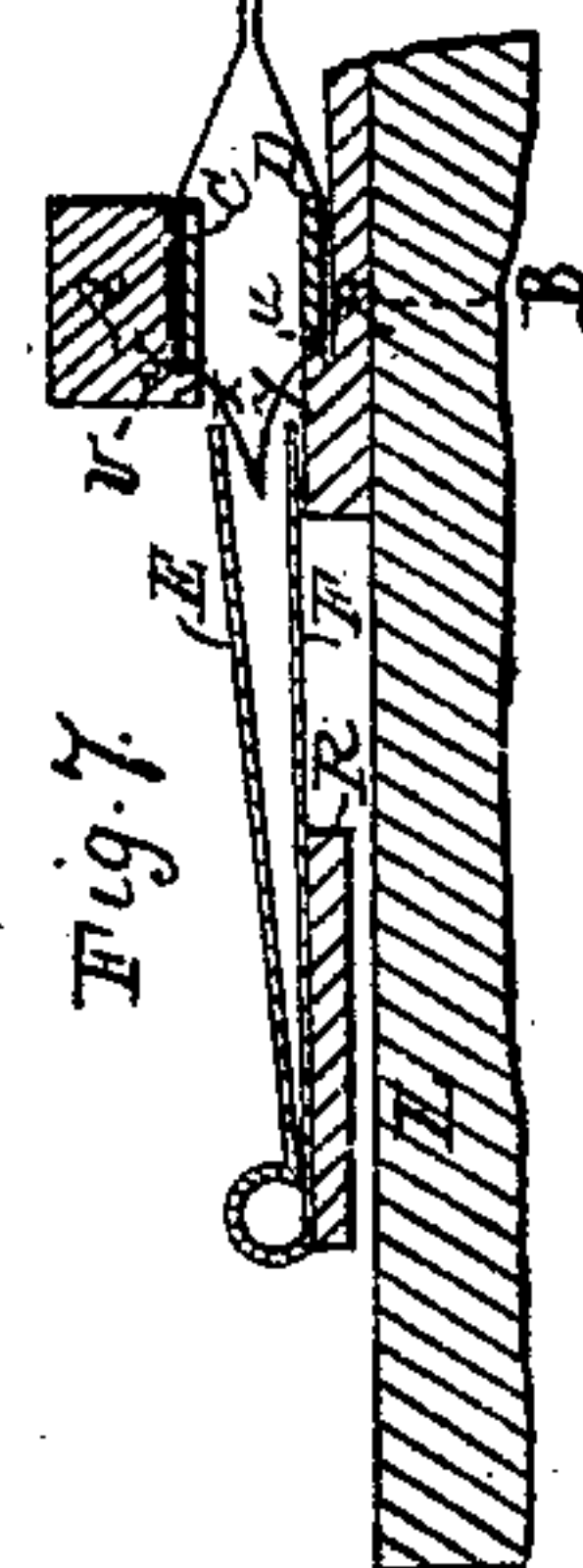
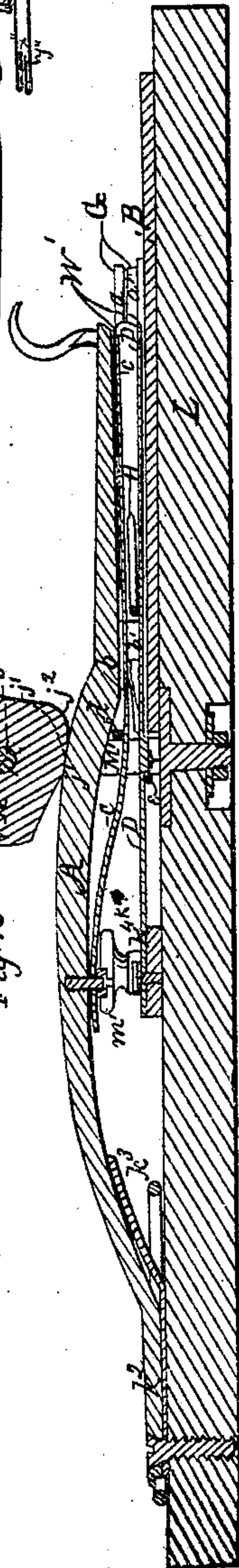
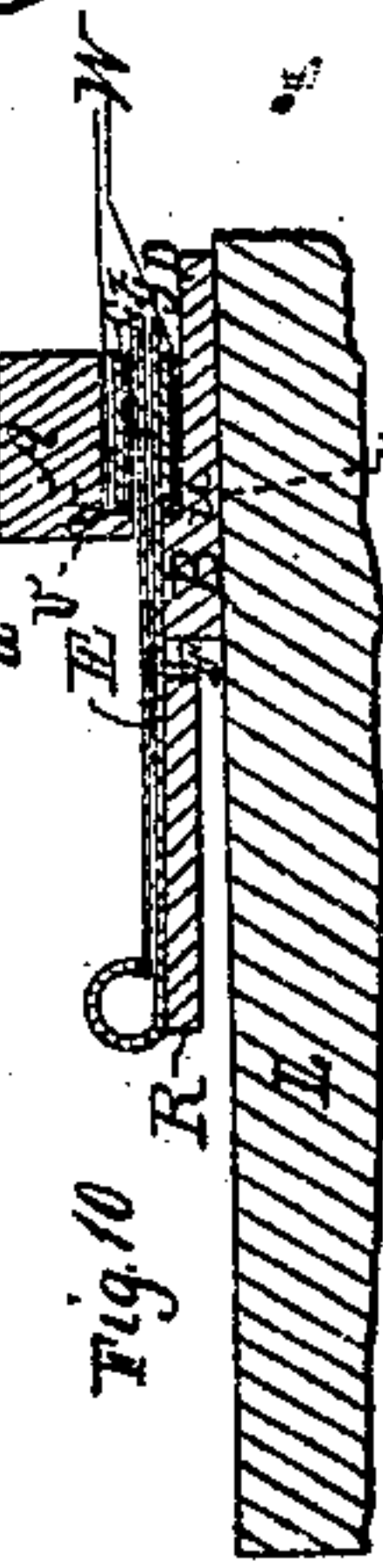
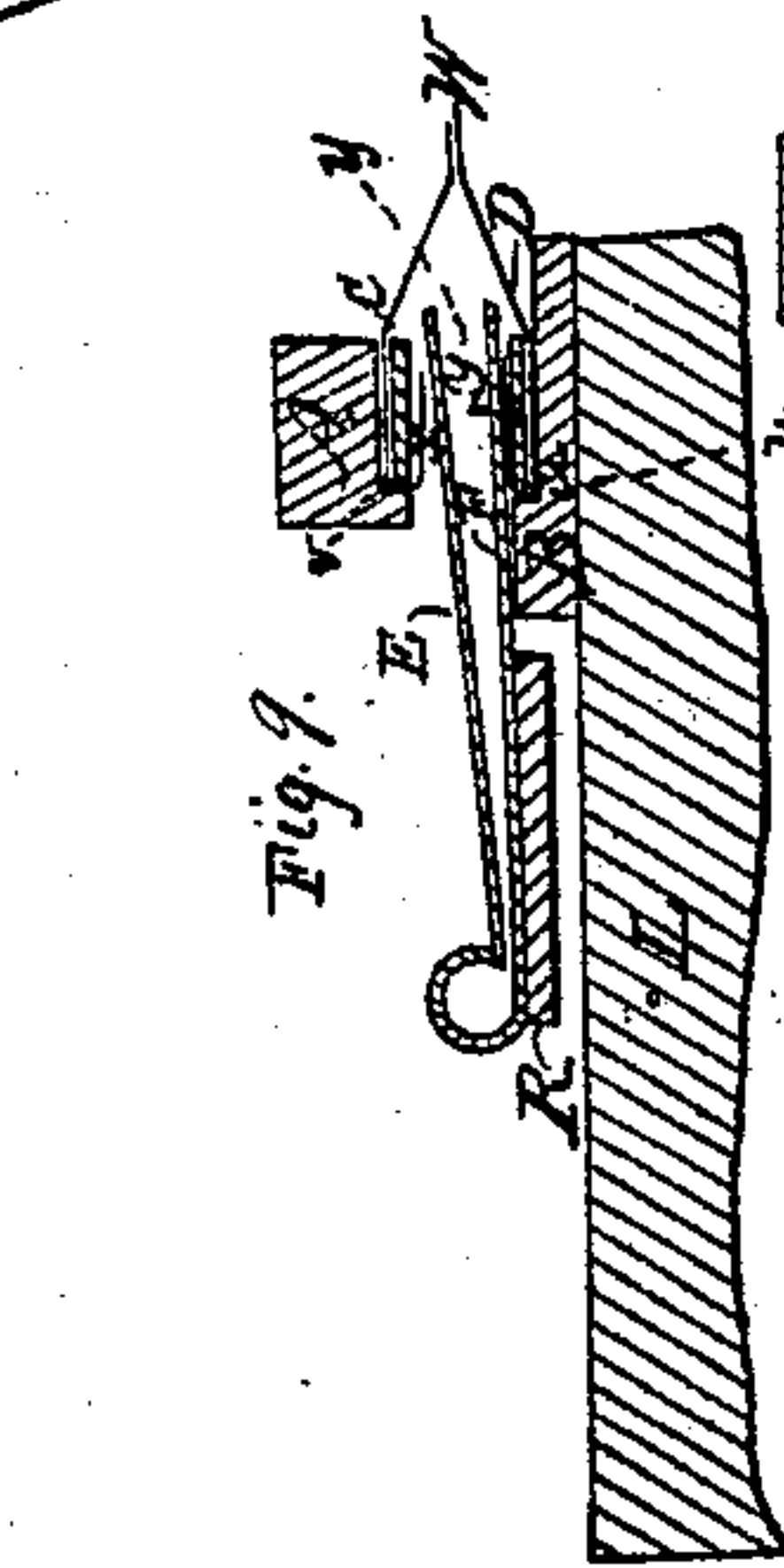
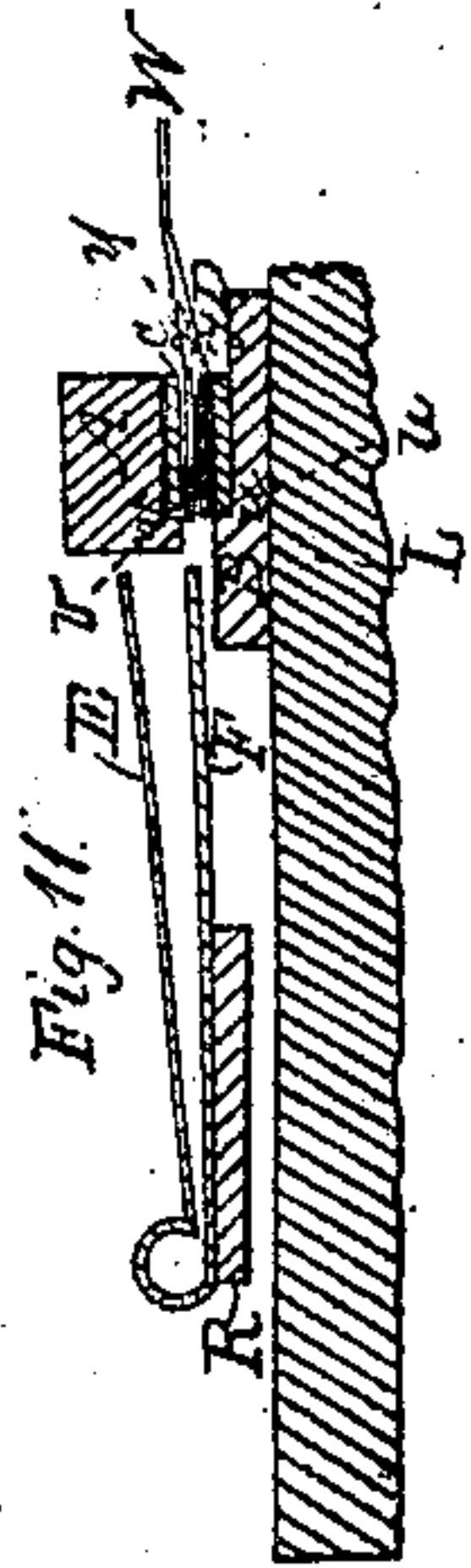
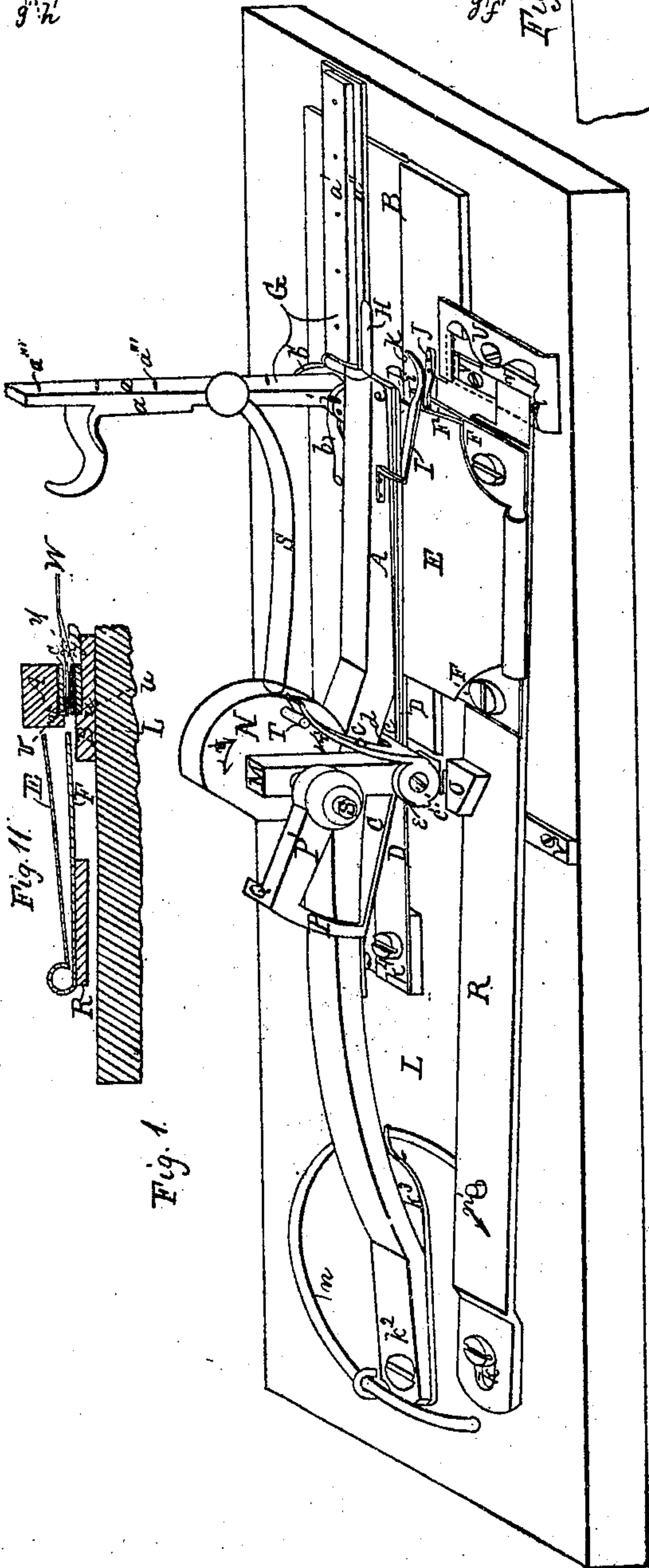
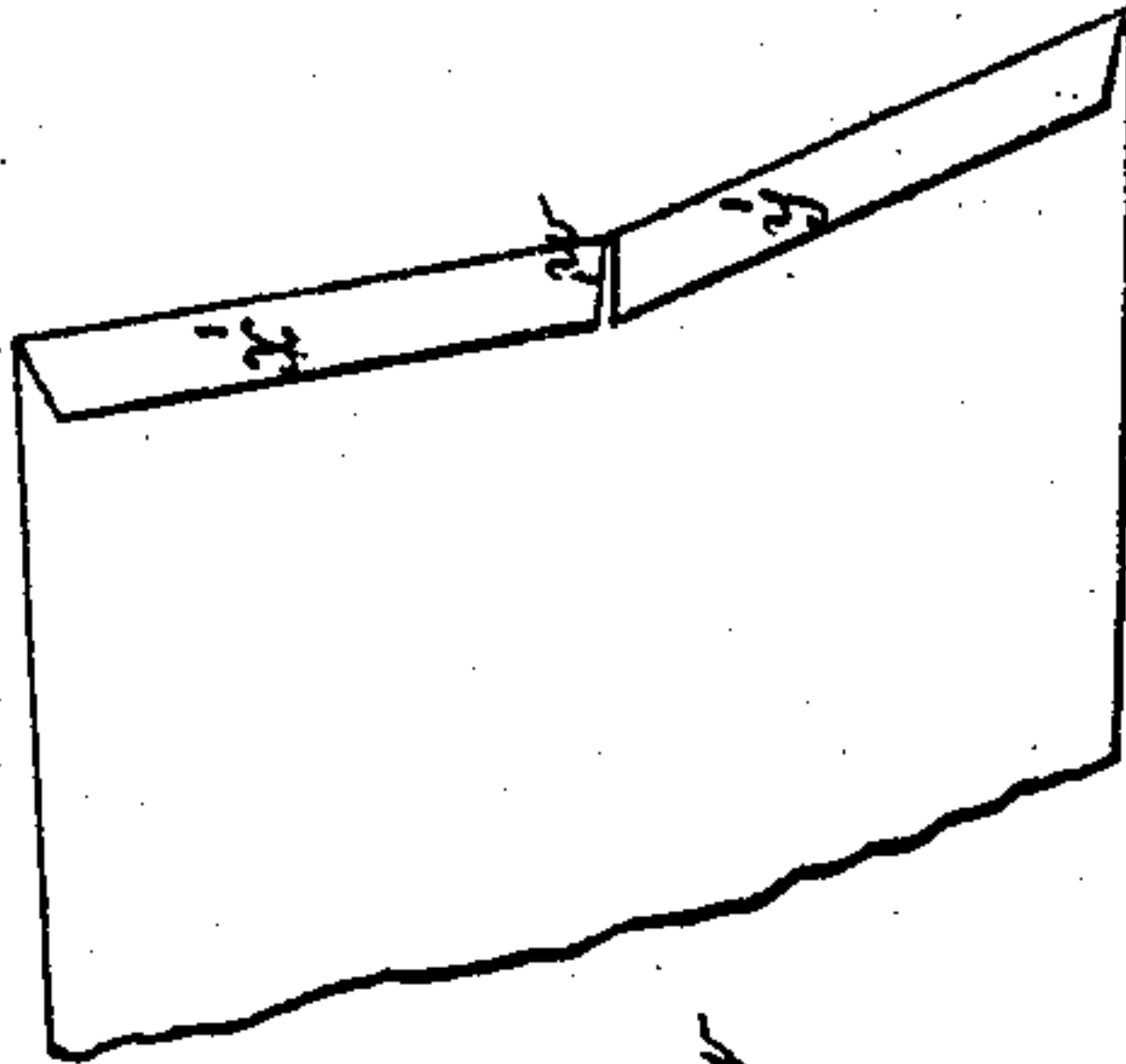
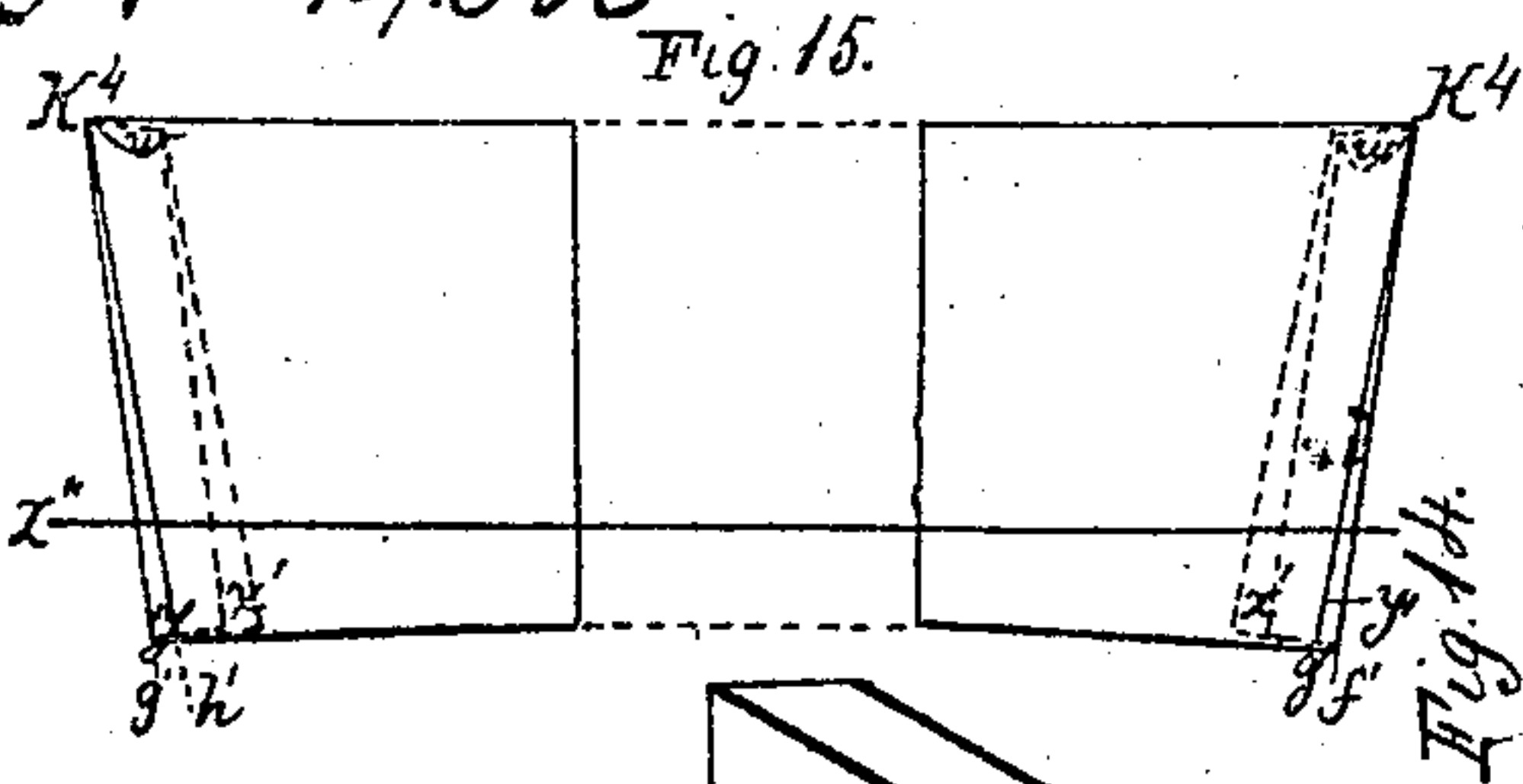
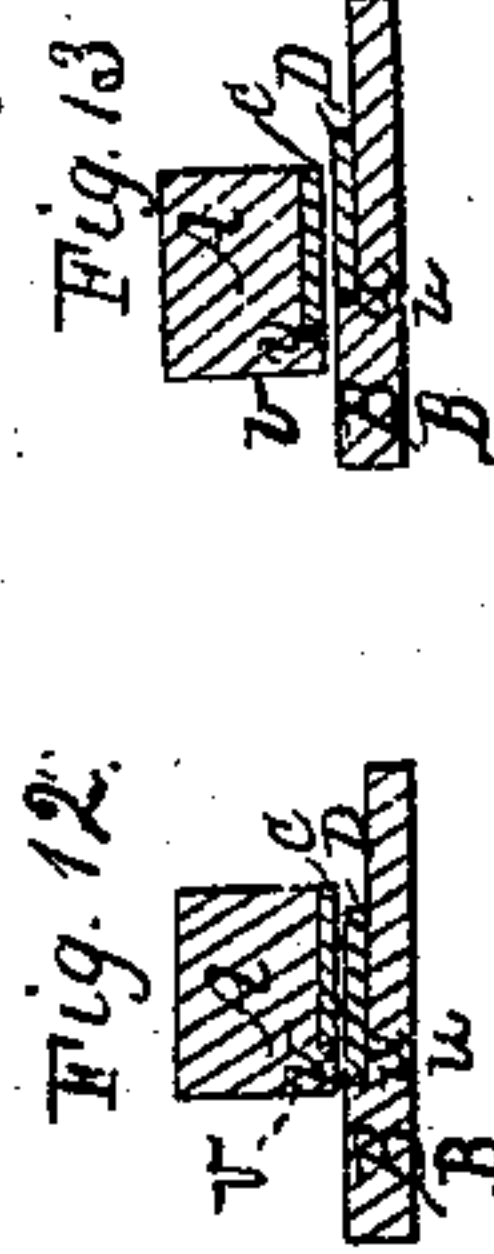


Fig. 2.



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Sheet 2 of 25 Sheets

Collar Mach.

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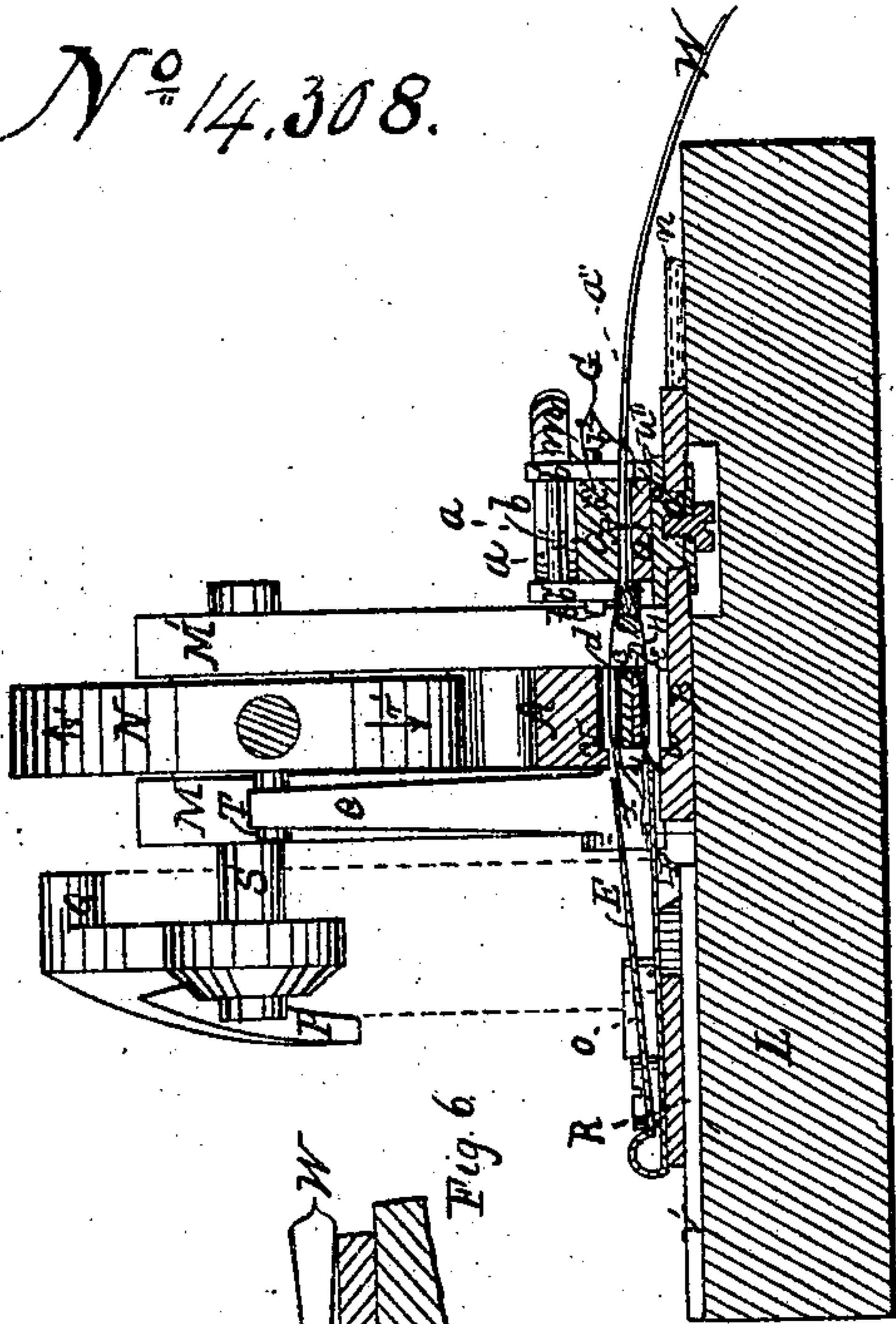


Fig. 5.

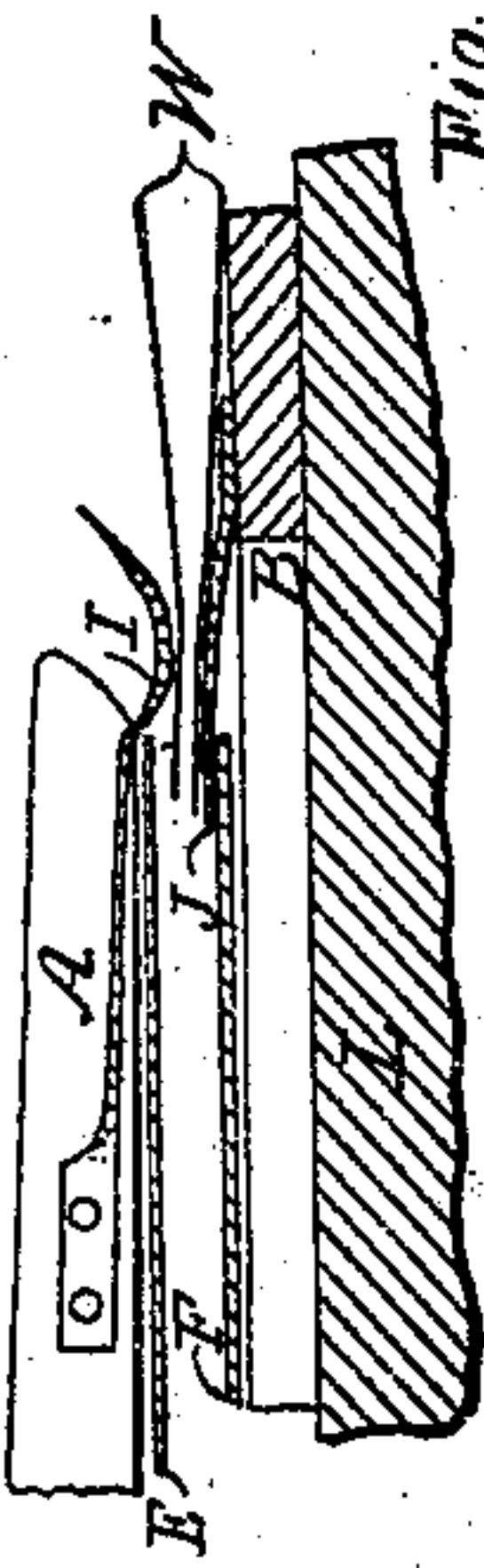


Fig. 6.

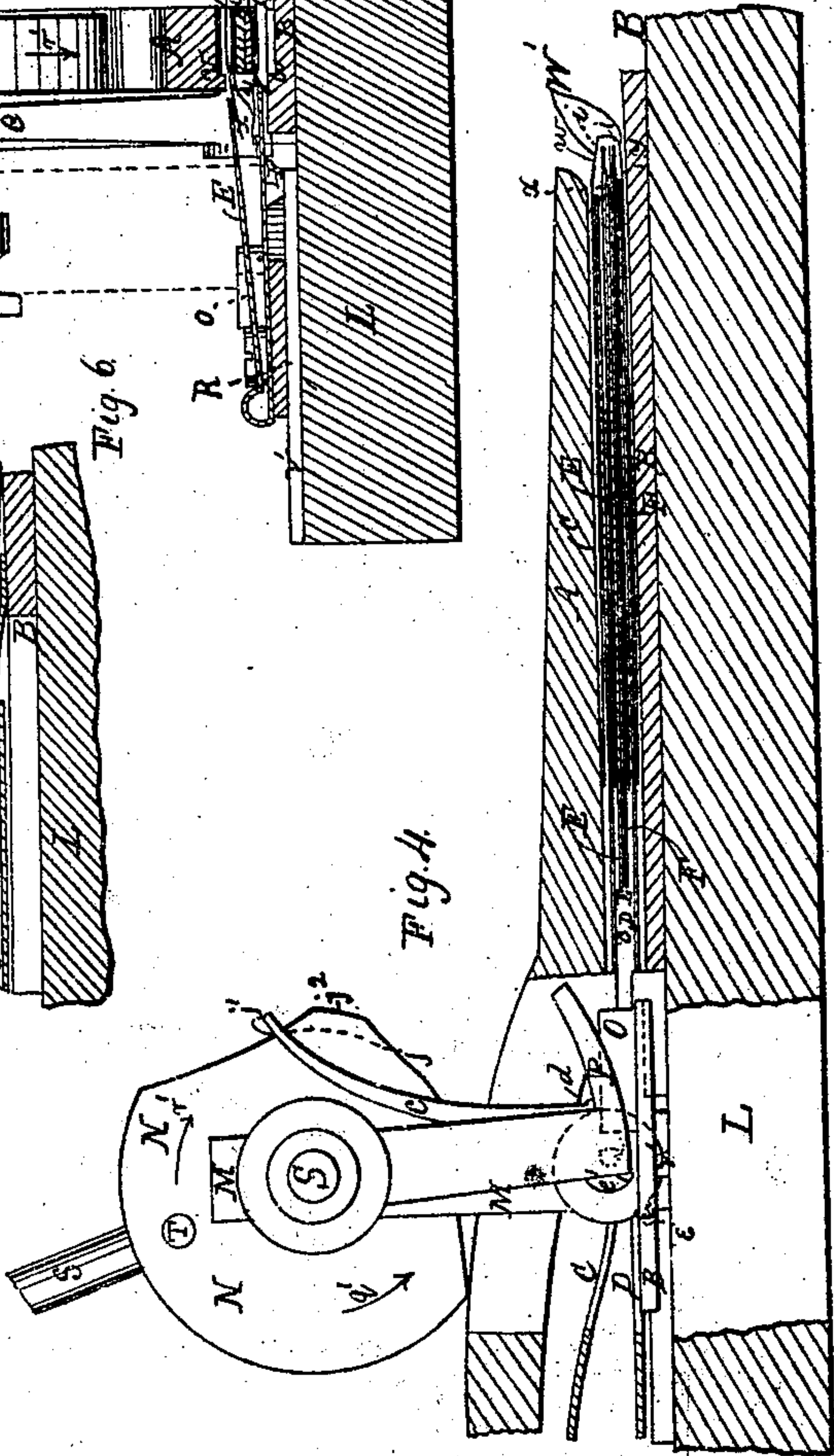
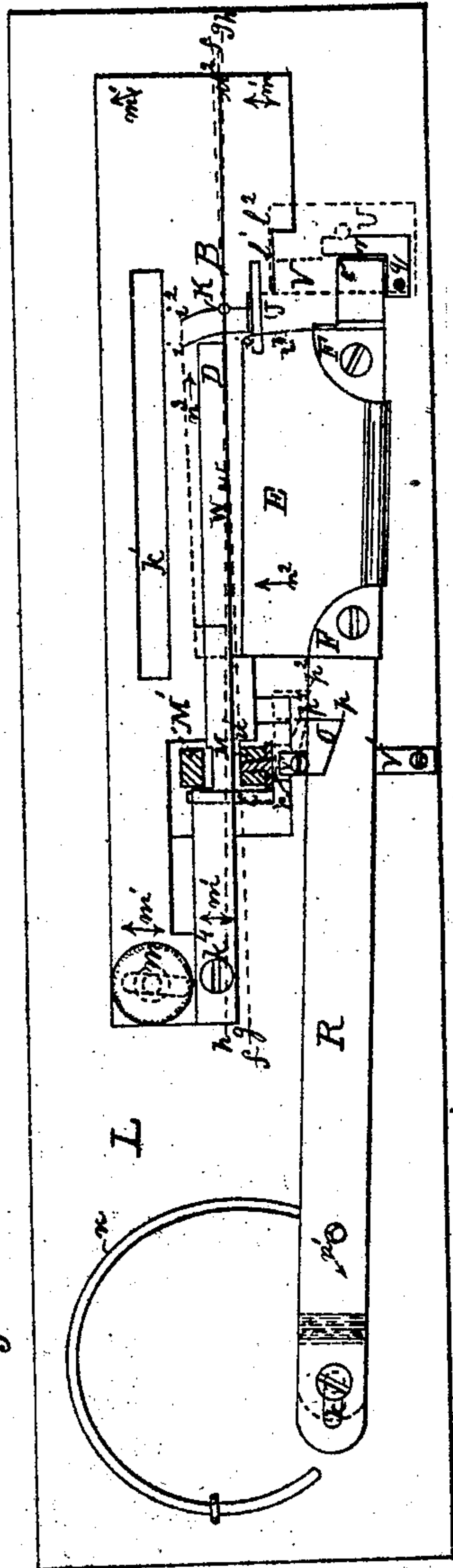


Fig. 4.

Fig. 3.



UNITED STATES PATENT OFFICE.

OTHNIEL W. EDSON, OF TROY, NEW YORK.

IMPROVEMENT IN MACHINERY FOR MAKING SHIRT-COLLARS.

Specification forming part of Letters Patent No. 14,308, dated February 26, 1856.

To all whom it may concern:

Be it known that I, OTHNIEL W. EDSON, of Troy, in the county of Rensselaer and State of New York, have invented a new and useful Machine for Turning in the Raw Edges of Shirt-Collars, &c., Preparatory to Stitching; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is an isometrical drawing of said machine; Fig. 2, a longitudinal section; Fig. 3, a plan of the lower parts of the machine; Figs. 4 and 5, enlarged longitudinal partial sections; Fig. 6, an enlarged transverse section through $z z'$ in Fig. 2 and elevation of parts back of said bisecting line; Figs. 7, 8, 9, 10, 11, 12, and 13, enlarged partial cross-sections; Fig. 14, an isometrical drawing of one end of a shirt-collar opened to a right angle after the edges have been turned or folded in by my machine; Fig. 15, a plan of a shirt-collar with its edges turned in ready for stitching, and Fig. 16 a section of Fig. 15 through $z'' z'''$.

The same letters refer to like parts in all the figures.

In the manufacture of shirt-collars and like articles, made of two or more thicknesses of linen or other cloth, it is the common practice to place the two surfaces which are to be the outside of the finished article "face to face" and then "run" the raw edges together, after which the article is "turned" to bring the face sides out preparatory to stitching. Sometimes the two thicknesses of cloth have been placed together "right sides out" and the raw edges then turned in by hand to avoid the usual running and turning; but this is a slow and difficult operation and not much practiced; but these raw edges are turned in by my machine in such an easy, rapid, and exact manner that shirt-collars can be made, by using it, both better and with less labor than heretofore.

The construction of my machine is as follows:

B is a lower jaw or plate fixed to L, and has a longitudinal ledge from u' to K or to u^2 to form a folding corner u .

A is the upper jaw having a longitudinal corner v similar to u . A is arranged with its corner v directly over u , and is made thin and elastic at one end, and is there fastened to the base L, so as to constantly spring upward.

D is a long, thin, flat, elastic tongue fastened to B at k^4 , which tongue springs into and fills u when not held up.

C is another tongue, similar to D, and fastened to A. C springs into and fills v when not pressed down. The axis S turns in the posts M M'. The cam N and the arm P' are each fastened to S. A lever having three arms c, d , and e is hung at c' to M in such manner that when N is turned to the position seen in Figs. 1 and 6 the pin T shall move c , and thereby depress d and elevate e , and thus push C and D out of their respective jaws to meet each other midway between A and B, as seen in Figs. 1 and 6.

E and F are two thin elastic folding blades which spring apart, except when pressed together, yet are always so near each other that they can when open be freely passed between the tongues C D when the two latter are farthest from each other. E and F are fastened to the bar R, which is secured to L in such manner that E and F can be vibrated horizontally from i to i' between C and D. The spring n presses R back to the stop q , except when E and F are carried between C and D by the action of the cam P on the cam-block O, fastened to R.

W is the double cloth, and x and y are its raw edges, to be turned in to prepare it for stitching.

The jaws A B, tongues C D, and blades E F are so combined and operated that if when they are all in the respective position seen in Figs. 1 and 6 one thickness of W is inserted between A and C and the other between B and D, and the edges of both layers between E and F, all as seen in Fig. 6, and the cam N, then turned in the direction of the arrow q' , C and D will first spring back into their respective jaws and crimp and clamp the cloth in the corners $v u$, as in Fig. 7. To insure the crimping of thick cloth in v and u , the jaws are next pressed together, as seen in Fig. 8, by the action of the projection j^2 , and then allowed to separate, as in Fig. 7, when N reaches the position seen in Fig. 2. C and D may be made so stiff as to avoid the use of the projection j^2 to press the cloth into v and u . As N is turned farther in the direction of q' , the cam P carries E and F between C and D, and thus folds the edges $x y$ inward, as seen in Fig. 9, and by turning N to its position in Fig. 4 A is pressed firmly down, as seen in Fig. 10, to insure the crimping of the cloth

between C and E and between D and F. N is then turned back to its position in Fig. 2, which allows E and F to spring back to their position in Fig. 6, when the folded cloth is drawn from between the jaws and tongues ready for stitching in some cases, although in general it yet needs to be "ironed down," which "ironing" I generally do by sliding both the folded edges between C and D when C and D are in the position seen in Fig. 2, and then turning N back to its position in Figs. 1 and 6, during which movement of N the folded edges are compressed, as seen in Fig. 11, by the action of the projection j^2 . If the edges of C and D, next the corners v and u , are made very thin the operation of ironing the folded edges of cloth will be often avoided.

It is not always necessary to have ledges or folding corners v and u in the faces of the jaws A and B, for these faces can be made plane and yet often operate successfully, especially if the blades E and F are prevented from springing so far apart when beginning to turn in the cloth as to strike the tongues.

Having thus described the arrangement and operation of the jaws, tongues, and blades, whereby two edges of double cloth are simultaneously turned in ready for stitching, I will now proceed to describe the construction and operation of certain devices which I have combined with the said combined jaws, tongues, and blades, whereby the above-described operation of turning in the edges of double cloth is much facilitated.

Instead of allowing the operative to direct and hold the cloth by hand between the respective jaws and tongues in the above-described process, a sliding clamp G is used to properly guide and hold the cloth in said process. This clamp slides parallel to the jaws A B and consists of a bed-piece a'' with a felt or elastic bed a' , a movable piece a hung to a'' , and a spring b , bearing on a , to hold the cloth firmly between a and a' . H is a separator fastened to a'' and forming part of G to keep the two layers of cloth apart, so that one thickness shall go between A and C and the other between B and D when the cloth is slid into the machine. In Fig. 1 this clamp is seen open and in place to receive the cloth; but in Figs. 2 and 6 it is seen closed and holding the cloth in the machine. In sliding the cloth into the machine, while the tongues must be between the two edges of cloth, both edges of cloth must pass between the blades E F. To insure such passage I arrange a spring-guide I (seen fastened to A in Figs. 1 and 5) to direct the upper edge x under E. I also arrange another spring-guide J (seen fastened to B in Figs. 1, 3, and 5) to direct the lower edge y above F; but I do not herein claim the above-described combination or arrangement of the sliding clamp G, having a separator H, nor the guides I and J with the combined jaws, tongues, and blades.

Shirt-collars are commonly made of a single piece of cloth doubled, as seen in Fig. 14, and

the corners K^4 are often made acute. Hence I provide a special additional arrangement, which I shall now describe, to form the corners perfectly. It consists in giving a forward longitudinal motion to the blades E and F, as from i' to i^2 in Fig. 3, when the jaws, tongues, and blades are in the respective positions seen in Fig. 10, thus causing the very thin edges $i i$ of the blades to force the loose cloth of the edges $x y$ into a fold w in the corner of the collar, as seen in Fig. 4. The front edges $i i$ of E and F should be shaped to correspond to the form of the corner to be made. In the drawings, the slot k allows R to move forward and a stop-notch at l^2 limits this movement, also, the spring n causes R to return as the cam Q ceases to act on O. In sliding the cloth into the machine when a corner is to be formed the uncut edge W' is left a little outside of the front ends of the jaws, as seen in Figs. 2 and 4.

To make a smooth edge on shirt-collars it is desirable to make the folded edge of the "right side" of the collar project a little beyond the folded edge of the "wrong side," as seen in Figs. 15 and 16. To do this one of the jaws and its tongue is adjustable horizontally about the point where the corner K^4 of the collar is formed. The lower jaw B is made adjustable around K, as a center, so that the folding corner u , with its spring D, can be set to the right of v , as in Fig. 12, to turn in the edges $x' y'$ on one end of a quantity of collars and then changed to the left of v , as in Fig. 13, to turn in the edges $x'' y''$ of the other end of the same, or u may be so set and clamped by m and U in regard to v as to turn in the edges x and y equally, as in Figs. 6, 7, 8, 9, 10, and 11. If the edges $x y$ to be folded inward are curved instead of straight, the jaws and tongues must be made to curve accordingly and the clamp G, if used, to slide in a curved course or otherwise operated so as not to injure the folds made by the jaws, tongues, and blades.

I will here state that I do not limit my claim to the particular modes herein described of giving the desired or necessary movements to the jaws, tongues, and blades, as other devices besides the cams and levers shown in the drawings can be effectually employed in their stead for these purposes.

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

1. The jaws A B, tongues C D, and blades E F, when the same are combined and operated, substantially as herein described, to simultaneously fold inward two contiguous edges of double cloth.

2. Giving a forward longitudinal motion to the blades E F immediately after the edges of the cloth have been turned inward thereby, as herein described, to complete the formation of the corners of articles folded.

OTHNIEL W. EDSON.

Witnesses:

JOHN MORAN,
A. F. PARK.