

No. 644,543.

Patented Feb. 27, 1900.

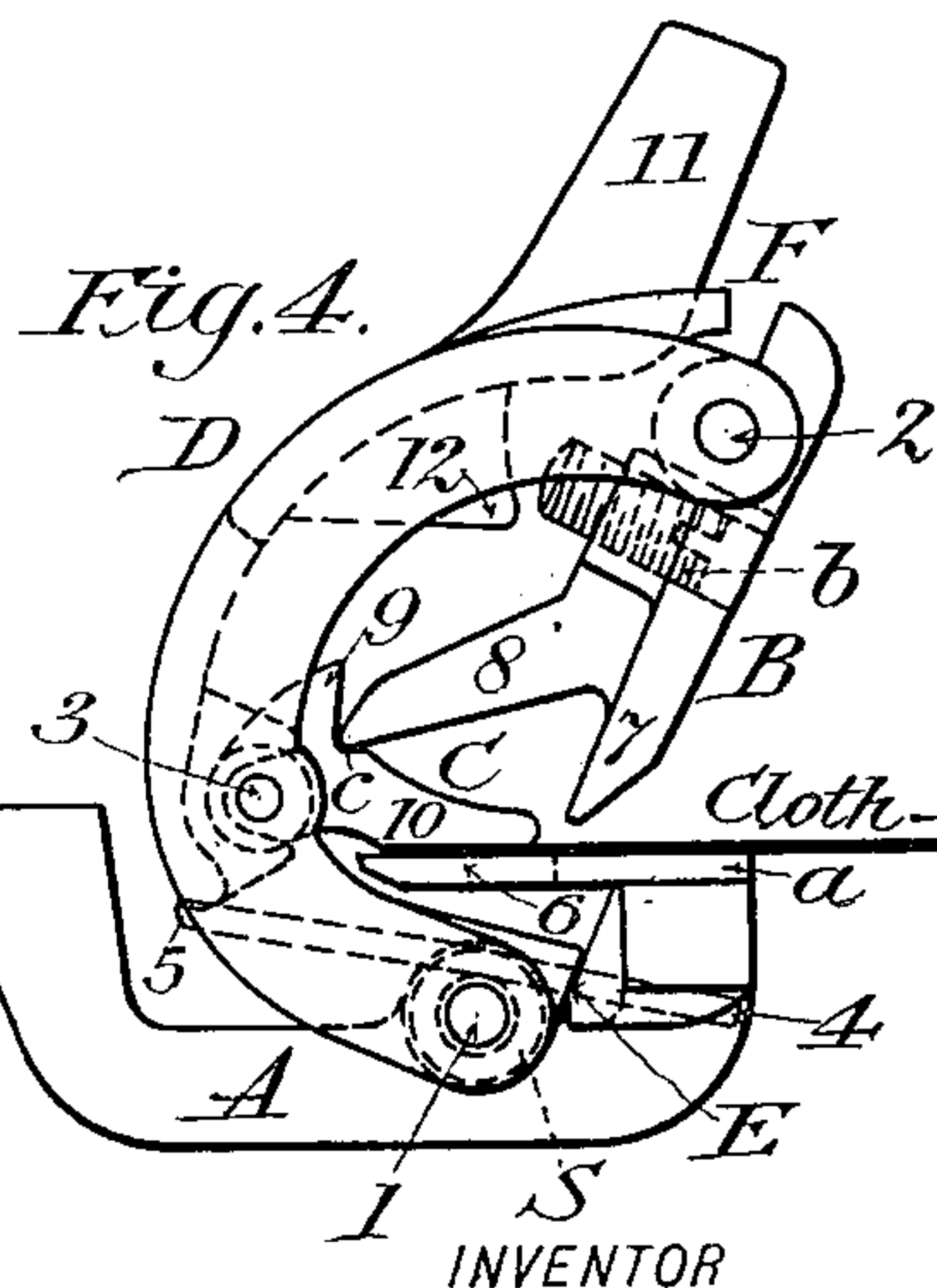
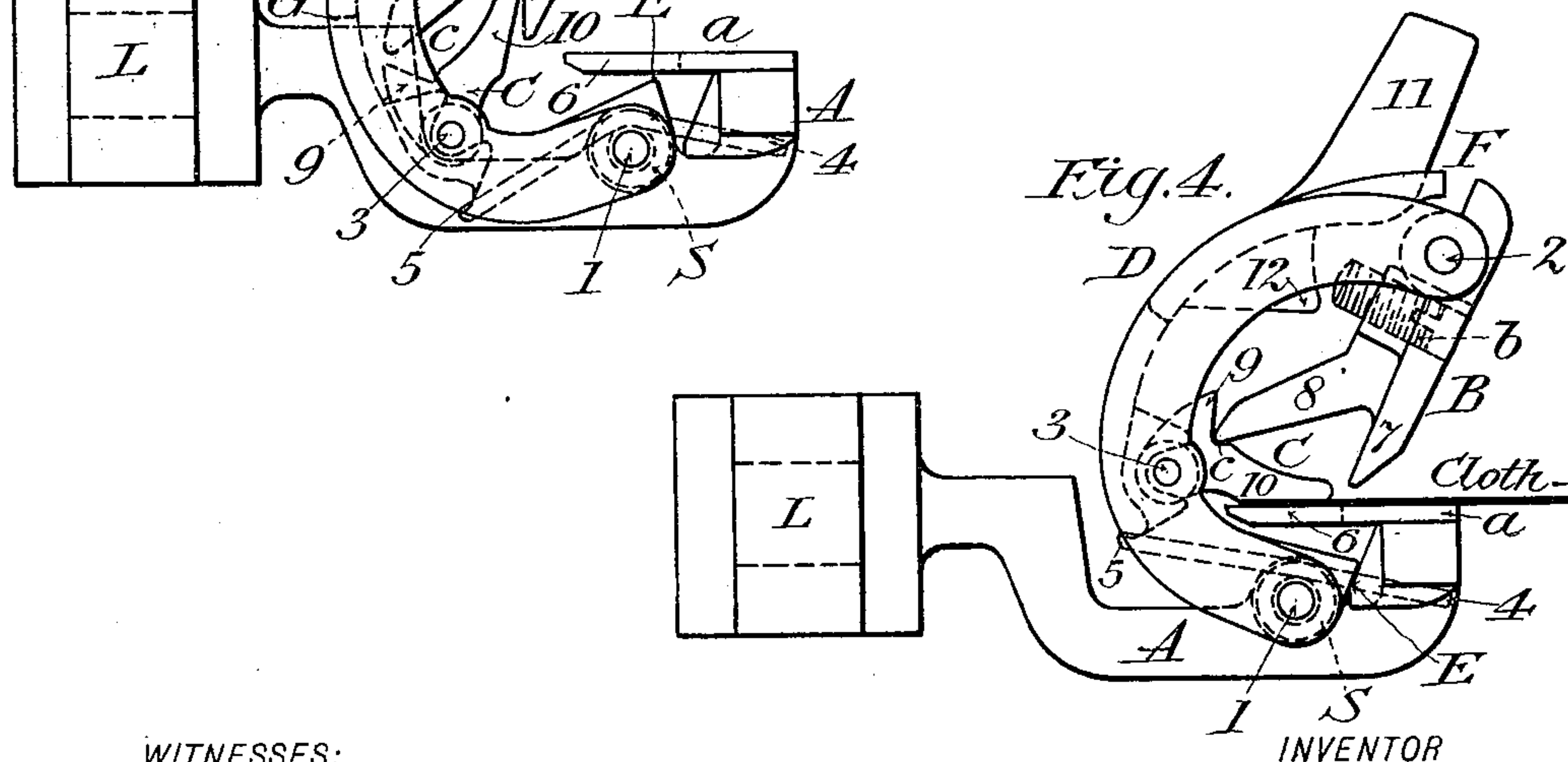
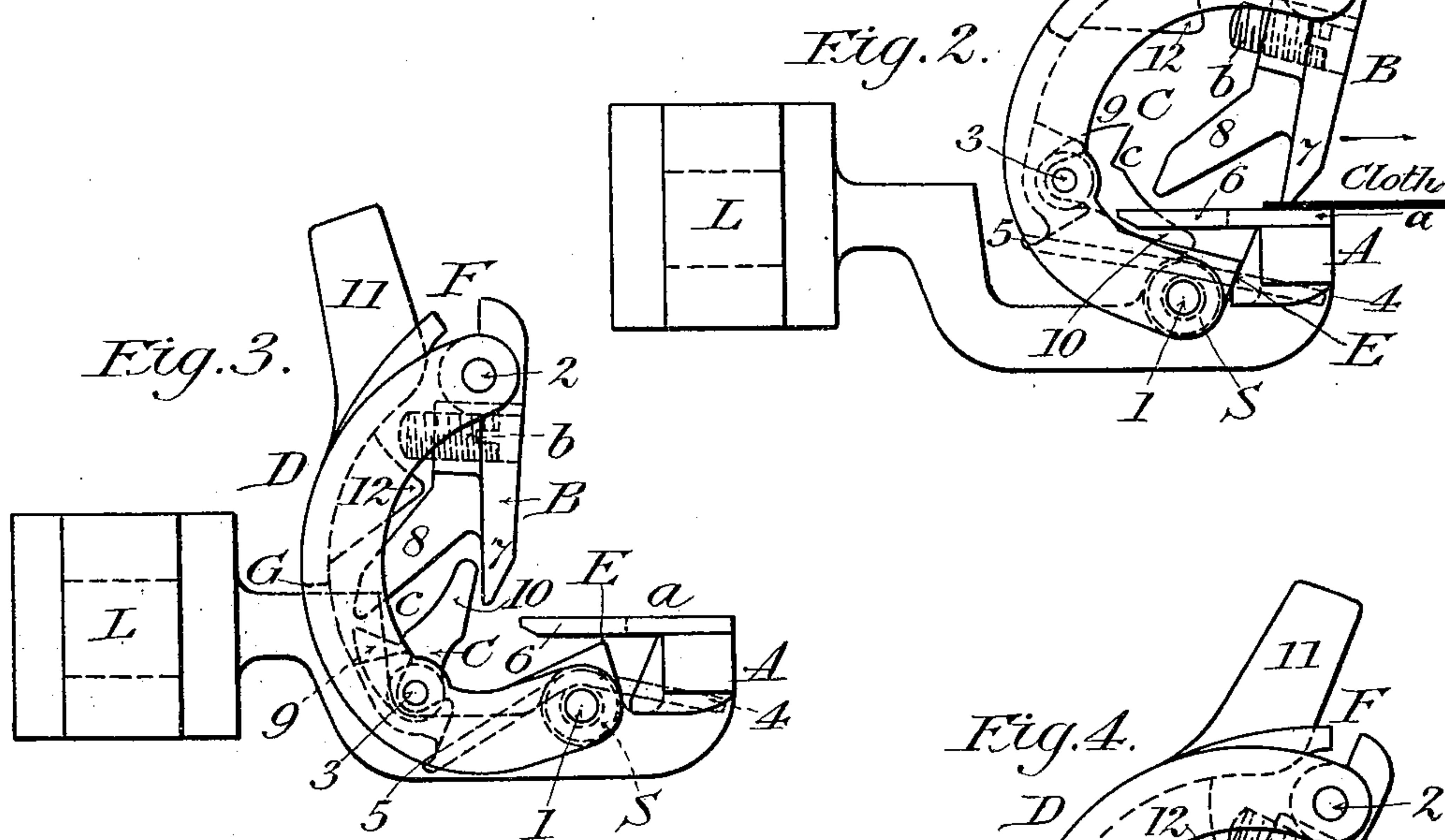
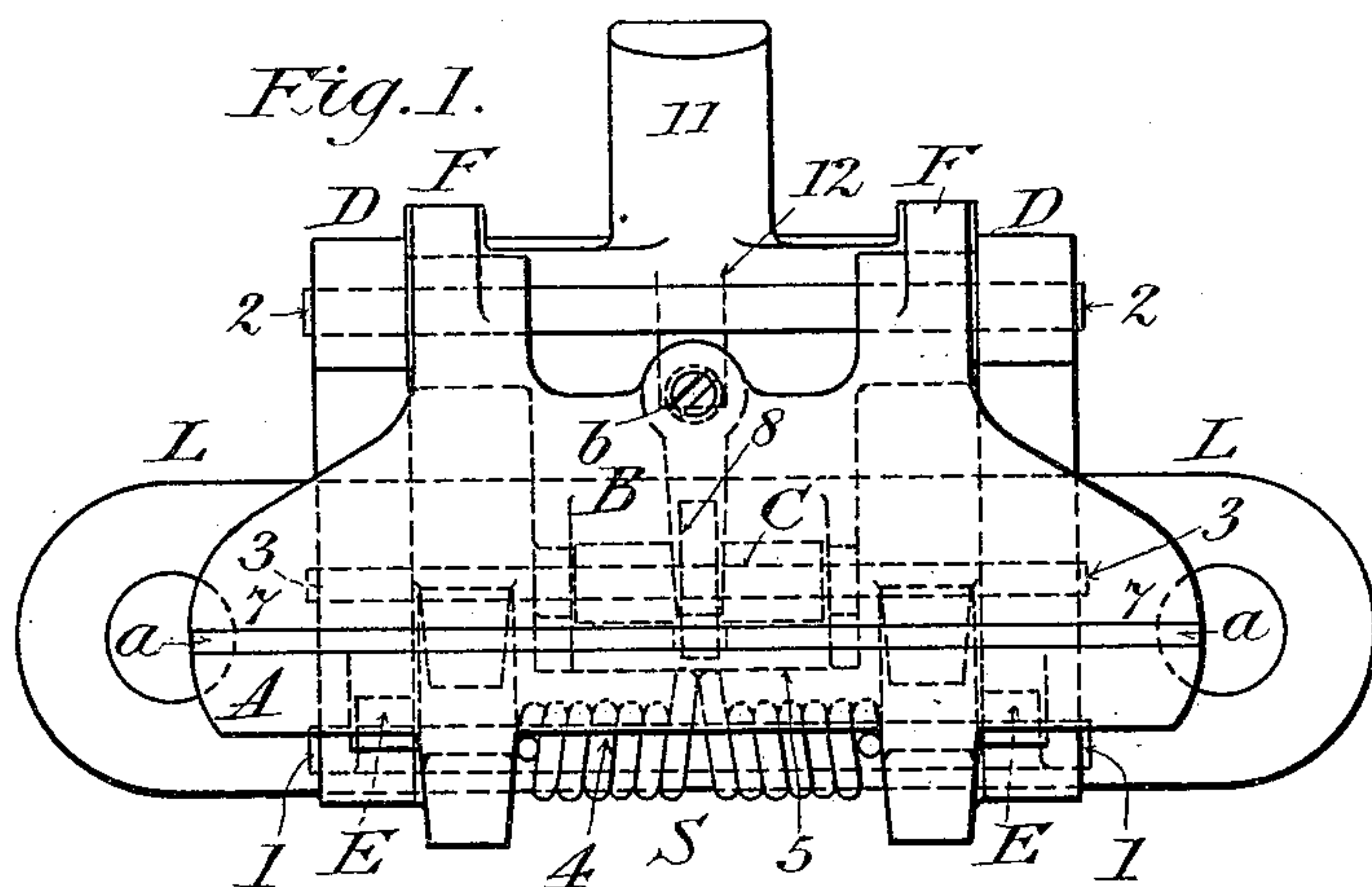
R. P. WINSOR.

CLOTH CLAMP FOR TEXTILE MACHINERY.

(Application filed June 3, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

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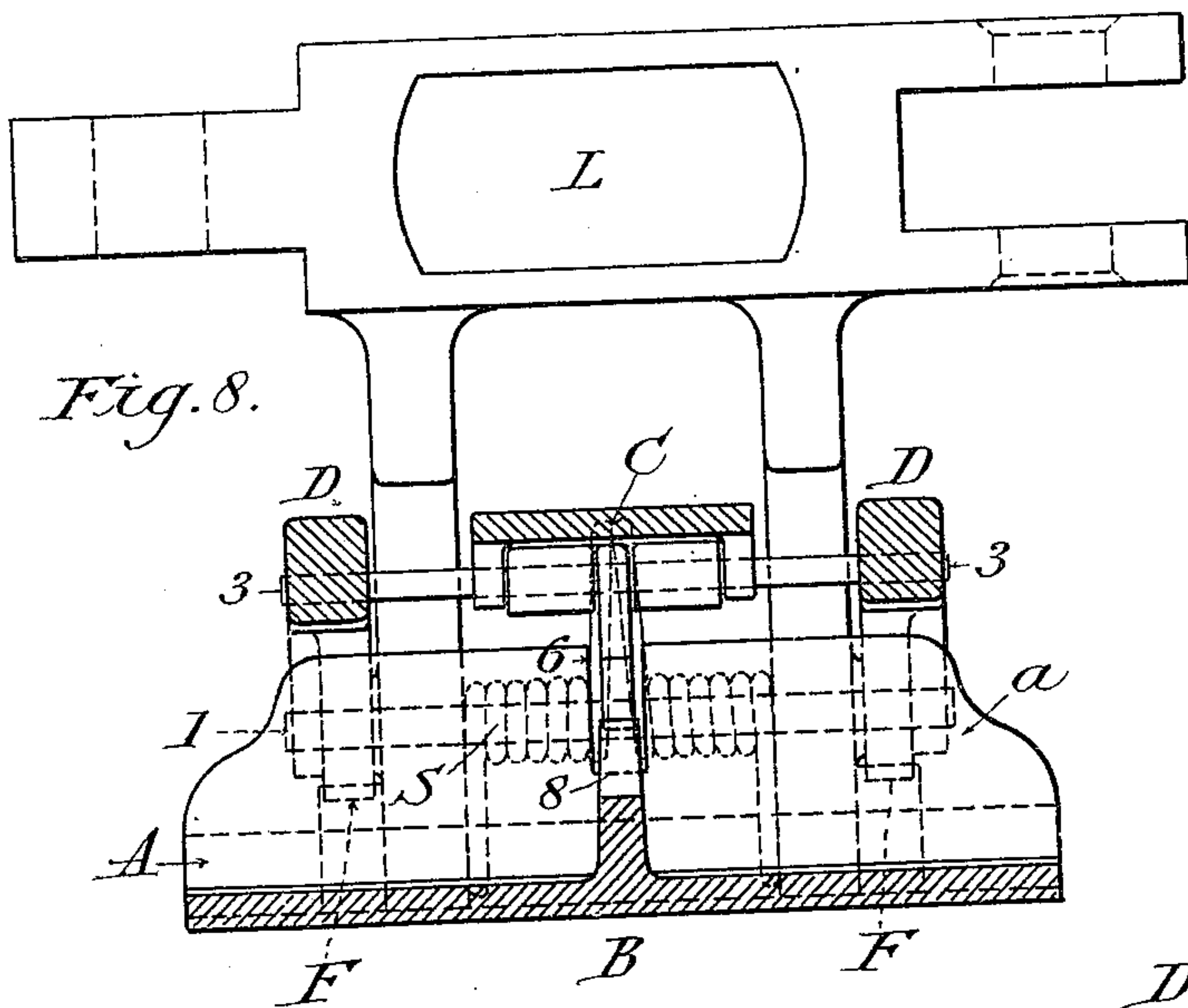


Fig. 8.

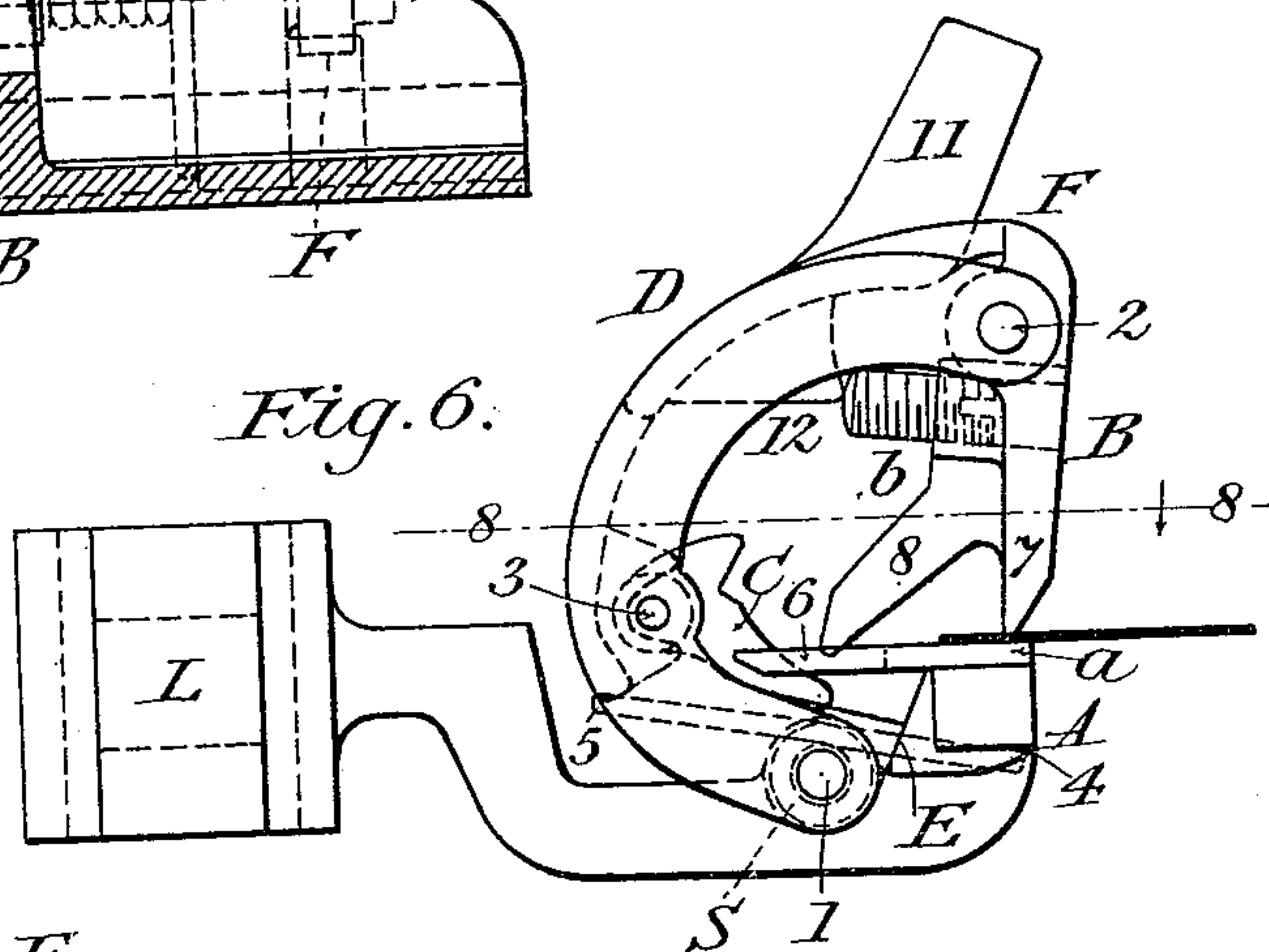


Fig. 6.

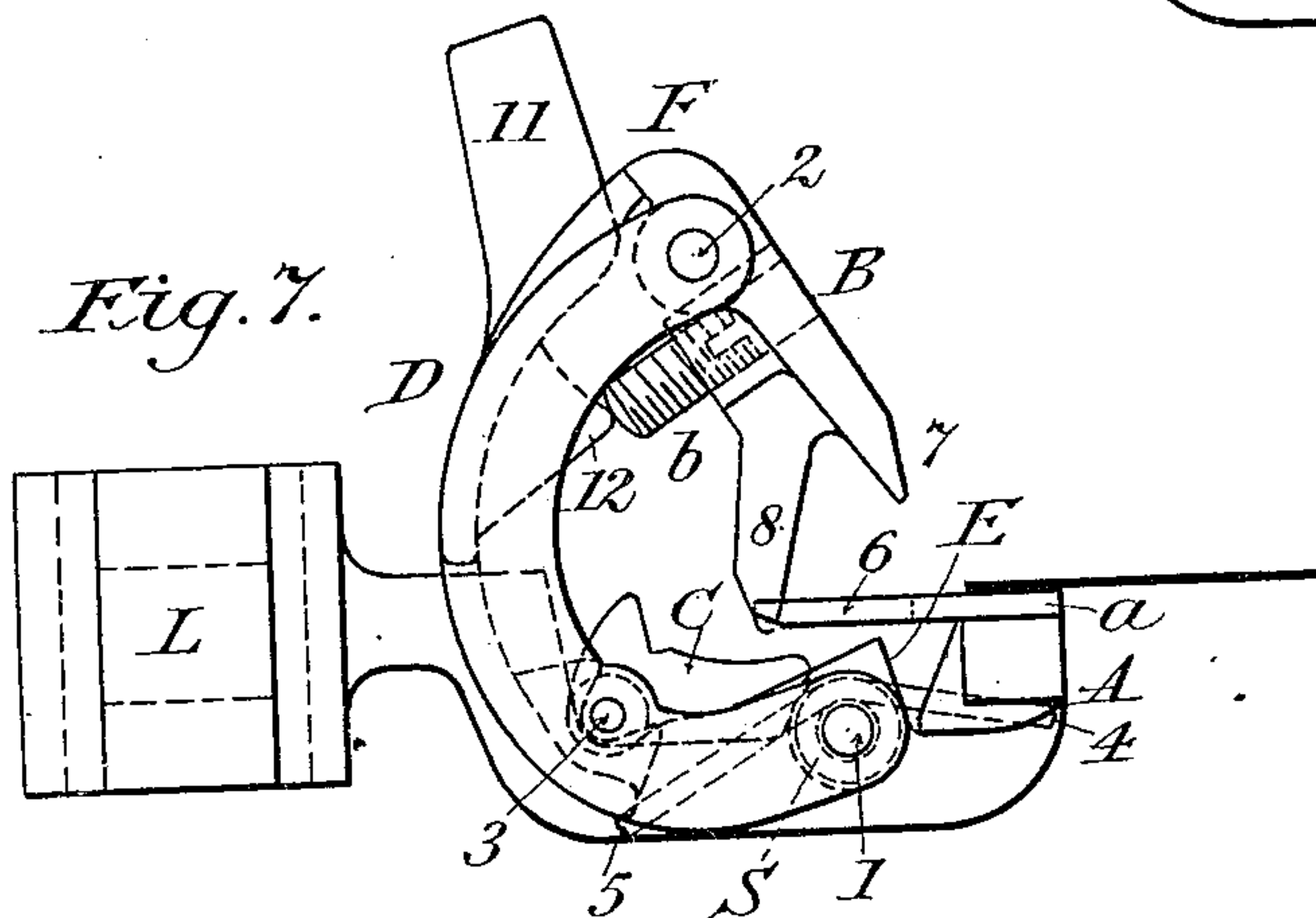


Fig. 7.

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CLOTH-CLAMP FOR TEXTILE MACHINERY.

SPECIFICATION forming part of Letters Patent No. 644,543, dated February 27, 1900.

Application filed June 3, 1899. Serial No. 719,234. (No model.)

To all whom it may concern:

Be it known that I, ROBERT P. WINSOR, a citizen of the United States of America, and a resident of Auburn, in the State of Rhode Island, have invented a new and useful Improvement in Cloth-Clamps for Textile Machinery, of which the following is a specification.

In a previous specification forming part of United States Letters Patent No. 604,103, dated May 17, 1898, I set forth a cloth-clamp for textile machinery having an upwardly-pressing spring, a laterally-swinging lever-arm against which said spring presses and which converts such pressure into downward stress, a gripping-pawl pivoted to the upper end of said arm and provided with a suitable controller, a cloth-support beneath said pawl, and stops limiting the travel of said pawl with the cloth in the direction of its stretch and arresting said arm in its normal position.

The present invention consists in certain novel combinations of parts hereinafter set forth and claimed, whereby an automatic controller of peculiar and superior construction is accommodated within said improved clamp or in any cloth-clamp having or adapted to have a similar gripping-pawl.

The objects of this invention are to provide said patented clamp with an automatic controller adapted to work effectively within the limited space available therefor, to give the controller sufficient leverage to adapt it to hold back a quick-acting gripping-pawl without pressing unduly heavy on the cloth above the slot and without notching the lower edge of the pawl, to insure all necessary movements of the controller, so that they cannot be prevented by clogging or gumming, to provide for "disconnecting" the controller, so to speak, and converting the automatic clamp into a spring-clamp at will, as when very thin cloth is to be held, and to render the improved clamp simple and free from liability to get out of order.

Owing to the intense steam heat in tentering-machines their cloth-clamps are very liable to be rendered inoperative by the gumming of accumulated dust or dirt and oil, especially if the joints be tight or reliance is

had upon the gravity of small and light parts, and one clamp failing to work properly will spoil a whole piece of cloth, as the part within that clamp will not be stretched as wide as the remainder, and the whole will consequently be more or less puckered. The provisions against such obstruction of the improved controller are consequently of great practical importance. It is also of great importance that the controller should have a flat surface to rest on the cloth. Otherwise it lets the pawl down gradually as the cloth draws from under the controller, and clamping the cloth uniformly near the selvage is prevented.

Two sheets of drawings accompany this specification as part thereof.

Figure 1 of the drawings is a front elevation of the improved clamp with its parts in their normal working positions. Fig. 2 is an end elevation of the clamp as shown in Fig. 1. Fig. 3 is an end elevation of the clamp opened to receive the cloth. Fig. 4 is an end elevation of the clamp, illustrating the operation of the controller; and Fig. 5 is an elevation of the controller detached. Figs. 6 and 7 are end elevations of the improved clamp as converted for holding thin cloth; and Fig. 8 is a horizontal section on the line 8 8 of Fig. 6, showing the principal parts in plan view.

Like letters and numbers refer to like parts in all the figures.

For convenience of reference the left-hand side of the clamp as viewed in Figs. 2, 3, 4, 6, and 7 is herein considered its rear side or back and the opposite or open side its front.

The improved clamp comprises an under jaw A, projecting rigidly from a tenter-chain link L (or its equivalent) and provided at top with the customary slotted cloth-support *a*, a gripping-pawl B, swinging above said cloth-support and coacting with the cloth upon said support, an automatic controller C in the form of a shoe-shaped lever, Fig. 5, and a laterally-swinging "arm" D, pivoted to said under jaw at 1, and to which said pawl and controller are attached by pivots 2 and 3, respectively, at the back of the clamp, said pivot 3 at the heel end of the controller, all said pivots being horizontal and parallel to the front of the clamp. As in said patented

clamp, a torsional spring S surrounds said pivot 1 and reacts against an abutment 4 in the under jaw A and a bearing-surface 5 in the arm D pressing upward against the latter, and said arm D converts such pressure into downward stress at the gripping-pawl B, which is thus normally pressed against the cloth-support *a* of the under jaw A, as in Figs. 1 and 2. A pair of stops E, each composed of a tangential projection and a matching abutment on the arm D and jaw A, respectively, arrest the arm D in its normal position, Figs. 1, 2, 4, and 6. A pair of stops F, each composed of projections on the arm D and pawl B, respectively, limit the travel of said pawl with the cloth in the direction of its stretch, (represented by the arrow in Fig. 2,) and a pair of stops G, Fig. 3, composed of the rear shanks of the under jaw A and matching notches in the back of the arm D, limit the backward or lateral movement of said arm, by which the cloth-plate *a* is exposed to freely receive the cloth.

At work, as in Fig. 2 or Fig. 6, the improved clamp operates in the manner set forth in said previous specification by the coaction of the downwardly-pressed gripping-pawl B with the cloth upon the cloth-support *a* of the under jaw A, and said under jaw differs from that of said patented clamp only in having the slot 6 of the cloth-plate *a* adapted to accommodate the improved controller C and in mechanical details.

The gripping-pawl B is constructed with a lower edge 7 unbroken by notches, as seen in Fig. 1, to coact with the cloth on the cloth-plate, and a rigid rearwardly-extending projection 8 to coact with the controller C, and with a screw-bore provided with a converting-screw *b* for rendering the pivot-joint between the pawl B and arm D rigid by tightly closing the stops F, so as to prevent the contact of the pawl B with the controller C, and thus to leave the latter in its lowered position, as in Figs. 6 and 7, when the cloth is too thin to sustain the weight of a controller.

The controller C is constructed with a short upwardly-projecting portion, hereinafter termed the "top" projection, 9, a deep notch *c* immediately in front of said top projection 9 and of the pivot 3, and a long flat-soled toe end 10, substantially at right angles to the flat face of said top projection.

The arm D is constructed with a rigid lug 11 by which to swing it laterally into the position represented by Fig. 3 or Fig. 7, and with a forwardly-extending projection 12 to coact with the projection 8 as a stop for the pawl B in this retracted position and to coact with the screw *b* when the clamp is converted into a non-automatic spring-clamp by means of said screw. In passing from said normal position, Figs. 1 and 2, to said retracted position, Fig. 3, the controller C is ordinarily acted on first by the projection 8 of the pawl B, which coacts with the top projection 9 of the controller and then by the lower edge 7 of the

pawl which coacts with the extremity of the toe end 10 of the controller, as seen in Fig. 3. The retracted controller is stopped by the contact of its top projection 9 with the back of the recess within the arm D, and it is so constructed that even in this retracted position the weight of the toe end 10 preponderates. Should there be any gumming at its pivot, however, it is forced into effective position by the coaction of the extremity of the pawl projection 8 with the notch *c* of the controller. The controller falls upon the cloth which covers the cloth-support *a* and is prevented by the cloth from dropping through the slot of the cloth-support, as is customary. When released by the escape of the selvage from beneath it, the controller drops into the position in which it is shown in Fig. 2, instantly freeing the pawl B, which then swings into its effective position, Fig. 2.

If desired, the toe end 10 of the controller C may be divided by open slots into parallel lines, the cloth-support *a* being provided correspondingly with a narrow slot for each line, and other like modifications will suggest themselves to those skilled in the art.

Having thus described said improvement, I claim as my invention and desire to patent under this specification—

1. The combination, in a cloth-clamp for textile machinery, of an under jaw provided with a cloth-support, an upper jaw comprising a gripping-pawl swinging above said cloth-support and having an unbroken lower edge to coact with the cloth upon said support and a rigid rearwardly-extending projection, and an automatic controller in the form of a shoe-shaped lever having its pivot at its rear end and an open notch immediately in front of said pivot between a top projection and a flat-soled toe end which are acted on respectively by said projection and said lower edge of the pawl, in succession, when the clamp is opened.

2. The combination, in a cloth-clamp for textile machinery, of an under jaw provided with a cloth-support, an upper jaw comprising a gripping-pawl swinging above said cloth-support and having an unbroken lower edge to coact with the cloth upon said support and a rigid rearwardly-extending projection, and an automatic controller in the form of a shoe-shaped lever having its pivot at its rear end, a short top projection at this end, an open notch at top immediately in front of said top projection to coact with said projection on the pawl when the latter drops, and a relatively-long toe end having a flat sole to coact with the cloth upon said support preliminary to dropping the gripping-pawl upon the cloth.

3. In an automatic cloth-clamp for textile machinery, a shoe-shaped controller pivoted at its rear end and having a flat-soled toe end to rest upon the cloth, a rigid top projection and an open notch immediately in front of said top projection, in combination with a cloth-clamping pawl having a rigid rear-

wardly-extending projection that coacts with said top projection of the controller when the pawl is retracted and bears upon the controller within said notch when the controller is dropped upon the cloth.

4. In an automatic cloth-clamp for textile machinery, a shoe-shaped controller having a flat-soled toe end to rest upon the cloth, a rigid top projection and an open notch immediately in front of said top projection, in combination with a cloth-clamping pawl having a rearwardly-extending projection to coact with said top projection and notch, and a spring-pressed arm to which said pawl and controller are pivoted substantially as hereinbefore specified.

5. The combination of a tenter-chain link provided with a rigid clamp-jaw having a cloth-support at top, a gripping-pawl constructed with a rigid rearwardly-extending projection, an automatic controller in the form of a shoe-shaped lever having an open

notch at top to coact with said projection, a laterally-swinging arm pivoted to said lower jaw and to which said gripping-pawl and controller are pivoted, and a spring tending to hold said arm in normal position, substantially as hereinbefore specified.

6. An improved cloth-clamp comprising an under jaw provided with a cloth-support, a gripping-pawl to coact with the cloth upon said support, an automatic controller that normally coacts with said gripping-pawl to control its grip on the cloth, a laterally-swinging arm pivoted to said under jaw and to which said pawl and said controller are pivoted, and means for rendering rigid the pivot-joint between said pawl and said arm when very thin cloth is to be held in the clamp, substantially as hereinbefore specified.

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Witnesses:

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