

(No Model.)

M. WEISS.

PULL-OFF DEVICE FOR SEWING MACHINES.

No. 559,644.

Patented May 5, 1896.

FIG. 1.

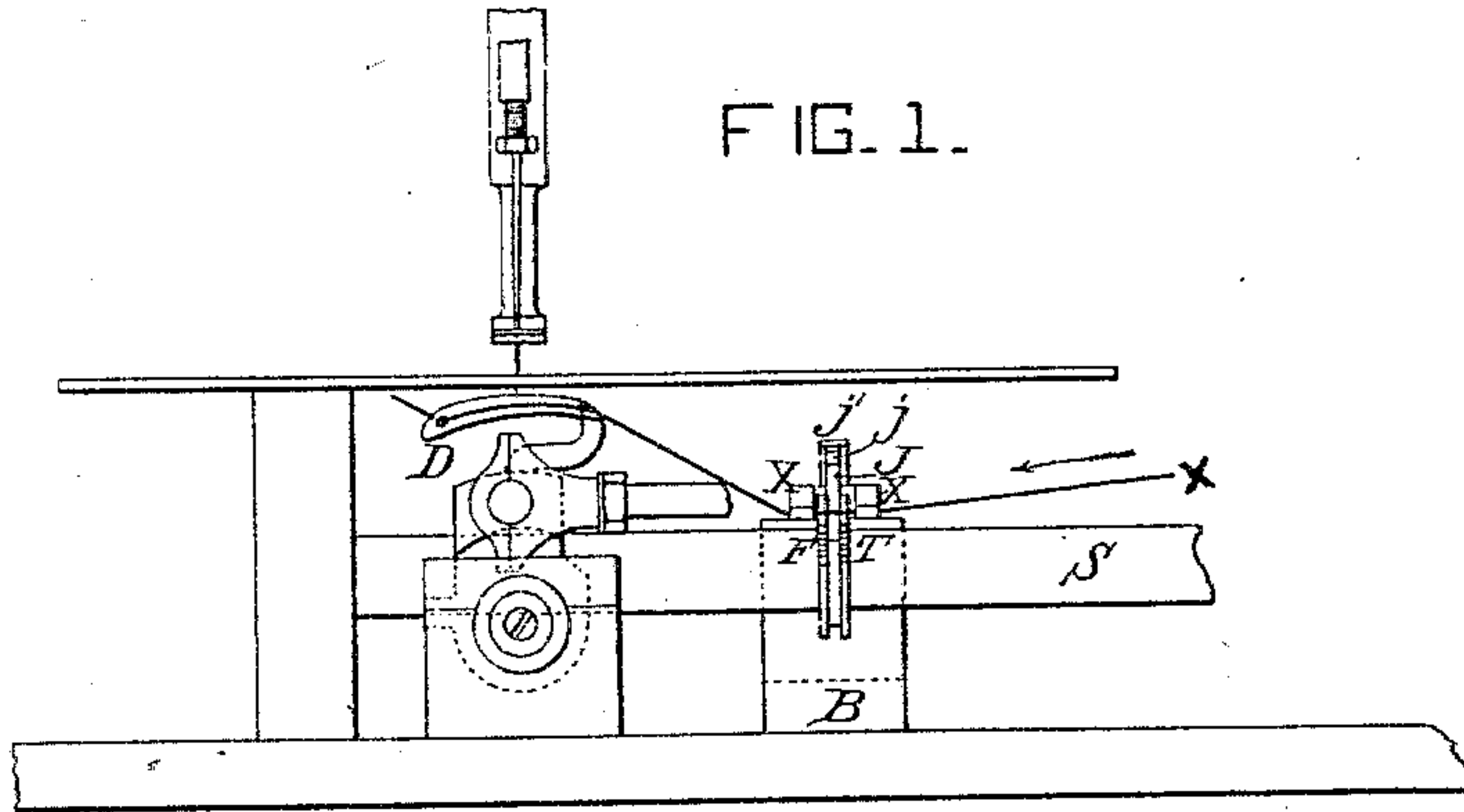


FIG. 3.

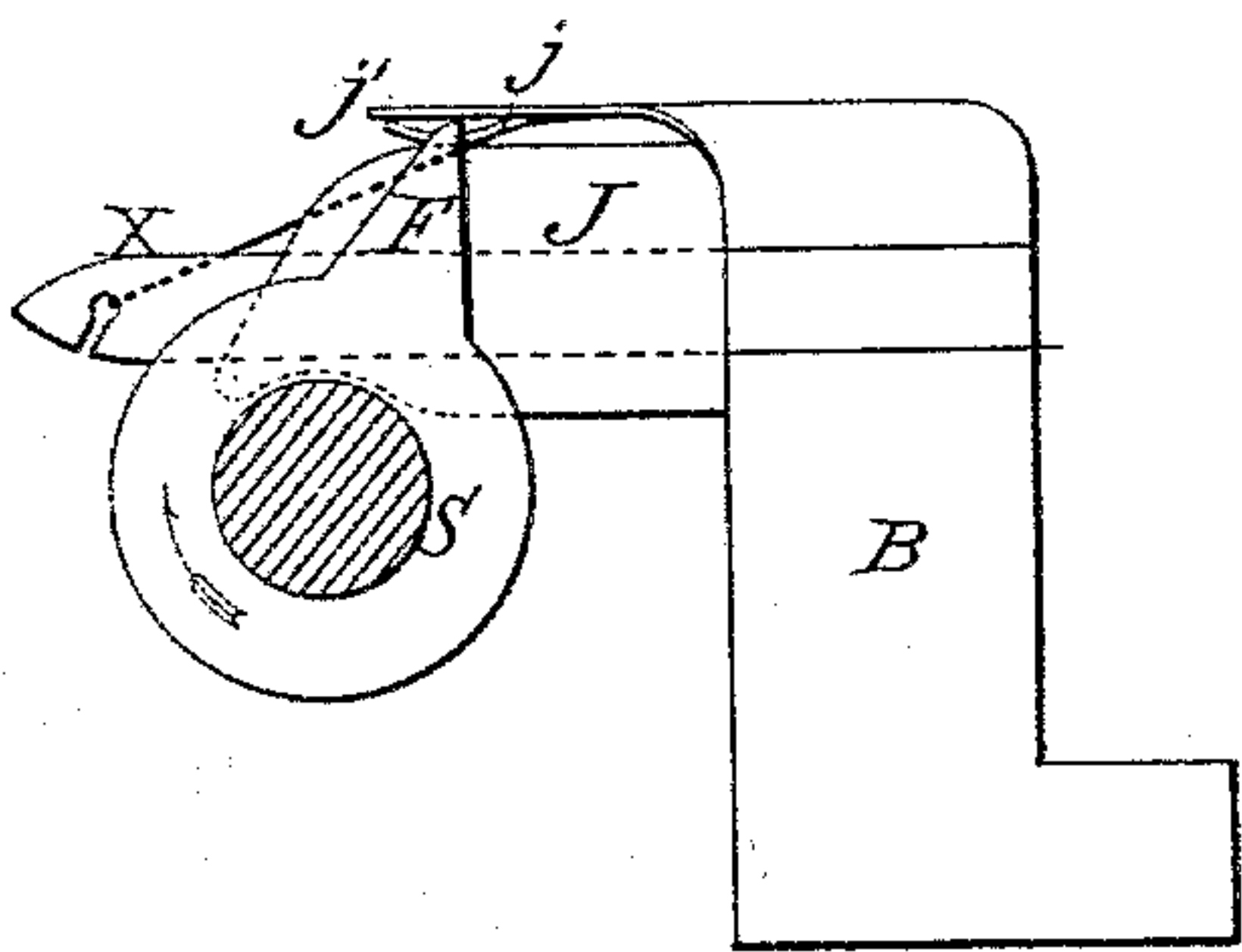


FIG. 4.

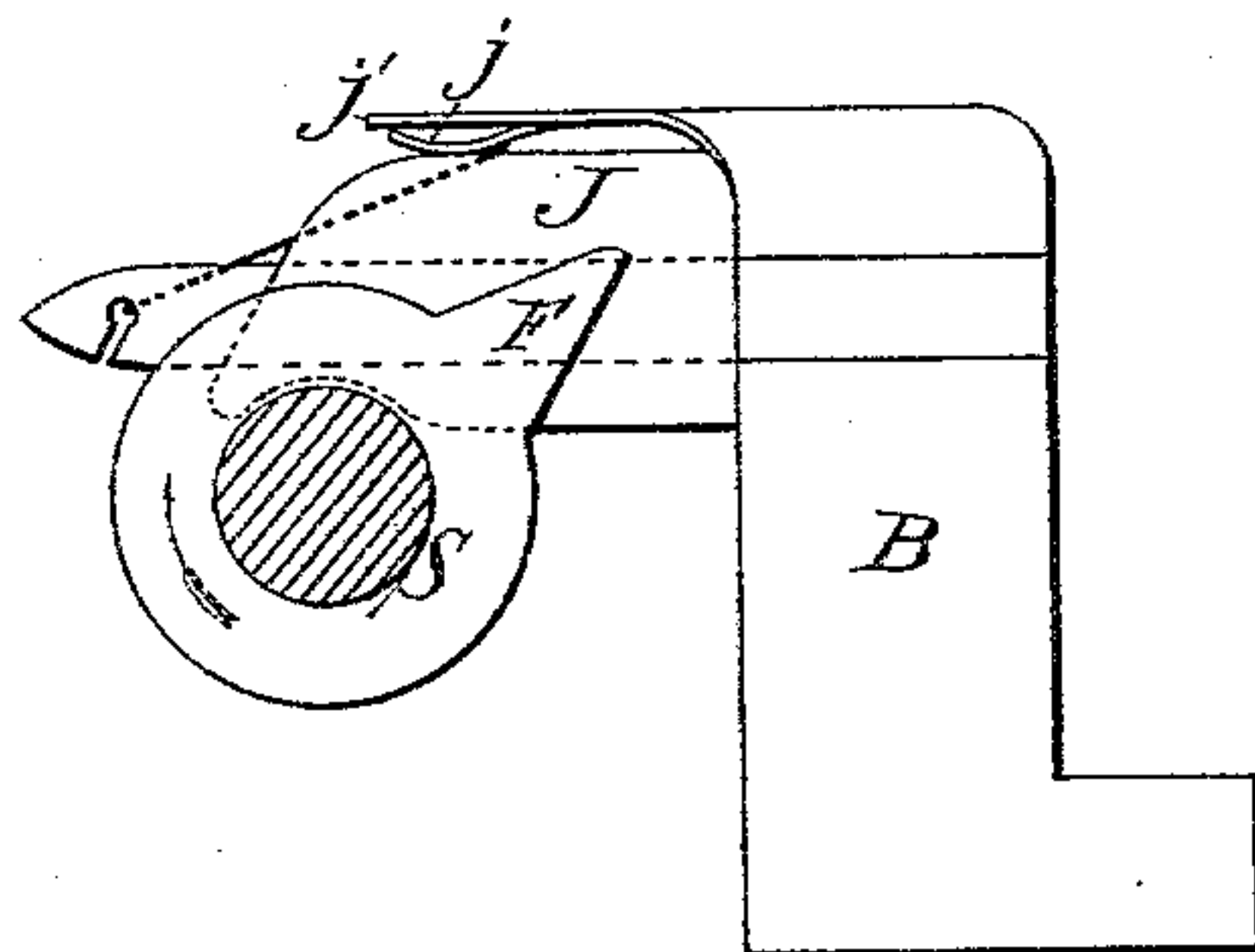
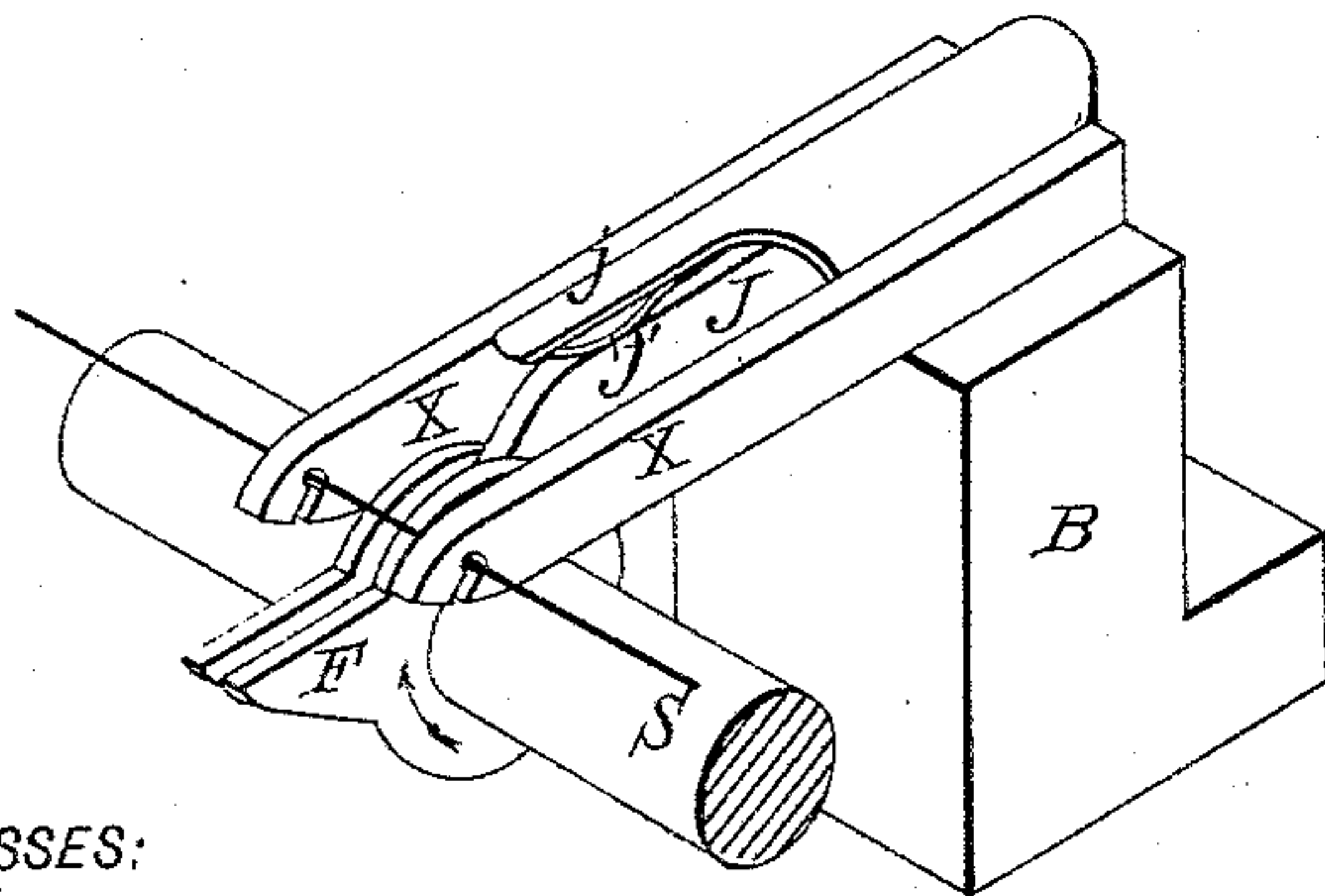


FIG. 2.



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# UNITED STATES PATENT OFFICE.

MORRIS WEISS, OF BROOKLYN, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE UNION SPECIAL SEWING MACHINE COMPANY, OF CHICAGO, ILLINOIS.

## PULL-OFF DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 559,644, dated May 5, 1896.

Application filed September 10, 1894. Serial No. 522,661. (No model.)

*To all whom it may concern:*

Be it known that I, MORRIS WEISS, a citizen of the United States of America, and a resident of Brooklyn, Kings county, New York, have invented Improved Pull-Off Devices for Sewing-Machines, of which the following is a specification.

My invention relates to that class of pull-off motions for sewing-machines in which a rotating arm moving between thread-guides comes into contact with the thread and draws it out into a loop, which then slips off the rotating arm and is taken up by the sewing mechanism. A pull-off motion of this character is illustrated in Patent No. 128,684, dated July 2, 1872, for instance.

The object of the present invention is to provide such a pull-off with means whereby the loop formed will be held lightly, but free to be taken up or drawn out by the sewing mechanism as and when it requires it.

In the accompanying drawings the invention is shown as applied in connection with the looper mechanism of a sewing-machine beneath the cloth-plate; but it will be understood that it may be applied in connection with other styles of sewing-machines and for the upper thread as well as the lower thread.

Figure 1 is a front elevation of sufficient of a sewing-machine to illustrate the invention, and Figs. 2, 3, and 4 are perspective and side views of the improved pull-off device, showing the successive steps in the handling of the thread.

In the particular application of my invention illustrated in Fig. 1 the pull-off device T is shown in connection with the main shaft S; but, as will be readily understood, it may be combined with any other convenient moving part of the machine. In this figure the line of thread at *x* is supposed to be on its way from any suitable tension device, as indicated by the arrow 1, and after passing through the pull-off device T it passes to and is threaded into the looper D.

As illustrated more fully in Figs. 2, 3, and 4, there is on the fixed frame a pair of guide-eyes X X, through which the thread passes. On the shaft S there is mounted an arm F, in the path of which lies the line of thread be-

tween the guide-eyes, as indicated in Fig. 2. I combine with this rotating arm and guide-eyes a frictional clip to receive the loop formed by the rotating arm and to lightly hold it until the looper in its forward movement draws the loop out of the clip. In the present instance the arm F is shown as double. Between the two parts of the arm projects a throw-off finger J, carried upon a fixed part B of the machine, this finger having an upper inclined face *j'*. Upon the upper edge of this finger J there bears a spring-jaw *j*, which forms the frictional clip for the thread-loop.

As the arm on the shaft S rotates in the direction of the arrow 2, and comes into contact with the thread between the guide-eyes, as indicated in Fig. 2, it will draw the thread from the tension device and form a loop, as indicated in Fig. 3, until it has pushed that loop just under the light spring-jaw *j*. By that time the finger F, as it rotates, will have withdrawn from the loop thus formed, Fig. 4. The spring-jaw *j* holds the loop firmly but lightly by friction until the looper D in its oscillating movement draws on the thread and pulls the loop out from the clip, straightening the thread out again, as indicated in Fig. 2, ready for the finger F to come round and form another loop.

I claim as my invention—

1. In a sewing-machine, the combination with stitch-forming mechanism; of a pull-off device consisting of a pair of fixed guides, a rotating arm operating between said guides, and a throw-off finger; and an engaging device located adjacent the path of movement of said arm, whereby, as the latter carries the loop of thread and deposits it upon the throw-off finger, the engaging device will retain the same; substantially as described.

2. A sewing-machine comprising suitable stitch-forming mechanism, and a pull-off device including a rotating arm arranged in its movement to come into contact with the thread, mechanism for rotating said arm in proper relation to the action of the stitch-forming mechanism, a throw-off finger extending within the plane of rotation of said rotating arm, and an engaging device arranged adjacent the throw-off finger to form



a clip to receive the loop formed by the rotating arm and to hold it free to be drawn out by the sewing mechanism; substantially as described.

5 3. The herein-described pull-off device for sewing-machines consisting of a rotating arm adapted to form a loop in the thread, thread-guides arranged on each side of said arm and located on each side of the plane of rotation  
10 of said arm, a fixed guide-finger extending within the plane of rotation of said arm, and a spring-jaw bearing upon said fixed guide-finger between which and the said guide-finger the loop is carried by the rotary arm,  
15 forming a clip for said loop; substantially as described.

4. A pull-off device comprising a rotating part having a finger F with a recess therein, guide-eyes arranged on each side of said finger and within the outer periphery of the circle described by its rotation, a fixed throw-

off finger J having an inclined front portion extending into the recess within the finger F, and a spring secured to a fixed part of the machine and bearing upon the upper surface  
25 of the throw-off finger J, the point of engagement of said spring and fixed finger being within the line described by the loop of the thread when carried around by the finger F, whereby in the rotation of said finger the loop  
30 is carried between the spring-clip and the fixed finger and held therein until released by the action of the stitch-forming mechanism; substantially as described.

In testimony whereof I have signed my  
35 name to this specification in the presence of three subscribing witnesses.

MORRIS WEISS.

Witnesses:

LOUIS SCHULTZ,

JONATHAN HALL,

LOUIS T. WEISS.