

(No Model.)

2 Sheets—Sheet 1.

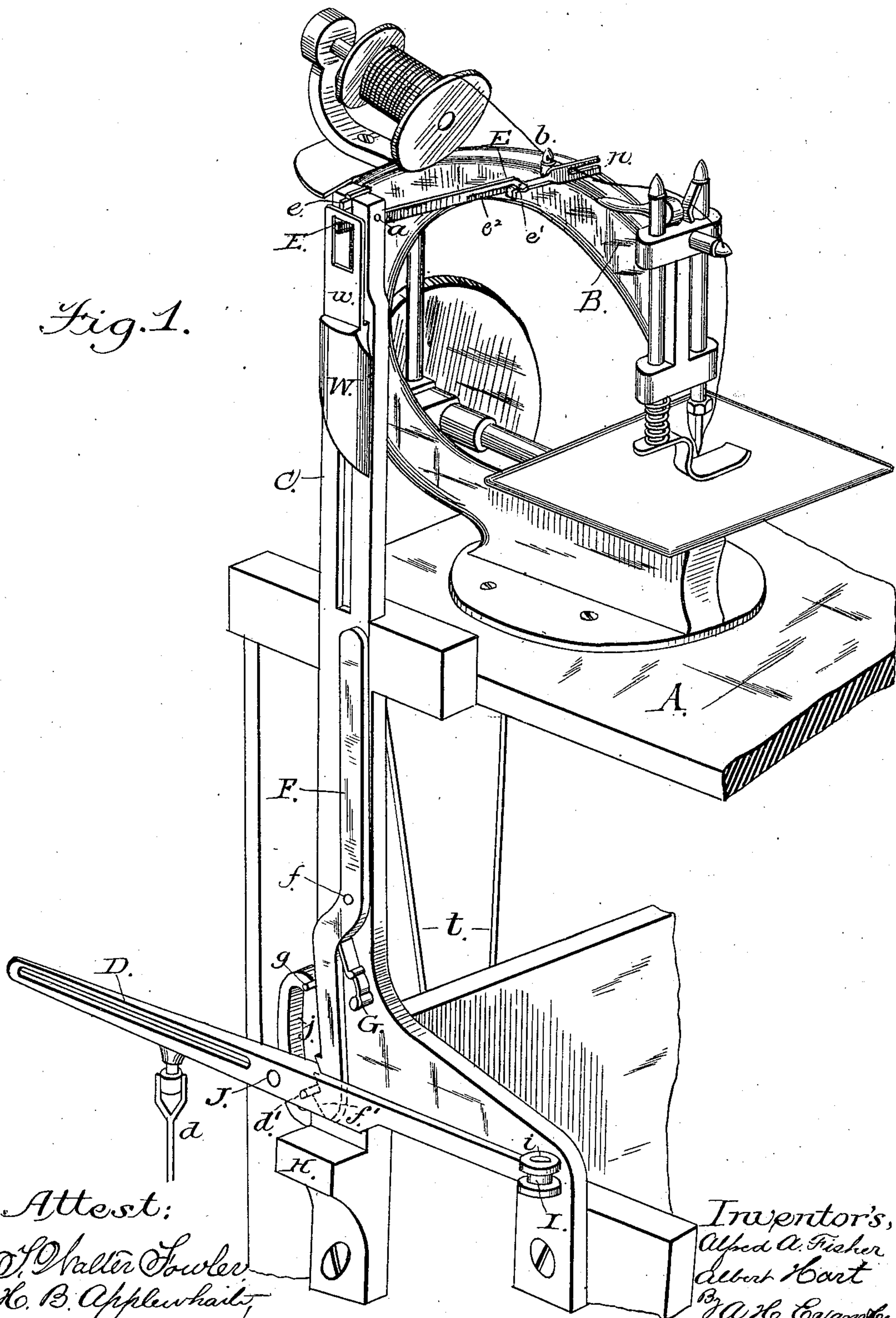
A. A. FISHER & A. HART.

SEWING MACHINE.

No. 316,350.

Patented Apr. 21, 1885.

Fig. 1.



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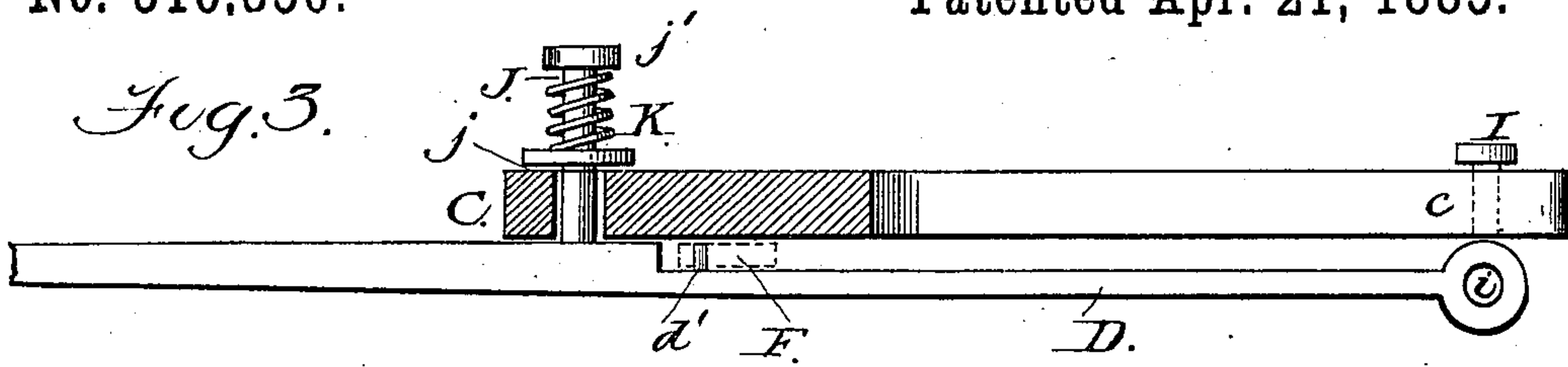
Inventor's,  
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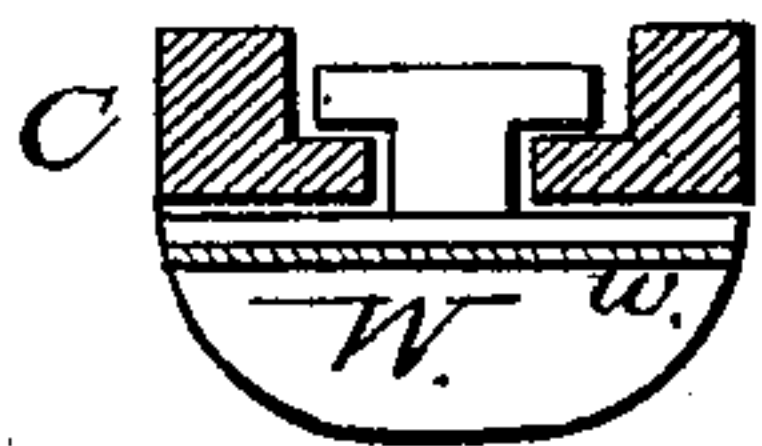
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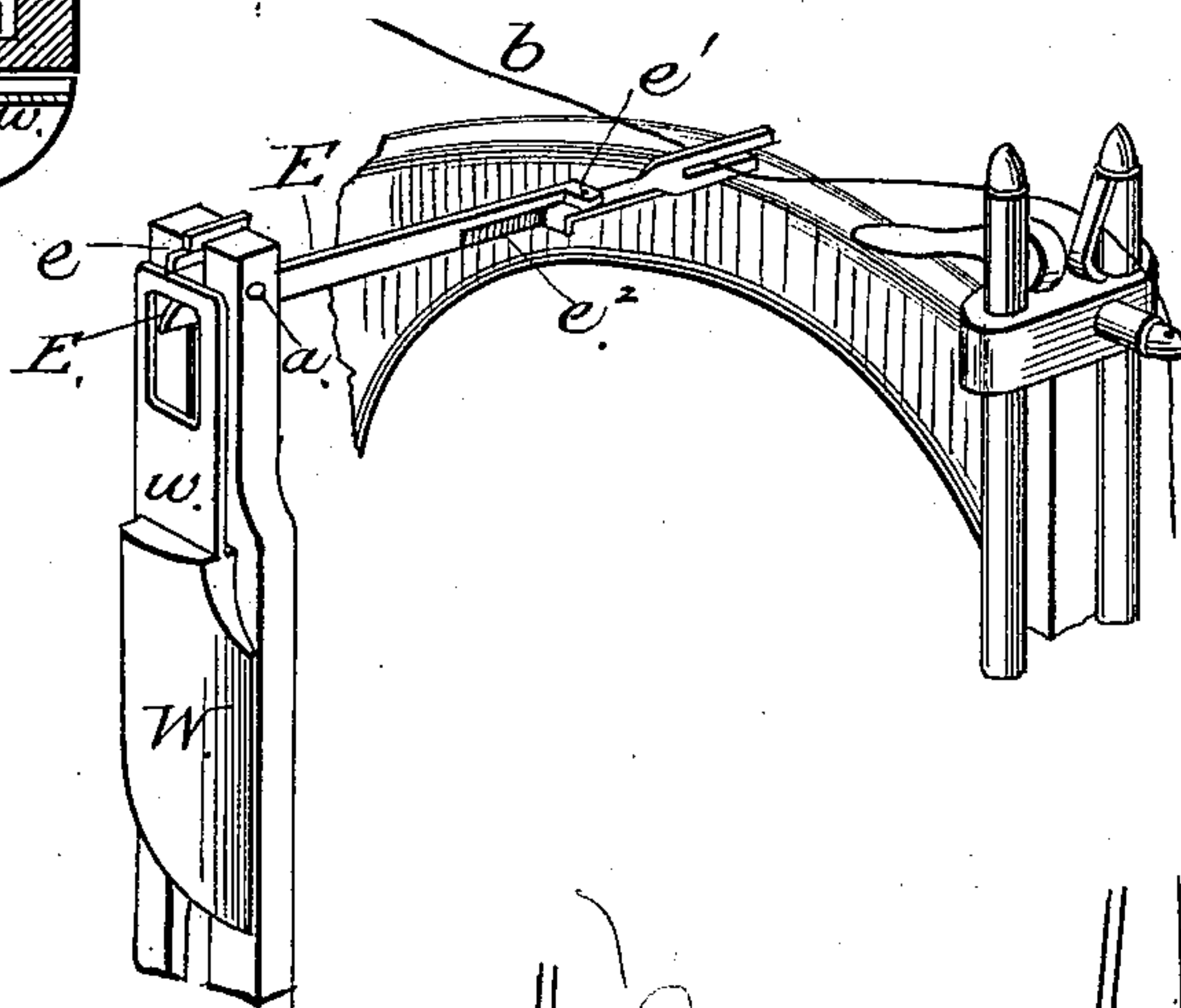
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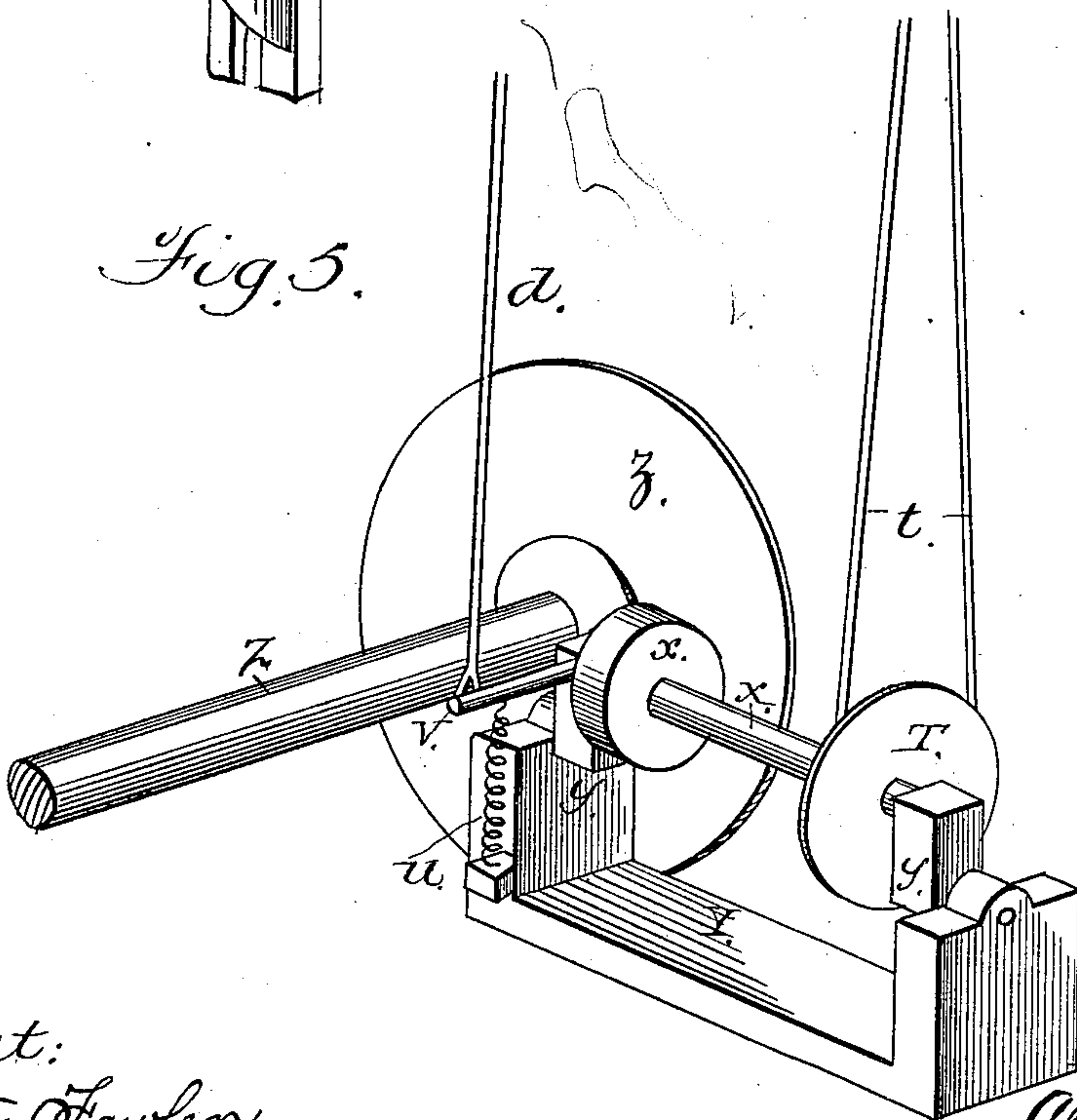
*Fig 2*



*Fig. 4*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

ALFRED A. FISHER AND ALBERT HART, OF BROOKLYN, NEW YORK.

## SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 316,350, dated April 21, 1885.

Application filed May 7, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, ALFRED A. FISHER and ALBERT HART, of the city of Brooklyn, county of Kings, and State of New York, have  
5 invented an Improvement in Sewing-Machines; and we hereby declare the following to be a full, clear, and exact description thereof.

Our invention relates to certain new and useful improvements in sewing-machines; and  
10 these consist in means, operated by the thread of the machine, for throwing the power device out of gear with the sewing-machine upon the passage of a knot in said thread, whereby said machine is automatically stopped, as we  
15 shall hereinafter fully explain, reference being made to the accompanying drawings, in which—

Figure 1, Sheet 1, is a perspective view of a sewing-machine embodying our improvements. Fig. 2, Sheet 2, is a cross-section  
20 through the weight W and slotted standard C. Fig. 3, Sheet 2, is a plan of lever D, and a section through the standard C, showing the slotted guide j, and showing bolt J. Fig. 4 is an enlarged perspective showing the means by  
25 which the machine is stopped by the attempted passage of a knot. Fig. 5 shows a power device which is thrown in or out of gear by the lever D.

30 A is a table, upon which the sewing-machine B is secured.

C is a standard secured to the side of the table and extending downwardly.

D is a lever connected, by means of the wire  
35 d, with any suitable devices below, which, by the movement up or down of said lever, will be thrown into or out of gear with the sewing-machine. In Fig. 5 we have illustrated a device of this character.

40 Z is the driving-shaft, carrying a large friction-wheel, z.

Y is a stand, in which are mounted to oscillate the small bearing-blocks y, in which is journaled the shaft X. This shaft carries a  
45 small friction-wheel, x, and a pulley, T, from which a belt, t, extends to the driving-wheel of the sewing-machine.

A lever, v, is attached to one of the rocking bearing-blocks y, and to the end of this lever  
50 the wire d from lever D is secured.

A spring, u, is attached to lever v and to the

stand Y, and operates to draw down upon said lever, thus rocking the bearing-blocks y and holding the friction-wheel x away from the friction-wheel z, in which case motion is not  
55 transmitted to the sewing-machine. This effect of the spring can only take place when the wire d is slackened by lowering lever D above; but when said lever is raised the wire d draws up the lever v, rocks bearings y, and  
60 forces the small friction-wheel against the large one, and thus transmits motion to the sewing-machine.

We claim nothing for this mechanism, as it is well known; but we have described it to show  
65 more clearly the operation of our invention.

Pivoted at a in the top of the standard C is an arm, E, the long end of which extends toward and above the presser and needle arms of the machine. This arm is jointed at e', its  
70 outer end being slotted, as shown. The thread b of the sewing-machine passes through this slot. The short end of the arm projects beyond the standard a short distance.

W is a weight guided in the standard C, 75 which is slotted for that purpose. The upper end of the weight is adapted to be hung up on the short end of arm e by means of a slotted spring-strip, w. The lower end of weight W is beveled, as shown. 80

F is a ratchet-lever. This is pivoted at f to the standard C. Its upper end lies under the weight and receives it when dropped. Because of the bevel of said weight the top of the ratchet-lever, when the weight is dropped, 85 is forced to one side. The lower end of this lever is provided with teeth, as shown, with which a pin, d', on the lever D engages to hold said lever up.

A spring, G, holds the ratchet-lever to its 90 engagement, and a small stop, g, limits its movement when released from pin d'.

The operation of the devices we have described is as follows: The tension of the thread b passing through the slotted end of arm E, 95 when the machine is in operation, is sufficient to hold the long end of said arm down, and thus cause said arm to support the weight W, which is suspended from its short end; but when a knot in the thread approaches the arm, 100 failing to pass through its slotted end, it forces the jointed end of the arm until it so shortens



it as to enable the thread to slip out of the slot, whereupon the arm, being relieved, trips the weight, which drops down upon the upper end of the ratchet-lever F, forcing it to one side. This movement throws its lower or ratchet end in an opposite direction, whereby it becomes disengaged from pin  $d'$ , and the lever D thereupon falls down, slacking wire  $d$ , and, as before explained, throws the power device out of gear with the machine, which is thus stopped. A spring,  $e^2$ , returns the arm E to a straightened position. Upon raising lever D again the pin  $d'$  travels up an inclined edge,  $f'$ , of ratchet-lever F, forcing it to one side until it engages with its teeth, whereupon the machine is started again and the thread  $b$  is to be returned to the slotted end of arm E.

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

1. In a sewing-machine, a mechanism by which a power device is thrown in or out of gear with said sewing-machine, in combination with the pivoted jointed arm E, having a slotted end through which the thread of the sewing-machine passes, and a mechanism operated by the release of said arm from the thread upon the attempted passage by said arm of a knot in the thread, for operating the mechanism by which the power device is operated to throw said device out of gear with the sewing-machine, substantially as herein described.

2. In a sewing machine, a lever by the operation of which a power device is thrown in and out of gear with said sewing-machine, in combination with the pivoted jointed arm E, having a slotted end through which the thread of the sewing-machine passes, a weight tripped by the release of said arm from the thread upon the attempted passage by said arm of a knot in the thread, and a means af-

fecting by the falling weight for operating said lever to throw the power device out of gear with the sewing-machine, substantially as herein described.

3. In a sewing-machine, a lever by the operation of which a power device is thrown in and out of gear with said sewing-machine, in combination with the pivoted jointed arm E, having a slotted end through which the thread of the sewing-machine passes, a weight tripped by the release of said arm from the thread upon the attempted passage by said arm of a knot in the thread, and a swinging ratchet-lever engaging with the power-lever and operated by the falling weight to disengage and release said power-lever to throw the power device out of gear with the sewing-machine, substantially as herein described.

4. In a sewing-machine, the pivoted lever D, having a pin,  $d'$ , and connected with the power device, and operating to throw said power device in and out of gear with the sewing-machine, in combination with the standard C, the jointed arm E, pivoted in its top and having one end slotted, through which said slotted end the thread  $b$  of the sewing-machine passes, the sliding weight W in the standard, adapted to be suspended from the other end of said arm E, and having a beveled lower end, and the pivoted ratchet-lever F, adapted to receive the weight W upon its upper end to engage with the pin  $d'$  of lever D with its lower end, substantially as and for the purpose herein described.

In witness whereof we have hereunto set our hands.

ALFRED A. FISHER.  
ALBERT HART.

Witnesses:

MEYER MAYER,  
T. WALTER FOWLER.