

No. 757,463.

PATENTED APR. 19, 1904.

J. T. HOGAN.

THREAD CUTTING DEVICE FOR SEWING MACHINES.

APPLICATION FILED JUNE 3, 1903.

NO MODEL.

Fig. 1.

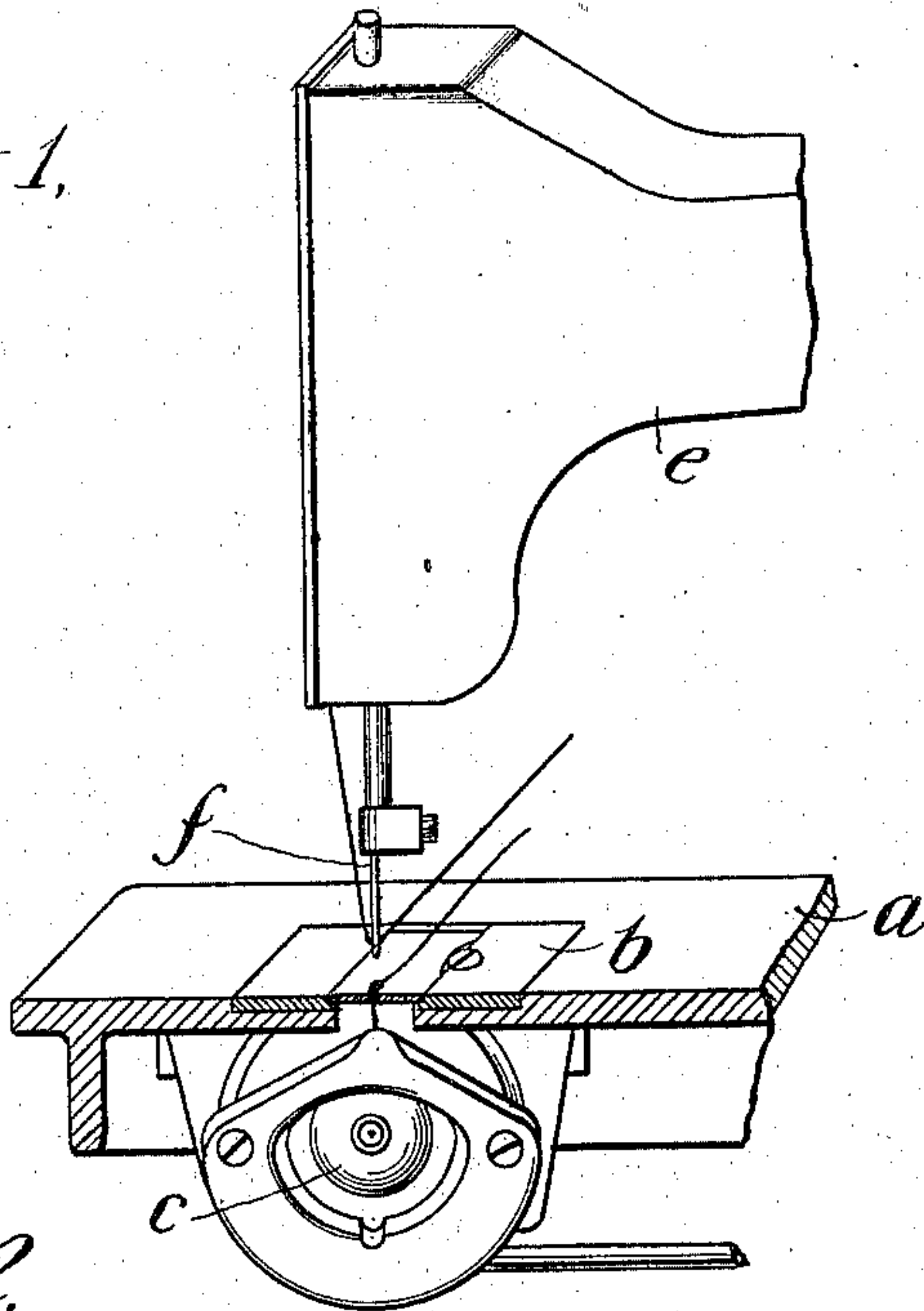


Fig. 2.

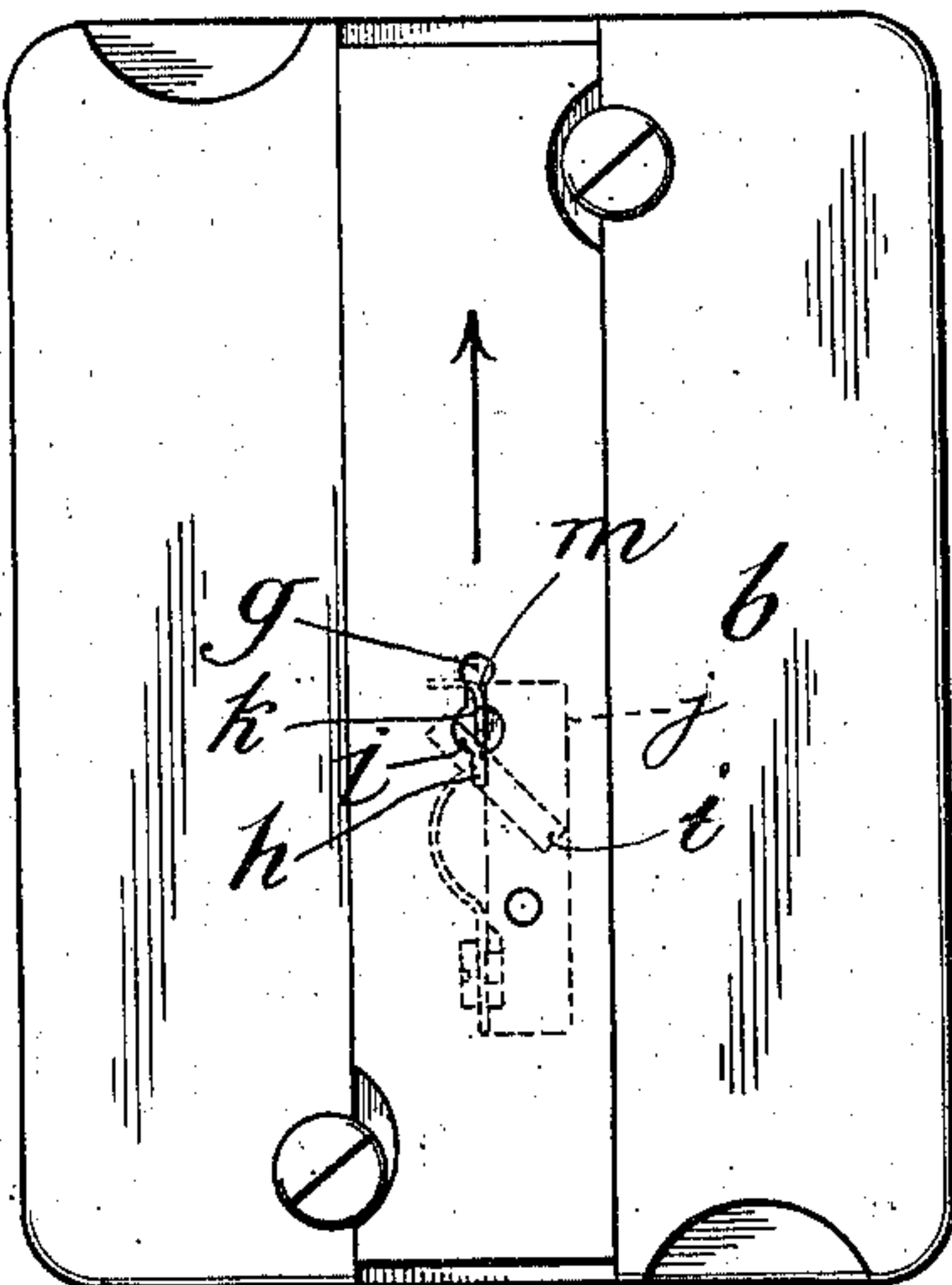


Fig. 3.

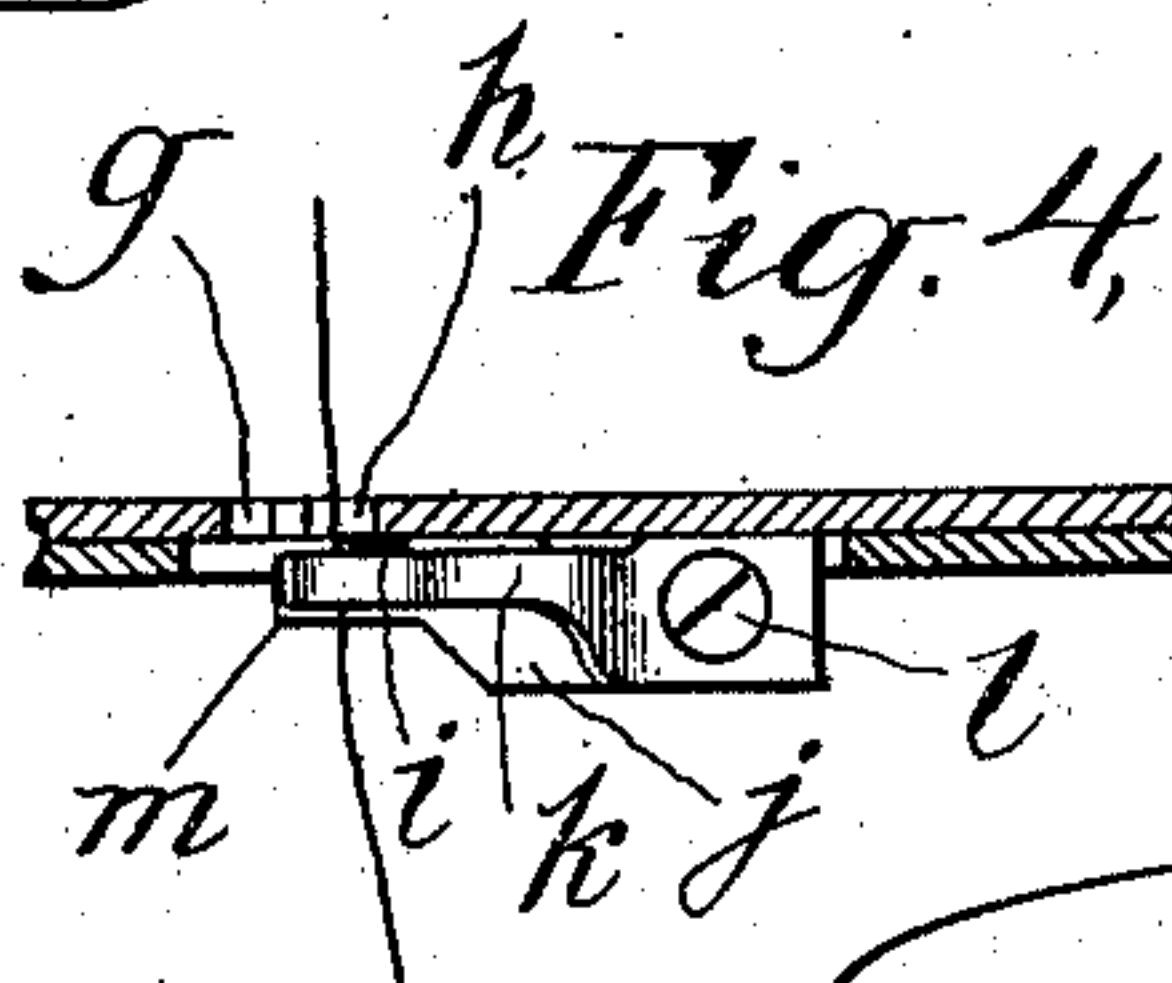
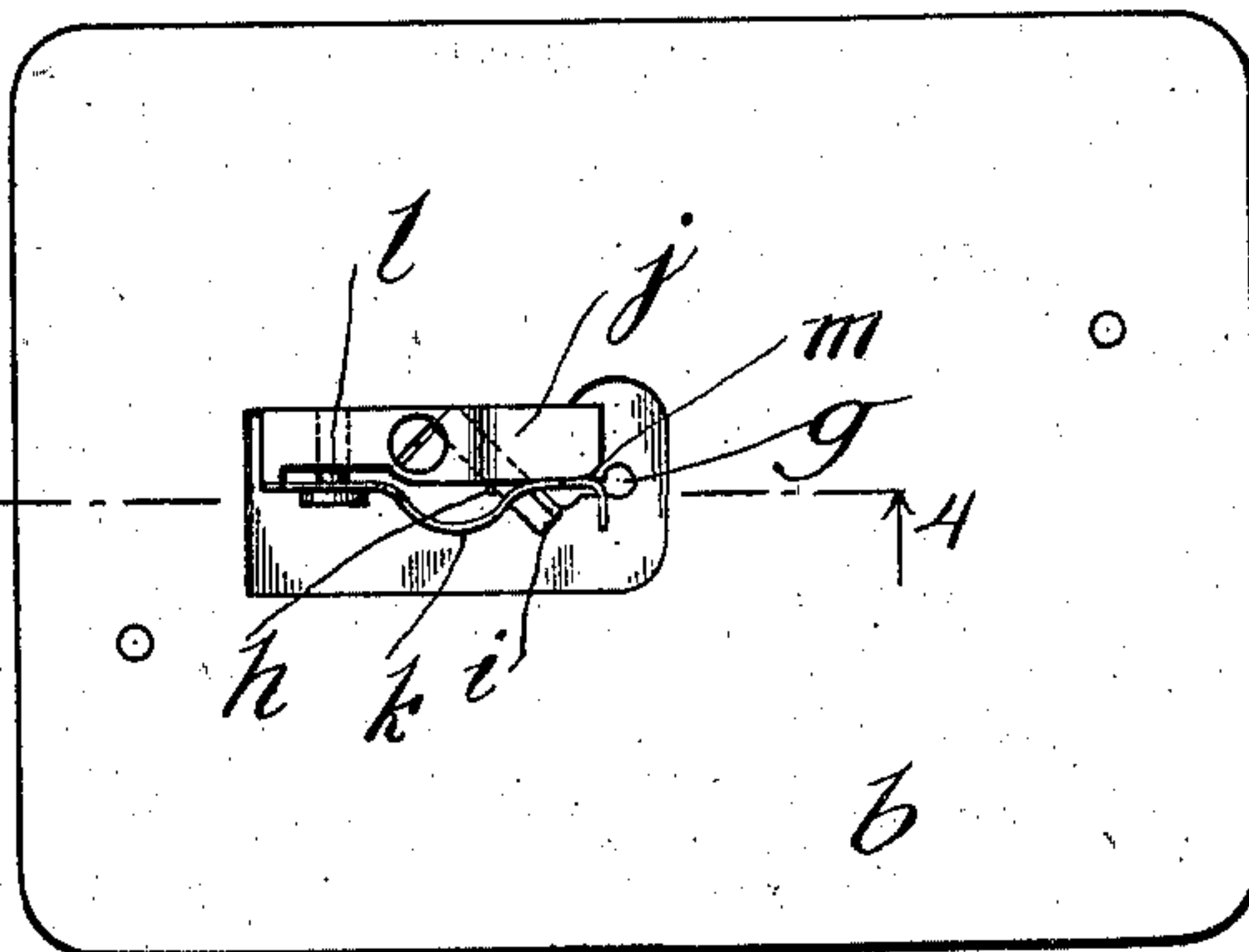


Fig. 4.

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THREAD-CUTTING DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 757,463, dated April 19, 1904.

Application filed June 3, 1903. Serial No. 159,905. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. HOGAN, a citizen of the United States of America, residing at Jersey City, county of Hudson, State of New Jersey, have invented certain new and useful Improvements in Thread-Cutting Devices for Sewing-Machines, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to improvements in thread-cutting devices for sewing-machines, and particularly to devices for cutting the lower thread after a section of work has been completed and for holding the free end of the lower thread until it has again been picked up in the commencement of a new piece of work.

To these ends my invention consists in a thread-cutting knife arranged beneath the surface of the throat-plate of a sewing-machine in such a position that when the work is removed or shifted after the completion of a sewing operation the thread will be severed thereby and, further, in a gripping device arranged in proximity to the cutting-knife whereby the free end of the thread leading to the shuttle of the lower-thread mechanism will be held and retained until released by subsequent sewing operation.

The objects of my invention are to sever the lower thread of the stitching mechanism by the mere removal of the work or the shifting of same other than that which takes place in the normal feeding operation and to hold the end of the severed thread in readiness for a subsequent stitching operation.

My invention further consists in certain details of construction and novel combination of parts, as will hereinafter more fully appear.

I will now proceed to describe a device embodying my invention and will then point out the novel features in claims.

In the drawings, Figure 1 is a view of a portion of a sewing-machine in which my im-

proved thread-cutting attachment is employed, certain portions of the machine being shown in front elevation and others in vertical longitudinal section. Fig. 2 is a top view of the throat-plate. Fig. 3 is an under side view of the same. Fig. 4 is a view in vertical longitudinal section thereof, the plane of section being upon the line 4 4 of Fig. 3.

I have shown in the drawings only such part of a sewing-machine as is necessary for the complete understanding of my invention, it being understood that my thread cutting and gripping attachment may be employed with any form of sewing-machine, as may be desired.

I have shown a conventional form of bed-plate *a*, throat-plate *b*, lower-thread mechanism *c*, upper head or arm *e*, and upper-thread mechanism, including a vertically-reciprocating needle *f*. The throat-plate *b* has the usual needle-opening *g* and is further provided with an open-ended slot *h*, extending laterally from the said needle-opening. The normal direction of feed of the work is in a line with the direction of the arrow in the drawings, and it will be seen that the slot *h* extends substantially in a line with such path of movement.

A thread-cutting knife *i* is secured beneath the upper surface of the throat-plate and extends transversely of the slot *h*. Being located some little distance away from the needle-hole the lower thread will normally pass just in advance of the said knife, but will not be engaged thereby. If the work, however, be removed by pulling it forward, as is usual; or if it be shifted forward a distance equal to or greater than the distance between the needle-hole and the knife-edge while the stitching mechanism is at rest, the thread will be drawn into the slot *h* and across the face of the cutting-knife *i*, whereby it will be severed.

A thread-gripping device comprising a stationary abutment *j* and a spring clamping member *k* is secured to the throat-plate beneath the cutting-knife *i*, the said cutting-

knife being clamped in position between the stationary abutment *j* and the under side of the throat-plate. The member *k* bears against one side face of the stationary abutment *j* with a yielding pressure, the extent of which may be regulated by means of a clamping and adjusting screw *l*. The point *m*, at which the members *j* and *k* unite, is in a line with the slot *h* and directly beneath same. For this reason when the thread enters the slot *h* and approaches the cutting-off knife *i* it must pass between the portions *j* and *k* and will be clamped thereby. When, therefore, the thread is finally severed by the knife *i*, the free end of the thread leading to the shuttle of the lower-thread mechanism *c* will be gripped or retained by the gripping device, and so held ready for the next stitching operation. When the next stitching operation occurs, the end of the thread will be gradually drawn away from the gripping device by the normal feeding movement of the work, so that after the first two or three stitches have been made and the ends of the thread firmly secured in the work the lower thread will be released from the gripping device and the stitching operation may be continued as is usual.

In the employment of my device it will be seen that the mere act of removing the work after a sewing operation has been completed will be sufficient to sever the lower thread and to cause the free shuttle end of the said thread to be gripped ready for the next sewing operation and that in the commencement of the next sewing operation the lower thread will be held until it is secured to the work in the formation of the first few stitches and will then be automatically released.

It will of course be obvious that the foregoing is but one embodiment of my invention and that the same is capable of many and varied modifications within the spirit and scope of my invention and, further, that certain parts may be employed in connection with other parts of different construction. Hence I do not desire to be limited only to the precise details of construction and combination of parts herein.

What I claim is—

1. In a sewing-machine, the combination with needle and shuttle thread mechanism, and a throat-plate having a needle-hole therein and a slot extending laterally from said needle-hole, of a stationary thread-cutting knife, arranged transversely of said slot and beneath the upper surface of said throat-plate and with its cutting edge facing said needle-hole, and a spring thread-gripping device arranged beneath the said thread-cutting knife, the cutting edge of said knife, and the receiving end of said gripping device, arranged to face in the direction of feed, whereby feeding move-

ment of the work will be in a direction away from said knife and gripper, and thread held by the said gripper upon the removal of one piece of work will be withdrawn from the said gripper by the initial feeding movement of the next piece of work at the commencement of a fresh sewing operation.

2. In a sewing-machine, the combination with needle and shuttle thread mechanism, and a throat-plate having a needle-hole therein and a slot extending laterally from said needle-hole, of a stationary abutment secured to the under side of the throat-plate and having one of its side faces arranged substantially in a line with said slot, a stationary thread-cutting knife secured between said abutment and the throat-plate, and with its cutting edge crossing said slot and facing said needle-hole, and a spring thread-clamping member secured to the side face of said stationary abutment, in a line with said slot.

3. In a sewing-machine, the combination with needle and shuttle thread mechanism, and a throat-plate having a needle-hole therein and a slot extending laterally from said needle-hole, of a stationary thread-cutting knife arranged beneath the upper surface of said throat-plate, and with its cutting edge transverse of the said slot and facing said needle-hole, and a thread-gripping device secured to the said throat-plate immediately beneath said cutting-knife, and comprising a stationary abutment having one side face substantially in a line with said slot, a spring gripping member secured thereto, and means for adjusting the tension of the said spring member.

4. In a sewing-machine, the combination with needle and shuttle thread mechanism, and a throat-plate having a needle-hole therein and a slot extending laterally from said needle-hole, of a stationary thread-cutting knife arranged beneath the upper surface of said throat-plate, and with its cutting edge transverse of the said slot and facing said needle-hole, and a thread-gripping device secured to the said throat-plate immediately beneath said cutting-knife, and comprising a stationary abutment having one side face substantially in a line with said slot, a spring gripping member engaging same, and an adjusting-screw securing said spring member to said abutment, said screw arranged upon adjustment to adjust the tension of said spring member.

5. In a sewing-machine, the combination with needle and shuttle thread mechanism, and a throat-plate having a needle-hole therein and a slot extending laterally from said needle-hole, of a stationary thread-cutting knife arranged beneath the upper surface of said throat-plate, and with its cutting edge transverse of the said slot and facing said needle-hole, and a thread-gripping device secured to

the said throat-plate immediately beneath said cutting-knife, and comprising a stationary abutment having one side face substantially in a line with said slot, a spring gripping member comprising a single strip of spring metal arranged to engage the side face of said stationary abutment at two points, and a securing and adjusting screw engaging spring mem-

ber at a point intermediate its said points of engagement, and adjustable toward and away from the stationary abutment to adjust the tension of said spring member.

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Witnesses:

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