

No. 668,047.

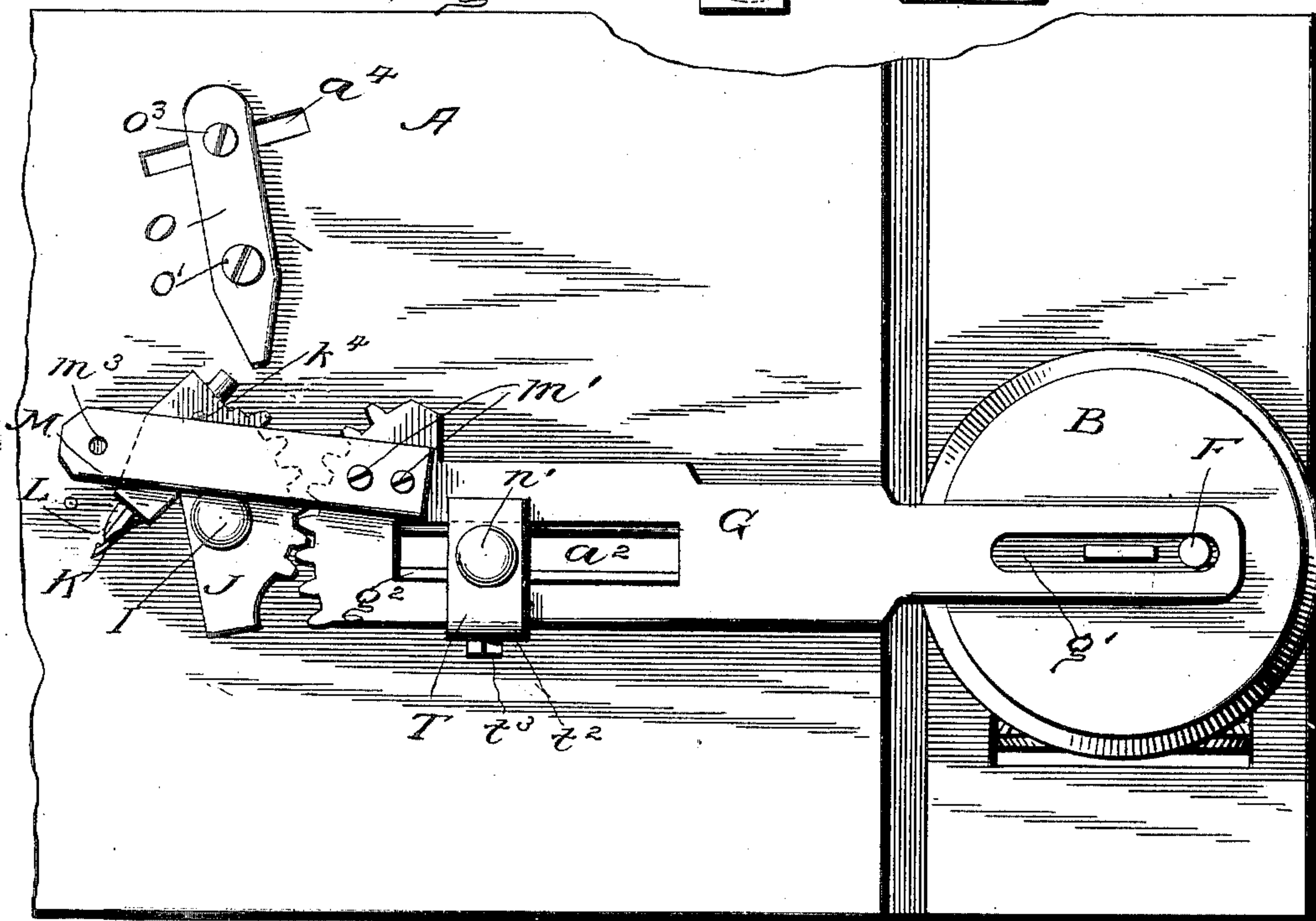
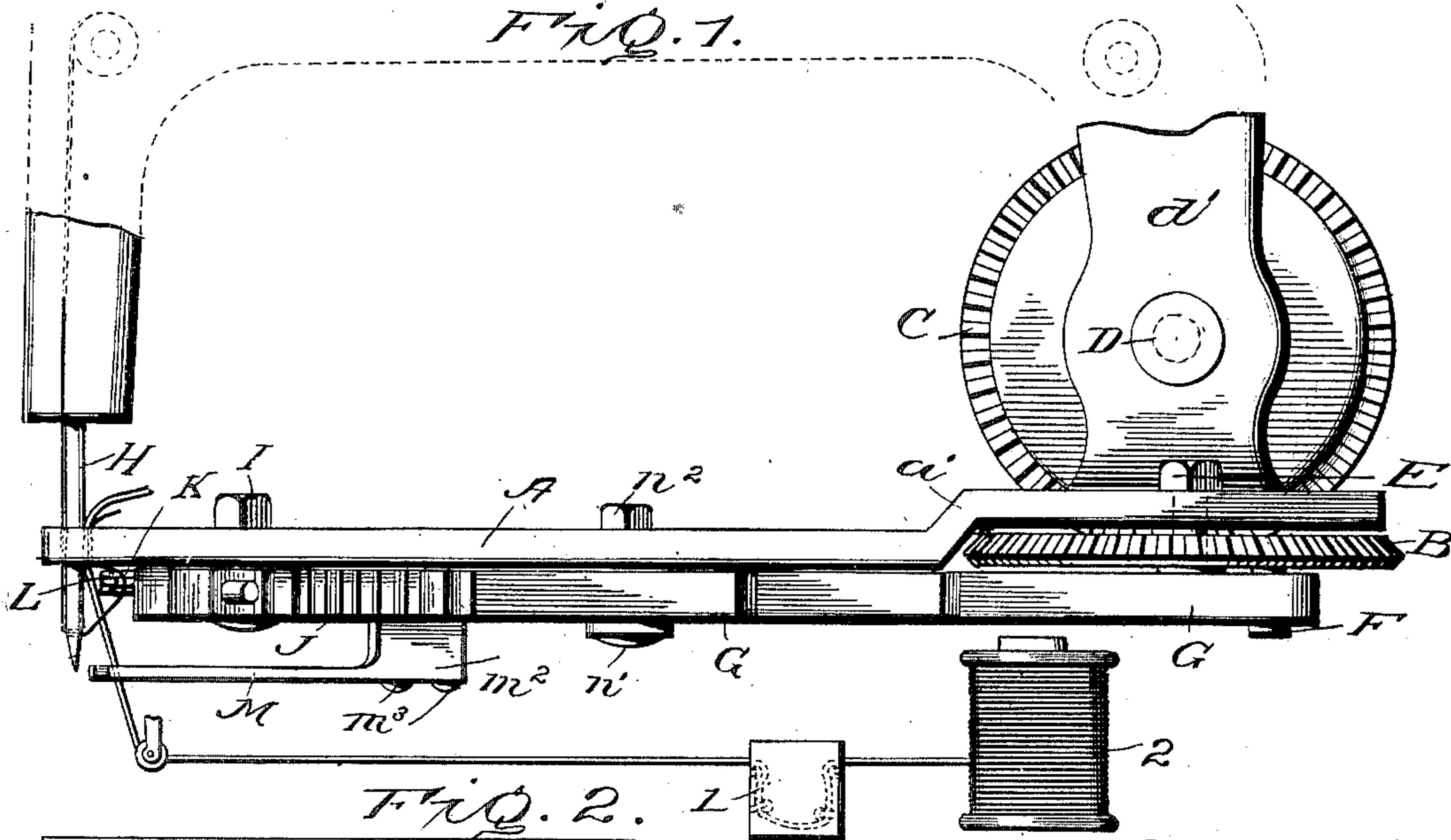
Patented Feb. 12, 1901.

W. L. JOSLYN.
WAXED THREAD SEWING MACHINE.

(Application filed Sept. 7, 1900.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses
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FIG. 4.

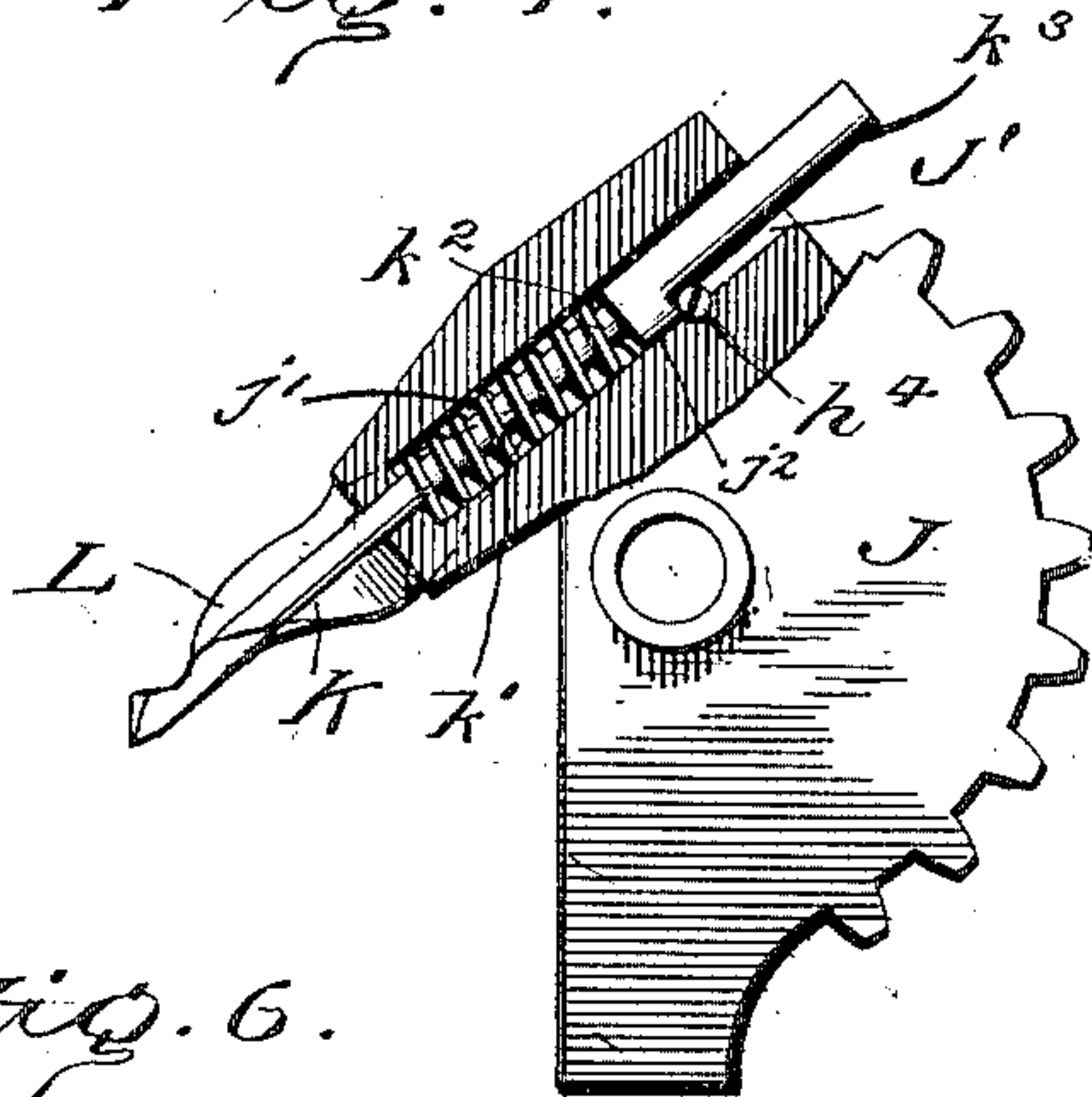


FIG. 6.

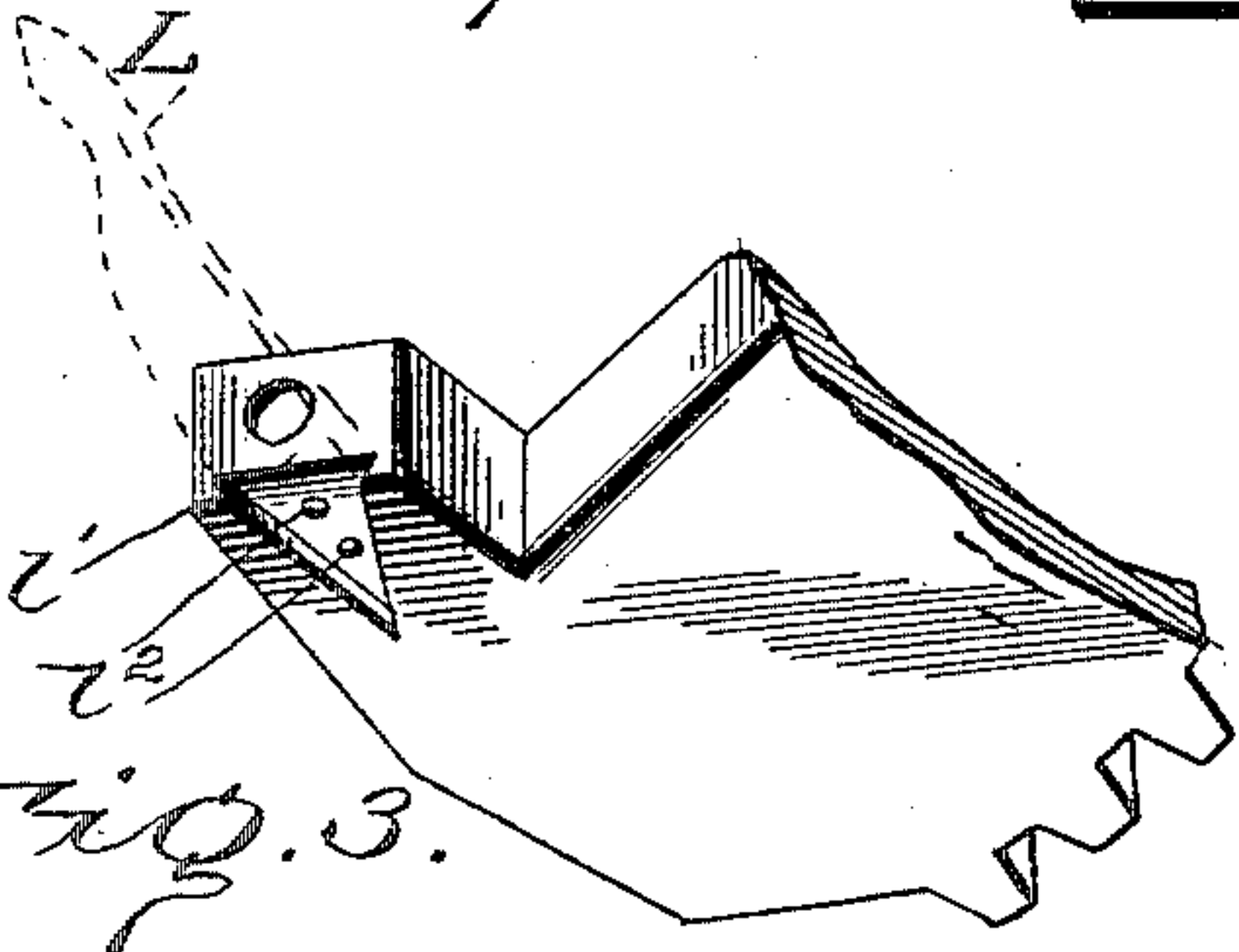


FIG. 5.

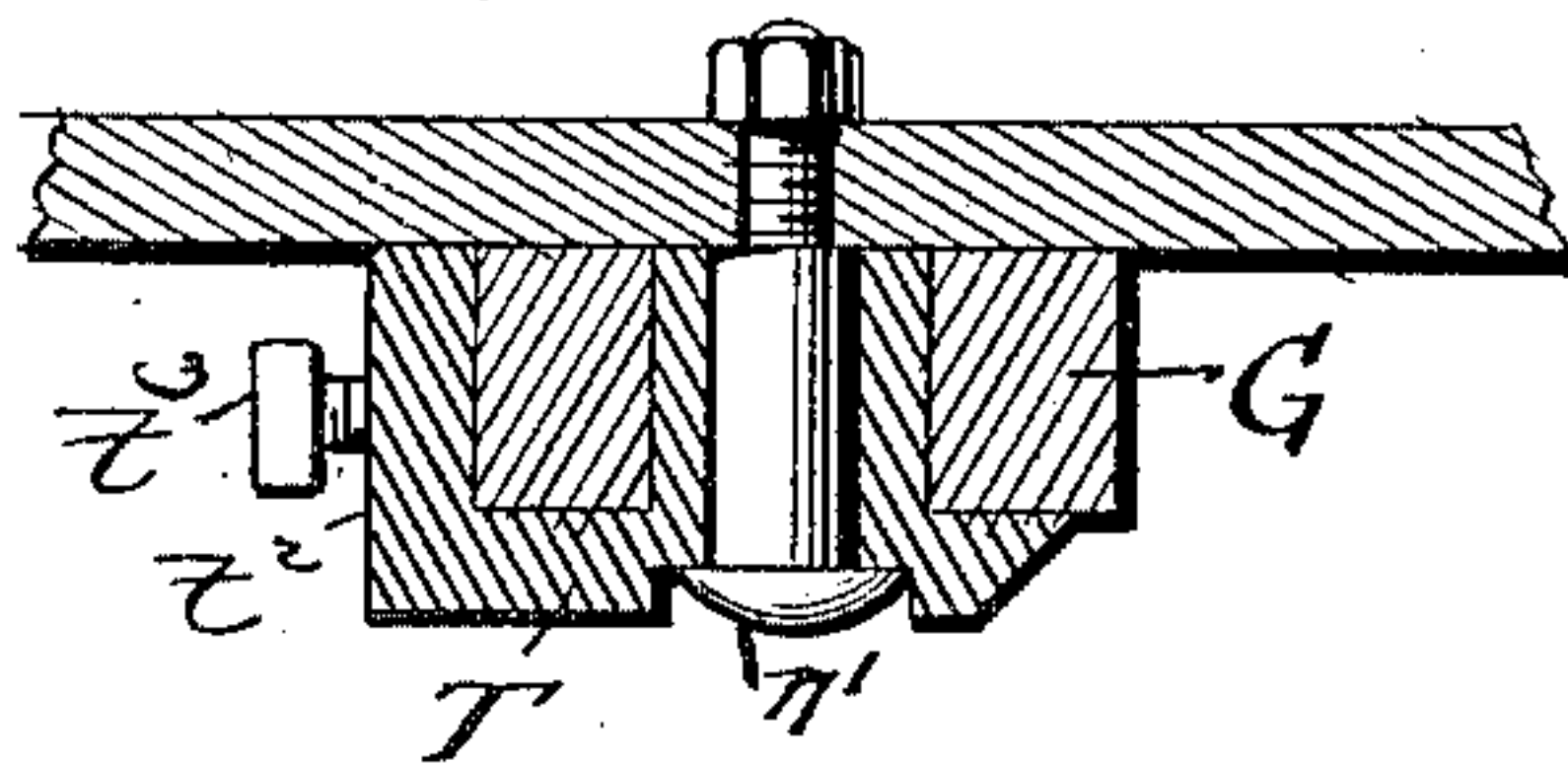


FIG. 3.

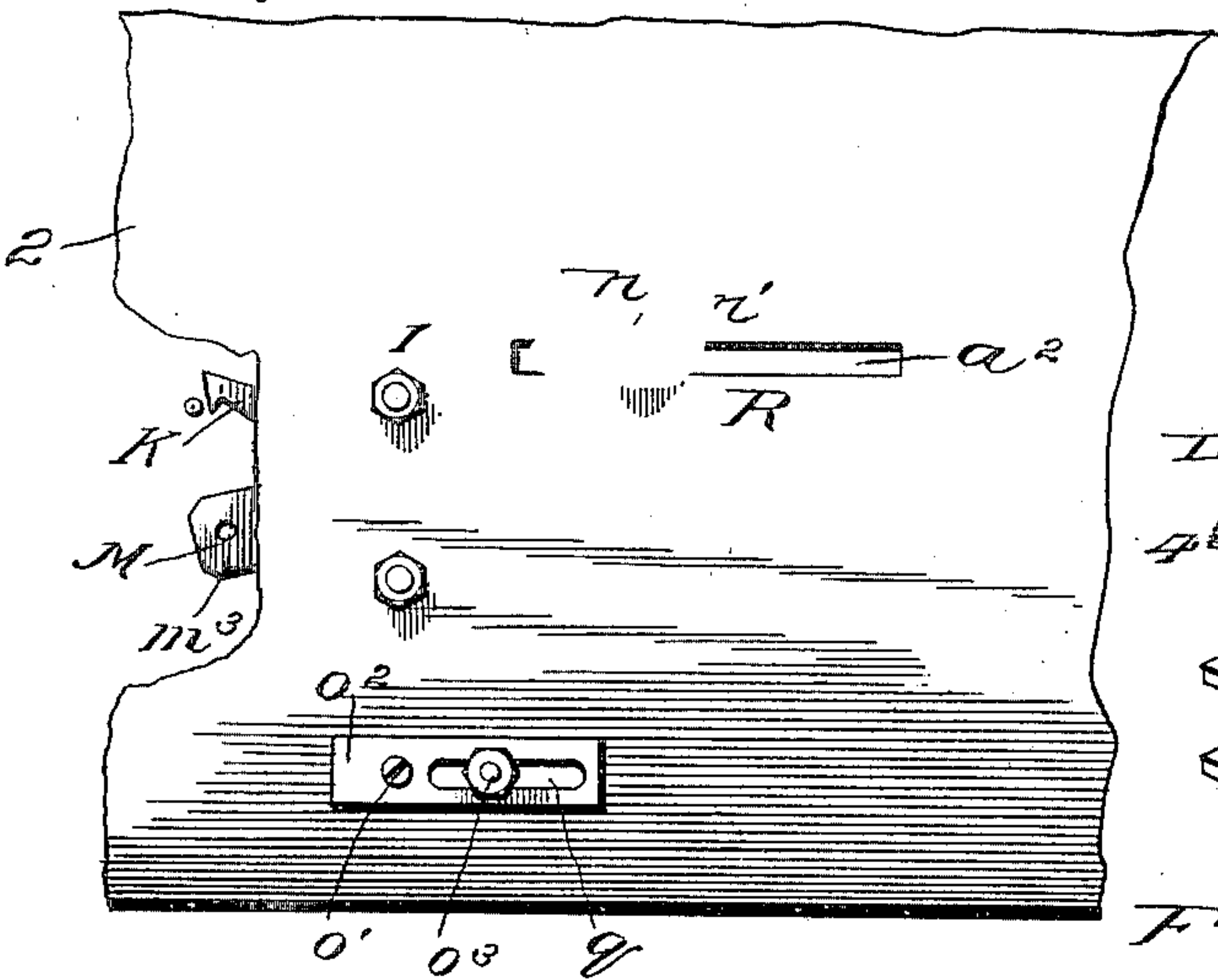


FIG. 7.

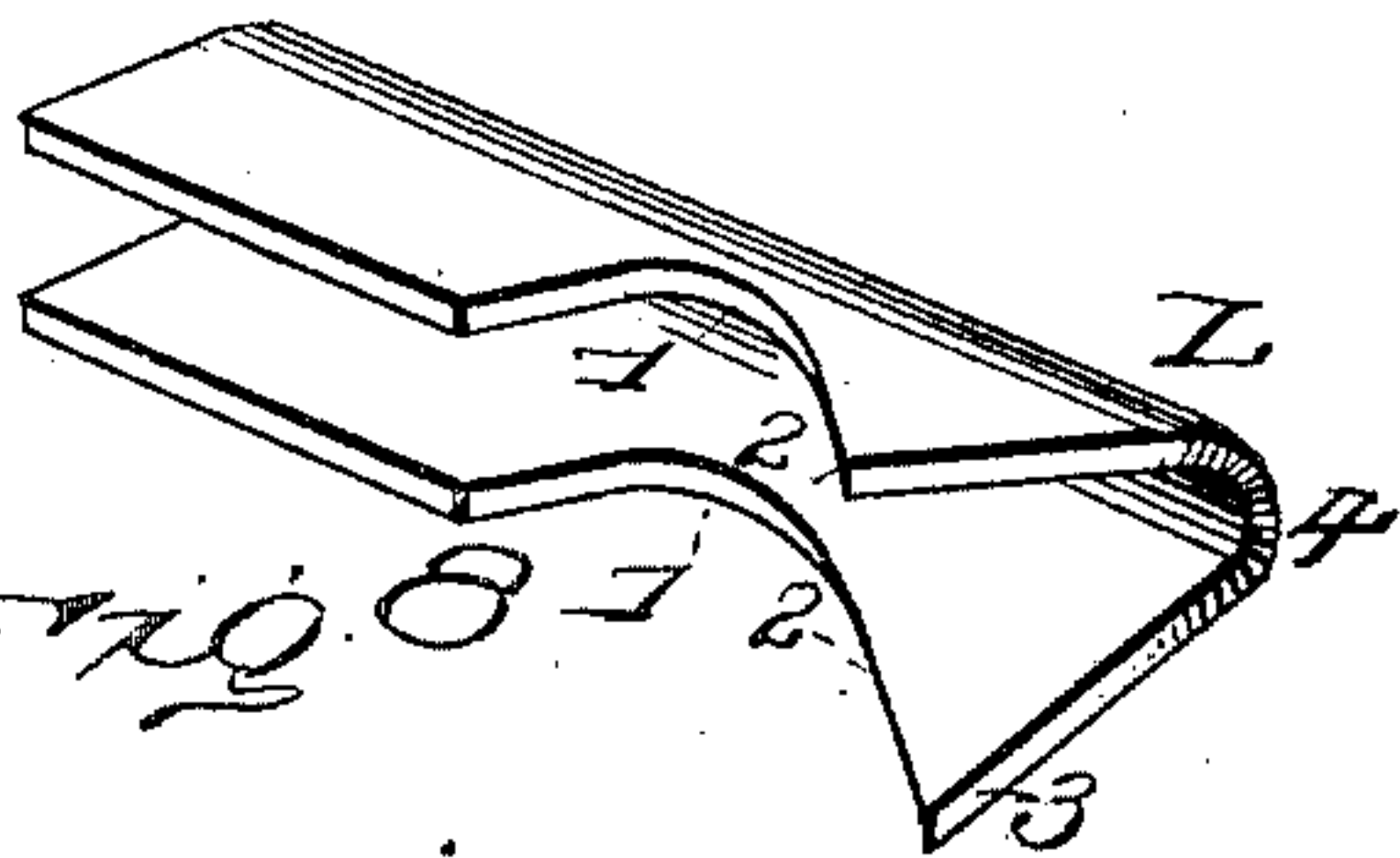
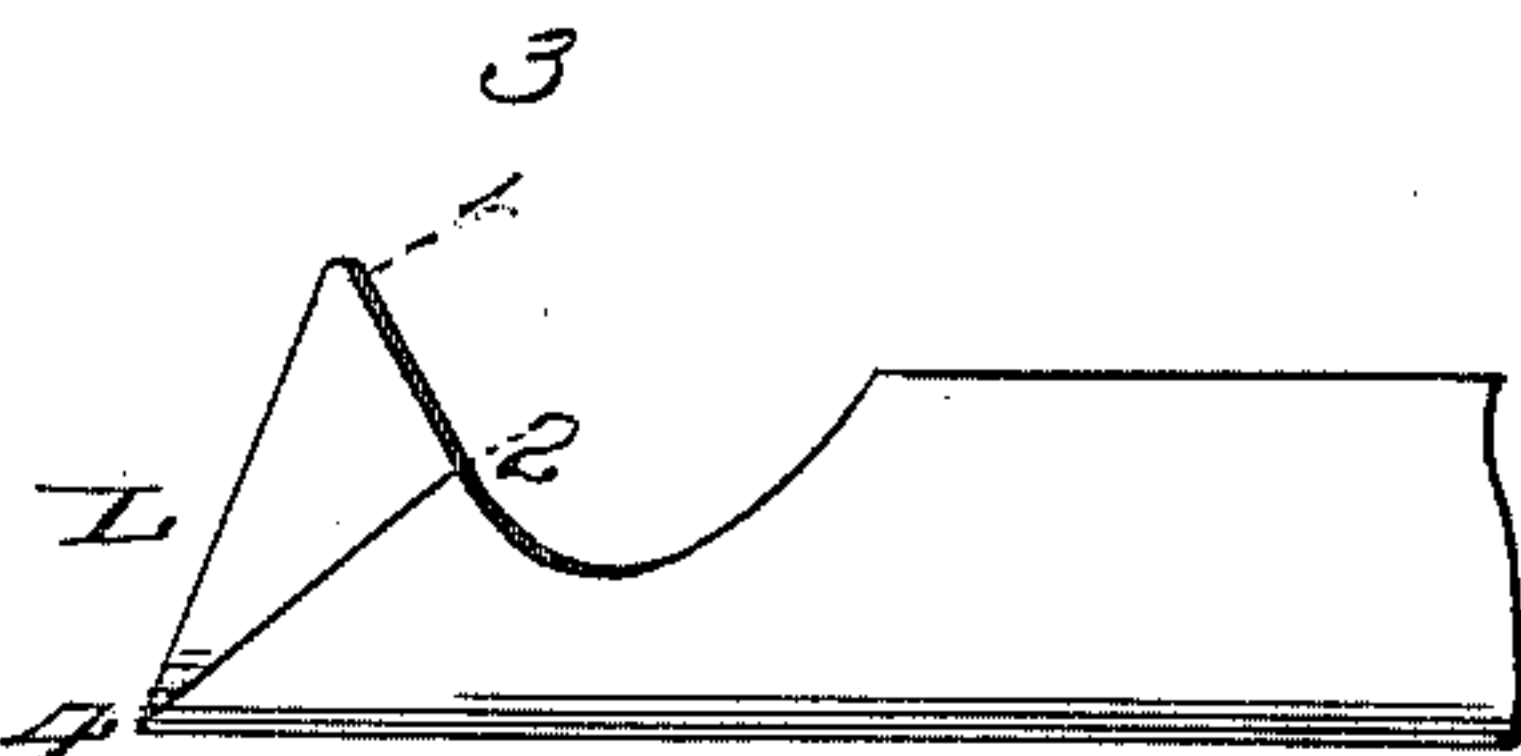


FIG. 8.

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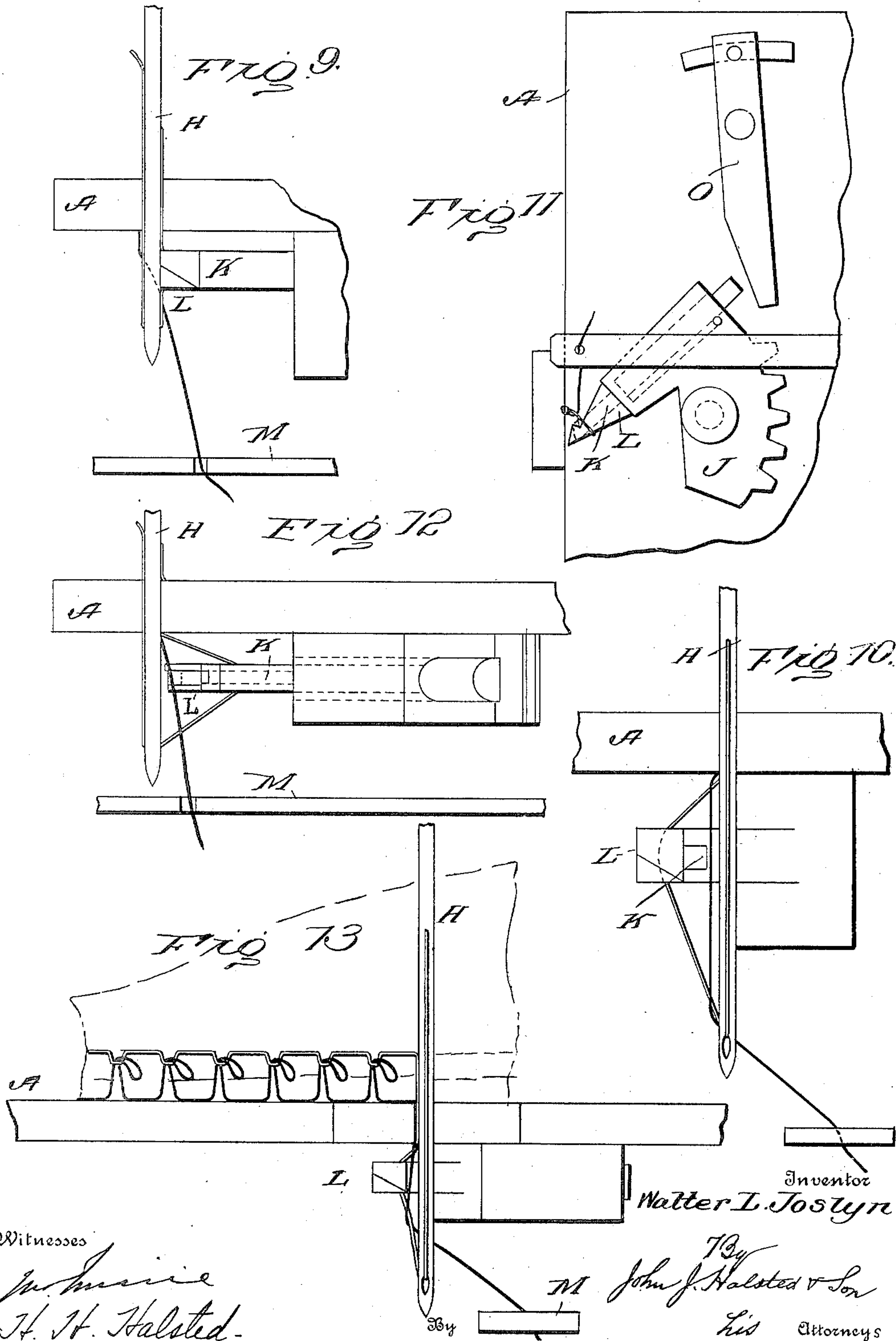
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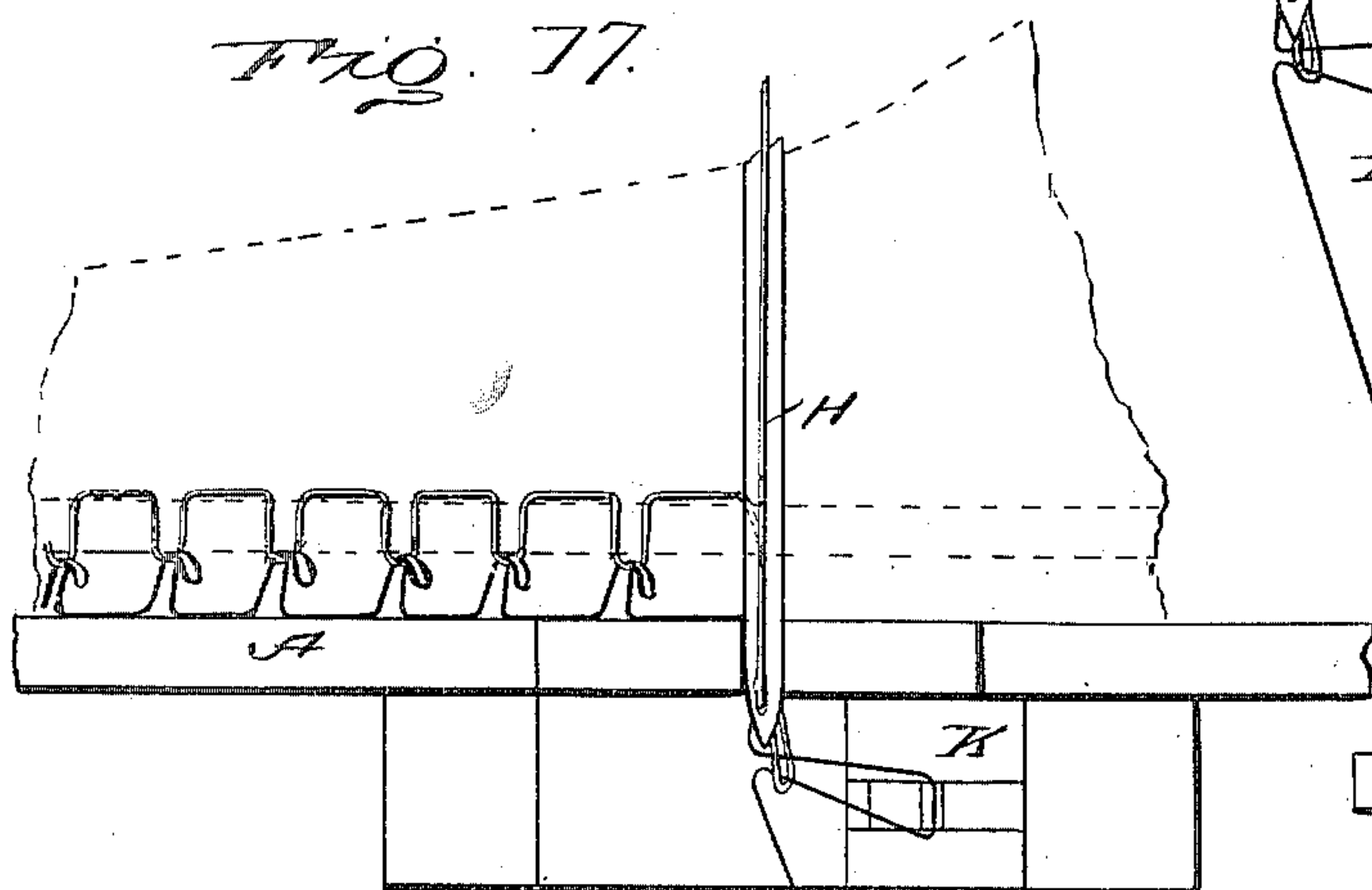
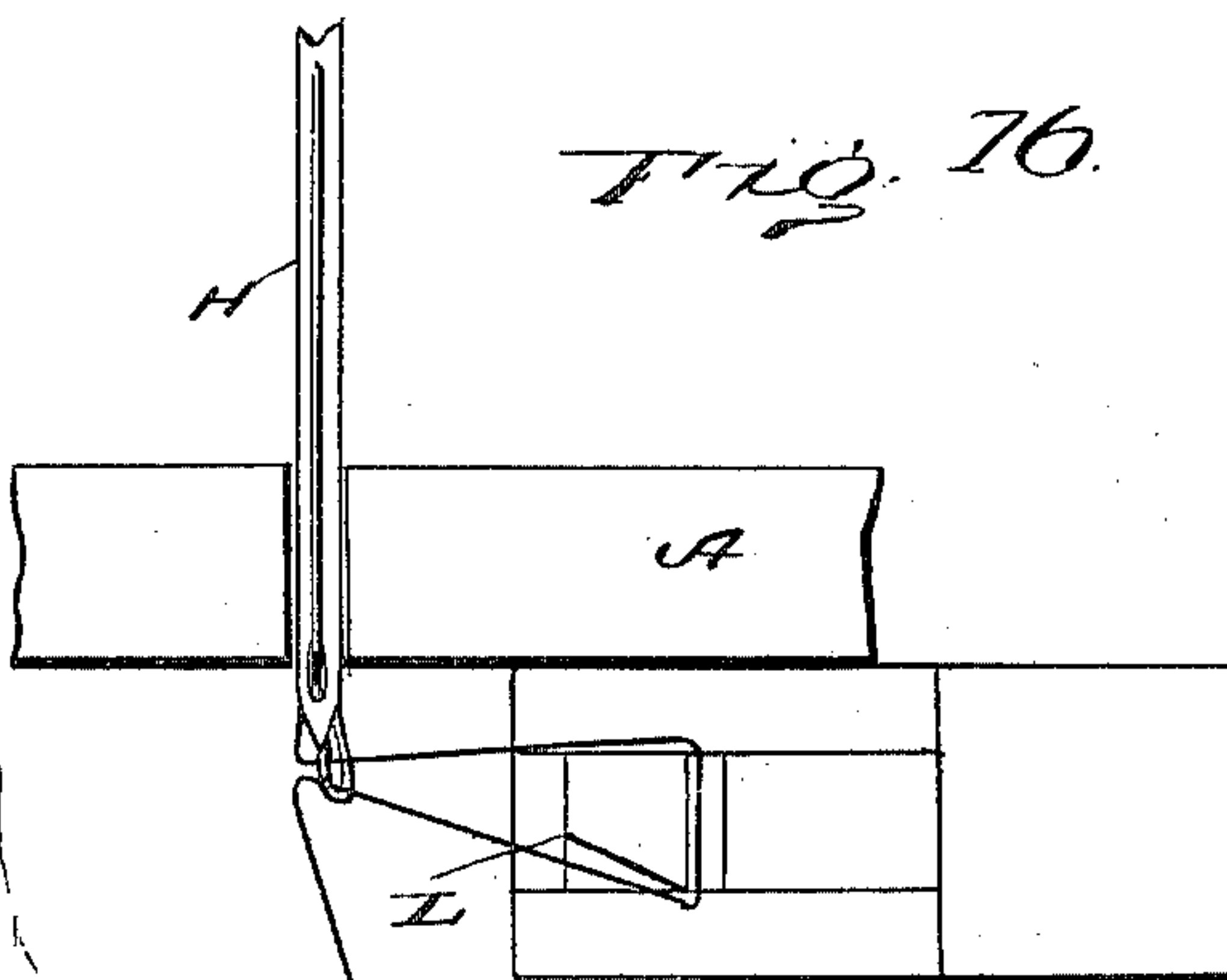
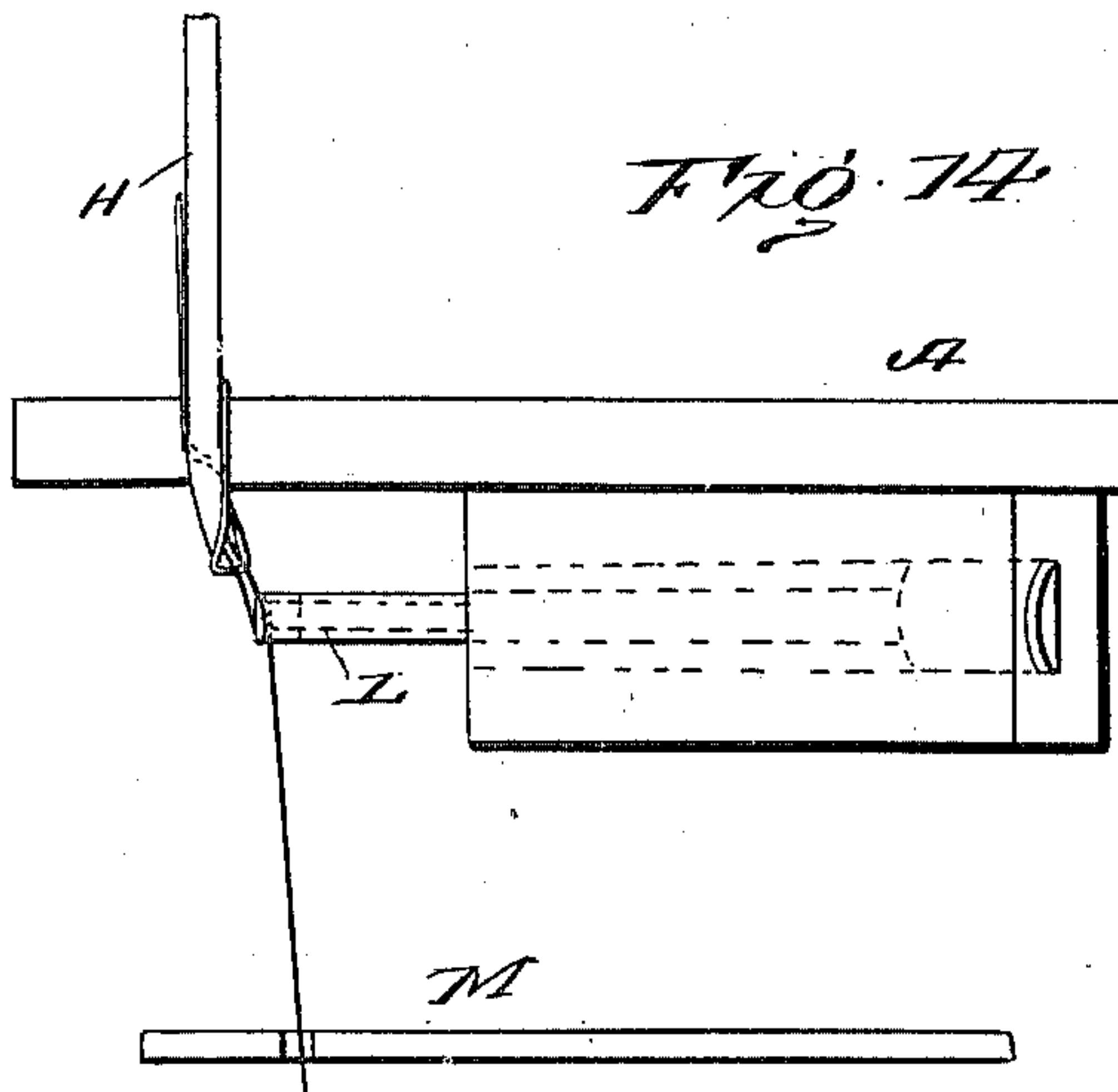
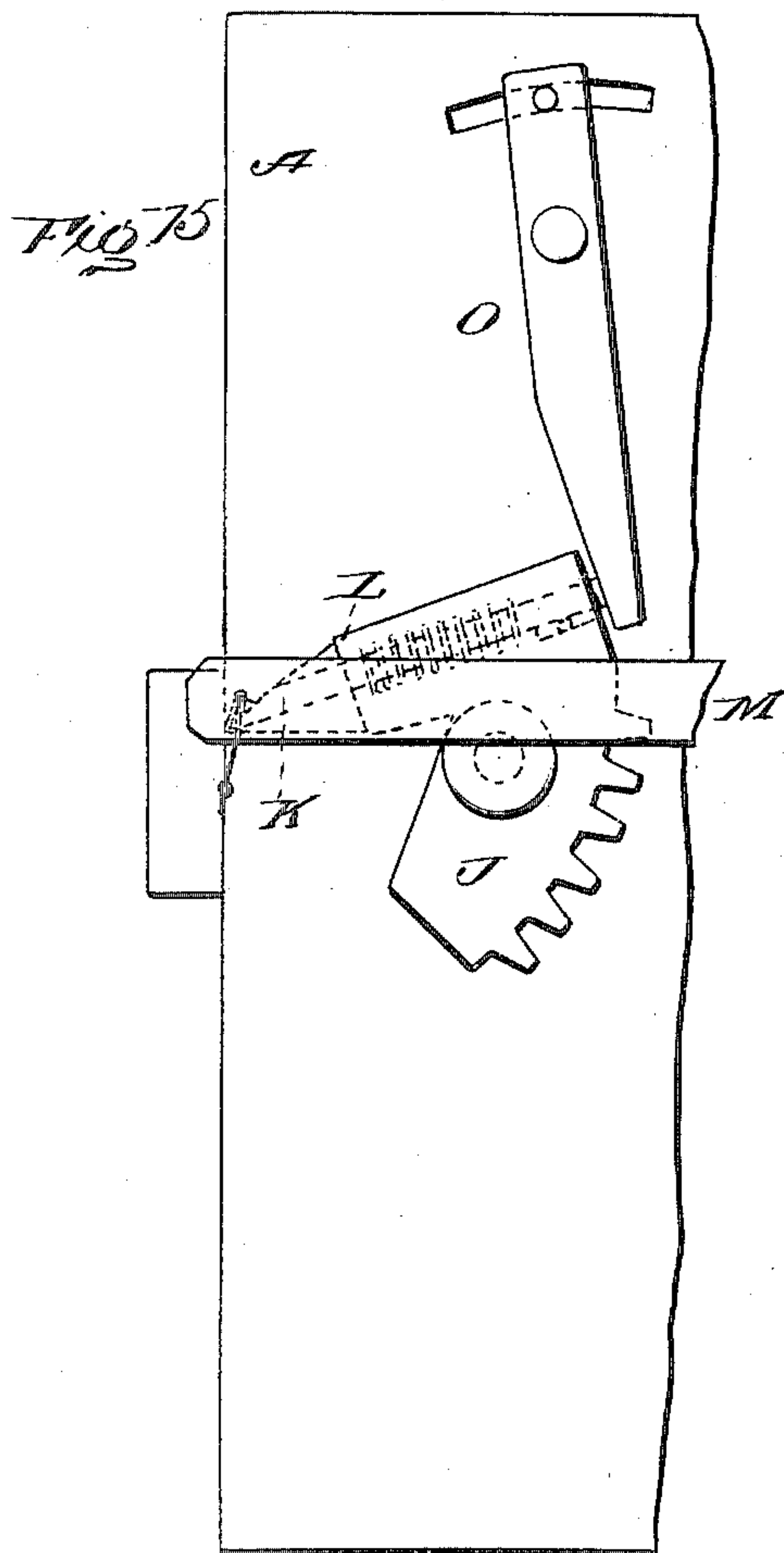
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UNITED STATES PATENT OFFICE.

WALTER L. JOSLYN, OF BROCKTON, MASSACHUSETTS.

WAXED-THREAD SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 668,047, dated February 12, 1901.

Application filed September 7, 1900. Serial No. 29,327. (No model.)

To all whom it may concern:

Be it known that I, WALTER L. JOSLYN, a citizen of the United States, residing at 186 Pleasant street, Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Waxed-Thread Stitching-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

In this my invention in sole-stitching sewing-machines I use an ordinary eye-pointed needle for the upper thread; but for the waxed thread to be interlocked with the upper thread in making therewith what is generally known as the "double-lock stitch" I have devised novel mechanism beneath the table in connection with sole-stitching means and whereby the waxed thread may be run direct from its ball or spool and through the wax-pot to the work. By these means there may be supplied fresh-waxed thread to the looper, and I entirely do away with any shuttle and of any shuttle-race and of any heater of the same and afford to the machine a capacity for higher speed and the turning out of a larger amount of work and also making of a saving of thread. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation showing parts beneath the table; Fig. 2, the under side of the table and devices; Fig. 3, a partial view of the top of the table; Fig. 4, enlarged and partly in section, the sliding looper and the toothed looper-carrier which carries it; Figs. 5 and 6, details detached and enlarged; Figs. 7 and 8, enlarged views of the horn detached. Fig. 9 is a side enlarged view in diagrammatic form, showing the horn in the act of taking up the upper thread to form the first loop for the stitch. Fig. 10 is an enlarged front view of the same character, showing the horn as having formed the loop of the upper thread and the thread-carrier with its lower thread moved to the right to cross such lower thread over the upper loop. Fig. 11 is a bottom plan, not enlarged, of the parts in the position shown in Fig. 10. Fig. 12 is a side view, the parts still being in the position

shown in Fig. 10. Fig. 13 is a diagrammatic front view, enlarged, showing the upper needle drawing up on the lower thread to complete the stitch. Fig. 14 is a side view in diagrammatic form, showing the parts in the same position as in Fig. 13, but the upper needle having been raised and the lower loop in the act of leaving the horn. Fig. 15 is a bottom view of the parts in the same position. Fig. 16 is a front view, enlarged, showing the horn forming the lower loop. Fig. 17 is a side view showing the parts as shown in Figs. 15 and 16 to bring out more clearly the relative position of the two loops which form the stitch.

The under-thread-attachment parts are placed under a table or shelf A, which has at its rear end a raised portion a' and which allows the placing horizontally under it of a bevel-gear B. A vertical bevel-gear C, engaging with the gear B, is attached to any suitable head-shaft (indicated at D) and supported in any standard d' above the table. The size of this gear C should of course be such as to give proper time for working the parts in taking up and releasing of thread, so as to allow the upper thread to do its proper work.

The vertical bolt E holds and allows the turning of the gear B. The bottom of this bolt E should be flush with the lower surface of gear B and the lower surface of this gear flush with the under surface of table A. In the gear B is placed a pin F, which acts as an eccentric, giving motion to a vibratory lever G as it works in a slot g' cut for the same.

In the front part of the table, in line with the needle H and with the bolt which holds the bevel-gear B and about one and one-fourth inches from the needle, is bored a hole, in which is set a bolt I, on which turns the looper-carrier J, which contains a straight-hooked sliding looper K, running in a hole j' , bored on the left-hand side of this looper-carrier and in which is placed a reacting spiral spring k' , and this in turn is held in place at the lower end or side next to the under thread, if desired, which fits the shank of the sliding looper, and at the other end by the head of this looper, which has a square shoulder k^2 .

At one side of the head or stock of the looper K is cut a flat side k^3 , running from

the outer end of the head toward the shank of the looper and leaving space enough to form a shoulder j^2 , in which a screw h^4 rests, placed in a hole bored partially in the hole j' , and thus keeping in place the looper and spring k' and also allowing the removal of this looper and its spring in case of breaking. Over this looper K and fastened to the carrier-piece J is a horn or case L, held in place by being dovetailed, as shown at i' , Fig. 6, and by small flat-headed screws l^2 . The sliding looper K used with this horn should not come to the end of the horn, and the lower side of the horn (not the side next to the table) should be shaped or filed away, that it may come to the point of the needle. This allows the under or waxed thread to pass by without interfering, as the thread carried by the thread-carrier M, attached to the lever G, passes to the left, as the upper-thread needle passes through the work with the upper thread. The looper-carrier J is kept in motion by the bevel-gear B and the vibratory lever G, which has a segment cog-gear cut at its end and fitting a similar segment cog-gear cut on the looper-carrier J. To the segment of the vibratory lever G the thread-carrier M is secured with screws m' , as shown, and this carrier is so placed on said segment and at the proper position to deliver the waxed thread. As the horn L passes by the upper-thread needle taking up the upper thread the thread-carrier M carries the under thread away from the horn. On returning it carries it in front of the hook of the sliding looper, which takes it up, forming a loop with the aid of the upper thread. At the time the upper needle, with its thread, is entering the outer sole a latch O, set at the outer edge of the under side of the table and held, as shown, by an adjustable bolt o' , on which it may turn, is in turn held at the required place by a slide o^2 and bolt o^3 , which has a pin connecting the two parts and forces the looper K forward into the V-shaped part of the horn. The horn L should of its own accord nearly release the loop of the under thread; but as the upper needle, with its thread, is at this time entering the outer sole the loop is held firm and prevented from slipping and is taken into the sole to the required depth from off the V-shaped horn without any resistance from the hook or horn. As the looper-carrier J returns the spiral spring k' returns the looper ready for the next loop. The looper-carrier J should be cut away at the place where the head of the looper comes through to allow the latch to work without interfering with other working parts.

Back of and near the center of the table is a slot R, cut about two and one-half inches long, to the right of and about a quarter of an inch from the line of the looper-carrier and bevel-gear bolt, this slot being of the required width to allow the bolt n' to pass, which holds the lever G in place, and to allow it to be moved backward and forward at will.

The adjustment of said bolt in said slot is to assist in lengthening or shortening the under-thread loop which forms the double lock. This bolt n' , which works in this slot, is so made that the part passing through the slot is smaller than the main shaft of the bolt, so forming a square shoulder, which rests on the under side of the table and is prevented from slipping by being drawn into place by the aid of a suitable nut n^2 .

The vibratory lever G is the part of the attachment which gives the motion to the looper-carrier J with the aid of the bevel-gear B on the under side of the table and in which is set a pin-eccentric F, which works in the slot g' cut in the rear end of the vibratory lever to work from left to right. At the other end of the vibratory lever is a segment of a cog-gear, a corresponding segment for which is cut in the looper-carrier and which are fitted together and held in place by bolts, on which they turn.

To get the proper work from the vibratory lever, a slot g^2 must be cut, beginning near its cog-gear and running lengthwise and in line with the slot g' in this lever near its other end, and this is about of the same length as the slot R cut in the table. In this slot g^2 a slide T is placed, which is flush with the surface of the vibratory lever on the side next to the table, one arm t^2 of which slide spans the side of said lever G, as shown. In this arm, which covers the side of the vibratory lever, a hole is bored and a thread cut. In this is placed a square-headed set-screw t^3 and with the aid of the same can be held at any place wanted in the slot g^2 . In the center of this slide T is bored a hole of the required size to fit the bolt n' , which holds the lever in place and allows it to turn.

The slot g' in the rear end of the vibratory lever G, in which works the pin-eccentric F, attached to the bevel-gear B, must be in line with the bolt which holds this lever in place by passing through the center of the slide, which is held in place by the square-headed set-screw n^3 , set in the arm of the slide T.

The thread-carrier M is made of an arm of sufficient length when attached, as shown to the left-hand side of the vibratory lever, near the head of slot g^2 , with an elbow m^2 , and which is set firmly and held, as shown, by screws m^3 , so as to be rigid and at such an angle as to give the proper time for the under thread to pass clear when the horn passes to the right, but on returning to pass in front of the looper, causing the same to form a loop with the aid of the upper thread. A hole m^3 should be made in the carrier-arm M, so as to move directly over the hook in the sliding looper K, and through which hole the thread runs. The tension of the under thread should be governed at the wax-pot and by any known or suitable means. (Not needed to be shown.) The wax-pot may be heated in any way that is convenient, steam-heating being preferred. The latch O, which forces the looper to re-

lease the loop of the under thread, is placed near the forward part and close to the edge of the table at the required distance to allow the same to strike properly the head of the sliding looper K and force it forward for the shortest as well as for the longest loops. This latch is held in place by a bolt passing through and set in the table and still allowing the turning of the latch as required.

To connect the slide and the latch which is on the under side of the table, a slot α^4 , as shown, is cut in the table large enough to allow a small bolt or pin to connect the two and moving of the latch as required by the looper. This slot is shown as curved in Fig. 15; but it may be straight, as shown in other figures, in which case the breadth of the slot must be of course sufficient to permit the proper actions or adjustments of the latch. In Fig. 2 this slot is shown straight and as extending lengthwise of the bed-plate and at an angle thereto, while in Fig. 3 the slot is shown straight and extending lengthwise of and parallel to the bed-plate, while in Figs. 11 and 15 said slot is shown as extending lengthwise and slightly at an angle to the bed-plate, but arc-shaped. Either form may be used at option.

The wax-pot and the supply of thread for waxing may be located where most convenient and are indicated at 1 and 2 in Fig. 1.

I would hereby again repeat and emphasize that by my invention in wax-thread shoe-stitching machines and using two threads in stitching my devices dispense entirely with any shuttle for the waxed or under thread, run the waxed thread into the machine direct from a ball or supply, and draw it consequently into the machine and to the stitch-making devices without any need of heating a shuttle or shuttle-race or equivalent devices.

What I claim as new in a shoe-sole-stitching machine employing an eye-pointed needle for

the upper thread and employing a waxed thread for the under one is—

1. In combination with a reciprocating eye-pointed needle and means for actuating the same, of a vibratory toothed segment, a sliding looper carried thereby, and carrying also a V-shaped horn, and a vibratory carrier for delivering the waxed thread direct to the looper, and means for actuating said segment and carrier, all substantially as set forth.

2. In combination with a reciprocating eye-pointed needle, the vibratory lever, the wax-thread carrier supported thereby, the vibratory carrier, the sliding looper and the V-shaped horn on said carrier, the latch to act on the stock of the looper, the vibratory toothed segment, and means for imparting movements to the said parts, all substantially as set forth.

3. A stitching-machine having stitch-forming mechanism comprising an eye-pointed needle and a looper mechanism, including the gears C and B, the latter located in a raised portion of the machine and carrying the crank-pin F, the vibratory lever having the adjustable fulcrum T, and means cooperating with said pin, the sliding looper, and means for actuating the same from the vibratory lever, as set forth.

4. A stitching-machine comprising a vertically-reciprocating needle, a vibratory looper and means for actuating the latter, a thread-carrier supported and actuated by said means, a thread-supply for the carrier, and a waxing device located between the carrier and supply and through which the thread of the latter is directed, substantially as set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

WALTER L. JOSLYN.

Witnesses:

Mrs. M. A. PLACE,
ARTHUR W. PLACE.