(No Model.)

3 Sheets—Sheet 1.

J. E. BICKFORD.

PEGGING MACHINE.

No. 409,729. Patented Aug. 27, 1889.

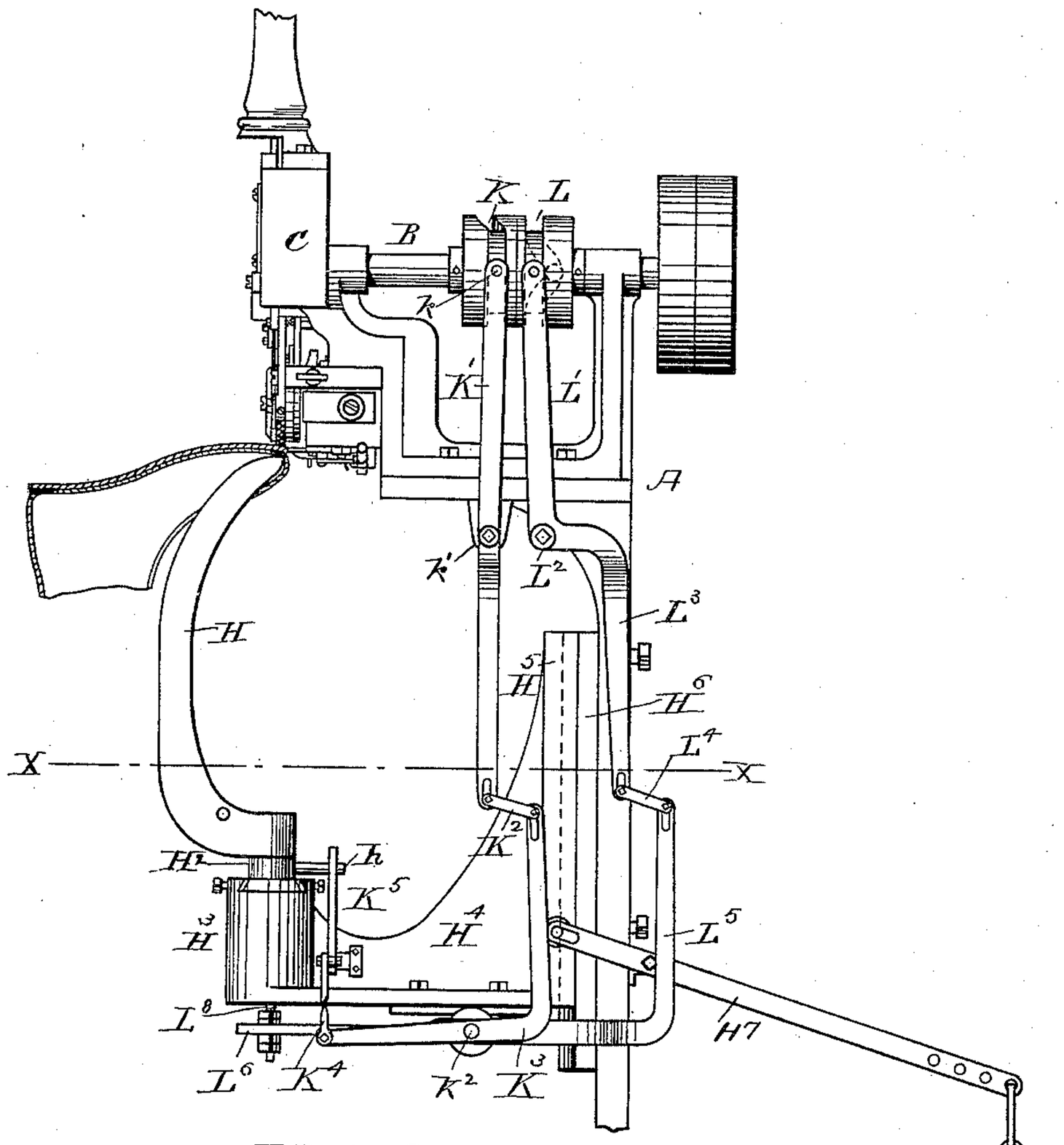

Fig. 1.

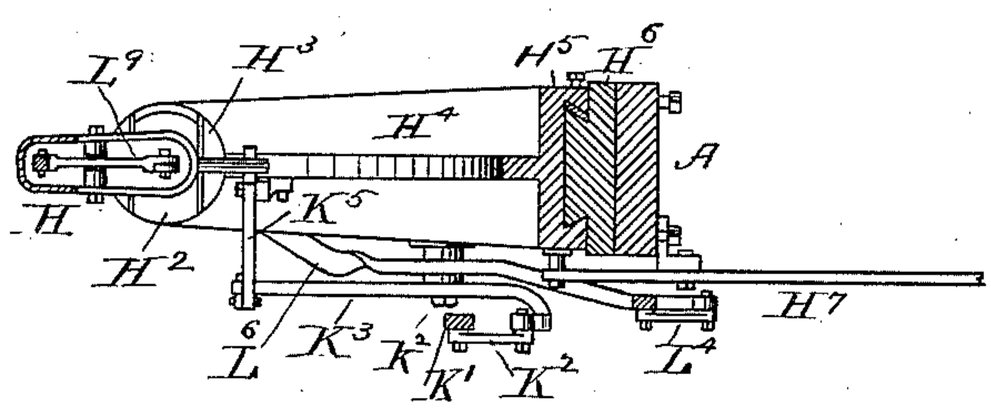

Fig. 2.

WITNESSES.

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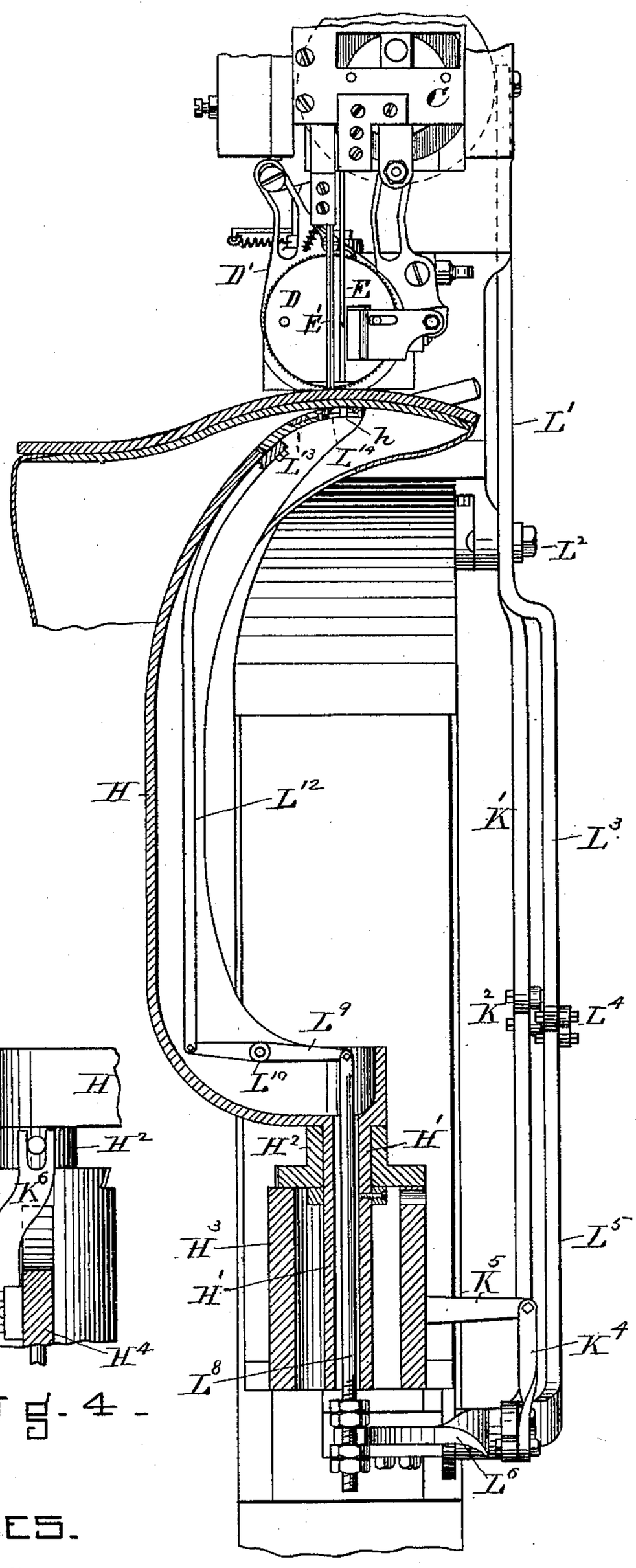

Fig. 4.

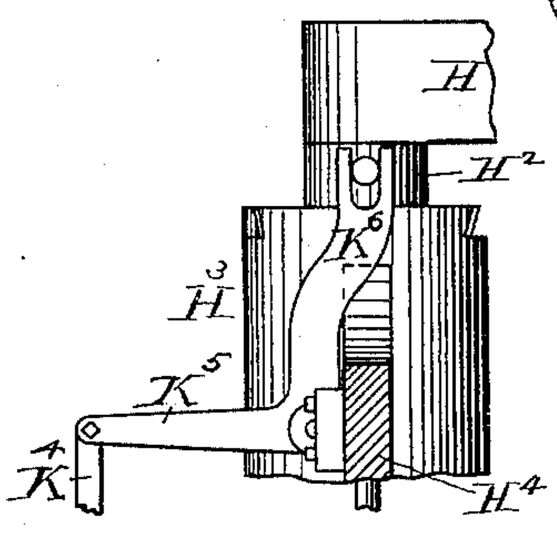

Fig. 5.

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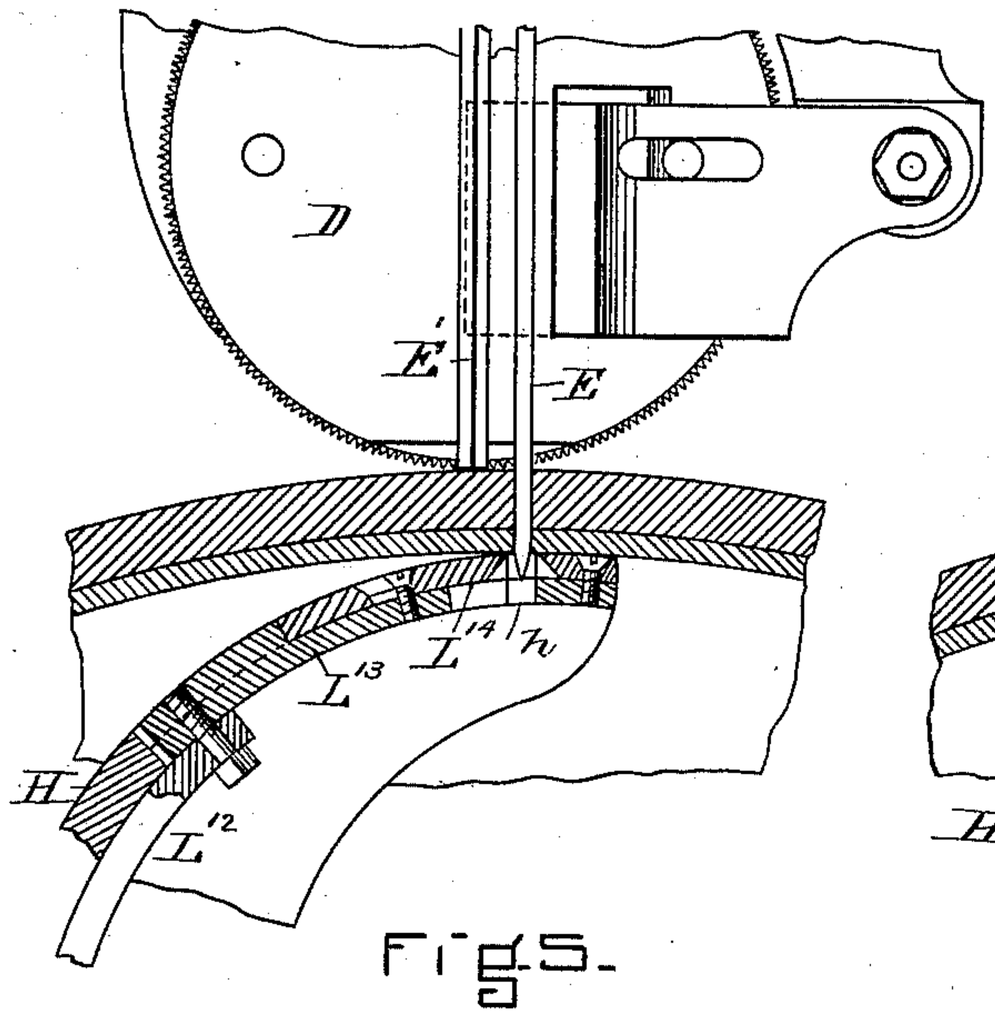

Fig. 5.

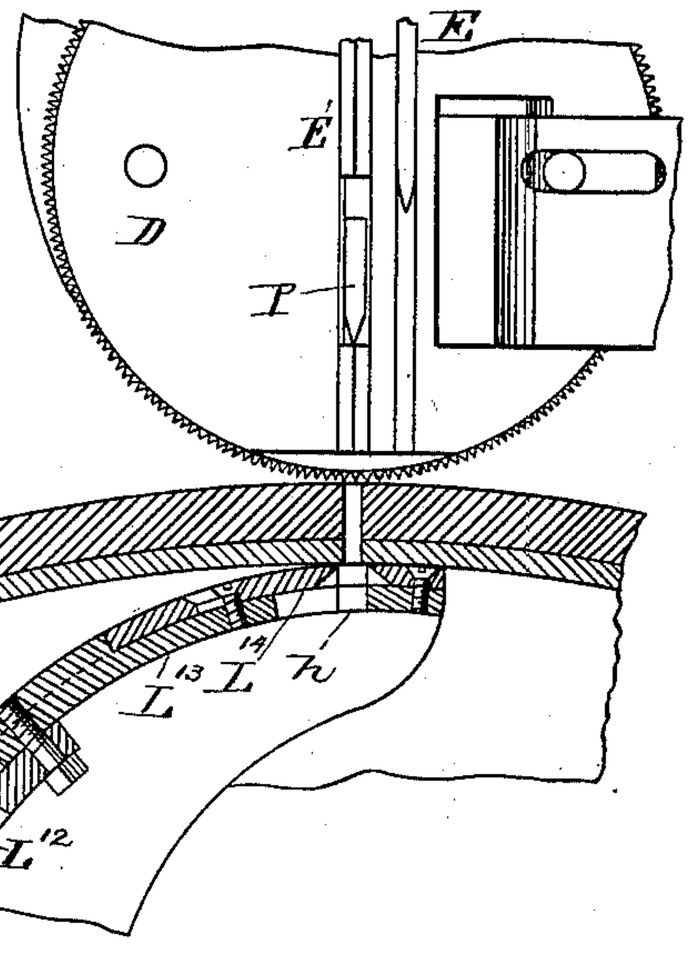

Fig. 6.

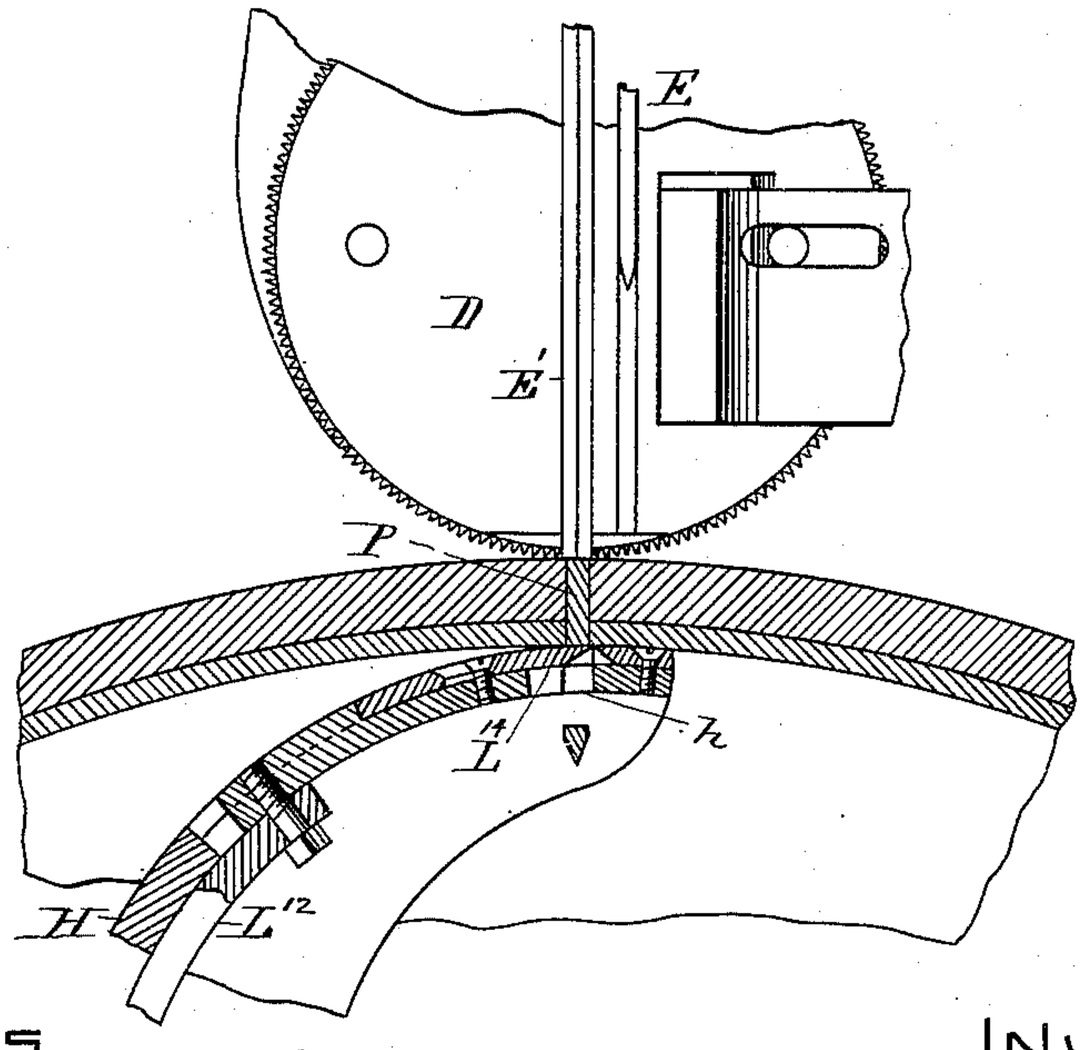

Fig. 7.

WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN E. BICKFORD, OF WHITMAN, MASSACHUSETTS.

PEGGING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 409,729, dated August 27, 1889.

Application filed November 10, 1888. Serial No. 290,481. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. BICKFORD, of Whitman, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Pegging-Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to combine with that class of pegging-machine in which a supporting-horn is used a device for feeding the horn along to correspond with the ordinary feeding device that works on the outer sole, and a device for cutting the pegs as they are driven. This object I attain by the mechanism shown in the accompanying drawings, in which—

Figure 1 is a front elevation of the upper part of a pegging-machine with my improvement attached. Fig. 2 is a horizontal section taken on line *x x* of Fig. 1. Fig. 3 is a front view of the upper part of a pegging-machine, showing some of the parts in section and some in elevation. Fig. 4 shows details in rear elevation. Figs. 5, 6, and 7 are views which serve to illustrate the working of my device in connection with the awl, driver, and feeding mechanism.

My invention consists in organizing and combining in one machine a pegging mechanism, a feeding mechanism, a support for the shoe, and a peg-cutting mechanism, so that a shoe after being withdrawn from the last can be pegged, including cutting the driven pegs, by the machine in a practical, rapid, and in all respects desirable manner. Heretofore this has not been done, as there has been no device by which the inner surface of the leather could be supported while the pegs were being driven. The reason that no such support could be given is the fact that the hole in the horn was always in the same place, it being located on a line with the axis upon which the horn turned; hence the hole had to be so large that the protruding point of the peg would have to have a space to move in the diameter of which is as great as the largest feed movement required, which is as great as one-fourth of an inch; and it is obvious that leather of the quality of which inner soles are made and of the temper in which inner soles are worked would be totally unable to retain its place when not supported within an eighth of an inch of the point at which the peg penetrated it, and that, as actual practice has demonstrated, a shoe pegged on such a support—that is, a support that has a hole one-fourth of an inch in diameter about the point of penetration—will have an inner sole the inner surface of which will have on its peg-line a series of protuberances, which will prevent the peg-cutter from working. In short, for this fact it has heretofore been impossible, or, at least, impractical, to peg and cut the pegs on a machine, and therefore it has not been done. My machine admits of this being done, and in the manner that I will now explain.

In the drawings, A represents the frame of the machine, B the main driving-shaft, and C the head of the machine.

In Fig. 3 I have shown a sketch of some of the working parts for operating the awl E, peg-driver E′, and feed mechanism D D′; but I need not enter into any description of these parts, as they are common to pegging-machines, and form no part of my invention.

The supporting-horn H has a cylindrical extension H′, (see Fig. 3,) which forms a journal for it to turn on. The journal H′ fits in a sleeve of a horizontal sliding piece H^2, which is dovetailed into the top of the vertically-moving housing H^3, the housing H^3 being connected by an arm H^4, Figs. 1 and 2, to an upright slide H^5, which slides vertically on a dovetailed piece H^6, bolted to the frame A. The housing H^3, with its arm H^4 and upright slide H^5, is moved up and down by a foot-lever, (not shown,) it being balanced in part by the counter-weight H^9 on the lever H^7. The horn H is moved vertically by the housing H^3 and its connecting parts, as has been just set forth. This vertical motion is under the control of the operator, and is used in placing the shoe on the horn or in taking it off when pegged. The turning of the horn about its journal H′ is also directly under the control of the operator, and is used for the purpose of presenting the different parts of the shoe to the pegging device.

In the drawings I have shown what is called the "band-feed" device; but my invention is equally adapted to work with an awl-feed device.

The parts and motions above referred to are old and in common use.

I will now proceed to set forth the devices that I consider new and of my invention or directly connected to the same. The horn H has an opening *h* at the top, (see Figs. 3, 5, 6, and 7, (which is adapted to receive in turn the end of the awl E and of the peg P, and as the opening *h* is but slightly larger than the awl, and as the awl does not move in the same line that the peg does, it is evident that the hole *h* must either be large enough to extend from the field of motion of the awl to that of the peg and embrace both fields (and thus be objectionably large) or the horn must move in the line of the feed, so that the hole *h* will be in turn first directly under the line of motion of the awl, as shown in Fig. 5, and then (moving with the feed of the shoe) be directly under the peg, as shown in Fig. 6.

The device that I use for moving the horn H bodily in the same direction that the shoe is moved by the feeding device consists of a cam-groove K, which, acting on a pin *k*, (see Fig. 1,) gives motion to the lever K′, pivoted at *k*′. This lever K′, acting through the link K^2 and bent lever K^3, (on pivot k^2,) link K^4, and bent lever K^5, (see Figs. 1, 2, 3, and 4,) moves an arm H^3, extending from the sliding sleeve H^2, in which the journal H′ of the horn H turns, and thus causes the sleeve H^2 and its dovetail to move back or forth the distance between the awl and the peg, or, what is the same thing, the distance from one peg to another. This movement of the horn is timed so as to agree exactly with the feed-motion of the machine. Thus when the awl is in or about to enter the sole the horn is in the position shown in Fig. 5, and when the awl has been withdrawn and the peg about to enter, or just entered, the horn is in the position shown in Fig. 6. The horn remains in the position shown in Fig. 6 until the peg P is cut off, as shown in Fig. 7. Then it is returned by the cam-groove K and the levers, as above set forth, to the first position shown in Fig. 5, ready for the next action. By thus causing the horn to move with the feed-motion, instead of remaining stationary, as in the ordinary machines, I facilitate the accurate feeding of the shoe as the work progresses, and save the inner sole of the shoe from being abraded or roughened.

I also have a great advantage in that class of pegging-machines in which it is desirable to cut off the pegs as they are driven, for in that case, if the horn does not move with the feed, then the hole *h* must be large enough to extend from the line of motion of the awl to the line of motion of the peg, thus presenting quite an opening over which the inner sole has no support, and in case it is damp and soft it is apt to be forced downward so as to interfere with the working of the machine, and also to become very uneven.

My device for cutting off the pegs as they are driven consists of a knife L^{14}, attached to a sliding piece L^{13}. (See Figs. 3, 5, 6, and 7.) This sliding piece L^{13} is operated by a link L^{12}, which in turn is operated by a lever L^9, (pivoted at L^{10},) link L^8, bent lever L^6 L^5, (see Fig. 2,) link L^4, bent lever L^3 L′, pivoted at L^2, and the cam-groove L. The cutting action of the knife L^{14} (see Figs. 5, 6, and 7) takes place immediately after the peg has been driven and before the horn has begun its backward movement, all of the parts being in the position shown in Fig. 7, wherein the peg is represented as having just been cut, everything being ready for the horn to move back, so as to bring the hole *h* into the line of motion of the awl E.

To effect the adjustment of the throw of the horn, I can move the fulcrums of the levers K′ K^3 K^5. The same adjustment may be effected for the peg-cutting knife by changing the fulcrums of the levers L′ L^5.

It will be observed that in my device all of that part of the horn that serves as a support for the shoe, or is in contact with the shoe, moves with and, in fact, forms a part of the feeding device. The peg-cutters move with the horn bodily when the feeding action is taking place, and move in relation to the horn when acting to cut off the peg. In former machines the horn is immovable, except about its own axis. In my machine the horn has a lateral motion—that is, a feeding motion—and in this respect is different from all other machines.

I claim—

1. In a pegging-machine, the combination of a feeding turning-horn having an awl and peg orifice and a peg-cutting mechanism and mechanism for holding the horn and shoe stationary during the working of the awl, then feeding the shoe and horn forward together and holding them stationary until the work of peg driving and cutting is completed, and mechanism to feed said horn back when these operations are completed, with a peg-cutter L^{14}, awl E, driver E′, and an upper feed mechanism, substantially as and for the purpose set forth.

2. In a pegging-machine, the rotating feeding-horn H, with the slide H^2, arm *h*′, lever K^6 K^5, link K^4, lever K^3, link K^2, lever K′, and cam K, substantially as and for the purpose set forth.

JOHN E. BICKFORD.

Witnesses:
FRANK G. PARKER,
MATTHEW M. BLUNT.