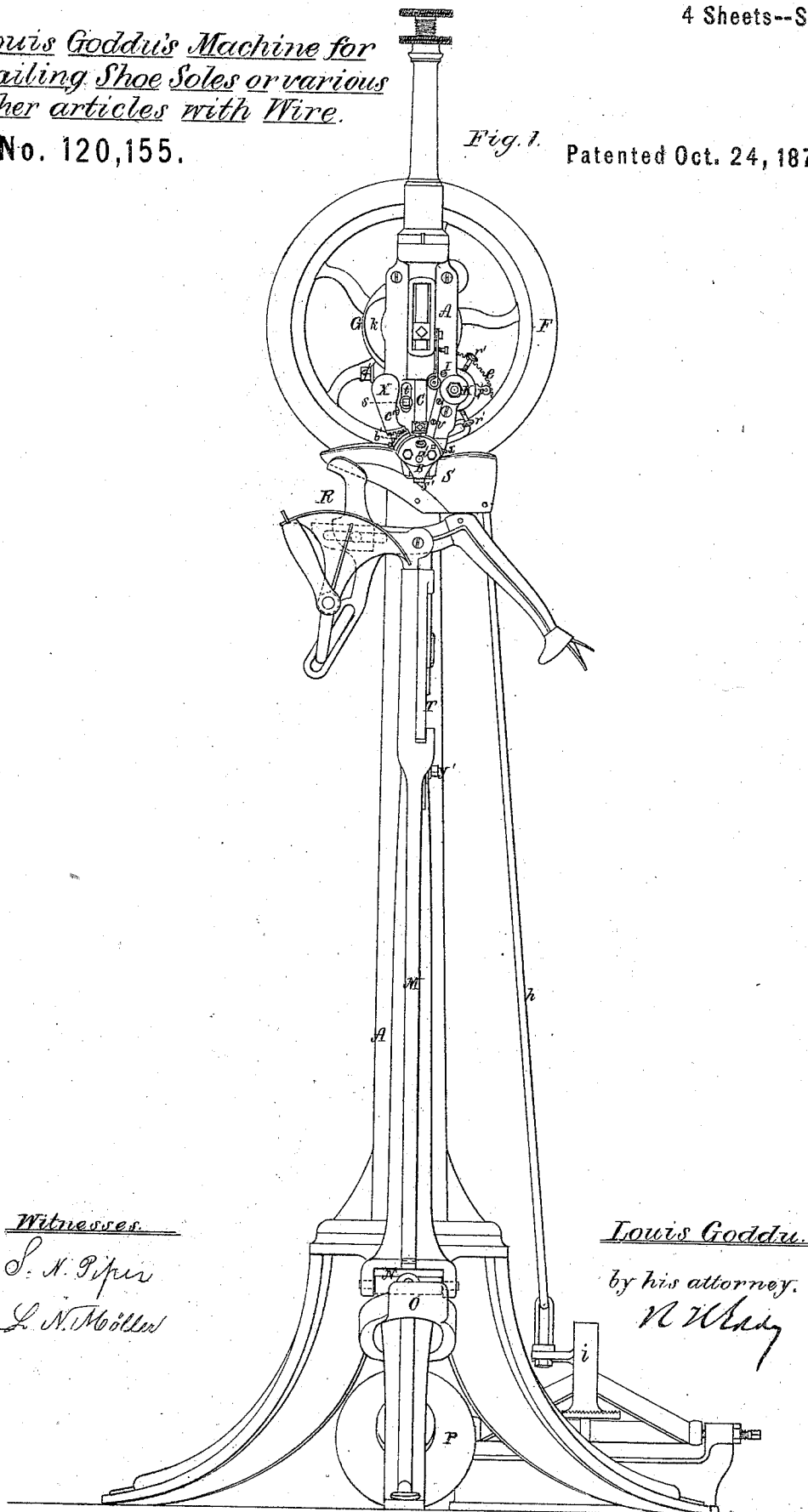


Louis Goddu's Machine for
nailing Shoe Soles or various
other articles with Wire.

No. 120,155.

Fig. 1. Patented Oct. 24, 1871.

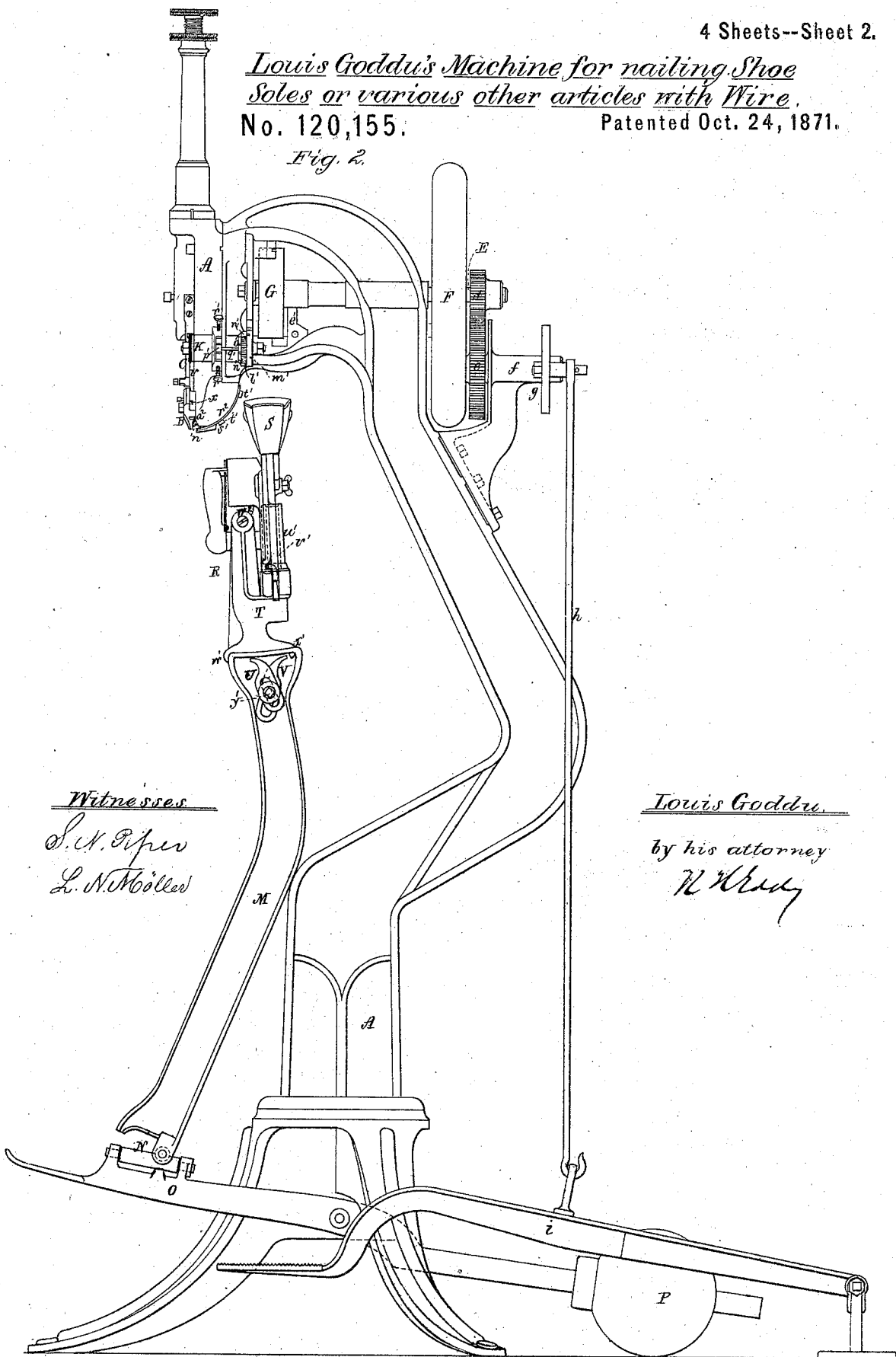


Witnesses.
S. A. Piper
L. N. Moller

Louis Goddu.
by his attorney.
R. W. H. W.

*Louis Goddu's Machine for nailing Shoe
Soles or various other articles with Wire.*
No. 120,155. Patented Oct. 24, 1871.

Fig. 2.



Witnesses

S. W. Piper
L. N. Moller

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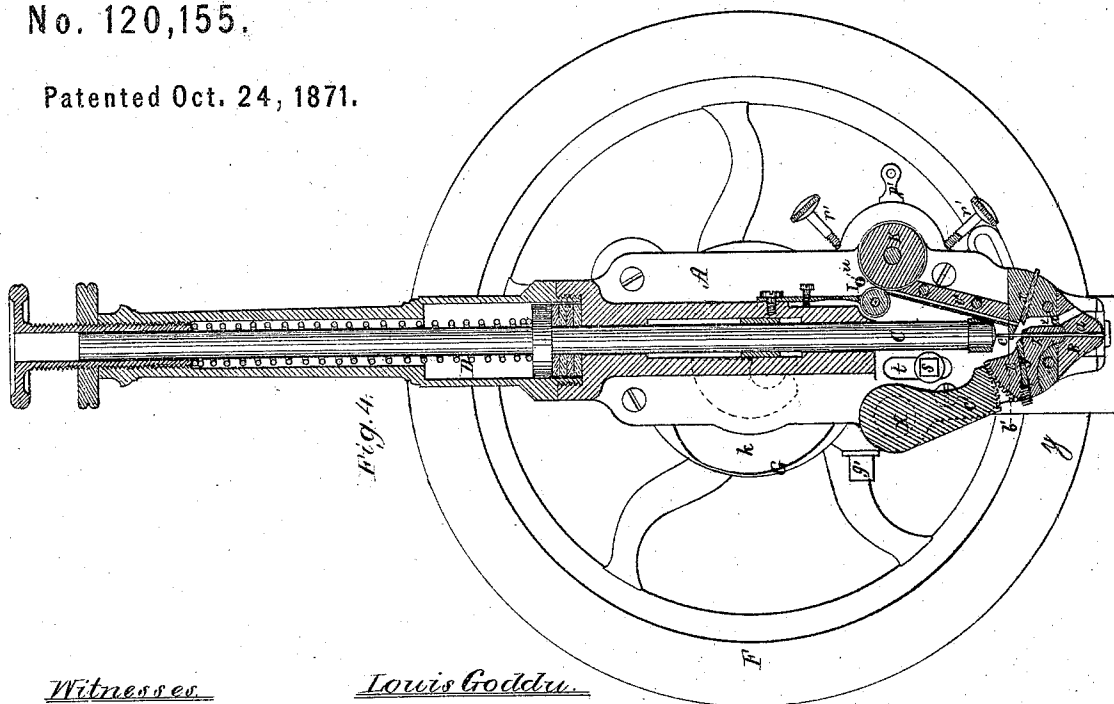
by his attorney

H. H. H.

Louis Goddard's Machine for nailing Shoe Soles or various
other articles with Wire. 4 Sheets--Sheet 3.

No. 120,155.

Patented Oct. 24, 1871.



Witnesses.

S. N. Piper
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N. Whaley

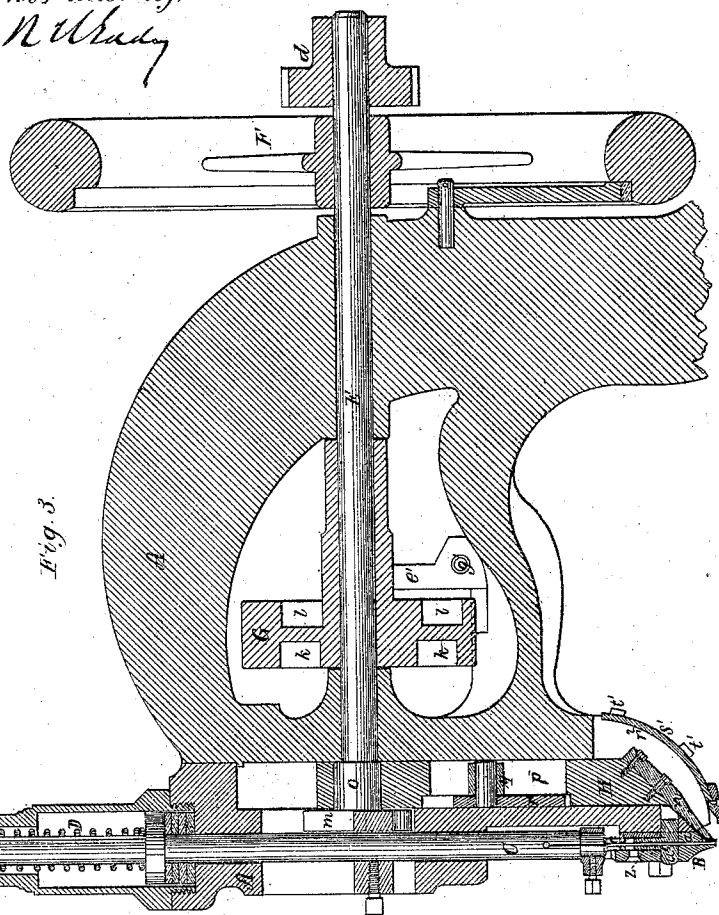


Fig. 3.

Louis Goddard's Machine for nailing Shoe Soles or various articles with Wire.

No. 120,155.

Patented Oct. 24, 1871.

Fig. 7.

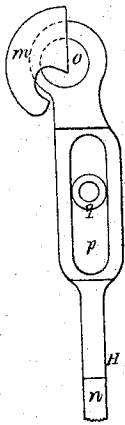


Fig. 6.

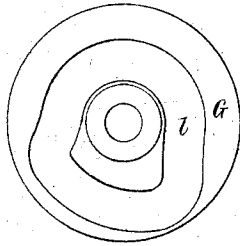


Fig. 5.

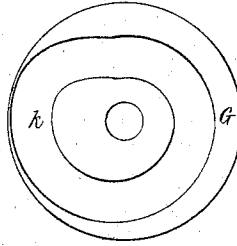


Fig. 9.

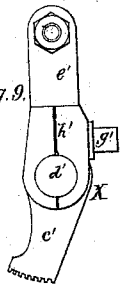


Fig. 8.

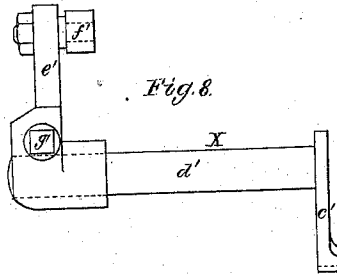


Fig. 11.

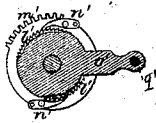


Fig. 13.



Fig. 14.

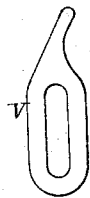


Fig. 10.

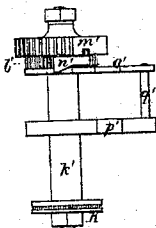
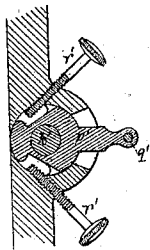


Fig. 12.



Witnesses.

L. N. Piper
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R. W. Rudy

UNITED STATES PATENT OFFICE.

LOUIS GODDU, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO ELMER TOWNSEND,
OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR NAILING SHOE-SOLES.

Specification forming part of Letters Patent No. 120,155, dated October 24, 1871.

To all whom it may concern:

Be it known that I, LOUIS GODDU, a citizen of the Dominion of Canada, but temporarily residing at Boston, of the county of Suffolk and State of Massachusetts, have made a new and useful invention having reference to the Nailing of Shoe-Soles, or various other articles with wire; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawing, of which—

Figure 1 is a front elevation, Fig. 2 a side view, and Fig. 3 a vertical and longitudinal section of my new or improved nailing-machine. Fig. 4 is a transverse and vertical section taken through the nail-driver.

Such other figures or drawing as may be necessary to a full or proper illustration of my invention will be hereinafter referred to and described.

The machine exhibited by the said drawing contains the main essential elements of a nailing-machine, they consisting of a guide-nose; a nail-driver and its operative mechanism; a mechanism for feeding in the wire from which each nail is to be severed; a mechanism for receiving the wire and transferring the nail portion thereof to the guide-nose passage; and, finally, a mechanism for severing a nail from the wire. In addition to the said collection of essential elements the machine has a mechanism for supporting the shoe, and one for feeding it along with an intermittent motion, in order that the nails may be driven into it at their proper distances asunder and in the required positions. The nature of my invention of the improvements made in such a machine may be thus defined, the same consisting in the nail-transferrer and the movable cutter combined with and arranged in one sectoral gear-lever disposed with the guide-nose in manner and to operate substantially as hereinafter explained and represented; also, in the combination of a sectoral gear-lever and its operative grooved cam with the nail-transferrer and the movable cutter combined with and arranged in one sectoral gear-lever disposed with the guide-nose, substantially in manner and to operate as hereinafter set forth; also, the combination of the arm of the sectoral lever with the fulcrum-shaft thereof, by means of a friction-clamp, whereby the said arm is enabled to move on and not turn the fulcrum-shaft in case the nail-driver should stop the transferrer in its rotary movement; also,

certain mechanism for estopping the pendulous supporter of the jack; also, the pawl-gauge and its stop-lever combined, as hereinafter described and arranged on one shaft and with adjustable stops; also, an adjustable fulcrum and a clamp-screw thereof, combined with the slotted feeding-lever and its operative eccentric; also, the machine, as provided with the stationary head, a movable feeder, and a movable jack-carrier, all substantially as described and represented; also, the stationary head, as made with a beveled bottom or a circular curved gauge and bearing thereof, arranged substantially as described and represented, such being for the purpose of enabling the machine to be employed in nailing across the rear part of a tap-sole without interference from the heel of the shoe; also, the arrangement of a chip-discharging passage in the nose-piece, and with respect to the cutters, as hereinafter described and as represented.

A denotes the stock-head or frame for supporting the operative parts, it terminating in or being provided with the guide-nose B, which has a vertical passage, *a*, leading down through it. Through this passage the nail, after being severed from the wire, is driven or forced by the nail-driver, shown at *c*. The said nail-driver is fixed in the lower part of a carrier or vertical slide-rod C arranged in the frame or stock A, and provided with a spring, D, the purpose of which is to depress the carrier after each elevation of it; such depression being with power sufficient to cause the nail-driver to force the nail into the article into which it may be required to be driven. Within the frame or stock A, and disposed therein, as represented, is the main shaft E, carrying a fly-wheel F, and provided with a gear, *d*, to engage with a pinion, *e*, fixed on another shaft, *f*. The said shaft *f* has a crank-wheel, *g*, fixed upon it, to whose crank a rod, *h*, is pivoted; the said rod at its lower end being pivoted to a pedal, *i*. By applying his foot to the pedal and moving it a rotary motion may be imparted by a person to the shaft E, or the said shaft may be put in revolution by other suitable means. There is fixed on the shaft E a double cam, G, it being furnished with cam-grooves *k l*, arranged in its opposite sides, as shown in Figs. 5 and 6, which are side views of such cam. Furthermore, there is fixed on the shaft E at its front end a cam or wiper, *m*, whose purpose is to effect the

elevation of the nail-driver carrier C at the proper times, and to allow it to be driven downward by the spring D. The said cam *m* is particularly shown in Fig. 7, which is a front view of the cam and the feeder H, to be hereinafter described. The purpose of the said feeder is to feed the shoe along with an intermittent movement in order that the nails may be driven into it at suitable distances apart. The feeder formed with an inclined and angular serrated foot, *n*, is supported on an eccentric *o* fixed on the shaft E. A long slot, P, in the feeder receives a stud or roller, *q*, carried by a plate, *r*, arranged to slide vertically within the head or stock A, and provided with a set-screw, *s*, extended through a slot, *t*, made in the head. This screw serves to regulate the altitude of the stud or roller *q*, and as a consequence the extent of feed or lateral movements of the feeder-foot. From the above it will be seen that during each revolution of the eccentric *o* the feeder will have not only up-and-down but lateral motions imparted to it, whereby it will be caused to feed the shoe along. The wire from which the nails are to be successively cut is to be led through a passage, *u*, of a guide, I, and thence against the milled or toothed periphery of a feed-wheel, K, thence through a conduit, *v*, to and past the cutting-edge of the stationary-cutter *x*, arranged as shown. From thence the wire passes into the passage *z* of the transferrer L. The said transferrer carries a cutter, Y, which, operating in conjunction with the stationary-cutter *x*, serves at the proper period to sever a nail from the wire. In this machine the transferrer is a toothed sector pivoted at its lower part in the nose piece or head B, its pivot being shown at *a'* in Fig. 3.

From the above it will be seen that the transferring-passage *z* and the movable cutter-carrier are in one and the same sectoral gear-lever whose arc *b'* engages with the toothed arm *c'* of a sectoral gear-lever, X.

Fig. 8 is a side view, and Fig. 9 is a rear end view of the said sectoral lever X, which consists of a shaft, *d'*, the arm *c'*, and a second arm, *e'*, arranged as represented. The shaft is pivoted, or takes a bearing in and extends through the head or stock A, and the arm *e'* carries a stud or roller, *f'*, to enter the rear groove of the double cam G.

The arm *e'* is split upward and provided with a screw, *g'*, the whole being as shown in Fig. 9, and for the purpose of clamping the arm upon the shaft *d'*. The arm being split or slit, as shown at *h'*, and provided with the screw *g*, which goes through the arm on one side of the slit and screws into that part of the arm which is on the other side, becomes, when fixed to the shaft, clamped to it by a clamp, whereby the arm is enabled to move on and not turn the fulcrum-shaft in case the nail-driver should be within, and stop the transferrer in its rotary movement, an accident which is liable sometimes to occur. Were it not for the clamp, as described, or were the arm *e'* rigidly fastened to the shaft, breakage of the machine would be liable to result from such accident. By the

movements of the transferrer L the wire will be cut, or the nail will be severed from it by the cutters, and subsequently will be moved directly over the guide-nose passage *a*, ready for being driven by the nail-driver.

Fig. 10 is a top view of the feed-wheel and its operative mechanism, as detached from the head A. Fig. 11 is a transverse section of the pawl-gauge, exhibiting its ratchet and the operative gear and pawls thereof. Fig. 12 is a transverse section of part of the head A with the stop-lever and stops of the pawl-gauge.

The feed-wheel K is fixed on one end of a horizontal shaft, *k'*, pivoted in the head A, and provided with a ratchet, *l'*, fastened on the said shaft. There is also on the shaft, so as to turn loosely on it, a gear, *m'*, to which two pawls, *n'*, *n'*, to work in the teeth of the ratchet, are pivoted. These pawls project beyond the ratchet on its inner side, and upon the periphery of the pawl-gauge *o'*, formed as represented. The said pawl-gauge *o'* and its stop-lever *p'* turn freely on the shaft *k'*, and are connected by a bar or handle, *q'*, so that they move together when moved on the shaft. The pawl-gauge, formed as shown, operates with two adjustable screws or stops, *r'*, *r'*, arranged in the head A in manner as represented. The purpose of the stop-lever and its adjustable stops is to regulate the extent of movement of the pawl-gauge *o'*, which gauges the distance or arc of movement of the ratchet, and thereby serves to regulate the feeding of the wire as the thickness of the sole to be nailed may require.

By taking hold of the handle *q'* the attendant can move simultaneously both the stop-lever and the pawl-gauge, as may be necessary from time to time to vary the feed of the wire while the machine may be nailing a sole. This arrangement and combination of the pawl-gauge and the stop-lever renders it very convenient for the attendant to operate them as circumstances may require.

The lower part of the head A is beveled or curved back from the guide-nose, in manner as represented at *r*², the curve being a circular arc. Against this arc a circular curved gauge, *s'*, is arranged, as shown, it being held in place by set-screws *t'*, which go through slots in it, and screw into the head. The said gauge is for determining the distance of the row of nails from the edge of a sole, such edge, while the machine may be at work, resting against the lower end of the gauge. By making the head A with the bevel or curved bed *r*², as described, for the gauge *s'*, arranged with the nose or nail-driver passage *a* in manner as shown, the machine can be used to nail across a tap-sole at or near its rear end without interference from a heel when projecting from the sole of the shoe. Therefore, the circular curved gauge and bed arranged as set forth renders the machine capable of cross-nailing a tap-sole, as explained. In the drawing the movable main carrier of the jack is shown at M as pivoted by means of a universal joint, N, to a pedal, O, which in turn is pivoted to the frame A, and provided with an adjustable

weight, P, all as shown. The said carrier M supports, by means of a secondary carrier or supporter, T, the jack R which carries the shoe-last S, the jack being made as represented, or in any other proper manner. The said jack has a cylindrical socket piece or bearing, w' , which rests on and encompasses a journal or pivot, v^1 , projecting upward from the pendulous supporter T. The said supporter T is pivoted to the jack-carrier, (the pivot being as shown at v^2), and at its lower part is provided with two stops, $w' x'$, arranged as shown. Between these stops are two other slotted stops, U V, that extend across one another, and are held to the jack-carrier M by a clamp-screw, y' , going through their slots, and being screwed into the said jack-carrier. These stops U V are more particularly shown in Figs. 13 and 14, which are side views of them. The adjustable stops U V, arranged and applied in manner shown with respect to the jack-carrier M and the pendulous supporter T, are much better than thumb-screws to extend in opposite directions from the jack-carrier, as they take up less room and do not interfere with the operation of the jack, and can be easily adjusted. The purpose of the adjustable stops U V, in conjunction with the stops $w' x'$, as described and shown, is to regulate the lateral movements of the supporter T. By being arranged with each other in manner as represented, and with the jack-carrier M, and the pendulous supporter T, and combined with them by means of the clamp-screw, they have advantages as stated.

In this machine, it will be perceived that I employ a stationary head, A, a movable feeder, H, and a movable jack-carrier, M. This construction of the machine is much better than that where the head is movable so as to effect the feeding of the shoe along, as the stationary head machine is simpler, easier of construction, and better in operation. It will also be perceived that in my improved machine as represented, the transferring nail-passage thereof goes through or crosses the axis of the fulcrum of the movable cutter-carrier L. In consequence of this, the nail wire, should it be fed forward too far by any accidental cause, will bring up against the bearing of the said fulcrum, and be estopped thereby so as to prevent it from projecting beyond the transferrer in a manner to clog the machine or cause damage to result to it.

A chip-discharging passage is shown at a^2 as formed in the nose-piece and opening out of it in manner as shown, its purpose being to discharge the chips or small pieces of the wire that

may be removed while the cutters may be in the act of severing a nail from the wire. Were it not for this passage such chips would be liable to clog the machine.

In the above-described machine I claim as of my invention the following, viz:

1. The wire-transferring passage z , and the movable cutter y , arranged and combined in one sectoral gear-lever L, disposed within and pivoted to the guide-nose, substantially in manner and so as to operate as described.
2. The combination of the sectoral gear-lever X, as described, and its grooved cam or rear groove of the cam G with the nail-transferrer passage z , the movable cutter y , and their common sectoral gear-lever L, arranged and combined with the guide-nose B or its passage a , as described.
3. In the nailing-machine, as described, the combination of the arm e' of the sectoral gear-lever X with the fulcrum shaft of such lever, by means of a friction-clamp as described, such being for the purpose specified.
4. The adjustable crossed stops U V, as arranged and combined, as explained and represented, with the carrier M and the pendulous supporter T, provided with stops $w' x'$, as set forth.
5. The pawl-gauge o' and the stop-lever p' , combined in manner as described, and arranged on one shaft, and with the adjustable stops $r^1 r^1$, as set forth.
6. The adjustable fulcrum q , provided with a clam-screw, s , as described, in combination with the slotted feeder H, and its operative eccentric o , all being arranged in the head A, as explained or represented.
7. The nailing-machine, as constructed, with a stationary head, A, a movable feeder, H, and a movable jack-supporter or carrier, all substantially as described.
8. In the nailing-machine, the stationary head A, as made or provided with the beveled bottom or circular curved gauge s' , and bearing r^2 therefor, arranged substantially as described and represented, such being for the purpose as specified.
9. In the nailing-machine, the chip-discharging passage a^2 , arranged in and combined with the nose-piece and the cutters, all substantially as explained and represented.

LOUIS GODDU.

Witnesses:

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J. R. SNOW.

(16)