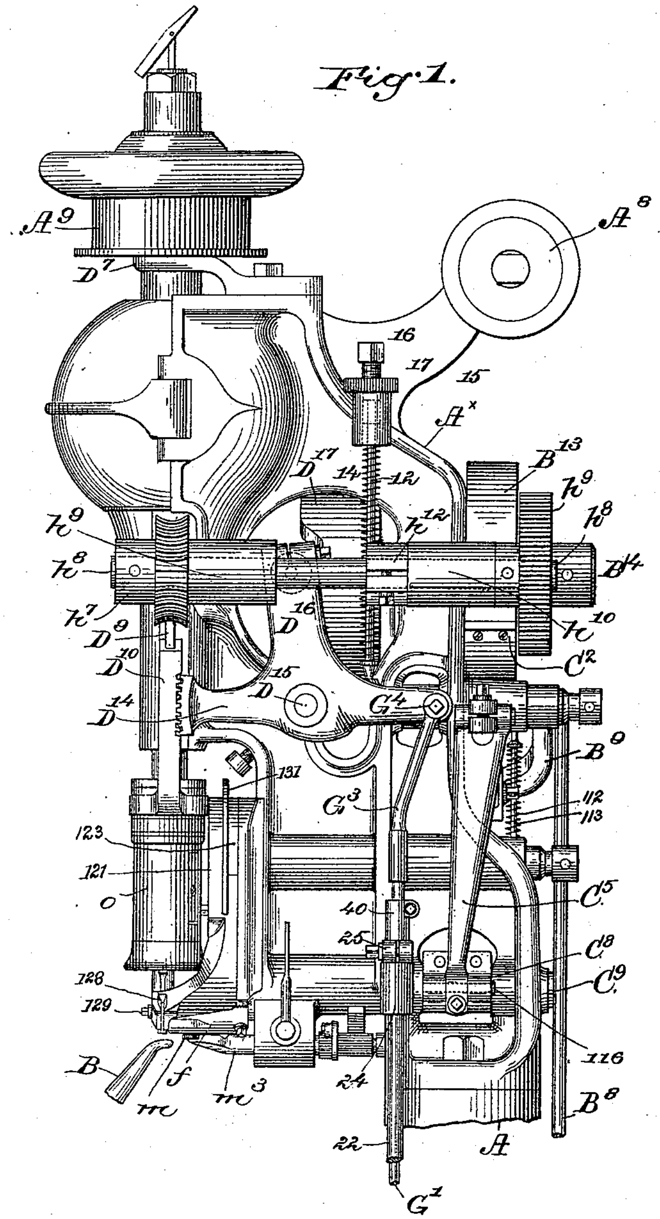
(No Model.) 5 Sheets—Sheet 1.

L. GODDU.

MACHINE FOR UNITING SOLES TO UPPERS.

No. 490,622. Patented Jan. 24, 1893.

Fig. 1.



Witnesses.

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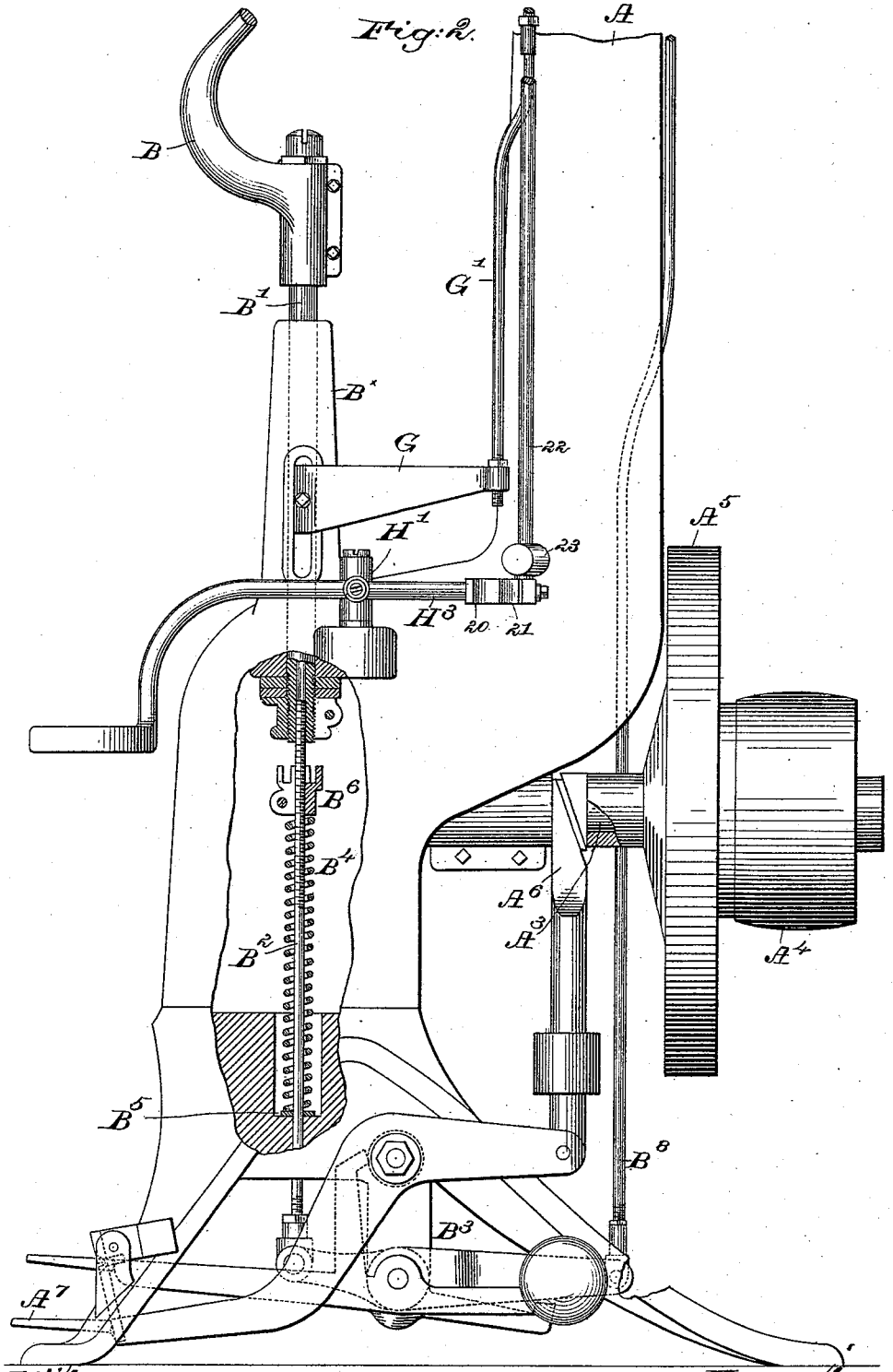
(No Model.) 5 Sheets—Sheet 2.

L. GODDU.

MACHINE FOR UNITING SOLES TO UPPERS.

No. 490,622. Patented Jan. 24, 1893.

Fig: 2.



Witnesses.
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(No Model.) 5 Sheets—Sheet 3.

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MACHINE FOR UNITING SOLES TO UPPERS.

No. 490.622. Patented Jan. 24, 1893.

Fig: 4.

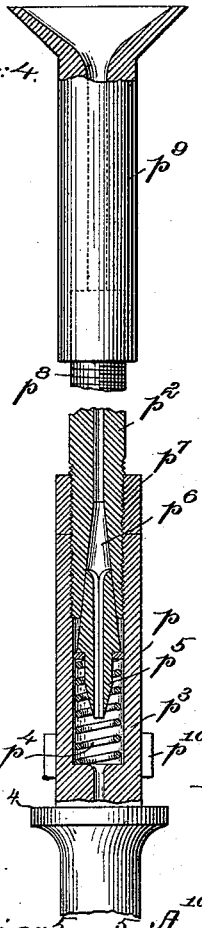


Fig: 3.

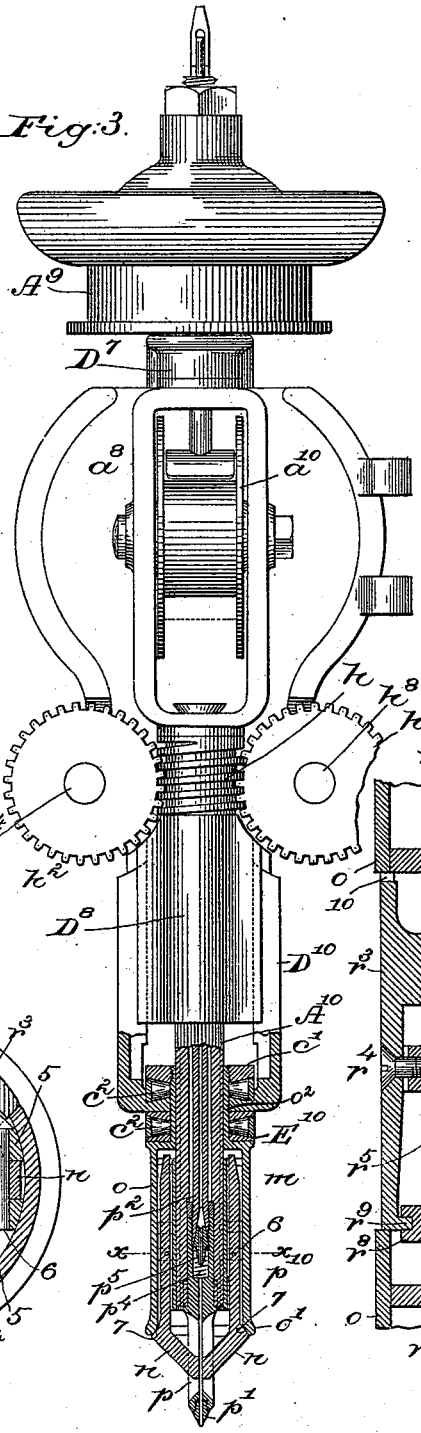


Fig: 6.

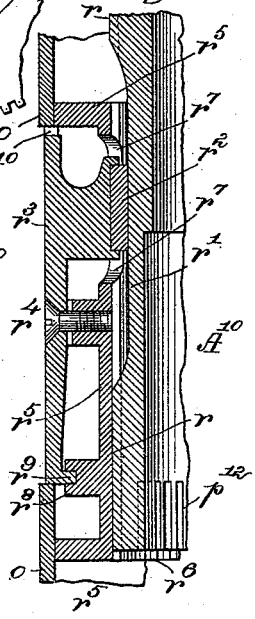
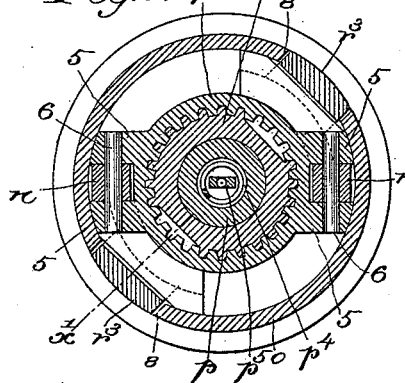


Fig: 5.



Witnesses.

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(No Model.) 5 Sheets—Sheet 4.

L. GODDU.

MACHINE FOR UNITING SOLES TO UPPERS.

No. 490,622. Patented Jan. 24, 1893.

Fig. 7.

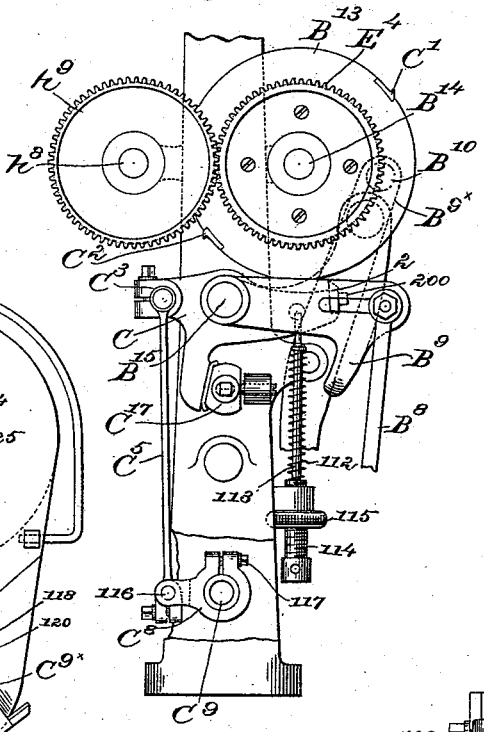


Fig. 8.

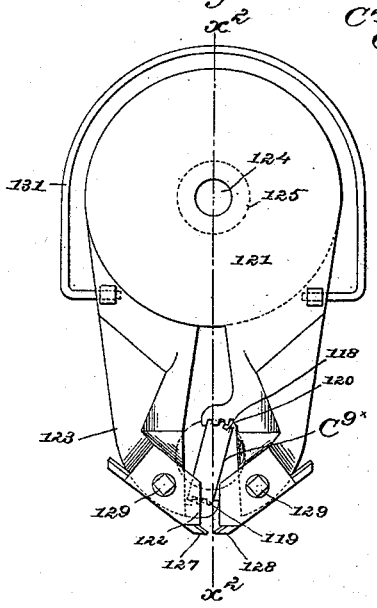


Fig. 9.

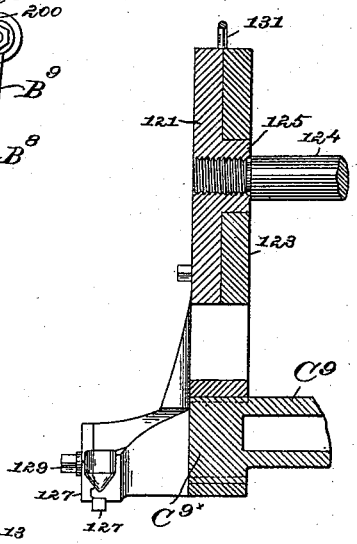


Fig. 10.

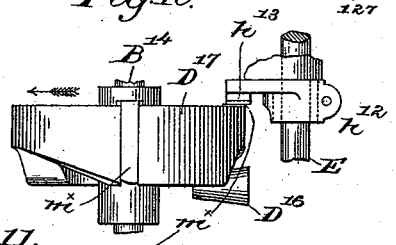
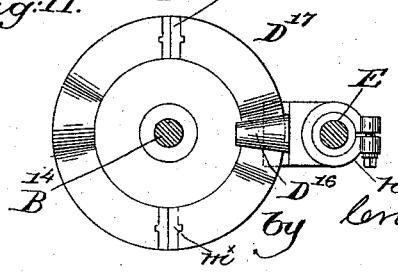


Fig. 11.



Witnesses.

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(No Model.) 5 Sheets—Sheet 5.

L. GODDU.

MACHINE FOR UNITING SOLES TO UPPERS.

No. 490,622. Patented Jan. 24, 1893.

Fig: 12.

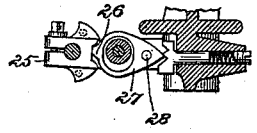


Fig: 13.

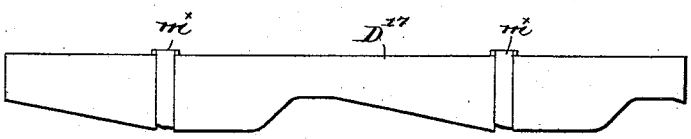
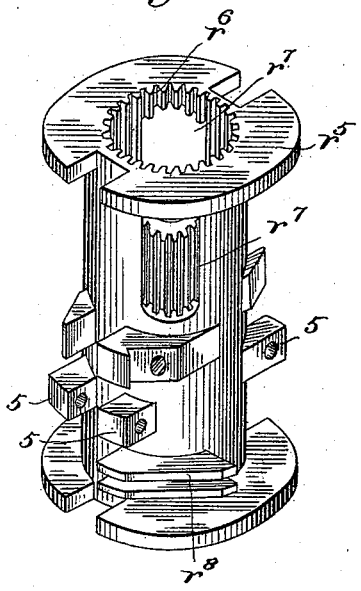


Fig: 14.



Witnesses.

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UNITED STATES PATENT OFFICE.

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MACHINE FOR UNITING SOLES TO UPPERS.

SPECIFICATION forming part of Letters Patent No. 490,622, dated January 24, 1893.

Application filed April 7, 1892. Serial No. 428,152. (No model.)

To all whom it may concern:

Be it known that I, LOUIS GODDU, of Winchester, county of Middlesex, State of Massachusetts, have invented an Improvement in Machines for Uniting Soles to Uppers, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention has for its object to improve and simplify the construction of that class of machines for uniting soles to uppers in which is employed a rotating spindle containing a screw-threaded wire, which latter, as it is rotated, has its free end screwed into the material for a greater or less distance according to the thickness of the material, the latter resting upon a suitable horn or work-support. The wire, when inserted into the material for a distance equal to the length of the fastening required at that point in the material, is cut off close to the material, and, the latter having been fed over the work-support, the end of the wire is again inserted and again cut off to form a fastening, this operation being continued.

The machine herein to be described is intended as an improvement on that shown in United States Patent No. 403,835, wherein the wire is fed by feed-rolls located at the lower end of the spindle, the said feed-rolls maintaining a continued hold on the wire.

The particular features in which my invention consists will be hereinafter particularly described and set forth in the claims at the end of this specification.

Figure 1, in side elevation, represents the upper part of a machine embodying my present invention, together with part of the horn. Fig. 2, a like view of the lower part of the machine, Figs. 1 and 2 showing an entire side view of the machine, the horn end being broken off. Fig. 3 is an enlarged partially sectional detail of the spindle, together with the worm gears engaged by the worm carried by the spindle; Fig. 4 is a yet further enlarged sectional detail of that part of the spindle containing the brake to prevent retrograde motion of the wire; Fig. 5 is an enlarged sectional detail, in the line x, Fig. 3; Fig. 6, a partial vertical section also greatly enlarged, taken through one side of the spindle in the line of the friction device, said line being indicated by x' in Fig. 5; Fig. 7 is a partial rear end elevation of the parts shown in Fig. 1; Fig. 8, a somewhat enlarged detail of the cutters and the oscillating segment for actuating the same; Fig. 9 is a section in the line x^2, Fig. 8; Figs. 10 and 11 are details showing the feeding cam with its movable sections, together with the device for putting the said sections into operative position, and with the roll which is acted upon by the said cam. Fig. 12 is a sectional detail looking down on the device 25, Fig. 1. Fig. 13 shows the cam D^{17} developed; and Fig. 14 shows the gripper-carrying sleeve r^5 detached.

Referring to the drawings, A represents a suitable column, upon which is mounted a head $A^\times$, the latter being of suitable shape and having suitable bearings for the different working parts to be described. The column has, as represented, a sort of sleeve $B^\times$, which receives the shank B′ of a suitable horn or work-support. B. The shank B′ at its lower end has connected with it a suitable screw rod B^2, having an adjustable nut B^6, against the under side of which bears a spring B^4, the said spring being seated on a suitable washer B^5, so that the spring normally acts to elevate the horn and keep it in contact with the fixed nose f, which rests against the upper side of the work or material into which is to be inserted the threaded end of the wire to be cut off to form a fastening. The rod B^2 is connected to one end of a lever B^3, to the opposite end of which is connected a rod B^8, in turn jointed in an adjustable manner to a lever B^9, having its fulcrum at B^{15}, the shape of the said lever being best shown in Fig. 13, the said arm having a U-shaped extension $B^{9\times}$, provided with a roller or other stud B^{10}, which enters a suitable groove in a cam B^{13}, fast upon the cam-shaft B^{14}. The shank B′ has extended from it an arm G, to the outer end of which is joined a measuring-rod G′, the upper end of which enters a suitable guide connected to or forming part of the frame-work. The upper end of the rod G′ serves as a variable stop, against which may rest the lower end of the measuring-leg G^3, jointed by a pin G^4 to one arm of a three-armed lever D^{14}, having its fulcrum at D^{15}. The lever D^{14} is acted upon by a rod 12, sur-

rounded by a suitable spring 14, the upper end of which enters a hollow bearing 15, into which is screwed a tubular adjusting-screw 16, into which in turn enters the upper end of the rod 12, the rotation of the screw,—the end of which acts directly on the upper end of the spring,—increasing the tension of the spring. This spring normally acts to keep the roll D^{16}, carried by one arm of the lever D^{14}, pressed toward the cam projections at the face of the cam D^{17}, see Fig. 13, said cam having two projections to vibrate the said lever twice during each rotation of the cam-shaft B^{14}, upon which it is mounted.

The position to which the measuring-rod G′ is elevated by the rising of the horn in contact with the under side of the material,—the horn being acted upon by the spring B^4,—will vary more or less according to the thickness of the material at the point where the screw-threaded wire is to be inserted into the stock, and consequently the upper end of the rod G′ upon which the measuring-leg G^3 rests, by occupying different positions, will permit the roller D^{16} to enter more or less the notches or spaces of the cam D^{17}, so that more or less of the cam grades of the said cam will act to move the lever D^{14} more or less according to the thickness of the stock, and consequently according to the length to which the wire is to be fed for the fastening next to be cut off, the said lever D^{14} being employed for that purpose.

The column A has erected upon it a stud-screw H, upon which is placed a hub H′ of a knee-lever H^3, having at its inner end sector teeth 20, which engage like sector teeth upon a block 21, secured to the lower end of a rock-shaft 22, having bearings at 23, 24. This rock-shaft has clamped to it a block 25, notched at its inner end to leave lugs—which, as the rock-shaft 22 is turned by the knee-lever, may be made to act upon a toe 26, see Fig. 12, of a stop 27, pivoted at 28, and turn the said stop about the said pivot when it is desired to throw out of operation or to continue in operation the feed mechanism for the wire.

The measuring-rod G^3 has clamped upon it a foot 40, shown as a block having a downward extension, which, when the stop 27 is in one position, is free to enter the large hole in the said stop; but when the said stop is turned to one side, as described, by the knee-lever, the said extension meets the top of the stop, and so long as the said stop remains in such position the lever D^{14} will not be moved to feed the wire.

The head of the machine has suitable bearings D^7 and D^8 for the hollow spindle A^{10}, through a central passage of which is led the screw-threaded wire to be inserted in the stock, said wire being taken from a spool a^{10}, mounted upon a stud a^{21}, to be described, the said stud passing through a forked or bifurcated portion a^8 of the spindle, between which parts the spool is mounted so that the axis of the spool is substantially in the line of the center of rotation of the shaft.

The upper end of the spindle above its bifurcated part a^8, is extended through the bearing D^7, and has fast upon it a pulley A^9, which is driven by a suitable belt extended over idle pulleys A^8, and thence down and over a pulley A^5, loose on a power-shaft A^3, provided with a suitable belt pulley A^4, driven by a belt from any suitable counter-shaft, the said pulleys each having at their contiguous sides, one a conical projection and the other a conical cavity, to act as friction-clutch pulleys, the loose pulley A^5 being pushed in driving contact with the face of the pulley A^4, so as to be rotated therewith whenever the operator puts his foot on the lever A^7 and elevates the wedge A^6 so that its beveled end acts against the beveled end of a block surrounding the shaft A^3 between the said rod A^6 and the hub of the loose pulley.

The bearing D^8 has at its opposite sides guides D^9, over which is fitted a yoke D^{10}, the lower end of which has a hole through which is extended the spindle A^{10}, the edges of the opening of the yoke about the spindle being preferably provided with small steel washers, see Fig. 3, to constitute tracks, against which run suitable antifriction rolls or balls, one series of which is mounted in a friction-box E^{10} and the other in a cap-plate c', one of the said series of rolls being marked c^2.

The cam B^{13} at its periphery has two toes C′, C^2, which, in the rotation of the cam-shaft, come in succession against a projection 2, secured in an adjustable manner by a suitable set-screw 200, see Fig. 7, to one end of a lever C, having its fulcrum on the shaft B^{15}, the opposite end of the said lever having, as represented, two arms, one of which is kept against a suitable stop C^{17} by a spring 112, it acting upon a rod 113, the rod entering a hole in the end of an adjusting-screw 114, provided with a check-nut 115 by which to hold it in adjusted position, the upper end of the screw acting against the said spring, the upper end of the spring in turn acting upon a suitable collar on the rod, the adjustment of the stop C^{17} being such as to keep the point of the projection 2 just in range with the toes C′, C^2, but so as not to touch the periphery of the said cam. The spindle has a worm h, which engages and rotates a worm gear h^2, fast on and rotating the cam-shaft B^{14}.

The parts so far described and referred to by letters and figures of reference are common to the Patent No. 403,835.

The cam D^{17}, see Fig. 10, is provided, substantially at the point of its greatest throw, with movable or yielding sections $m^\times$, herein represented as blocks, fitted by suitable dovetails or otherwise to slide in the said cam in the direction of the said shaft, upon which it is mounted. The worm h also engages a worm gear h^7 on a shaft h^8, having its bearings in two hubs h^9, h^{10}, see Fig. 1, the latter having

a sleeve-like extension upon which is clamped a collar h^{12}, having an inclined or beveled face or toe h^{13}, see Fig. 10, which, in the rotation of the said cam, comes in contact with the rear end of each sliding section m, and holds said section in such position that its opposite end forms a working continuation of the cam D^{17} when its point of greatest throw is acting upon the roll D^{16}; but as soon as the said movable section has acted upon the roll D^{16} to move the lever D^{14} in a direction to complete the feeding stroke, the rear end of the said section passes the toe h^{13}, letting the said section fly quickly back, which instantly allows the spring 12 to turn the lever D^{14} in a direction to raise the feeding sleeve m and release the gripper levers n, n, to be described, from the wire.

The opposite end of the lever C has connected to it by a stud C^3 the upper end of a link C^5, which at its lower end embraces a rod 116, mounted in one end of an arm C^8, the hub of which is split, as represented in Fig. 7, which split hub is clamped by a clamping-screw 117, shown by dotted lines in said figure, upon a hollow rod or shaft C^9. This shaft C^9, made hollow for sake of lightness, has, see Fig. 7, a double segment $C^{9\times}$, having two series of teeth 118 and 119, the teeth 119 being farthest from the center of oscillation of the said shaft. The teeth 118 engage teeth 120 of an arm 121, while the teeth 119 engage teeth 122 of an arm 123.

The head of the machine has a bearing-stud 124, the front end of which is shown in Fig. 9, in order that it may be screwed into the threaded hub 125 of the cutter arm 121, the said hub, projecting from the rear side of the said arm, entering a hole in the cutter arm 123, so that the said arm 123 turns on the said hub. The cutter arm 121 has a cutter 127, while the arm 123 has a cutter 128, each being adjustably held in suitable grooves at the lower ends of the arms by suitable clamping-screws 129. A suitable spring, as 131, acts normally to keep the jaws or arms carrying the cutters separated.

From the foregoing it will be understood that whenever, in the rotation of the cam B^{13}, the toes C′, C^2 strike the projection 2, the lever C will be moved to move the link C^5 in the direction of the arrow next to it, and cause the rotation of the shaft C^9 and the segment $C^{9\times}$ in a direction to cause the approach of the arms and make the cutters enter and sever the wire, this being done, however, only after the end of the wire has been screwed into the stock.

The spindle A^{10} is provided at its lower end with a slotted extension p, having a nose p', the said extension being represented as connected to a tubular part p^2, see Figs. 3 and 4, the part p^2, see Fig. 4, being screwed into the part p, a chamber p^3 being left in the part p for the reception of a spring p^4, which sustains a brake or clamp p^5, composed preferably of two or more separate like blocks tapered externally at their upper ends to enter a tapering hole p^6 in the part p^2, a check-nut p^7 screwed onto the part p^2 and abutting against the end of the part p, holding the parts p and p^2 together. The upper end of the part p^2 is threaded at p^8 and has screwed upon it a long nut p^9, having, as shown, a flaring or trumpet mouth into which enters the threaded wire, to be taken from the spool a^{10} through the spindle. The spindle extension p^3 has a shoulder 4 to abut against the lower end of the main body of the spindle A^{10}, and just above the shoulder the extension is provided with a series of teeth p^{10}, which engage a series of slots p^{12} made in the interior opening of the main body of the spindle, to thus obviate rotation of the spindle extension in the said main body.

The main body of the spindle is fluted externally, as at r, for a portion of its length, the flutes being in the direction of the length of the spindle and starting from the lower end thereof, but some of the flutes of the spindle are cut away for some distance, as at r', to thus leave flat bearing surfaces at two or more points against which bear certain friction devices, r^2, to be described, preferably made of leather or other suitable material and attached to gibs r^3, secured by suitable screws or adjusting devices r^4 to ears of a gripper-carrying sleeve r^5, fluted internally, as at r^6, to be engaged by the external flutes of the main body of the spindle, so that the said gripper-carrying sleeve is rotated in unison with the said spindle and yet the said gripper carrier is so applied to the spindle that it may be reciprocated vertically on the said spindle when the force with which the friction surfaces bear against the spindle is overcome. The gripper-carrier has lugs or ears 5, which receive the pivots or fulcra 6 of the gripper levers n, having inclines or shoulders at their outer sides near their lower ends, and provided below said inclines with fingers or thin points which, extended through the slots in the spindle extension, grip and feed the wire as the said gripper levers descend. The gripper-carrier has slots r^7 through which pass the friction devices r^2 to engage the spindle. The gripper-carrier also has two or more projections r^8, extended partially about the carrier and grooved, as shown in Fig. 6, for the reception of a lip r^9 at the lower end of one of the gibs r^3.

Surrounding the gripper-carrier is an outer or feeding sleeve o, the lower end o' of which is beveled internally to co-act with the bevel 7 of the gripper levers, as in Fig. 3, to close the said levers onto the wire, not shown. The smaller upper end o^2 of the outer or feeding sleeve is smooth internally and fits the smooth exterior of the main body of the spindle above its fluted portion, and the extreme upper end of the outer sleeve has screwed or attached to it the cap-plate c', resting on rolls or balls c^2, supported by the yoke D^{10}. The outer or feeding sleeve has one or more slots, as 8, for

the gibs r^3 referred to, the length of the slots being a little greater than that of the gibs, so as to leave a space, as 10. The descent of the outer or feeding sleeve on the spindle is effected through the slide D^{10}, before described, moved however for a variable distance according to the thickness of the material, to receive the fastening next to be made. In the descent of the outer or feeding sleeve its lower end acts on the inclines 7 of the gripper levers and closes their lower ends on the wire, so that the said wire is held and fed longitudinally out through the nose p' and is screwed into the material on the horn by rapid revolution of the spindle. During the feeding movement of the wire, as described, effected by the descent of the outer sleeve, the upper ends of the slots 8 in the sleeve do not touch the gibs, but the entire force of the outer sleeve is expended on the gripper levers to keep them closed on the wire to feed it and screw it into the material, and during this feeding movement of the outer sleeve the gripper-carrier is pushed downwardly on the spindle by the action of the outer sleeve on the beveled parts 7 of the gripper levers, and the friction devices r^2 slide on the spindle. The wire having been screwed into the material, and the cutters having been made to cut off the wire close to the material, the outer or feeding sleeve is lifted by or through the action of the spring 12 on the lever D^{14}, and at the commencement of said upward movement the feeding sleeve leaves the beveled parts 7 of the gripper levers, permitting the latter to release the wire, and then the lower ends of the slots 8 strike the lower ends of the gibs r^3, and thereafter the gripper-carrier is made to rise with the feeding sleeve and the friction pads r^2 slide upwardly on the spindle, the friction of the pads on the spindle being overcome by the upward movement of the feeding sleeve. After the wire has been screwed into the material for the proper distance, the cutters will be closed to grasp the wire and cut the same off close to the material, but during this operation the rotation of the spindle will be continued at its full speed. The wire is cut off, as stated, to form a fastening between the completion of the feeding stroke of the gripper levers and the completion of the backward stroke thereof over the wire.

In practice, when about two hundred and fifty fastenings are being inserted per minute, which may be done, the time consumed in cutting off the wire at the surface of the material is but a small fraction of a second, and should the gripper levers hold the wire close to the cutters while the latter acts to cut off the rapidly rotating wire, the end thereof where the fastening is cut from the wire will be left dull, or will be marred or blunted, so that it is not in its best and proper condition to enter the material.

In another application, Serial No. 428,151, filed by me, I have made provision for acting upon the wire and preventing retrograde or backward movement thereof, at such a distance from the non-rotating cutters that the wire is permitted to yield to torsion between the point where it is grasped by the cutters and the point where it is engaged by the brake therein referred to, and when the cutters complete their action the torsional twist is quickly dissipated, and as a result the end of the wire is cut off and left with a sort of chisel or even point, a point which will readily enter the material. In this present invention, however, the brake or device which engages the wire to prevent retrograde movement is located at or near the lower end of the spindle or near the fulcra of the gripping levers, and hence the amount of wire left which may yield to torsion, as stated, is so greatly reduced that it becomes necessary to effect the soonest possible release of the gripper levers from the wire as the feeding stroke of the gripper levers is completed. Herein, in order to release the gripper levers earlier than would be possible with a cam such as contained in the case referred to, I have provided the cam D^{17} with the movable sections $m^{\times}$, which are located substantially at the point of greatest throw of the cam, so that the instant that the said lever D^{14} has completed its stroke to insure the completion of the feeding stroke of the sleeve and the gripper levers, the said movable section drops back, letting the spring 12 or other device which moves the said lever D^{14} in the direction opposite the movement thereof, imparted to it by the cam D^{17}, assume quick control of the lever and raise the feeding sleeve sufficiently to instantly relax the hold of the gripper levers upon the wire, thus leaving all that portion of the wire between the cutters and the brake p^5 to be subjected to and receive the torsional strain found necessary to avoid blunting or marring the end of the wire while in contact with the cutters. The foot f, and the shoe-feeding mechanism m, m^3, and its actuating devices, are and may be all as in the said patent or as in said application, so need not be herein further described.

I claim—

1. In a machine for inserting screw-threaded wire into soles of boots and shoes, leather, &c., the following instrumentalities, viz:—a continuously rotating longitudinally slotted spindle having external projections and grooves; a feeding sleeve surrounding the said spindle loosely; a gripper-carrier interposed between the said sleeve and the said spindle and having projections and grooves at its inner side to engage the projections and grooves of the spindle, and wire grippers entering the slots of the said spindle, gripping the wire, and made movable by the said gripper-carriers in said slots in the direction of the length of the spindle during its rotation to feed the wire through the said spindle, substantially as described.

2. In a machine for inserting screw-threaded wire into soles of boots and shoes, leather,

&c., the following instrumentalities, viz:—a continuously rotating longitudinally slotted spindle having external projections and grooves; a feeding sleeve surrounding the said spindle loosely; a gripper-carrier interposed between the said sleeve and the said spindle and having projections and grooves at its inner side to engage the projections and grooves of the spindle; wire grippers pivotally mounted upon said gripper-carrier and entering the slots of the spindle to grasp the wire, the gripper levers entering slots in the said spindle and made movable in the said slots in the direction of the length of the spindle to feed the wire through the said spindle; and a friction device connected with the gripper-carrier and engaging and rotating the feeding sleeve in unison with it and with the spindle, substantially as described.

3. In a machine for inserting screw-threaded wire, the following instrumentalities, viz:—a continuously rotating spindle provided with longitudinal grooves and projections, and having an extension slotted for the reception of gripper levers; a gripper-carrier surrounding the said spindle and having grooves and projections to be engaged and rotated by the spindle; wire-feeding gripper levers mounted on the said gripper-carrier; a feeding sleeve loosely mounted upon the said spindle and having a beveled or inclined portion; and a friction device connected with the gripper-carrier and engaging the spindle, a part of the friction device being extended into a slot or space of the feeding sleeve, the said slot or space being longer than the part of the friction device extended therein to enable the feeding sleeve to be reciprocated for a slight distance before it takes with it the gripper-carrier, substantially as and for the purpose described.

4. In a machine for inserting screw-threaded wire, the following instrumentalities, viz:—a hollow continuously rotating spindle; its surrounding gripper-carrier; gripper levers pivoted thereon and having inclined or beveled shoulders below their pivots; and a feeding sleeve having suitable bevels or inclines to act upon the bevels or inclines of the gripper levers and cause the latter to grasp the wire, and devices to actuate the said feeding sleeve vertically on and during the rotation of said spindle and independently of and vertically with relation to the length of the said gripper levers, substantially as described.

5. In a machine for inserting screw-threaded wire, the following instrumentalities, viz:—a hollow continuously rotating spindle; a surrounding gripper-carrier, each connected with the other by suitable grooves and projections so that the carrier rotates in unison with the spindle but is free to be moved vertically thereon; wire-feeding grippers pivoted upon the said gripper-carrier; a feeding sleeve having beveled or inclined surfaces to act upon and close the grippers upon the wire in the downward motion of the feeding sleeve; a friction device carried by the gripper-carrier and engaging a part of the spindle, the said friction device also engaging and rotating the feeding sleeve with the gripper-carrier and spindle; and means to adjust the friction of the friction device upon the spindle, as and for the purposes set forth.

6. The rotating spindle; its surrounding gripper-carrier, each connected with the other by suitable grooves and projections so that the carrier rotates in unison with the spindle but is free to be moved vertically thereon; wire-feeding grippers pivoted upon the said gripper-carrier; a feeding sleeve having beveled or inclined surfaces to act upon and close the gripper levers upon the wire in the downward motion of the sleeve; a friction device carried by the gripper-carrier and engaging a part of the spindle, the said friction device also engaging and rotating the feeding sleeve with the gripper-carrier and spindle; means to adjust the friction of the friction device upon the spindle; and a brake or check for the wire, said brake having a beveled and tapered surface and being free to move longitudinally in the said spindle, substantially as described.

7. The rotating spindle; its surrounding gripper-carrier, each connected with the other by suitable grooves and projections so that the carrier rotates in unison with the spindle but is free to be moved vertically thereon; wire-feeding grippers pivoted upon the said gripper-carrier; a feeding sleeve having beveled or inclined surfaces to act upon and close the grippers upon the wire in the downward motion of the sleeve; a friction device carried by the gripper-carrier and engaging a part of the spindle, the said friction device engaging and rotating the feeding sleeve with the gripper-carrier and spindle; means to adjust the friction of the friction device upon the spindle; a brake or check composed of two or more parts shaped externally to resemble a cone; and a spring to act upon end of the said brake to aid in keeping the same in proper contact with the wire to thus maintain the proper amount of friction, substantially as described.

8. In a machine for inserting threaded wire into soles of boots and shoes, &c., the following instrumentalities, viz:—a hollow spindle; wire-feeding grippers; a carrier therefor; a lever, as D^{14}; intermediate devices between said lever and said gripper-carrier to reciprocate the gripper-carrier and cause the grippers to grasp and release the wire; an actuating cam for said lever, the said cam having a movable section near its point of greatest throw; and a co-operating toe, whereby the said lever is released instantly, as described, to enable the wire-feeding grippers to be released from the wire, as and for the purpose set forth.

9. The continuously-rotating wire-carrying spindle, and its slotted extension composed of two parts containing a chamber, and a vertically-movable wire-holding brake located in

said chamber, and a loose yielding support in said chamber between it and the brake, substantially as described.

10. In a machine for inserting metallic fastenings, a continuously rotating wire-carrying-spindle having a yoke at its upper end and slotted and chambered below that point for the reception of a brake and of wire feeding devices, combined with a reel carrying the wire to be fed through the spindle, a vertically movable wire holding brake, and a wire feeding device located at a distance below said brake and close to the end of the spindle, and means to reciprocate the wire feeding devices, to operate, substantially as described.

11. The continuously-rotating wire-carrying spindle, and its slotted extension composed of two parts containing a chamber, and a vertically-movable wire-holding brake made in pieces and having a tapering upper end to engage a tapering part of the spindle extension and located in said chamber, and a spring to act against said brake, substantially as described.

12. In a machine for inserting screw-threaded wire into soles of boots and shoes, leather, &c., the following instrumentalities, viz:—a continuously-rotating longitudinally slotted spindle having external projections and grooves, a feeding sleeve surrounding the said spindle loosely, a lever, as D^{14}, connections between said lever and said feeding sleeve, a measuring leg connected with said lever; a horn; intermediate devices located between said measuring leg and said horn and varied in position with relation to the measuring leg by or through differences in thickness of material upon the horn, a gripper carrier interposed between the said sleeve and the said spindle, and having projections and grooves at its inner side to engage projections and grooves of the spindle that they may rotate in unison, and lever-like wire grippers pivotally mounted on and carried by the said gripper carrier, the points of the grippers entering the slots, in the spindle and engaging the wire, the gripper carrier in its descent acting upon the gripper levers, forcing them inwardly against the wire and thereafter moving the gripper levers downwardly with it during the feeding of the wire longitudinally through the spindle, as and for the purposes set forth.

13. In a machine for inserting screw-threaded wire, the following instrumentalities, viz:—a hollow continuously rotating spindle; a loosely connected gripper carrier; grippers pivoted thereon, and made as levers having beveled or inclined surfaces; a hollow feeding sleeve surrounding said gripper carrier and also the upper ends of said gripper levers, and devices to reciprocate the said feeding sleeve vertically with relation to both the gripper-carriers and the said spindle, and adapted to act on said gripper levers below their pivots to thus cause the said gripper levers to engage firmly the wire; and friction devices, to operate, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS GODDU.

Witnesses:
GEO. W. GREGORY,
FRANCES M. NOBLE.