

(No Model.)

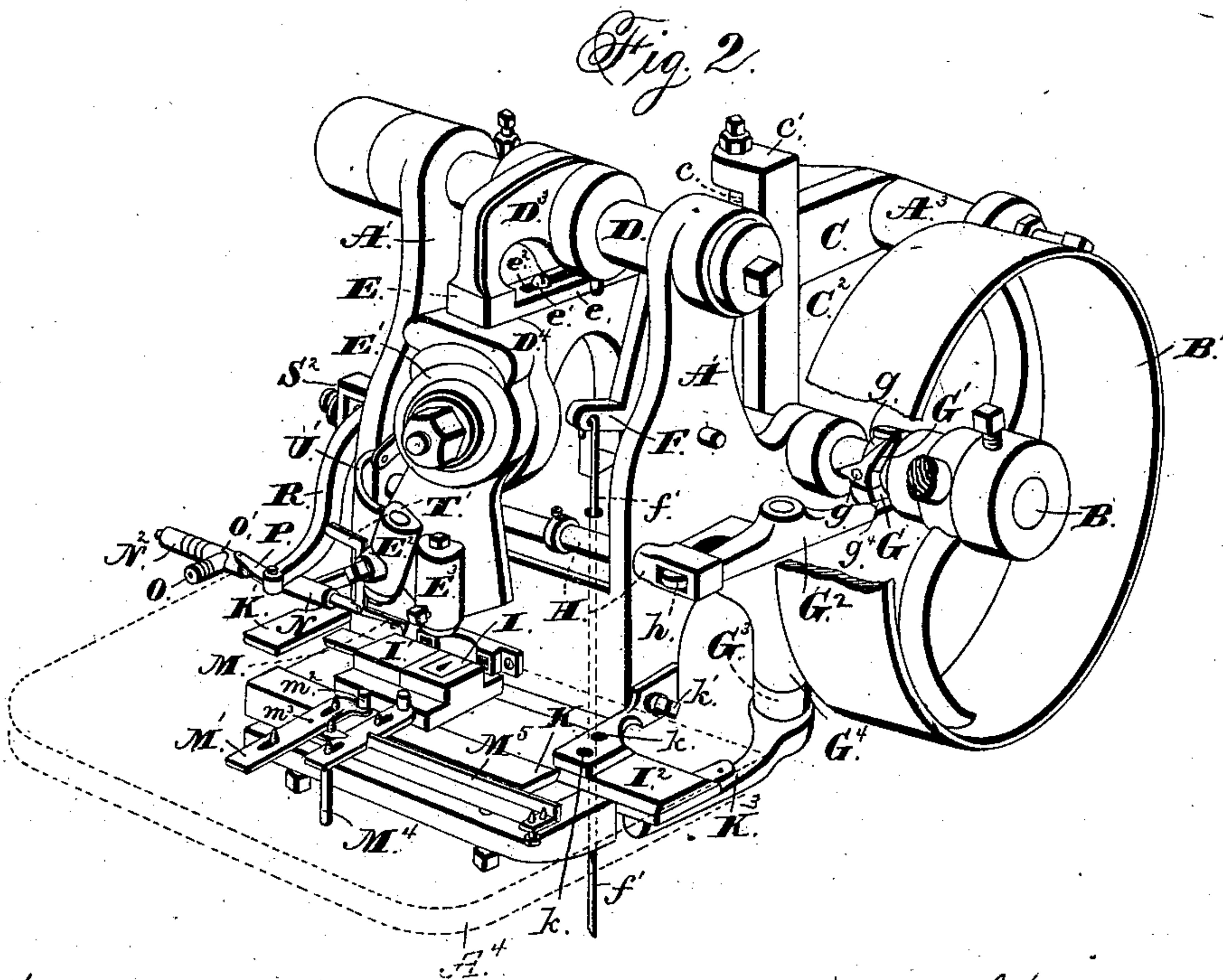
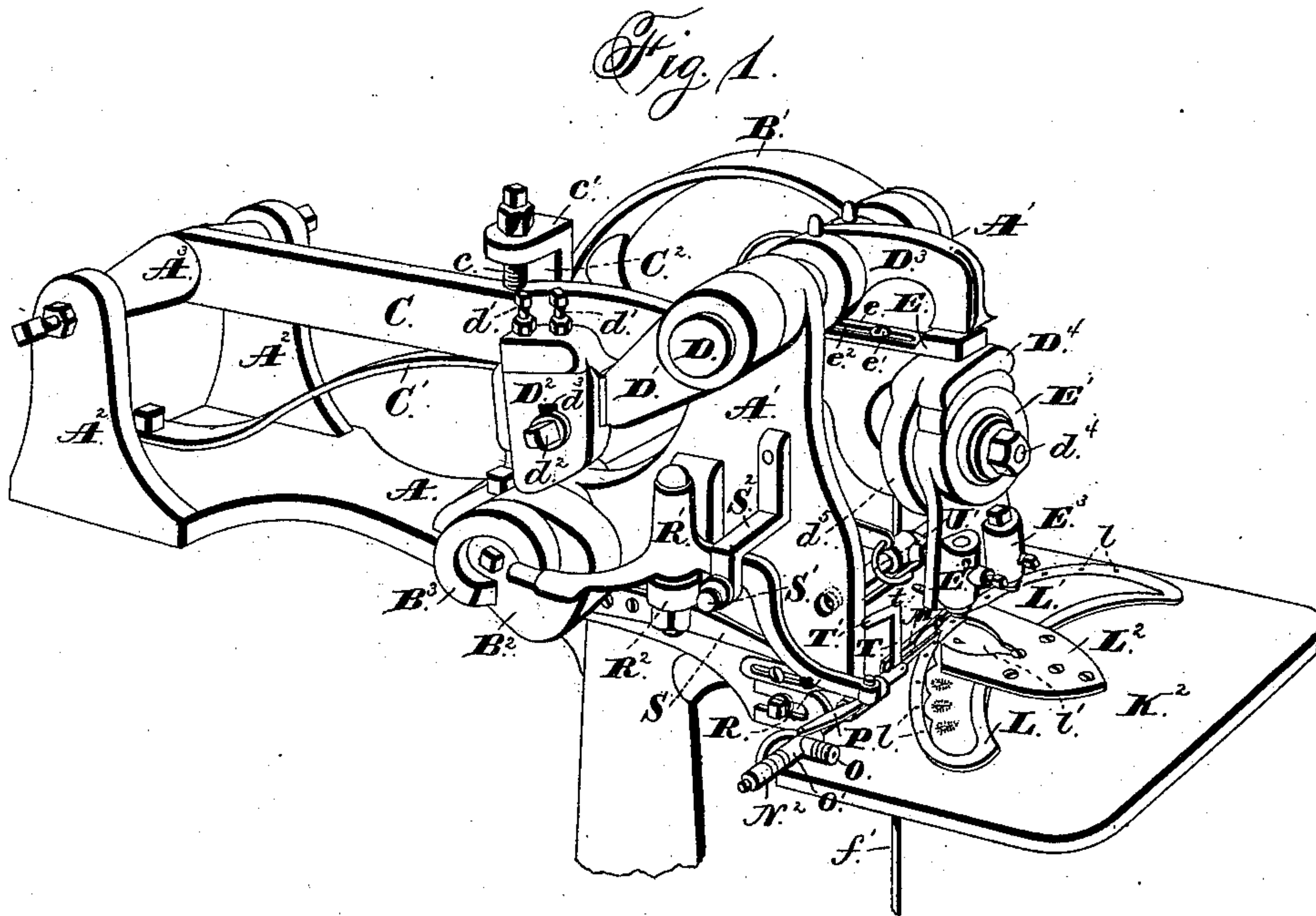
3 Sheets—Sheet 1.

G. VALIANT & J. NESBITT.

LEATHER CUTTING AND EMBOSSEING MACHINE.

No. 360,933.

Patented Apr. 12, 1887.



Witnesses:
Jas. C. Hutchinson.
Henry C. Hazard

Inventors:
Geo. Valiant and Josiah Nesbitt, by
Cindler and Russell, their Attys.

(No Model.)

3 Sheets—Sheet 2.

G. VALIANT & J. NESBITT.

LEATHER CUTTING AND EMBOSING MACHINE.

No. 360,933.

Patented Apr. 12, 1887.

Fig. 3.

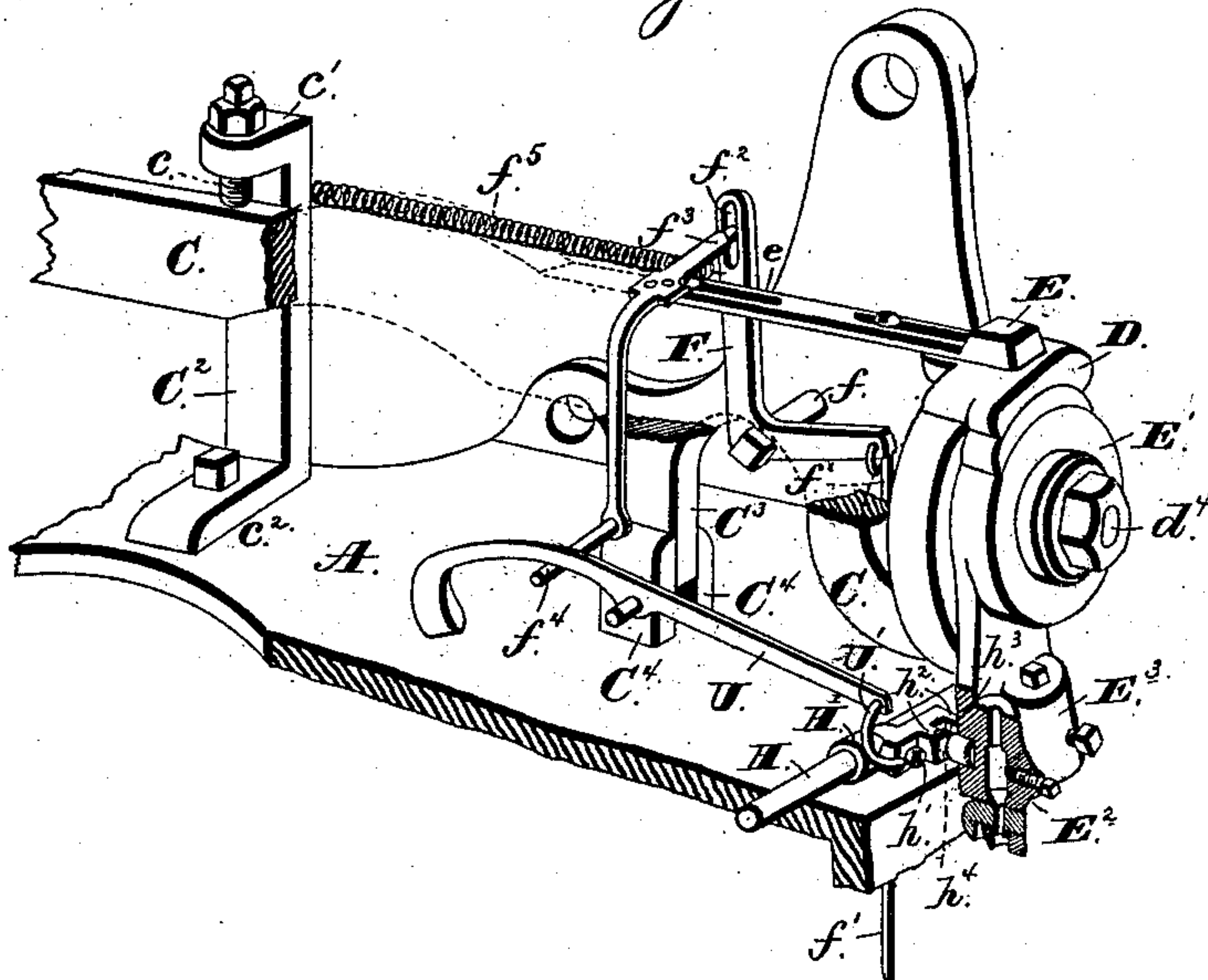
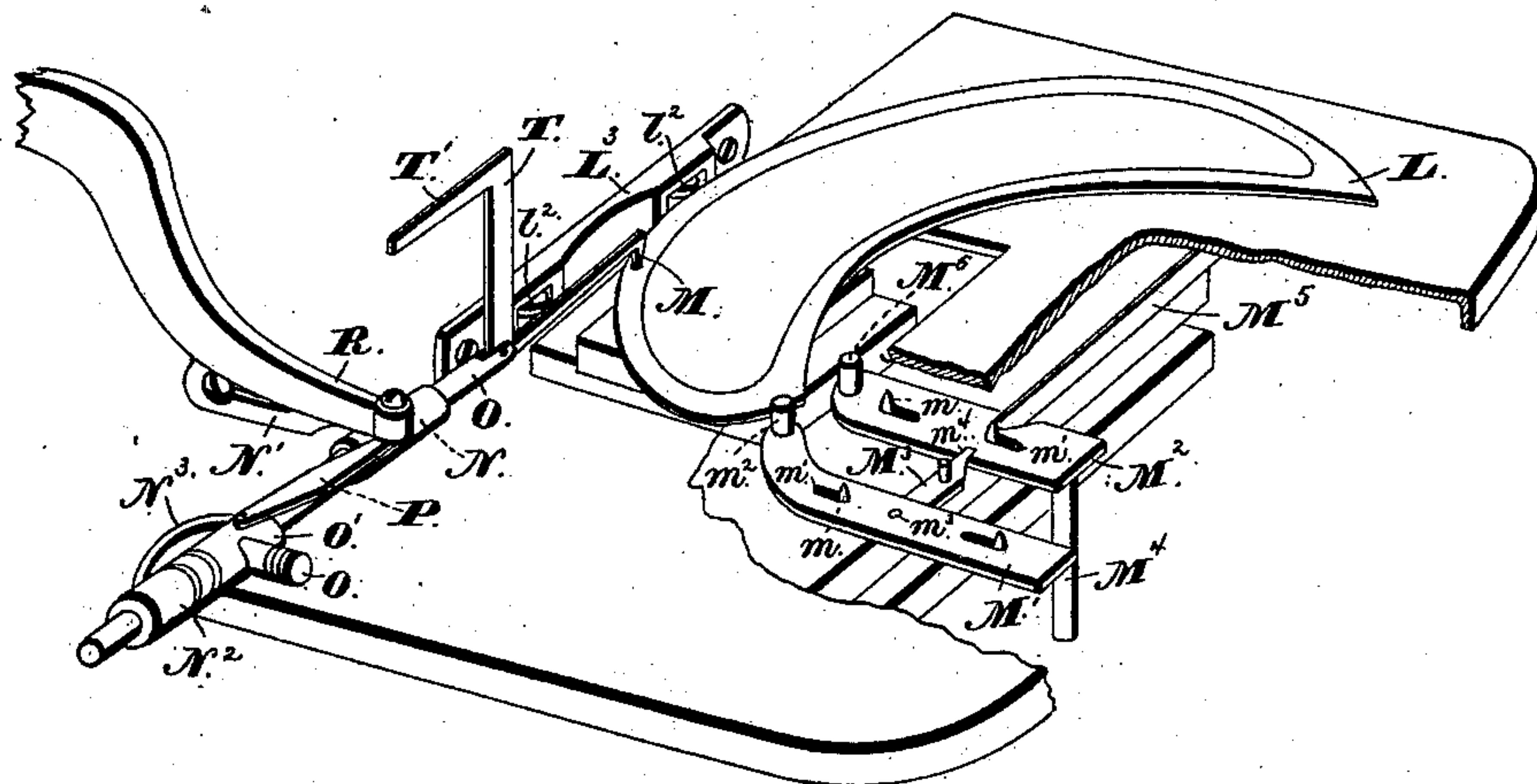


Fig. 4.



Witnesses:

Jas. E. Hutchinson
Henry C. Hazards

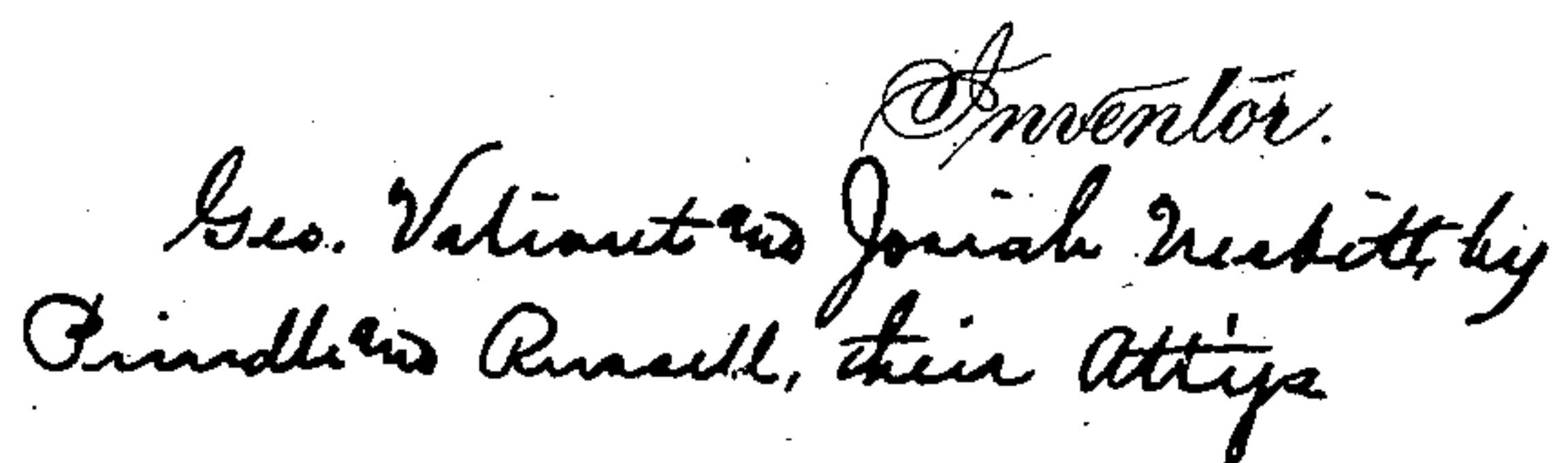
Inventors:

Jos. Valiant & Josiah Nesbitt by
Grindle & Russell, their Attys

3 Sheets—Sheet 3.

LEATHER CUTTING AND EMBOSSING MACHINE.

Patented Apr. 12, 1887.



UNITED STATES PATENT OFFICE.

GEORGE VALIANT AND JOSIAH NESBITT, OF TORONTO, ONTARIO, CANADA;
SAID NESBITT ASSIGNOR TO THE VALIANT BUTTON FLY COMPANY, OF
PORTLAND, MAINE.

LEATHER CUTTING AND EMBOSSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 360,933, dated April 12, 1887.

Application filed July 21, 1885. Renewed September 20, 1886. Serial No. 203,681. (No model.)

To all whom it may concern:

Be it known that we, GEORGE VALIANT and JOSIAH NESBITT, of Toronto, in the county of York, in the Province of Ontario, Canada, have
5 invented certain new and useful Improvements in Stamping and Embossing Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in
10 which—

Figure 1 shows a perspective view of our machine; Fig. 2, a similar view of the same, but from the opposite side and with certain portions removed to show the operative mechanism more clearly; Fig. 3, a detail perspective
15 view, partly in section, of a portion of the machine; Fig. 4, a detail perspective view of the table, the blank-holding form, and the means for holding said form and feeding it along; Fig. 5, a detail perspective view, enlarged, of
20 the cam mechanism for rocking the head; Fig. 6, a view in front elevation, partly in section, of the head, and the cutter and die carried thereby; Figs. 7 and 8, detail views of the cutter and the embossing-die, respectively; Fig.
25 9, a detail view of the anti-friction-roller-carrying block; Fig. 10, a similar view of the cam for rocking or swinging the head, and Fig. 11 a modification of blocks for the cutter and
30 die and of the mechanism for moving.

Letters of like name and kind refer to like parts in each of the figures.

The object of our invention is to provide a machine adapted to automatically alternately
35 cut and stamp or emboss shapers and patterns at regular intervals in a blank of leather or other material; and to this end our invention consists, essentially, in cutting and stamping or embossing devices alternately acting upon
40 the blank used, substantially as hereinafter specified.

It further consists in the alternately acting, cutting, and stamping or embossing devices, in combination with means for feeding the blank,
45 as hereinafter specified.

It finally consists in the machine and the construction, arrangement, and combination of the parts thereof, as hereinafter specified.

In the drawings, A designates the frame of

the machine, which can be of any material or
50 construction and supported in any way desired. Near its front end are the two parallel upright standards or plates A' A', on opposite sides of the frame. In suitable bearings in such uprights is journaled the main driving-
55 shaft B, provided on one end with the driving-pulley B', and on the opposite end carrying the two cams B² B³, the former adapted to act in a direction at right angles to the shaft B, and the latter in a direction parallel thereto,
60 for purposes to be hereinafter described.

Journaled in uprights A² A², at the rear of the frame, is the rock-shaft A³, forming the pivot-shaft of arm C, which is fixed to it, and extends forward between the uprights or stand-
65 ards A' A', above the shaft B. Said arm is of such length that its forward end has substantially a perpendicular movement with relation to the main part of the frame.

A spring, C', fastened at its rear and lower
70 end to the frame, and at its upper and forward end bearing up against the under side of the arm C, tends to keep the forward end of the latter normally thrown up in the position
75 shown in Fig. 1, such upward swing of the arm being limited and regulated by means of the adjustable stop formed of the set-screw c, tapped down through the horizontal arm c' of the standard C², fastened to the frame at c².
80 When the arm rises its upper side strikes this stop, as shown best in Fig. 3. To steady the arm in its vertical movements we provide it with a downward extension, C³, which is embraced by the lugs C⁴ C⁴ on the frame. Such
85 construction confines the movements of the arm to a vertical plane, and prevents any sidewise vibration. Above the forward end of the arm is a transverse shaft, D, journaled in the up-
90 rights A' A', and carrying upon one end an arm, D', extending downward and rearward to a point over cam B² on shaft B. On such
95 arm is a block, D², which is engaged by the cam to move the arm. Such block is set in a recess or groove in the arm, as shown, and is capable of adjustment by means of the set-
screws d' d', tapped through a portion of the arm and engaging the upper end of the block, as shown best in Fig. 1.

To hold the block seated in place in its recess or groove, a screw, d^2 , is provided, passing through a slot, d^3 , in the block and tapped into the arm. By adjusting the block up or down on the arm, the height to which the latter will be raised by the action of the cam upon the block can obviously be readily regulated.

Upon shaft D, between its bearings in the frame, is an arm, D^3 , extending forward and downward, and at its end which is situated over the fixed head D^4 on the long lever-arm C preferably enlarged and flattened, to engage squarely the top of the sliding block E on top of arm C when said block is in the position as shown in Figs. 1 and 2, and the arm D^3 is thrown down by the forward rocking of shaft D. Block E is, as shown, formed on or in one piece with the slotted plate e , resting on and sliding on top of arm C, and held in place and guided thereon by screws e' e' passing down through slots e^2 e^2 in the plate.

On the front of the fixed head D^4 on arm C is pivoted, by means of pivot-bolt d^4 , the head E' , having its upper portion formed, as shown, so as to always bear against a projecting portion, d^5 , of the fixed head D^4 as the head E' is rocked on the pivot-bolt.

Upon the head E' are the holders E^2 and E^3 for the cutting and the embossing or stamping dies E^4 and E^5 , respectively. Said holders are arranged upon the lower portion of the head, so as to extend thereon substantially in radial lines from the center of motion of the head. We do not, however, limit ourselves to the holders or sockets, as shown, as the cutting and stamping or embossing dies can be attached or fixed to the head in any way or by any means desired. It is intended, however, that said dies, in whatever way attached or fixed, shall be substantially radial, as set forth, in order that as the head is rocked on its pivot-bolt to bring one die or the other into operative position, said die will then be vertically below the point at which the head E' is attached to the fixed head on arm C.

As our machine is especially intended for cutting the button-holes and scallops in and embossing the fly of a boot or shoe, we have shown the cutter or cutting-die E^4 adapted to cut at one stroke a button-hole and a scallop, and the embossing-die E^5 of such shape and configuration as to emboss and ornament the material adjoining the edges of the button-hole and the scallop.

With the construction and arrangement of the parts of the machine as already set forth herein, as the shaft B is rotated by connection of the pulley B' with any desired source of power, the cam B^2 will force the block D^2 and arm D' upward and let them fall again, thus rocking shaft D and swinging arm D^3 down and up again at each revolution of shaft B. With the sliding block E on top of arm C slid forward into position, as shown in Figs. 1 and 2, the arm D^3 will, as it descends, strike the same and so force arm C with the head down-

ward to cause the cutting or stamping die to act on the blank placed below the head and supported as hereinafter described. The spring C' , as arm D^3 rises again, throws arm C upward into its first position.

The motion of arm C can be stopped while the main shaft continues to revolve by sliding the block E back on the arm C out of reach of the lower end of arm D^3 , thus allowing the spring to throw and hold arm C into elevated position. As the main or driving shaft continues to revolve, the rising and falling movement of arm D^3 will then continue; but the lever-arm C will not be actuated, as arm D^3 cannot strike it, but can only operate it through the intervention of block E.

To enable block E to be slid, as desired, into and out of position to be struck by arm D^3 to throw the cutter and stamp or die carrying head into and out of action, as indicated, we provide the elbow-lever F, pivoted at f to one of the frame-uprights and having attached to one of its arms the rod or link f' , adapted to be connected with a treadle or lever to be operated by foot or hand, as desired. The other arm of lever F extends upward and is provided with the slot f^2 , in which plays the pin or bar f^3 , attached to the slotted plate e , carrying block E. On the other side of the plate the bar f^3 extends downward, and at its lower end is provided with the horizontally-projecting pin f^4 , for a purpose to be hereinafter set forth.

To rock the head E' to bring the cutter and the stamping or embossing die alternately into operative position as said head descends, we provide the following mechanism: Upon the main shaft B, between the driving-pulley and the frame-upright on that side, is fixed a collar, G, of which a portion is cut away at g to make room for a swinging cam-gate, G' , pivoted at g' , so as to swing toward either side of the collar, as shown best in Fig. 5. On each side of its pivotal point the gate is provided with an arm or projecting portion, g^2 , the rear side of which comes in contact with a stop-shoulder, g^3 , at the end of the cut in the collar when the gate has been swung toward that side. The front side or face of the projection will then be substantially flush with the side of the collar, as shown, while the front end of the gate projects to one side beyond that side of the collar. Engaging the side of the collar G is an anti-friction roller, g^4 , on the lever G^2 , which is fixed to the vertical pivot shaft or spindle G^3 , journaled in the bearing G^4 on the outer side of the adjacent frame upright A' . Guided at its opposite ends in suitable openings in the frame-uprights is the reciprocating bar H, extending across just behind the lower portion of the rocking head E' , and provided at one end with a slot, h , which receives the forward end of the swinging lever G^2 . The swinging of the lever on its pivot will obviously, with this construction, cause the positive reciprocation of the bar.

With the parts in position as shown in Fig.

5, as the shaft B revolves in the direction indicated by the arrow, the forward end of the gate, projecting as it does at an angle beyond the side of collar G, will engage the roller g^4 on the lever and will force or carry it over to the other side of the collar. As the roller engages in its passage the projection g^2 on the gate, it will hold it back, thus causing the gate to swing over to the other side of the collar, so that it will be in position to engage the roller on the lever again as the collar revolves and carry or force it back to the side of the latter upon which it was at first. Thus, as the shaft B continues to revolve, the lever will be at regular intervals rocked on its pivot—first in one direction and then in the other. The gate-opening and gate are so situated on the collar as to actuate the lever F while the cam B^2 on the other end of shaft B is not acting to raise the arm D—that is, when shaft D is not being rocked to throw arm D^3 downward to actuate the lever-arm C, and so the cutter and stamp carrying head E' , as described hereinbefore.

Upon bar H is the sleeve H' , fastened in place by set-screw h' , and on the front side of said sleeve are the two lugs $h^2 h^2$, between which is the vertical passage h^3 , which receives the rear end of pin h^4 on the rear side of head E' . With such construction the head can move up and down while the pin is still engaged by and held between the lugs $h^2 h^2$, as when the cutting and stamping head is in operation it is caused to descend and rise again at each revolution of the main shaft by the mechanism and in the way hereinbefore described; and as the cam-gate on the collar on the main shaft acts to swing the lever G^2 and move bar H during each revolution of the shaft, but at a time when the cutter and stamp carrying head is not being forced down into action, the head will be swung on its pivot to one side before one downward stroke and to the other before the next, and this alternate swinging will be kept up while the main shaft continues to revolve.

The collar G on the shaft is made of such thickness as to cause the lever G^2 to move bar H just far enough to swing the head E' and bring the cutter and the stamping or embossing die alternately directly below the pivotal support of the head in proper operating position.

As for the cutter and the die different anvil or supporting blocks are desirable, we provide the two blocks I and I' , fastened to slide I^2 , side by side, and having their upper faces formed so as to act properly in conjunction with the cutter and the stamping-die, respectively. The slide I^2 fits in a dovetailed groove in a plate, K, which is adjustably supported and held in place by screws tapped up through the forwardly-extending tubular portion A^4 of frame A. We show two of the screws at $k k$. There can be any number of these, but there are preferably four, each situated near a corner of plate K. By means of such screws the

plate can be adjusted to its proper position with relation to the cutter and die head and fixed at the desired adjustment.

Attached to and supported on suitable bracket-arms, $K' K'$, at each side of the frame, is the table K^2 . This is preferably made adjustable by slotting one of the arms K' and fastening it to the frame by means of a bolt or screw, k' , passing through such slot and into the frame. To allow for the movement of the blocks I and I' the table is slotted or made open, as shown. To reciprocate the slide I^2 with the blocks as and when the head E' is swung on its pivotal support, as described, we connect said slide with arm K^3 on the lower end of spindle G^3 . The movements of the blocks I I' will then correspond with those of the head, so that the proper block will be below the head each time it descends.

The blocks I I' , instead of being arranged as just described, can, if desired, be placed side by side on a disk or rotary horizontal head, I^3 , on the vertical spindle I^4 , which is provided with the toothed pinion I^5 , meshing with the reciprocating rack I^6 , reciprocated by suitable connection with the arm fixed on the lower end of spindle G^3 . With this construction the head or disk will be rotated back and forth to bring the blocks alternately into operative position to act with the cutter and die, respectively.

As our machine is especially adapted, as described, for button-holing, scalloping, and embossing the fly of a boot or shoe, and the cutter and die, together with the blocks to act in conjunction therewith, are formed for such purposes, the form L, for holding the blank to be operated upon, is, as shown, shaped and adapted to receive and hold the fly L' of a boot. The edge of the form corresponding to the forward or button-hole edge of the fly is curved like said fly edge, and at intervals corresponding with the intervals between the button-holes to be cut in the fly the form is provided with holes $l l$, to be engaged by the feed-hook M, as will be described hereinafter.

A guide plate, L^2 , attached to table K^2 , as shown, extends over and serves to hold the form L and the fly-blank down in place on the table and upon the blocks I I' , its inner or rear portion being provided with an opening, l' , for the passage of the cutter or die operating upon the blank. The rear curved edge of the form L rests against the anti-friction rollers $l^2 l^2$ on block L^3 , attached to the frame, as shown, and cut away on its front side between the rollers, so as not to come in contact with and interfere with the movement of the curved edge l^3 of the form L, engaging the rollers. On the under side of the table are the two plates $M' M^2$, attached thereto by means of screws $m m$, passing through slots $m' m'$ in the plates. With this construction the plates can slide in parallel lines toward or from the die-blocks I I' and plate K. The plate M' is provided with the pin m^2 , projecting upward, so as to be in position to engage the end of form

L when the plate is slid inward, as shown in Fig. 4. Said pin then acts as a gage for the proper placing of the form on the table. A short swinging plate or bar, M^3 , pivoted at m^3 , connects the two plates M' and M^2 , being pivoted at one end to plate M' and at the other engaging a notch, m^4 , in plate M^2 . As one of the plates M' M^2 is moved in one direction the other will then be moved in the other direction.

A handle, M^4 , is attached to plate M^2 , so that it can be drawn back as desired, and a spring, M^5 , engages the plate to force it normally inward in the position shown best in Fig. 2, so that the pin M^6 on the plate engages the outer or forward side of the form and presses said form against the rollers $l' l'$. While the plate M^2 is in such position, with its pin engaging the form, the other plate, M' , is, by the connecting means set forth above, withdrawn, so that its pin m^2 is out of the way of the form as it is moved or fed along. As the pin m^2 on plate M' engages the curved forward or outer side of the blank-holding form and presses the latter so that its curved inner or rear side engages the rollers, if the form be pulled or fed along by the feed-hook engaging the holes ll in the form, the movement of the latter will correspond with the curvature of its said rear or inner edge, so that the button-holes cut and embossed by the cutter and the die will always be at the right angle with reference to the fly.

Reciprocating in a horizontal bearing, N , on the bracket arm N' , adjustably attached to the frame by slot-and-screw attachment, as shown in the drawings, is the rod O , to the forward end of which is pivoted the pawl-shaped hook M , adapted to engage the holes ll in the blank-holding form L as the hook is drawn outward, but to slide over the form edge as the rod and hook move inward again. The outer end of the rod O can be supported, as shown, in a second bearing, N^2 , on a bracket-arm, N^3 . Upon the rod, between bearings N and N^2 , is a sleeve, O' , adjustably fixed to the rod by means of set-screw o , in the well-known way, and pivoted to this sleeve is one end of link P , whose other end is pivotally connected with lever R , which is pivoted by means of vertical bolt R' to the bracket R^2 on the frame. The rear end of the lever, or an anti-friction roller thereon, is engaged and operated by cam B^3 , so as to swing the lever to carry the rod O and feed-hook inward once during each revolution of the main driving-shaft. A spring, S , bearing against the inner side of the forward end of the lever, acts to throw such end outward to carry the rod O and feed hook outward again and draw the fly-holding form along by means of the hook, so as to bring the place on the fly for another button-hole into position to be operated upon. The throw of the lever, and consequently of the feed-hook, can be regulated by means of the set-screw S' on bracket S^2 , acting as an adjustable stop, engaging the outer side of the lever. The positions which the operative end of the hook will occupy at

each end of its throw are regulated by adjusting the sleeve O' on the rod O . The cam B^3 is so situated, as shown, with reference to cam B^2 that the inward and outward movements of the forward end of the lever, and consequently the rod O and feed-hook M , will be completed before the cutter or die on head E' descends and acts upon the fly-blank.

Attached to hook M , and extending upward therefrom, is the arm T , and on the rear side of head E' is a pin, t , so situated as to be struck by said arm before the hook reaches the inner end of its throw, when the head is rocked to bring the cutter into position to operate on the blank when the head descends. The engaging part of the hook will then be raised as it nears the end of its inward throw, and will not engage any of the holes ll in the form L . Said form will then remain stationary and not be moved. When the head E' is swung so as to bring the die or stamp E^5 into operative position, the pin t is up out of reach of the arm T , so that the feed-hook can act to feed the form and blank along, as described.

While the head, and consequently the cutting and stamping dies, are thrown out of action by the means described hereinbefore, it is desirable to also throw and keep the feeding mechanism out of operation, so that the fly-blank-holding form may be put in place for the cutting and stamping operations. The arm T at its upper end is therefore provided with an outwardly-extending arm, T' , at its upper end, and a lever, U , is provided, pivoted on a pin on one of the guide-lugs $C' C'$, and having on its forward end a curved portion, U' , adapted to come in contact with the top of arms $T' T'$ when such end of the lever is down. As the pivoted hook is thrust inward it will then be tilted upward, so as to be inoperative and not engage the holes in the form. The pin or stud f^4 on the bar f^3 , which moves with the plate-carrying block e , engages the under side of the rear end of lever U , as shown in Fig. 3, said rear end being so formed that rearward movement of the stud f^4 will lift it and throw the other end of the lever down into the operative position described. To raise the front end of the lever again above the track of arm $T' T'$, when plate E and bar f^3 are moved forward by the treadle-connection described, the rear end of the lever is weighted, as shown. If desired, a spring could of course be used for this purpose.

Our machine, as described and shown, is especially adapted for button-holing, scalloping, and embossing or ornamenting the button-hole strip or fly of a boot or shoe, and we will therefore describe its operation when used for such purpose, while it is obvious that without change in its essential features, and with no alteration, except such as would involve mere ordinary mechanical skill, the machine can be adapted for stamping and ornamenting blanks or pieces of other material, and for other purposes.

As used for action upon a boot or shoe fly, as described, the operation of our machine is briefly as follows: The fly being placed in the form L, the plate M², with its pin M⁶, is drawn out so that plate M² is carried inward to bring its gage-pin m² into operative position. The form is then slid under the plate until its end strikes the latter pin. Plate M² is then released and is thrown inward by the spring, so that its pin engages the curved forward side of the form and bears the form over against the anti-friction and guiding rollers l' l'. The elbow-lever F is then operated by treadle or otherwise to move plate e and block E forward, to bring the latter under the rising and falling arm D³, so that the cutter and die carrying head will be actuated. By the forward movement of the plate e, the bar f³, and the stud f⁴ thereon, the rear end of the lever is allowed to drop, thus raising its front end and disengaging it from the arm T T' on the feed-hook. The head descends and the cutter E⁴ cuts the button-hole and scallops the edge of the fly, and the head rises again. The feed-hook is thrown inward; but as its arm T engages the pin t on the head, as described, the hook is swung upward and does not engage a hole in the form L, and so said form is not fed along, but remains stationary, so that the stamping or embossing die, which is now brought into operative position by the swinging of the head when it descends, strikes the fly where the cutter did, and embosses and ornaments the edges of the button-hole and the scallop just cut. The head and die then rise and the feed-hook travels inward, engages one of the holes along the edge of the form L, and, being retracted by its spring, draws the form along, so as to bring the place on the blank next to be acted upon in position below the head. By the mechanism fully set forth hereinbefore, the head is, before it descends again, swung on its pivotal support to bring the cutter or cutting-die into operative position, as before. Upon the releasing of the starting treadle or lever the spring f⁵, attached at one end to the elbow-lever F and the other to a fixed part of the frame, as shown, draws the upper arm of said lever back and so slides the plate e rearward upon lever-arm C, to carry the blocks out of reach of the driving-arm D³, so that the head is no longer actuated. As plate e is thus moved, the bar f³ moves with it, and the pin or stud thereon rides under the inclined rear portion of the lever and raises it, so as to depress the front end of the lever into position to engage the part T' of arm T on the feed-hook and hold the latter up, so as to prevent its operating upon the fly-blank.

With our machine, as described, the cutter and the stamping and embossing die act alternately upon the same portion of the fly, and such alternate action is continuous until the fly is completely button-holed, scalloped, and embossed.

Having thus described our invention, what we claim is—

1. In a machine for cutting and embossing, the cutting and embossing devices, in combination with means, substantially as described, for causing them to operate alternately upon a blank.

2. In a machine for cutting and ornamenting, a cutter and ornamenting-die operating alternately, in combination with feeding mechanism, substantially as described, for feeding the blank operated upon, substantially as and for the purpose shown.

3. In a machine for cutting and embossing, a cutter and an embossing die or stamp, operating alternately, in combination with feed mechanism, substantially as described, adapted to feed the blank being operated upon along after both the cutter and die have acted upon it, substantially as and for the purpose set forth.

4. In a cutting and embossing machine, in combination with a moving arm or piece, a head pivoted thereto carrying a cutter and an embossing die or stamp, and means, substantially as described, for rocking the head on its pivot, substantially as and for the purpose described.

5. In combination with the reciprocating head provided with suitable cutter and die holders, means, substantially as described, for rocking the head to bring the holders alternately into line with its reciprocation, substantially as and for the purpose described.

6. In a machine for button-holing, scalloping, and embossing boot and shoe flies, a reciprocating head pivoted to its moving support and provided with a cutting-die adapted to cut a button-hole and scallop and a stamping or embossing die, and means, substantially as described, for turning the head on its pivot to bring the cutting and stamping dies alternately into operative position, substantially as and for the purpose specified.

7. In combination with the moving head E', pivotally attached to its moving support, a rod connected with the head, a lever connected with the rod, and cam mechanism, substantially as described, for swinging the lever.

8. In combination with the head E', pivoted to its moving support and provided with cutting and stamping dies, a rod connected with the head, a lever connected with the rod, a collar on a rotary shaft, and a cam-gate on the collar adapted to engage and operate the lever, substantially as and for the purpose set forth.

9. The die-carrying head pivoted to a swinging arm, a spring engaging such arm, a second swinging arm driven by suitable mechanism, and a movable block adapted to be moved between the two arms, so as to impart the motion of the second arm to the one carrying the head, substantially as and for the purpose described.

10. In combination with the rising and falling arm C, carrying the die-head E', the spring supporting the arm, the sliding block on the arm, the rock-shaft, the arm thereon adapted to engage the block on arm C, and means for

rocking the shaft, substantially as and for the purpose specified.

11. In combination with the sliding-block-carrying plate and the rod or arm projecting therefrom, the elbow-lever provided with a slot to engage such rod or arm, the spring connected with the slotted arm of the lever, and a rod by means of which the lever can be operated against the stress of the spring, substantially as and for the purpose described.

12. In combination with the lever arm C and the die-carrying head thereon, a spring tending to throw such arm upward, a sliding block on the arm, a rock-shaft, an arm on the rock-shaft adapted to strike the block on arm C, a second arm on the rock-shaft, an adjustable block thereon, and a cam engaging the block, all substantially as and for the purpose specified.

13. In combination with the cutter and die carrying head E' and the movable blocks adapted to act in conjunction with the cutter and die, respectively, means for moving the head to bring the cutter and die alternately into operative position, and means for correspondingly moving the blocks alternately into operative position, all substantially as and for the purpose shown.

14. In combination with the reciprocating and swinging head carrying a cutter and a die and the movable blocks for acting in conjunction with the cutter and die, a lever, a spindle or rock-shaft to which the lever is attached, an arm on the spindle, connecting means between the lever and head and the arm on the spindle, and the blocks and suitable cam mechanism for swinging the lever, substantially as and for the purpose set forth.

15. In combination with reciprocating and swinging head E' and the slide I², a rod connected with the head, a lever connected with the rod, a rotary shaft, a collar thereon, a cam-gate on the collar, a spindle to which the lever is attached, and an arm on the spindle connected with slide I², substantially as and for the purpose described.

16. In combination with a holder or holding-form for the blank to be operated upon, provided with a series of holes, a reciprocating hook adapted to engage such holes successively and feed the holder along, substantially as and for the purpose specified.

17. In combination with means for cutting the button-holes and scallops on a boot or shoe fly, a form to receive and hold the fly-blank, provided with a series of holes, and a reciprocating feed-hook adapted to engage such holes successively and feed the form and blank forward, so as to bring the places on the blank for the button-holes successively under the cutter, substantially as and for the purpose shown.

18. In combination with the form for receiving and holding the shoe or boot fly, means, substantially as described, for guiding the form,

and a feed device for feeding it along, substantially as and for the purpose set forth.

19. In combination with the blank-holding form and the table upon which it rests, a sliding plate provided with a pin adapted to act as a gage-stop to determine the proper position of the form, substantially as and for the purpose described.

20. In combination with the form adapted to receive and hold a boot or shoe fly and corresponding with it in shape, the rollers to guide one edge of the form and the spring-pressed plate provided with a pin engaging the other edge thereof, substantially as and for the purpose specified.

21. In combination with the form adapted to receive and hold a boot or shoe fly and shaped to correspond with the same, the rollers engaging and guiding the inner edge of the form, the sliding plate provided with the stop-pin for engaging the form when it is being put in position, the spring-pressed plate provided with the pin to engage the outer edge of the form, and connecting means between the two plates, whereby as one is moved inward to cause its pin to engage the form the other is withdrawn, substantially as and for the purpose shown.

22. In combination with plate M', provided with a pin or lug to act as a stop for the form L, the plate M², provided with a pin or lug, the spring M³, and the pivoted bar M³, connecting the two plates, substantially as and for the purpose set forth.

23. In combination with a reciprocating rod and means, substantially as described, for reciprocating the same, the feed-hook pivoted thereto and means for swinging such hook out of operative position when desired, substantially as and for the purpose described.

24. In combination with the alternately-acting cutter and die, means, substantially as described, for feeding the blank along after both cutter and die have acted upon it, substantially as and for the purpose specified.

25. In combination with a holder for the blank and the alternately-acting cutter and die, feed mechanism adapted to feed the holder along after both the cutter and die have acted, substantially as and for the purpose shown.

26. In combination with the holder for receiving the fly-blank, provided with a series of notches or holes, the reciprocating bar, the feed-hook hinged thereto, an arm on the hook, a head carrying the alternately acting cutter and die, and the pin on the head for engaging the arm on the hook as the latter is moved inward, substantially as and for the purpose set forth.

27. In combination with the reciprocating and swinging head and the cutter and die carried thereby, means for swinging the head to bring the cutter and the die alternately into operative position, a hinged reciprocating feed-hook adapted to engage the blank-holder and

feed it along, provided with an arm, and a pin or stop on the head adapted to engage such arm and swing the hook up while the cutter is in operative position, substantially as and for the purpose described.

28. In combination with the vibrating lever and the reciprocating rod carrying the feed-hook hinged thereto, the adjustable sleeve on the rod and the link connecting such sleeve with the lever, substantially as and for the purpose specified.

29. In combination with the reciprocating rod and the feed-hook, the lever, the link connecting the lever and a sleeve on the rod, a cam operating on the lever to throw the rod and hook inward, and a spring acting on the lever to move the rod and hook out again, substantially as and for the purpose shown.

30. In combination with the hinged reciprocating feed-hook provided with an arm, the lever adapted at one end to engage such arm and tilt the hook upward out of operative position and at the other weighted, so as normally to keep its engaging end out of engagement with the arm on the hook, and means for raising the weighted end of the lever, substantially as and for the purpose set forth.

31. In a machine for button-holing, scalloping, and embossing flies for boots and shoes, in combination with the means for starting and stopping the cutting and embossing mechanism, the reciprocating hinged feed-hook, an arm on the same, the weighted lever, and means connected with the stopping and starting devices adapted to swing such lever into engagement with the arm on the hook when such devices are moved to stop the cutting and embossing mechanism, substantially as and for the purpose described.

32. In combination with the reciprocating hinged feed-hook and arm thereon, the weighted lever U, the bar f^3 , and the pin or stud f^4 thereon engaging the lever, so as to raise the weighted end of the lever as the bar is moved and lower the other end thereof into position to engage the arm on the hook, substantially as and for the purpose specified.

Toronto, July 13, 1885.

GEORGE VALIANT.
JOSIAH NESBITT.

In presence of—

R. H. BOWES,
CHARLES C. BALDWIN.