S. M. CUTTER.

PEGGING MACHINE.

APPLICATION FILED JAN. 19, 1899.

930,047.

Patented Aug. 3, 1909.

3 SHEETS—SHEET 1.

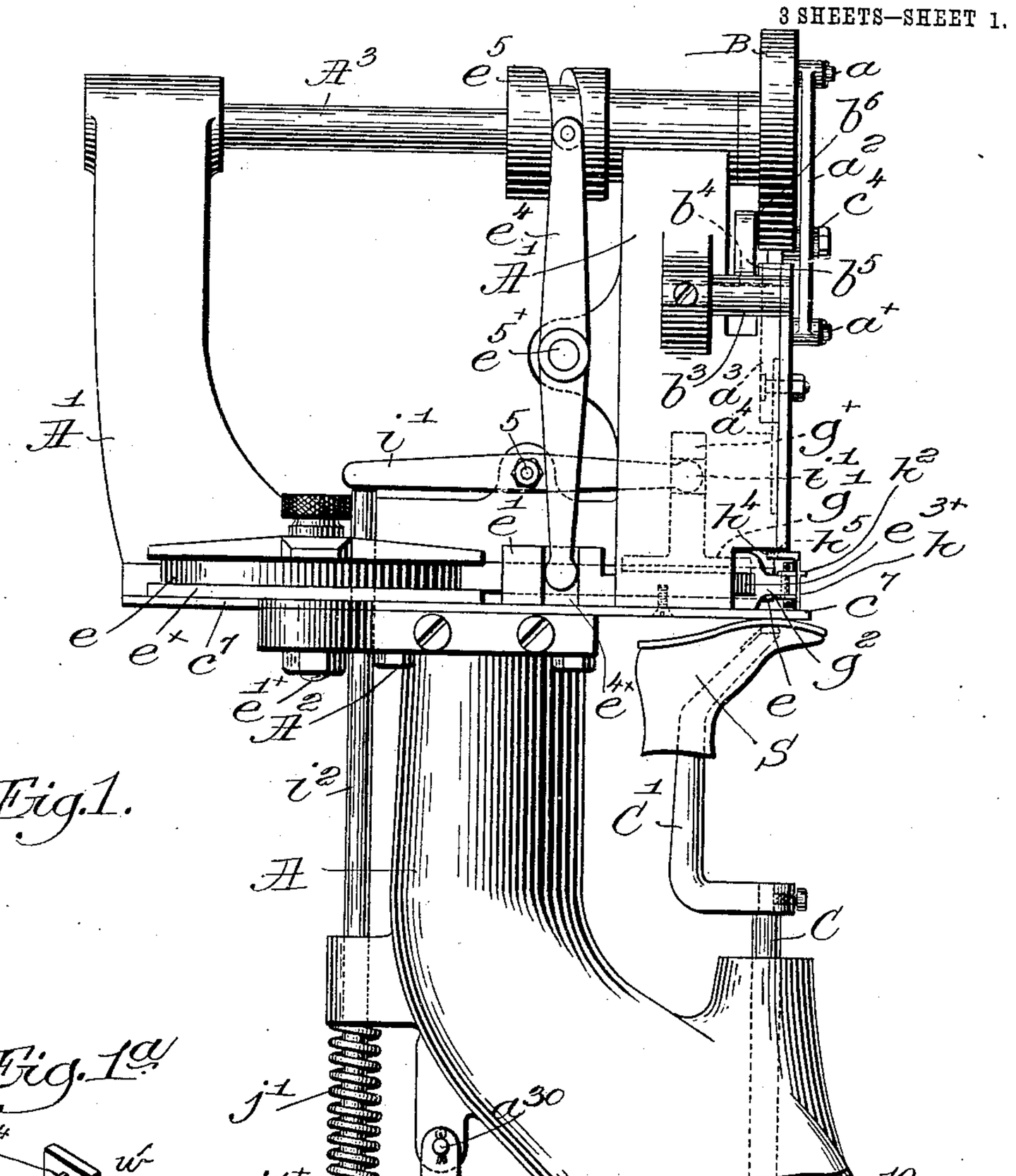
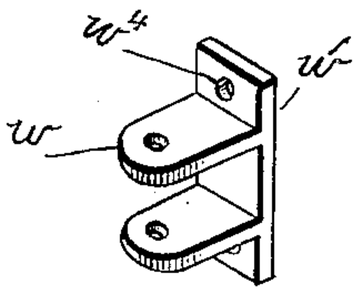


Fig. 1.

Fig. 1a.



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3 SHEETS—SHEET 2.

Fig. 2.

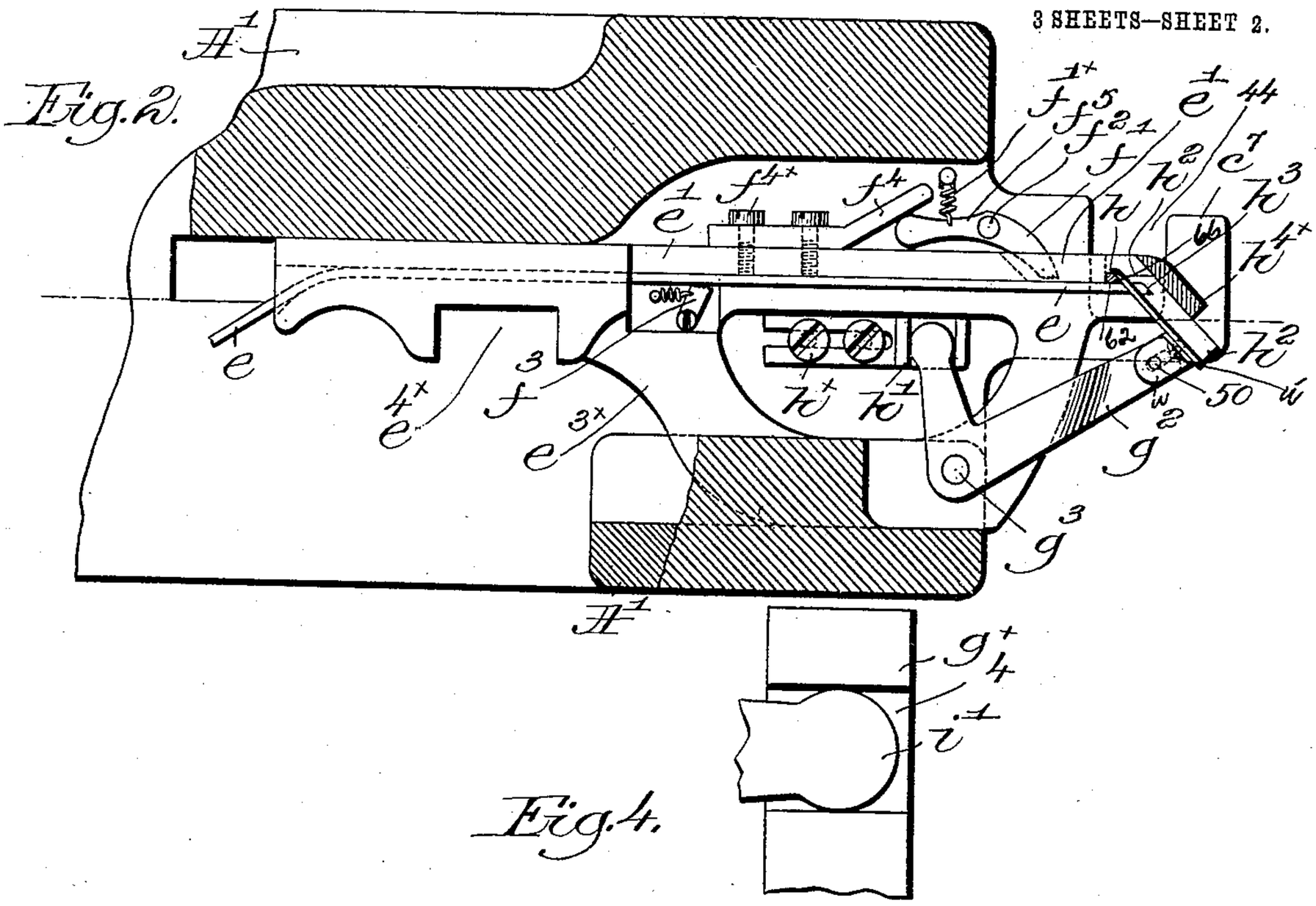


Fig. 4.

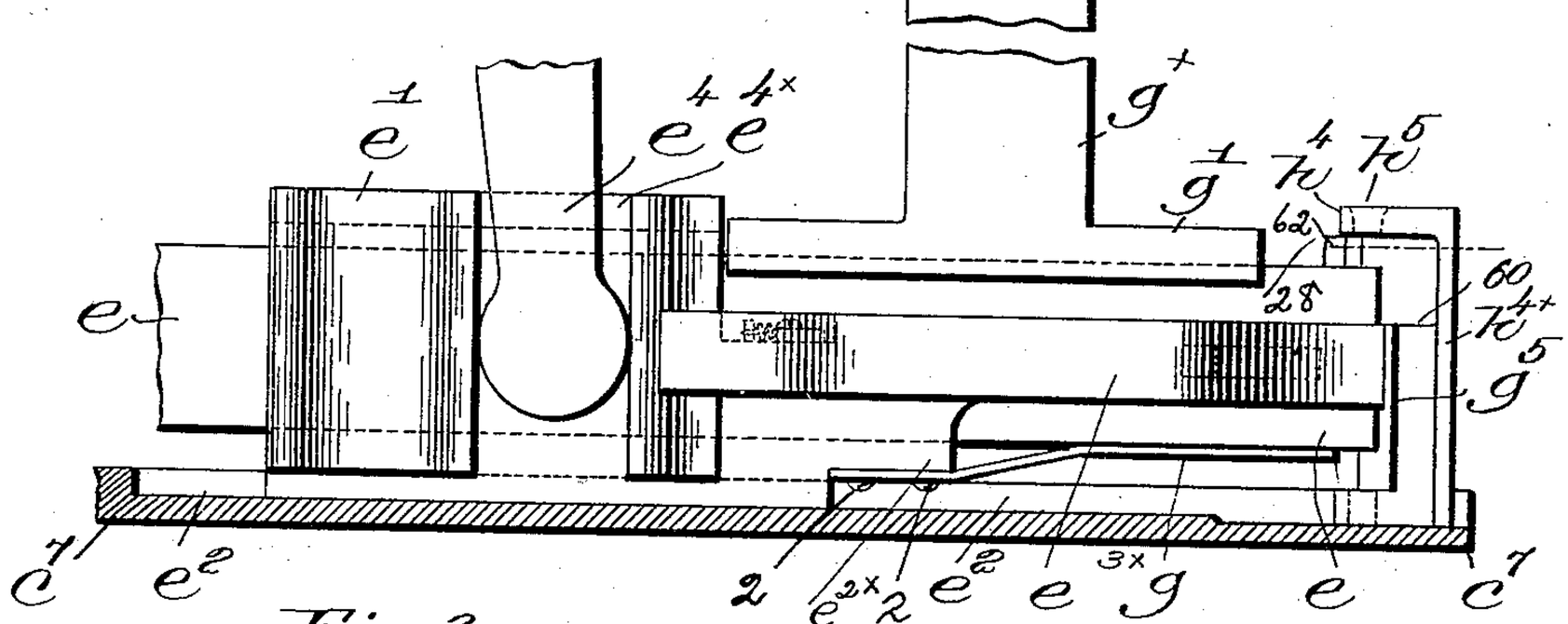


Fig. 3.

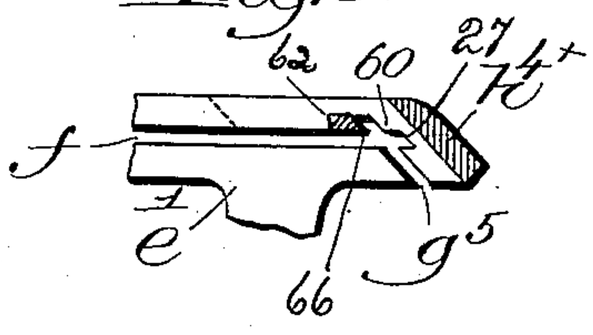


Fig. 5.

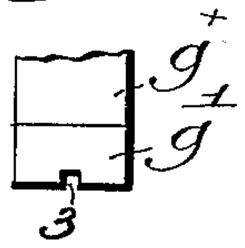
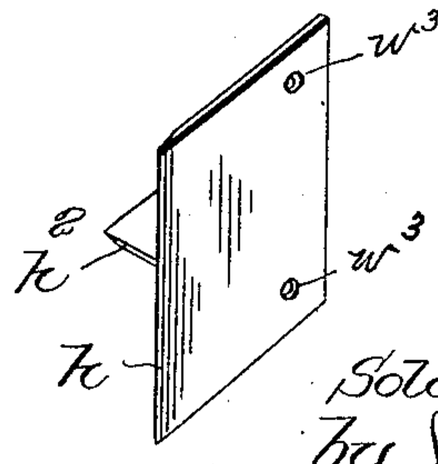


Fig. 7.



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3 SHEETS—SHEET 3.

Fig. 6.

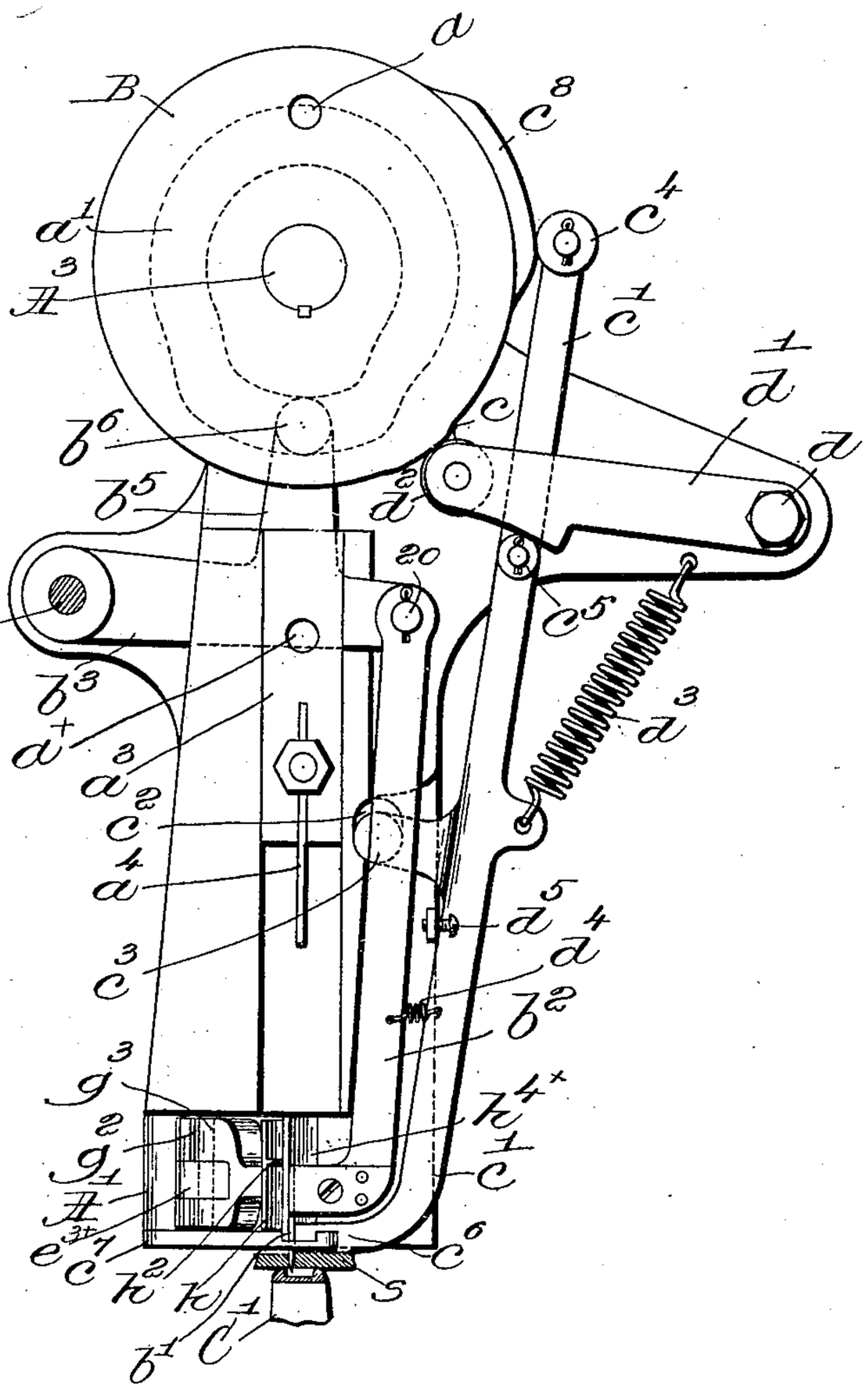

Fig. 8.

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UNITED STATES PATENT OFFICE.

SOLOMON MARCELLA CUTTER, OF MONTREAL, QUEBEC, CANADA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNITED SHOE MACHINERY COMPANY, A CORPORATION OF NEW JERSEY.

PEGGING-MACHINE.

No. 930,047. Specification of Letters Patent. Patented Aug. 3, 1909.

Application filed January 19, 1899. Serial No. 702,681.

To all whom it may concern:

Be it known that I, SOLOMON M. CUTTER, of Montreal, Province of Quebec, Dominion of Canada, have invented an Improvement in Pegging-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has for its principal object the production of an improved pegging machine in which a peg ribbon or strip is used, a feature of this invention being to cut from peg ribbon pegs varying in length to correspond with variations in the thickness of the stock which is being calipered prior to driving each peg, the stock being calipered between, as herein shown, a stock-support and a nose or plate which contacts with the outside of the sole being pegged, the stock-support being the movable member of the calipering device. The peg ribbon or strip has a width substantially equal to the longest peg required, but shorter pegs may be formed from it as the decreasing thickness of stock demands.

My machine has been devised to control automatically the length of the peg to be cut, according to the thickness of the stock next to receive a peg.

As I have herein chosen to illustrate my invention, the variations in lengths of pegs are due to varying positions occupied by the stock-support with relation to the appliances, to be described, for making the pegs as needed, these changes of position being effected automatically by changes of thickness in the stock being calipered between the stock-support and the plate or nose. Variations in thickness of stock, therefore, effect a change in the relative position of the appliances which form the pegs from the ribbon or strip with relation to the upper and lower edges of said ribbon or strip, so that a peg of greater or less length may be made, as required, from the peg ribbon. Preferably the ribbon is led to the point at which the pegs are formed through a raceway or guideway, herein shown as reciprocable for the purpose of effecting the feed of the ribbon through the raceway.

A feature of the invention is that the ribbon is movable in the direction of its width with reference both to the raceway and to the means for making the pegs so that the length of the pegs may be varied.

In the illustrated embodiment of the invention, I have so located the peg ribbon or strip-supporting and feeding mechanism, and the appliances used to make the pegs from the peg ribbon, that the pegs present a diamond shape in cross-section. These pegs are driven directly into the stock, one corner of each peg occupying a position nearer the edge of the stock being pegged than the remaining corners of the peg, so that a row of driven pegs presents to the tread of the sole diamond-shaped ends.

To enable me to form pegs of lengths varying according to variations in the thickness of the stock being pegged, I employ means to cut the peg ribbon transversely to form the side of the peg, and shortening means to cut the peg or peg ribbon to determine the length of the peg and a feature of the invention is a single peg cutting device having two blades with cutting edges at right angles for cutting out from the ribbon pegs shorter than the width of the ribbon. As to certain other features of the invention, however, the two blades may be separate and distinct devices.

In all embodiments of the invention herein disclosed, the means for forming the pegs includes a vertical blade or cutter, which acts in the line of the side of the peg, to separate it from the ribbon and a horizontal blade, which acts in a direction at right angles to the vertical blade, to define the head of the peg, thus determining its length. Since the blade last mentioned reduces the length of the peg to less than the width of the ribbon, it is sometimes defined herein as a "peg shortener." The two blades together constitute the acting part of the peg forming means though this term covers also the vertical blade alone since the peg shortener is not effective when a peg of full length is formed. The chief function of the portion of the vertical cutter herein shown as located above the peg shortener is to remove the surplus wood not required in the shortened peg being made, and I have hereinafter designated at times this portion of the vertical cutter as the "surplus remover."

A further feature of the present invention

is that the actuation of the peg forming means is effected by the reciprocation of the raceway through which the peg ribbon is fed. As herein shown, the peg forming means is carried by the raceway but is given an independent movement to cause the cutters to form a peg.

The invention comprises also other incidental features including particularly combinations of parts and details of construction to be described.

Referring to the drawings, Figure 1 is a side view of a sufficient portion of a pegging machine embodying my invention in its preferred form, to enable the same to be understood, the lower part of the column or standard being shown as broken out; Fig. 1ª is a detail of the plate W′ to be described; Fig. 2, in plan view, shows the raceway, peg forming means and adjacent parts, some of said parts being in section; Fig. 3 is a plan view with a part in section, of the front end of the raceway; Fig. 4 is a side view of the raceway and coöperating means to act upon the peg ribbon; Fig. 5 is an end view of the block which engages the upper edge of the peg ribbon; Fig. 6 is a front view showing the mechanism to periodically depress the stock-support and to actuate the driver and the awl; Fig. 7 is a detail showing detached one form of peg forming means; Fig. 8 shows a modification thereof.

The column A adapted to stand on the floor, supports at its upper end a head A′, the head being connected to the column by suitable bolts A^2.

The head presents suitable uprights or bearings to sustain the main shaft A^3, upon which will be mounted fast and loose pulleys or other suitable driving devices, controlled by a treadle, such as are common in well known pegging machines, such for instance as are represented in U. S. Patent No. 582,579, dated May 11, 1897, and so need not be herein illustrated or further described.

As shown in Figs. 1 and 6, the shaft A^3 has fast upon its front or right-hand end a disk B having in its front face a stud or crank a, and at its rear side, said disk has a cam groove a'. The crank a has applied to it loosely one end of a link or connection a^2 which fits over a stud a^x extended from a driver bar a^3, provided with a driver a^4, said driver bar being fitted to slide up and down in a suitable guideway made in the front face of the head A′.

The awl b' is actuated to enter the stock through an awl-bar or carrier b^2 jointed at its upper end loosely by a suitable stud 20 to the end of a lever b^3, pivoted at b^4 on an ear extended from the head A′, said lever having an arm b^5 provided with a roller or other stud b^6 which enters the cam groove a' before referred to. The head has extended from its opposite side, see Fig. 6, a second ear which receives a stud d, on which is pivoted an arm d' provided at its inner end with a roller or other stud d^2.

The head A′ has a notch terminating in a pocket c^2, in which is entered a stud on the rear side of a circular ended projection c^3, extended from a stock depressing device shown as a lever c', having at its upper end a roller or other stud c^4. This lever c' has mounted upon it a roller stud c^5 and the lower end of the lever is bent laterally, as at c^6, to work under the lower end of the awl carrier b^2, the lower end of said lever working in a slot 44 in the nose or plate c^7, it constituting a portion of the head A′ and serving as an abutment to bear against the outside of the sole of the boot or shoe S being pegged. The lever c' is moved to depress the stock and the stock support, herein shown as a horn, away from the underside of the plate or nose c^7 preparatory to feeding the stock over the horn. This lever c' is normally kept elevated with its lower end retracted by means of a spring d^3, connected to one of the ears referred to, and to the said lever, and said lever is further connected by a spring d^4 with the awl carrier b^2. In a lug on head A′ is mounted a screw d^5 which regulates the backward position of the awl carrier and hence determines the length of the feed by fixing the point at which the feed stroke of the awl begins.

The disk B has two cam projections c and c^8, the one c acting against the roller d^2 to depress the lever d', and cause it through the stud c^5 to depress the stock depressing device c'. The cam projection c^8 acts on the roller c^4 of the lever c' to move its lower end c^6 laterally so that it coöperates with the awl to feed the stock over the horn.

When the awl is out of the stock the edge of the awl carrier rests against the feed regulating screw d^5, and the end of the lateral extension c^6 at the lower end of the lever c' rests substantially in contact with one side of the awl, and at such time the serrated under side of the extension c^6 is substantially flush with the under side of the nose or foot plate c^7, the stock being forced upwardly against said plate by a spring j', and the roller c^4 at the upper end of the lever c' stands near the periphery of the disk B, the exact position of the said roller with relation to said disk depending on the adjustment of the screw d^5. From this position of the parts, the awl starts downward to enter the stock and the cam projection c of the disk B meets the roller d^2 and depresses lever c', the lower end of which is in contact with the stock, thereby forcing the stock together with the stock support or horn downward so as to remove the stock from contact with the foot-plate c^7. Thereafter the inclined face or acting part of the projection c^8 of the disk B strikes the roller or other stud c^4

of the lever c' and causes said lever then in contact with the stock and the stock depressed from the foot-plate c^7 to be vibrated, so that said lever in contact with the awl acts in conjunction with the said awl to feed the stock over the horn, the movement of the lever c' being sufficient to place the awl in the path of movement of the driver which is then in its elevated position, as shown in Fig. 6. After this the projection c in the movement of the disk B retires from the lever d' letting the spring d^3 raise the lever c' and since the awl is withdrawn from the stock at about the same time, the lower end of the lever c', as it is being moved to the right as seen in Fig. 6, acts through the spring d^4 connecting said lever with the awl carrier b^2, to bring the edge of the awl carrier against the regulating screw d^5.

The peg ribbon or strip e may be taken from a suitable reel $e^\times$, mounted on a stud $e'^\times$ of the head. The peg ribbon is led through a groove f in a raceway e', said raceway at its underside having a projection as $e^{2\times}$ to enter a groove e^2 in the plate or nose e^7, and it has another projection $e^{3\times}$ extended laterally therefrom and entering a suitable groove or guideway in the head A', shown by dotted lines, Fig. 2. This raceway has a notch $e^{4\times}$, see Fig. 4, which receives the rounded lower end of a lever e^4, pivoted at $e^{5\times}$, on an ear extended from the head A' the upper end of said lever having a roller or other stud, which enters a cam groove in a cam e^5 fast on the said shaft A^3, said cam causing the said raceway in this form of my invention, to slide forward and backward to a limited extent. The raceway has at one side a slot, as shown by dotted lines in Figs. 2 and 3, leading into the groove f, and in this slot stands one end of a spring-pressed pawl f' pivoted at f^2 on the plate or nose e^7, the acting end of said pawl being normally moved toward the peg ribbon by means of a spring $f'^\times$, connected therewith and with said plate. The acting end of the pawl f' has teeth to engage the peg ribbon. The opposite side of the raceway is slotted and receives a spring-pressed pawl f^3, which is attached to and moves with the raceway, said pawl engaging the peg ribbon to insure that the ribbon shall move with the raceway as the latter is moved toward the driver. Adjustably connected to the raceway by screws $f^{4\times}$ is a dog or regulator f^4 which acts upon the rear end f^5 of the pawl f' and thereby controls the feeding movement of the peg ribbon within the raceway, as will be further explained.

The underside of the raceway has attached to it by suitable screws 2, a spring g, which, as shown, acts against the underside of the peg ribbon e and presses it upwardly into a notch 3 of a block g'. This block g', partially broken out in Fig. 4, has an upwardly extended arm $g^\times$, provided with a notch 4 in which is entered the rounded end of a lever i', pivoted at 5, on an ear supported by the head, and the rear end of the lever rests on a vertically moving rod i^2, surrounded by a strong spring j', said rod having its lower end screwed into a block i^3, jointed to the rear end of a horn lever i^4, pivoted at 6, in a suitable ear or part of the standard, the opposite end of said lever having jointed to it at 7 one member 8 of a pair of toggle links 8, 9, the upper link being in turn jointed at 10 to the lower end of a horn shaft C having attached to its upper end in any suitable manner, a suitable or usual stock-support or horn C', the shaft C sliding up and down in a suitable bearing in the standard. The members 8, 9, of the toggle, are united by a pin 12, and said pin is embraced by a link 13, connected with a pin 14 extended from an elbow lever j^2 having its fulcrum at 6, the said elbow lever being acted upon at 25 by a spring 24 connected to rod 12, and also, as herein shown, near its front end by a spring 15, both said springs normally acting to keep the pin 17 carried by said lever in the position shown in Fig. 1 to act as a stop for a bar 19 having a slot 18 in which said pin 17 stands. The bar 19 is pivoted at $19^\times$ on a link $20^\times$ pivoted at a^{30}. Spring 26, which tends to move bar 19 forward, is not strong enough to move pin 17 forward against the resistance of springs 15 and 24, and hence the parts will remain normally in the positions shown in Fig. 1 with the two links 8 and 9 of the toggle in alinement and the stock support in elevated position.

When the parts stand in the position shown in Fig. 1, the notched or ratchet block 22 carried by the bar 19 is kept from engaging the ratchet teeth 23 carried by the rod i^2 and the strong spring j', acting against a collar $j'^\times$ fixed to rod i^2, acts to press the horn upwardly to clamp the stock of whatever thickness between itself and the foot plate, the spring yielding to accommodate variations in thickness of stock. When the front end of the lever j^2 is depressed the pin 17 is moved to the right letting the spring 26 connected with the link $20^\times$ act to move the bar 19 and put the teeth of the block 22 in engagement with the block 23 connected with the rod i^2, and thereafter further depression of the lever acts to move the link 13 far enough to break the parts 8, 9, of the toggle and cause the horn to descend. With relation to this part of the invention, I will say that in the use of pegging machines it is necessary to depress the horn when the stock is to be removed, and for this purpose a treadle is ordinarily used, but to depress this treadle it is usually necessary to overcome the pressure of a strong stiff spring, such as the spring j', it normally

acting to keep the horn raised or pressed upwardly and the stock thereon against the nose-plate c^7.

The operator has to depress the treadle to lower the horn and compress this spring usually two or three times a minute during the entire day, and this work has been found to be very tiresome for the operator, so I have devised the means just described for suspending the effective force of this strong spring j' so that the operator in lowering the horn does not have to work against and overcome the pressure of that spring but only the pressure of the weaker springs 15 and 24, the force of which is partially counterbalanced by the weight of the horn and connected parts. When the ratchet block 22 engages the ratchet teeth 23 to restrain the movement of the rod i^2, the lever i' is also retained in place causing the block g' to be held stationary, so that the peg ribbon support will not be moved vertically while the horn is being depressed to take off or put on stock. When the foot is removed from the treadle j^2 the parts 8, 9, of the toggle are straightened or put in line and the horn is put into its elevated position and at the same time the pin 17 meets the end of the slot 18 and acts to remove the block 22 from its engagement with the ratchet teeth 23 letting the strong spring j' immediately assume control of the rod i^2 and the lever i^4 for moving the stock support vertically.

The raceway e' has pivoted on it at g^3, a lever g^2, to one end of which is secured a cutter h, see Fig. 7, which slides back and forth in the diagonal groove g^5, made in the raceway e', the cutter acting to cut the peg ribbon diagonally through from side to side in the formation of each peg, so that each peg cut from the end of the peg ribbon is made diamond shape in cross section. The lever g^2 has a rounded end, which fits a notch in a block h', adjustably secured to the plate or nose c^7 by suitable screws h^x, the adjustment of said block on said plate serving to determine the position of the cutting edge of the cutter h at the end of its operative stroke and thus providing means to compensate for any variation in the length of the cutter. To insure a proper right line movement for the said cutter, the connection between the lever and the cutter must be a loose one so that the device may slide in a right line while the end of the lever moves in a circular path. As herein shown, the lever g^2 has a slot in its end which embraces a pin or projection 50, carried by ears w of a plate w', shown detached in Fig. 1^a. The peg-forming device, shown detached in Fig. 7, is attached to plate w' by screws extending loosely through holes w^3 in said device, said screws entering threaded holes w^4 in the plate.

The edge h of the peg forming means is made to enter the peg ribbon obliquely when the raceway is substantially in its forward position and said edge, coöperating with the upright corner 66 of the raceway, cuts the peg ribbon transversely. The edge h^2 of the peg shortener cuts the peg ribbon longitudinally, sliding over the shoulder 60, which coöperates with said edge h^2 in making the longitudinal cut. As already explained the length of the peg so formed will depend on the position of the peg ribbon determined, through connections with the horn, by the thickness of the stock.

Viewing Fig. 4, whenever the upper edge of the peg-ribbon e stands above the shoulder 60 it will be understood that a peg will be cut from the peg-ribbon of a length less than the width of the peg-ribbon, and the surplus of the ribbon not to be used at that time is the part of the end of the ribbon above the shoulder 60. This surplus must be removed and it is done by cutting the ribbon entirely across the same from edge to edge. To enable this transverse cut to be made the peg-ribbon is supported transversely at its rear side in the line of the action of the edge h both below and above the peg-shortening edge h^2, the support for the ribbon above the shoulder 60 being represented as a projection 62 rising from that wall of the raceway, the face of said projection being in line at one side with the raceway groove f and at its other side with the diagonal slot g^5. After the peg shortener has acted to form the head of the peg, and has, therefore, determined the length of the peg, the peg forming means remains stationary while the driver descends through a hole h^3 in the peg shortener, the driver meeting the head of the peg which stands substantially in line with said hole. This hole or opening in the peg shortener is provided to avoid the necessity of withdrawing the peg shortener prior to the descent of the driver to drive the peg, I having chosen to use the transverse cutting blade h to form one side of the guide-way or passage in which the peg stands to be acted upon by the driver and driven into the stock.

In Fig. 8, however, I have shown a modified form of appliance for making pegs, and putting the end of the peg ribbon in proper shape preparatory to the formation of each peg. In this modification I use a blade t having an edge t' which serves the purpose of the transverse cutting edge to separate the peg from the peg ribbon, and a blade t^2 having an edge t^3 which cuts the peg ribbon transversely in line with and in continuation of the edge t', these two blades being separated by a space t^5, said blade or blades being attached to a plate w' as described of the device h. In this space I have located a third blade t^7, having an edge t^8, said edge occupying a horizontal position, or a position at right

angles to the edges previously referred to, and the blade t^7 has a projection t^9 which is engaged by a lever t^{10}, supported upon a pivot extended through the blade t^2, the upper end of said lever being acted upon by a suitable cam or moving part of the machine, so that said lever is made to move the blade t^7, the edge of which constitutes the peg shortener, at the proper times to shorten the peg. The hole h^3 in the peg shortener is brought into line with a hole h^5 made in an overhanging lip h^4 carried by an upright part $h^{4\times}$ of the raceway when the raceway is in its farthest position to the right, thus putting said holes h^5 and h^3 exactly under and in the line of movement of the driver a^4, said driver descending through said holes, and acting upon the peg. Then, after the driver has been withdrawn from the said holes, the cam e^5 commences to retract the raceway toward the left, as shown in Figs. 1, 2, and 4, and thereby simultaneously to withdraw cutter h from the groove f. During the first portion of this movement of the raceway, the pawl f' is maintained out of contact with the peg ribbon through the engagement of dog f^4 with the rear end f^5 of the pawl but, just before the raceway reaches the end of its movement, the dog f^4 retires from engagement with the pawl and spring $f'^{\times}$ forces the toothed end of the pawl into engagement with the ribbon. The adjustment of the dog upon the raceway is such, for the usual class of work to be done with the machine, that the pawl is caused to engage and hold the ribbon against further backward movement at such a point in the retracting movement of the raceway that the end of the ribbon will be brought into engagement with the end wall 27 of groove f at just the moment that the raceway reaches its rearmost position or will be brought close enough to said wall so that after cutter h has been actuated the peg will bear against both cutter and wall. If desired, however, the adjustment of the dog f^4 may be such as to effect a slightly earlier release of the pawl, in which case the end of the ribbon will be pressed forcibly against the end wall 27 and the final movement of the raceway may even carry the ribbon backward slightly with reference to the end of the pawl. On the other hand, if a peg of a width less than normal is desired, the dog f^4 may be adjusted to release the pawl at a later point in the movement of the raceway, in which case the end of the ribbon will not completely fill the space between cutter h and wall 27. Upon the forward movement of the raceway, as already explained, the ribbon has no relative movement within the groove f but slides along under pawl f' until the latter is retracted from the ribbon by dog f^4 as the raceway approaches its foremost position and, during the last portion of this forward movement, a shortened peg is severed from the ribbon and left in position for driving.

It will be noticed that the peg is held or guided between the cutter on one side and the upright wall 27 at the end of the peg-ribbon guideway f. If the stock being pegged varies in thickness, the block g' will be raised and lowered by its connections with the stock support, such movement varying according to the variations in thickness of the stock. If the stock increases in thickness, the block g' will be lowered to thereby positively lower the peg ribbon against spring g, leaving less of the upper part of the ribbon to be removed in producing a peg of the proper length. If the stock decreases in thickness, the block g' will be raised a corresponding distance so that the peg ribbon under the action of spring g will be placed in position to have a greater quantity of its upper edge removed to thus produce a shorter peg. By adjusting the rod i^2 in the threaded block i^3, the normal position of the block g' acting on the top of the peg ribbon may be adapted to the width of the peg ribbon used, and thereafter the pegs will be cut off of a length varying as required, by varying thicknesses of stock being pegged.

The stock-support herein shown is pressed upwardly continuously by means of the spring j' so that the stock-support contacting with the underside of the stock to clamp the same against the usual nose c^7 is free to rise to a greater or less extent through the action of the spring j', said spring constituting a means whereby the stock-support is made self-adapting to variations in thickness of stock between it and the usual nose-plate.

The stock-support in this present instance of my invention is not pulled down automatically by or through the action of the lever i^4 preparatory to feeding, as in my former patent, No. 582579, dated May 11, 1897, but is depressed only by or through the action of lever c' and its connected mechanism, already described.

The portion of the peg removed from the top of the ribbon by the horizontally arranged part h^2 of the peg cutting and forming mechanism is discharged through the space 28 between the shoulder 60 and the overhanging lip h^4, and escapes from the raceway in the direction of the movement of the peg cutting or forming device.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a pegging machine, a raceway, a lever carried by the raceway, peg forming means carried by said lever, and means to operate said lever whereby the peg forming means is forced through the peg ribbon or strip in the raceway to form pegs directly therefrom.

2. In a pegging machine, a raceway means to yieldingly sustain therein a peg ribbon or strip, means to reciprocate said raceway longitudinally, means for depressing said peg ribbon against the means for sustaining the same, peg forming means, and means to operate it and cause the said forming means to sever pegs of varying length from the end of said ribbon or strip, combined with means to insure the forward movement of said peg ribbon in said raceway.

3. In a pegging machine, a raceway to receive a peg ribbon, means to move said raceway, peg forming means, actuating means therefor carried by said raceway, and a device to operate said actuating means and move the peg forming means to cut a peg from a peg ribbon.

4. In a pegging machine, a movable raceway to receive a peg ribbon or strip, peg forming means, a lever to which it is attached, said lever being pivoted on the said raceway, combined with a device to actuate said lever and peg forming means during the movements of the raceway.

5. In a pegging machine, a movable raceway to receive a peg ribbon or strip, a lever carried by said raceway, a peg former connected with said lever, means to operate said lever as the raceway is being moved whereby said former is forced to sever pegs from said peg ribbon or strip.

6. In a pegging machine, a raceway with a plurality of obliquely intersecting guide grooves, one of them having an end wall against which is held the end of a peg ribbon, means guided by the other groove to form diamond-shaped pegs of varying length directly from said ribbon, and automatic means to position the ribbon with reference to said peg-forming means.

7. A support for a peg ribbon, it presenting a longitudinal groove intersected by a diagonal groove, a peg former occupying a position in said diagonal groove, a horn or work-support, means for automatically varying the length of pegs formed directly from the peg ribbon according to the position of the horn or stock-support and means to actuate said peg former to form from said peg ribbon a peg diamond shaped in cross-section.

8. In a pegging machine, a raceway to receive a peg ribbon, means to sustain said ribbon yieldingly in said raceway, automatic means to lower said ribbon in said raceway, and peg-forming means.

9. In a pegging machine, a raceway to receive and guide a peg ribbon or strip, means to raise and means to lower said peg ribbon or strip in said raceway, and peg forming means to form from said ribbon pegs of varying length.

10. In a pegging machine, a stock support, a foot plate, peg-forming means to form pegs from the end of a peg ribbon, a raceway to receive and guide said peg ribbon, a yielding support for one edge of said peg ribbon, means controlled by the stock support and co-acting with the other edge of said peg ribbon to place automatically the peg ribbon in position with relation to the peg-forming means to form a peg to correspond with the thickness of the stock on the stock support.

11. In a pegging machine, a raceway to receive and guide a peg ribbon, means to move the raceway to feed said peg ribbon forward, means to form pegs from said peg ribbon, means to change automatically the position vertically of said peg ribbon in said raceway to vary the length of the peg to be formed, and a surplus remover to take away the material not needed in the peg.

12. In a pegging machine, a stock-support capable of adapting itself to varying thickness of stock, a raceway having a driver passage, means coöperating with said raceway to move it longitudinally, means to change the position of the peg ribbon vertically through variations in the position of the stock-support, and peg forming means to form pegs from said peg ribbon, said pegs varying in length according to the variations in thickness of the stock on the stock-support.

13. In a pegging machine, a raceway, means to insure the movement of a peg ribbon or strip longitudinally in said raceway, a driver passage, a device to act on the upper edge of said peg ribbon or strip, peg forming means and means to move said device to depress the peg ribbon or strip in said raceway.

14. In a pegging machine, a raceway having a longitudinal groove to receive and guide a peg ribbon or strip, a driver passage, a spring to act upon the lower edge of said ribbon or strip, a device to act upon the upper edge of said ribbon or strip, calipering means to caliper the thickness of the stock being pegged, and means controlled by said calipering means to depress the device acting upon the upper edge of the peg ribbon or strip to thereby change its position vertically and automatically according to the thickness of the stock being calipered, peg forming means, and means to actuate it whereby pegs cut from the said peg ribbon or strip are automatically varied in length to correspond with the thickness of the stock before being calipered.

15. In a pegging machine, means to present a peg ribbon or strip, a spring acting on the lower edge of said peg ribbon or strip, a block or device acting on the upper edge of said ribbon or strip, a stock support, and means actuated by it to change the position automatically of said block and cause it to place the upper edge of said ribbon or strip

in variable positions vertically according to variations in thickness of the stock.

16. In a pegging machine, a raceway to receive a peg ribbon or strip, peg forming means to form pegs from said strip, a block or device acting upon the upper edge of said ribbon or strip, means to force said strip continuously against the said block or device, a stock-support, and means between it and said block or device to change its position according to variations in thickness of stock on said stock support.

17. In a pegging machine, a raceway to receive a peg ribbon or strip, peg forming means to form pegs from said ribbon or strip, a block or device acting on the upper edge of said ribbon or strip, means to force the upper edge of said strip constantly against said block or device, a stock-support capable of changing its position according to varying thickness of stock, a rod actuated by said stock-support, and a device between said rod and said block to move the latter in unison with the said stock-support.

18. In a pegging machine, a raceway having a groove to receive a peg ribbon or strip and provided at the end of said groove with a vertical driver passage, means to move said raceway longitudinally, a driver, and means to actuate it to drive a peg from the driver passage into the stock.

19. In a pegging machine, a raceway to receive a peg ribbon or strip, means to move said raceway, peg forming means carried by said raceway, and means to operate said peg forming means as the raceway is moved.

20. A driver, a raceway to receive a peg ribbon or strip, means to reciprocate said raceway transversely relative to the driver, a device attached to a fixed part of the machine and adapted to come in contact with the said ribbon or strip to hold the same while the raceway is being moved away from the driver, thereby insuring the travel of the peg ribbon or strip longitudinally in the said raceway as required to present the end of the peg ribbon in position to have a peg formed from it.

21. In a pegging machine, a raceway shaped to expose part of the upper edge of a peg ribbon, and provided with a groove to receive and guide a peg ribbon, and a groove intersecting the ribbon receiving groove, combined with peg forming means presenting an edge to cut the ribbon transversely and longitudinally in the formation therefrom of a peg shorter than the width of the ribbon.

22. In a pegging machine, a vertical blade for detaching a peg from peg ribbon and a coöperating horizontal blade for shortening the peg, said horizontal blade having an opening in it for the passage of a driver, together with co-acting devices for moving said blades to form a shortened peg.

23. In a pegging machine, a single peg cutting device having two blades with cutting edges at right angles and means for moving said devices against one side of a peg ribbon to sever therefrom a peg shorter than the width of the ribbon.

24. In a pegging machine, a raceway presenting an upper horizontal edge and having a groove to receive a peg ribbon or strip, said raceway having a groove intersecting the groove in which the said ribbon or strip is contained, peg forming means presenting a vertical edge moving in said groove to sever the ribbon or peg transversely to form a peg, and a horizontally arranged edge which attacks the peg ribbon to shorten the peg, said horizontal edge coöperating with the upper edge of the said raceway.

25. In a pegging machine, means to caliper the stock, means to support a peg ribbon or strip and to change its position vertically according to the variations in the thickness of the stock, combined with peg forming means having a substantially vertical and horizontally extended cutting edge, the horizontal part of the cutter having a driver passage therein back from its edge, and means to slide the same to and fro with relation to said ribbon or strip, said peg forming means operating during one and the same stroke to not only sever the peg strip transversely but also to cut the same longitudinally to form a peg of greater or less length according to variations in thickness of stock being calipered, and a driver to pass through the opening of said peg cutting device.

26. In a pegging machine, an awl, means to actuate it to enter the stock, and independent means contacting directly with said awl and moving the same laterally while in the stock to feed the same.

27. In a pegging machine, a stock support, an awl, means to cause it to enter the stock, means to depress the stock together with the stock support and then to move the awl laterally while it is in the stock for the purpose of feeding the stock over the stock support.

28. In a pegging machine, a stock support, an awl, means to cause the awl to penetrate the stock, an independent device, and means to move the same to contact with the upper side of the stock and depress the stock and the stock support, said means also contacting with the awl then in the stock and effecting the movement of the awl for feeding the stock over the stock support.

29. In a pegging machine, a raceway through which a peg ribbon may be fed, peg-forming means including a shortening device, devices directly engaging the ribbon to move it in the direction of its width with reference both to the raceway and to the shortening device.

30. In a pegging machine, a driver, a raceway to receive a peg ribbon, means to move the ribbon longitudinally in the raceway, means to form pegs from the ribbon, and means to change the position of the ribbon vertically in the raceway and with relation to the peg-forming means.

31. In a pegging machine, means to caliper the stock being pegged, a raceway to receive a peg ribbon, means to effect the longitudinal movement of said peg ribbon in said raceway, peg ribbon supporting means, and devices deriving their movement from means for calipering the stock whereby the peg ribbon is moved vertically in said raceway more or less in accordance with the variations in thickness of stock being calipered and peg forming means.

32. In a pegging machine, a horn, a horn lever, a toggle connecting the shank of the horn with said horn lever, a two-armed treadle, a link connecting one end of said treadle with the pin of said toggle, a spring to normally keep said treadle in a position to maintain the toggle straight and the horn in its elevated position, combined with a toothed block, and means to move said block in the direction of the horn spindle in advance of the movement of said lever for a distance sufficient to break the toggle to depress the horn.

33. In a pegging machine, a raceway having a groove to receive the peg ribbon, and a diagonal groove intersecting the peg-ribbon receiving groove, the raceway being provided also with a projection to sustain the side of the peg ribbon and with a shoulder, in combination with a peg-forming device with meeting vertical and horizontal cutting edges, a lever to move said device to cause it to cut out from the peg ribbon a peg shorter than the width of the ribbon whenever any portion of said ribbon occupies a position above said shoulder.

34. In a pegging machine, a foot plate, a stock support, means normally acting to clamp the stock between said plate and said support, a raceway to receive a peg ribbon, means for positioning the ribbon in the direction of its width within the raceway, a peg forming device and means to actuate it to form pegs of the desired length, and means to drive the pegs as formed into the clamped stock.

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

SOLOMON MARCELLA CUTTER.

Witnesses:
W. A. DUNNETT,
F. W. KNOWLTON.

Corrections in Letters Patent No. 930,047.

It is hereby certified that in Letters Patent No. 930,047, granted August 3, 1909, upon the application of Solomon Marcella Cutter, of Montreal, Quebec, Canada, for an improvement in "Pegging-Machines," errors appear in the printed specification requiring correction, as follows: On page 3, line 89, the reference-numeral "12" should read i^2, and line 122, page 6, the word "before" should be stricken out; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 24th day of August, A. D., 1909.

[SEAL.]

F. A. TENNANT,

Acting Commissioner of Patents.