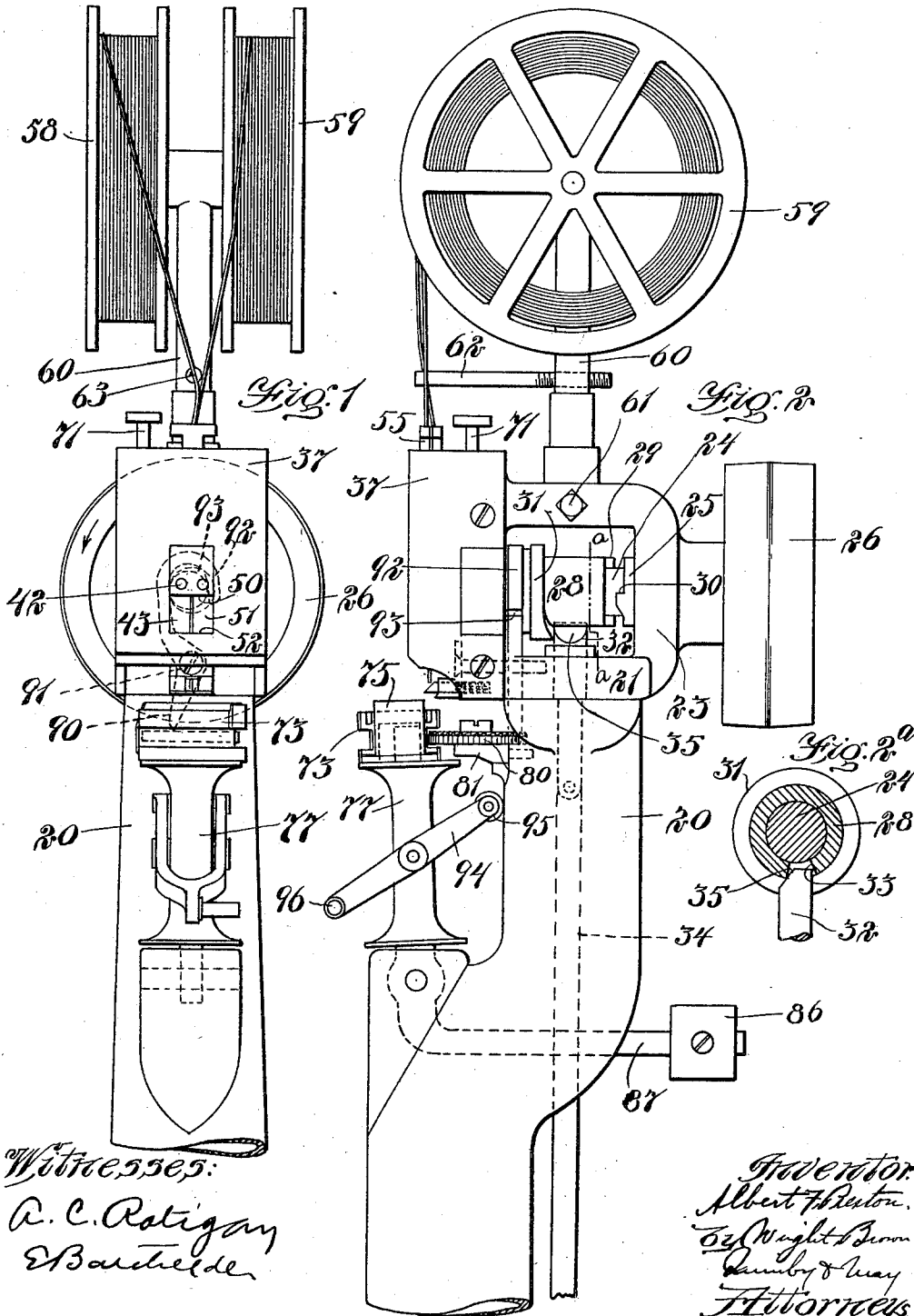


A. F. PRESTON.
 MACHINE FOR MAKING AND DRIVING FASTENERS.
 APPLICATION FILED AUG. 3, 1905.

1,030,829.

Patented June 25, 1912.

3 SHEETS—SHEET 1.

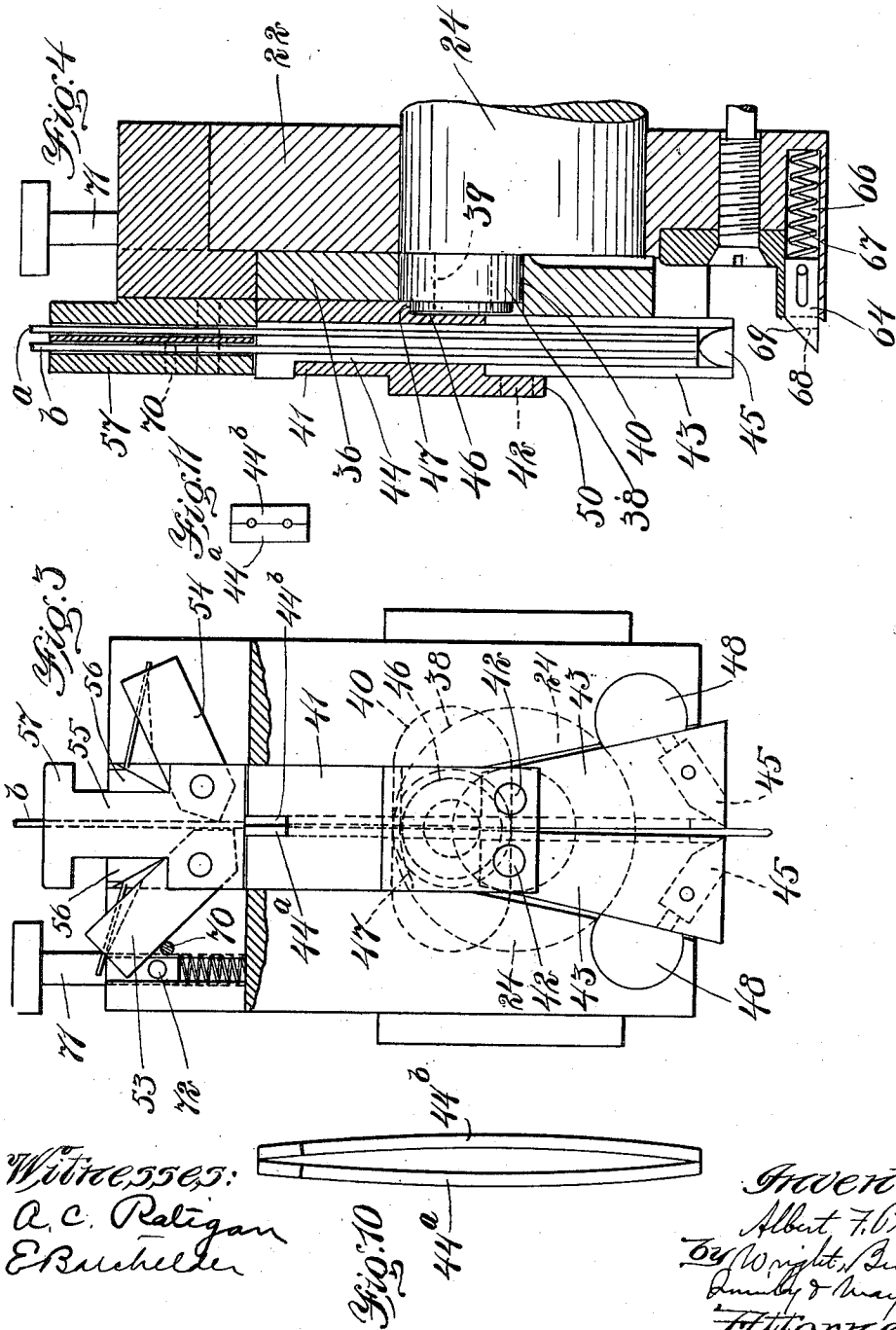


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3 SHEETS-SHEET 2.



Witnesses:
A. C. Ratigan
E. B. Schuler

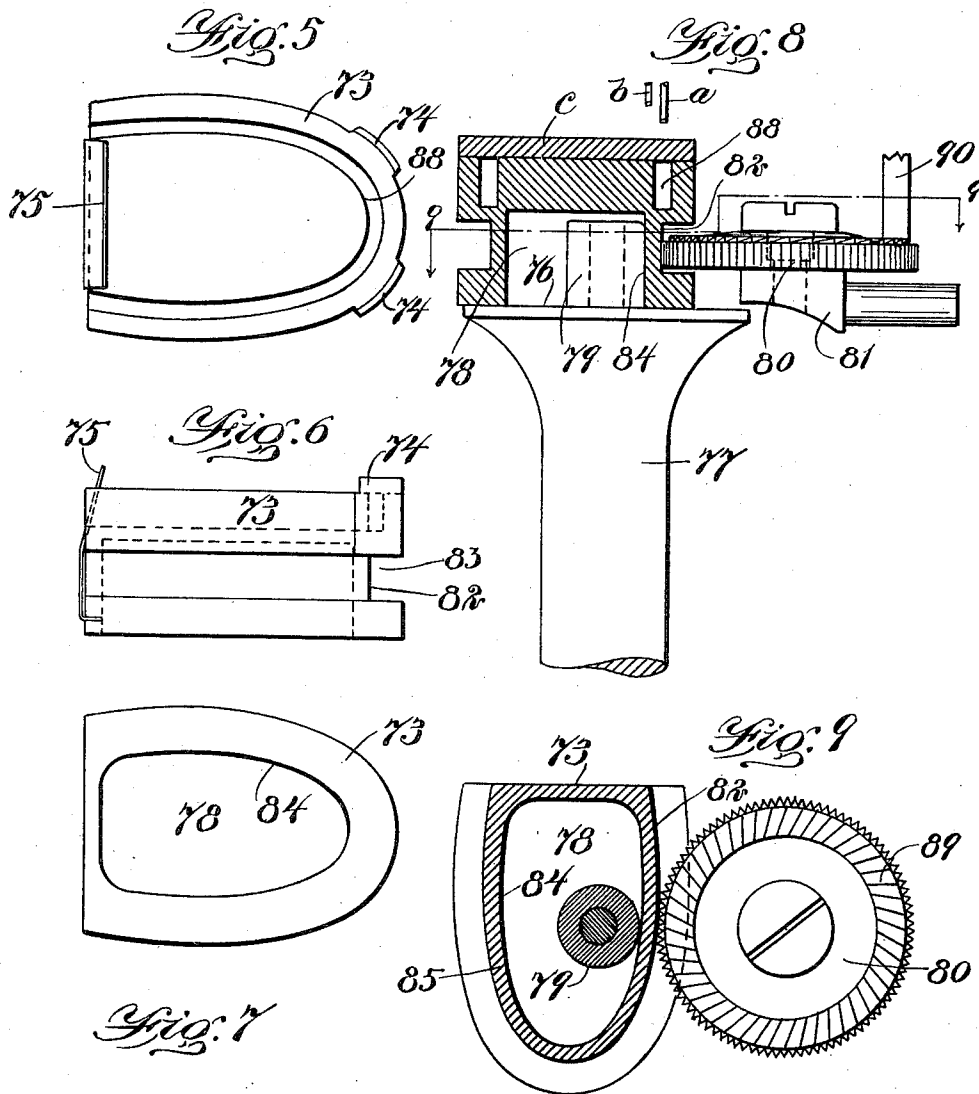
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3 SHEETS—SHEET 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

ALBERT F. PRESTON, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

MACHINE FOR MAKING AND DRIVING FASTENERS.

1,030,829.

Specification of Letters Patent.

Patented June 25, 1912.

Application filed August 3, 1905. Serial No. 272,558.

To all whom it may concern:

Be it known that I, ALBERT F. PRESTON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Making and Driving Fasteners, of which the following is a specification.

This invention relates to machines for setting metallic fastenings, and in particular to those which feed a continuous strip and drive the end thereof into the work, afterward severing the inserted portion of the strip to form the completed fastening.

The machine shown in the drawings is adapted to drive nails or slugs into heels preparatory to their attachment to shoes or into top-pieces for heels before they are applied to the heel bodies. It may further be employed for driving fasteners into spring-heeled shoes or into the soles of shoes, or other classes of work. In its general nature, it is similar to the invention of which one embodiment is illustrated in Reissued U. S. Letters Patent No. 12,820, granted on the 23rd day of June, 1908, and its particular object is to improve upon the machine of that construction so that the fasteners may be gripped more firmly and positively by the driving means; to provide a guiding and positioning device for the end of the strip which is to be inserted into the work; to space the fastenings evenly at all parts of the line; and in general to simplify the construction of the machine.

Of the accompanying drawings,—Figure 1 represents a front elevation of one form of machine embodying the elements of the present invention. Fig. 2 represents a side view of the machine. Fig. 2^a represents a section taken on line *a—*a** of Fig. 2. Figs. 3 and 4 represent respectively, a front elevation and a central longitudinal section on a larger scale, of the driving head or carrier. Figs. 5, 6 and 7 represent respectively, a plan, an elevation and an under plan view of an improved work-holding block adapted to be used in connection with this machine. Fig. 8 represents a cross-section of the block in position upon the machine, showing the supporting, guiding and feeding means for the block. Fig. 9 represents a sectional plan view taken on line 9—9 of Fig. 8. Figs. 10 and 11 represent respectively, a side elevation and an end view of a strip-guide used

with this machine, the latter view being on an enlarged scale.

The same reference characters indicate the same parts in all the figures.

In the drawings, 20 indicates a standard upon which is secured the head or frame 21. This head is formed with uprights 22 and 23 in which is journaled a driving shaft 24 upon which is loosely mounted a sleeve 25 connected to the belt-pulley 26 by which the machine is driven. Splined upon the shaft is a sleeve 28 which is capable of sliding longitudinally thereof, and has engaging members 29 adapted to coöperate with corresponding engaging members or teeth 30 on the loose sleeve 25. The sleeve has a cam 31 which is arranged so as to bear upon a pin 32, mounted in the lower part of the frame 21 and projecting toward the shaft, and when so engaging the pin, to shift the sleeve toward the front of the machine and uncouple the clutch. The pin not only acts upon the cam to uncouple the clutch, but also serves as a lock for the shaft, for it extends into a hole 33 in the sleeve when the machine is at rest.

A link 34 connects the pin with a treadle of any usual construction. When the treadle is depressed, the pin is drawn out of engagement with the cam and the sleeve shifted by means of a spring located within the same and surrounding the shaft, so as to bring the clutch teeth into engagement. Upon releasing the treadle, the pin is raised into contact with the sleeve, and when the offset part of the cam comes into proximity to the pin, it engages the same and shifts the sleeve. As soon as the clutch members are out of positive engagement, the shaft and other mechanism of the machine come to a stand, and if no means were provided for further separating the clutch members, they would strike without actually engaging as the sleeve rotates and so cause chattering. In order to prevent this, I form upon one side of the pin, a beveled surface 35 which engages one edge of the hole 33 after the clutch has uncoupled and acts in the manner of a cam to rotate the sleeve a still further amount, thereby through cam 31, acting to shift the sleeve farther along the shaft, separating the clutch members beyond possibility of contact.

On the front of the standard 22, I mount

a reciprocating driving head or carrier 36 which is held in place by a cover or hood 37 which is fastened to the sides of the standard 22 and extends forward upon both sides and in front of the carrier. The latter is reciprocated by means of a roll 38 upon an eccentric stud 39 which projects from the driving shaft 24 into a slot 40 in the carrier. The carrier also has a longitudinal recess of which the sides in the upper portion are parallel, while those in the lower portion are inclined, converging from the lower or driving end of the carrier. Within the straight portion of the recess is a slide 41 which fits this portion of the recess and to the lower end of which are pivoted at 42 a pair of wedge-shaped jaws 43, the adjacent sides of which are approximately parallel, while the outer sides are inclined to correspond to the inclined walls of the recess. The guide 44 for the wires or strips from which the fastenings are made extends through the central part of the slide 41 and is carried thereby, its lower end extending down between the wedge-shaped jaws 43. Thus a strip which is fed through this guide emerges between the jaws at their lower ends which are equipped with cutters 45 for gripping the strip to feed the same and for subsequently severing fasteners therefrom.

Upon the eccentric stud 39 is mounted a projection or roll 46 upon which rests a cam surface 47 upon the inside of the slide whereby the latter is supported. Thus when the shaft is rotated, the carrier 36 is reciprocated and the slide and jaws caused to travel downward therewith by means of the engagement of the inclined sides of the recess with the outer sides of the jaws, while the slide and jaws are elevated by means of the engagement of projection 46 with the cam surface 47.

It will be noted in Fig. 3, that this surface 47 at the left of the center line is curved downward on an arc approximately concentric with the path of the projection 46, and that therefore when the shaft is turned in left-hand rotation, the projection 46 remains in contact with this surface, holding the slide elevated and not permitting any downward movement thereof until the projection has turned through a greater or less amount. However, the side of slot 40 upon which the roll 38 is acting at the same time is horizontal so that the driving head is caused to move downward a slight distance, while the slide remains stationary and thereby a slight relative movement is produced between the driving head and slide. Thereby the inclined sides of the recess, or rather the bearing blocks 48 in such inclined sides, are forced against the wedge-shaped jaws and move them together slightly against the fastener strip, causing the cutters 45 to bite into the opposite sides thereof and take a

positive grip. Further rotation of the eccentric stud moves the driving head or carrier and jaws downward together, feeding the fastener strip downward and driving the end thereof into the work. Just before the carrier reaches the limit of its downward movement, the slide and jaws are positively arrested and as the carrier continues to the end of its stroke, the bearing blocks act again upon the wedge-shaped jaws and force them together a further amount until the cutters penetrate the strip and sever the fastener.

It will be noted that the bearing blocks 48 are the only parts of the inclined walls of the carrier which engage the jaws 43. These blocks are partially cylindrical and are set into similarly shaped recesses adjacent the inclined walls so that they may rotate to a certain extent about their axes and in which they are retained by the contracted mouths of the recesses, which are somewhat less than the greatest diameter thereof. The parts of the cylinders which project out of the recesses are formed with plane bearing surfaces which engage the inclined sides of the jaws, and as the inclination of the latter varies with the differences in position of the jaws about their pivots, the bearing blocks are enabled to turn in their sockets correspondingly so that an even bearing may be had under all conditions. This avoids the necessity of making the sides of the recess in the carrier so as to fit accurately upon the jaws and it also enables the blocks to be renewed when they or the jaws have become somewhat worn without requiring the substitution of an entirely new carrier and jaws. The means for arresting the jaws at the conclusion of their downward stroke consists of a shoulder 50 which projects through an opening 51 in the surrounding cover 37 and engages the lower end 52 of such opening, which constitutes a complementary stop or abutment fixed upon the machine frame.

The wire or strip guide 44 consists of two pieces 44^a 44^b which are placed side by side and held in the slide 41 and have passages for the strips extending longitudinally, and being formed partly in each of the pieces, by making grooves of a depth substantially the same as half the thickness of the strips in corresponding parts of the adjacent faces. The parts of the wire guide are of resilient metal and are made as shown in Fig. 10, being sprung outwardly at their central parts and bent toward each other at the ends. When they are assembled, they are held so that their central parts are pressed together and the spring tension in them causes their ends to bear with greater force against each other. Furthermore, the passages in these parts of the guide, that is the ends thereof, are of slightly less depth than the thickness of the strips so that the bot-

toms of the grooves forming the sides of the passages are caused to bear with a spring tension upon opposite sides of the strips so as to hold them yieldingly wherever they may have been put. The guide 44 may also be slightly twisted so as to equalize the tension on the two fastener strips when two strips are used.

53 54 are dogs pivoted upon a strip-guiding slide 55 and projecting into the same to engage the strips and prevent retrograde movement when the slide 41 and guide 44 are elevated. The member 55 is retained between the guiding projections 56 connected to the standard 22 and is capable of moving somewhat with relation thereto, the amount of movement permitted being equal to the distance between the projections 57 on the part 55 and the tops of projections 56. This movement permits the strips, dogs 54 and all to be raised sufficiently to clear the work when the carrier is elevated, until the member 55 is stopped by projections 56 when further retrograde movement of the strips is prevented. The frictional hold which the strip guide has upon the strips, by reason of the construction of the pieces 44^a 44^b above described, causes the member 55 and dogs 53 54 to be elevated, while the said dogs when arrested take so firm a grip upon the strips as to hold them and overcome the frictional grip of the parts 44^a 44^b. Since the member 55 is freely movable between its two limits of movement it will naturally be caused to descend as the carrier descends, both by the action of gravity and by the pull of the strips in overcoming the pressure of the dogs 53 and 54 carried by said member 55.

The strips before being passed into the wire guide to the gripping and cutting jaws, are held upon reels 58 59 which are mounted upon a standard 60 held with capability of rotary adjustment in the frame 21. A set-screw 61 binds against the standard and holds it in any position into which it may be turned. A bar 62 projects laterally from the standard over the opening into the strip-guiding slide 55 and has in its end a slot or passage 63 through which one or both of the strips may pass, so that it or they may be guided and directed to the feeding and driving jaws in such a direction as to counteract and overcome the tendency of the strip, as it is unwound from the reels, to curl. Whenever it is noticed that the strip tends to curl in a particular way, the bar 62 may be moved to one side or the other by rotating the standard 60, or it may be adjusted toward the front or rear of the machine by means of its threaded connection with the standard so that the portion of the strip above the wire guide may be set to one side or the other to straighten out the curl or kinks of the strip.

Located below the driver and in the path

of feed of the strip, there is a placing device which resides close to the upper surface of the work and is adapted to receive the end of the strip and position the same so that it will enter the work perpendicularly to the surface thereof or accurately in any other line or direction which may be desired. This device consists of a block 64 mounted in a guideway or socket 66 in the standard 22 of the frame and projected outwardly by a spring 67 so that its end projects into the path in which the driving head and strip move. This end has a slot 68 into which the end of the strip is adapted to project just before it reaches the work and of which the rear and sides constitute guiding surfaces which straighten the strip in case it has any tendency toward deflection by reason of the bend given to it from the coil, and position and guide the strip so that it will enter the work in a predetermined straight line. The projecting end of the block also has a beveled cam surface 69 which is engaged by the jaws 43 as the carrier is lowered and through which the block is retracted out of the way of the jaws.

As in the machine of the patent hereinbefore referred to, this machine is adapted to drive a plurality of slugs or fasteners into the work, and for that purpose is provided with means for feeding two strips *a* *b*, of which the strip *a* is adapted to be arranged between the strip *b* and the edge of the work. Of course if desired, provisions for feeding more than two strips and driving more than two fasteners at each operation may be provided. Of the strip-holding dogs previously described, the dog 54 acts on strip *a*, while dog 53 acts on strip *b*, and in order that the fastenings cut from the strip *b* may be shorter than those cut from strip *a*, a stud 70 is mounted upon a portion of the carrier 36 and is adapted to strike dog 53 and disengage it from the strip before the carrier reaches its upward limit of motion. A slide 71 having a stud 72 is mounted in the frame and may be moved so as to render the dog 53 entirely inoperative so that no fasteners are fed and cut from the strip *b*.

The novel work-holder consists in a block 73 having an outline corresponding in a general way to that of the piece in which the fasteners are to be driven, and in the instance illustrated in the drawings, it has the shape of a heel or top piece of a heel, but of course it is to be understood that the block may have the shape of a sole or article of any other character. Fixed lugs 74 and a spring 75 are provided upon the block for holding the work firmly and permitting it to be easily applied and removed. This block is adapted to be placed and to rest loosely upon the flat upper surface 76 of a column or standard 77 which is pivoted to

the main support of the machine. In its under side the block has a cavity or recess 78 into which is adapted to project a roller stud or guide roll 79 which is mounted upon the column 77. The function of this guide roll is to hold the block firmly in contact with the periphery of a feed wheel 80 which is mounted in a plane substantially perpendicular to the line in which the fasteners are fed and in the embodiment shown, is horizontal and is supported by a bracket 81 mounted upon the standard 20.

The part of the block which is engaged by the feeding wheel is the surface 82 on the side of the block which may for convenience be called the "feeding surface" and is carefully shaped so as to have a contour or outline corresponding exactly to the path of the line or row in which the fasteners to be driven into the work are intended to be arranged. Preferably one point in the circumference of the feeding wheel is directly in line with the fastener strip and the guide roll 79 is so arranged that the block will be brought into contact with the feed wheel at this point. This is accomplished by having the line of centers of the feed wheel and roll in the same plane with the line in which the fasteners are driven. Thus one or another point of the feeding surface is always in line or approximately so with one of the fastener strips, and thus as the block is fed along by the wheel the fasteners are driven successively in a row which is precisely similar in direction to the feeding surface. The line of fasteners in the work therefore is formed wholly independently of the shape of the outline of the work, and thus fasteners or slugs may be driven into a heel, top piece or sole in an absolutely even and regular line, the continuity or regularity of which is not liable to be broken by any irregularities in the periphery of the work. Heretofore slugs have been driven into heels, etc., and guided by a feeding device and guide in contact with the edge of the work. Thus if the work is not perfectly smooth or even, any irregularities in its edge are reproduced in the line of slugs, which is therefore liable to be uneven and to present a bad appearance. By means of the construction illustrated and described herein, such a result is impossible, since when once the block has been correctly made with a smooth feeding surface, fasteners may be evenly driven in unvarying arrangements in work of any shape or degree of inaccuracy whatever. By setting in the surface 82 from the periphery of the part of the block which holds the work, the fastenings may be set in a line at any distance desired from the periphery of the work. In the embodiment shown in the drawings, *c* represents a top piece of a heel which is held by the lug 74 and spring 75, and the feeding surface 82 is formed at

the base of a lateral groove 83 formed in the sides of the block surrounding the same.

The wheel 80 is advanced step by step by means hereinafter described, so as to feed the block intermittently and bring point after point of the work under the fastener strip. The amount of feed may be made as great as desired and preferably it will be uniform so that the fasteners will be evenly spaced. As the block is fed by contact on a surface directly in line with the path of the fasteners, it is obvious that the latter will be spaced evenly at all parts of the line in which they are placed, both at the most sharply curved parts as well as at the comparatively straight portions, and thus it is possible to place slugs at the abruptly curved rear end of the heel with the same spacing as that given them at the sides, a result which has hitherto been impossible with the methods of feeding the work hitherto known and practised.

The walls 84 of the cavity 78 in the block constitute an interior guiding surface with which the guide roll 79 engages and which is substantially parallel throughout with the outer surface 82, that is, it is separated from the outer surface at all points by equal distances, and thus between these surfaces is formed a relatively thin web 85 of uniform thickness throughout. The guide 79 presses with a uniform yielding pressure against the inside of this web through the agency of a weight 86 mounted upon an arm 87 connected to the column 77 and holds the block so that the portion of the web engaged directly by the wheel and roll is perpendicular to the line of centers thereof, that is, the least dimension of the web is in the line of centers. Where more than one fastener strip is used, the strips are arranged in the same plane with the line of centers of wheel and roll and so the plurality of fasteners which is driven at any one operation is arranged in a line perpendicular or radial to the row in which either fastener is arranged. As further assisting to hold that part of the web which is embraced between the feeding wheel and roll exactly perpendicular to their line of centers, I prefer to make the curvature of the most sharply curved portion of the web, that which comes adjacent the rear of the heel, with an internal radius substantially equal to the radius of the roll 79 so that this portion of the web when brought adjacent the roll will embrace a portion thereof comparatively closely and will be rolled about the pivot thereof while being fed. There will thus be no chance for the web to occupy an inclined position and so the plurality of fasteners or each single fastener, if one having an elongated or rectangular section is employed, will be radial to the rows. When the feeding surface is arranged directly in

line with the outer strip *a*, the outer row of fasteners will be evenly spaced and the inner row crowded together at the sharp curves, but if desired, the feeding surface
 5 may be in line with the strip *b* or may be intermediate the strips, and then either the inner row will be evenly spaced and the outer spread apart at the sharp curves, or the outer row will be slightly separated and
 10 the inner slightly condensed, averaging the intervals in the several rows.

Where fasteners of greater length than the thickness of the work are driven, I provide the block with a groove 88 extending
 15 inward from the supporting surface of the block and following the direction of the row of fasteners. Corresponding points of this groove and the feeding surface 82 will be substantially in line.

20 The peripheral teeth of the feed wheel 80 are made of hard metal and with sharp edges, while the portion of the block which has the feeding surface 82 may be of soft metal into which the teeth may sink to a
 25 certain extent and so obtain a positive feeding hold. Another suitable construction may be to form teeth upon the feeding portion 82 of the block to mesh with the teeth of the feed wheel, and as a convenient way
 30 of forming such teeth, I may construct the block first of soft steel and feed it in contact with the wheel 80 until indentations are produced by the sharp edges of the teeth, after which the block may be hardened and
 35 the indentations will then be transformed into permanent meshing teeth.

The feed wheel 80 is provided on its upper side with ratchet teeth 89 which are engaged by a pawl 90 pivoted to the frame
 40 or head 21 at 91. To this pawl is connected a curved arm 92 which embraces an eccentric 93 on the driving shaft, through which the pawl is oscillated. The slot in the pawl through which the pivot passes is somewhat
 45 elongated as in my prior patent above referred to, so that the pawl may rise to pass from one tooth to the next. In order that the pawl may not be obliged to rise to such an extent in clearing the teeth, I form the
 50 latter tangential to a concentric portion of the wheel within the circular series of teeth, as shown in Fig. 9, instead of being radial, and the pawl instead of extending perpendicularly to the wheel, is inclined, as shown
 55 in Fig. 1, and engages a tooth substantially parallel to the pivot and at one side thereof. Thus when the pawl is retracted to engage a subsequent tooth after feeding the wheel, its engaging portion travels in a path which
 60 rises somewhat from the wheel instead of being at first parallel therewith. Thus the path of the pawl is more nearly parallel with the inclined face of the subsequent tooth and there is not so great friction be-
 65 tween them.

In order to move the work-holding column away from the feed wheel so as to permit removal and application of the work, I pivot upon the column an arm 94 which has
 a stud 95 adapted to engage the standard 70 20 and a handle 96 which may be grasped by the operator. When the arm is brought into horizontal position it engages the standard 20 and moves column 77 away there-
 75 from, but when the member 94 is disengaged from the standard, weight 86 swings the column toward the feeding and driving devices and carries the work into operative position.

In place of the guide roll 79, a fixed stud 80 which is cylindrical throughout a greater portion of its periphery but has a somewhat flattened side adjacent to the feed wheel, may be used. The flattened side comes into contact with the web 85 at a plurality of points, some of which are on opposite sides of the line from the center of the feed wheel to the point of contact of the latter with the web, and thus it serves to hold the block more firmly against the feed wheel and prevent
 90 it being inclined either way from a line perpendicular to the line of centers of the feed wheel and guiding stud.

I claim:—

1. A machine for driving and severing 95 fasteners from a strip, comprising jaws adapted to feed the strip, drive it into the work and sever the fasteners therefrom, means for imparting to said jaws their feeding and driving movement, and positively-
 100 operating means for simultaneously moving the jaws toward each other to an equal extent to cause them to bite equally into the strip at the commencement of said feeding and driving movement. 105

2. A machine of the character described, comprising a pair of opposed severing jaws, a reciprocating carrier on which said jaws are mounted to move toward each other, means for presenting a strip of fastener material between said jaws, and positively-
 110 operating means for causing said jaws to move simultaneously toward each other to an equal extent and thereby bite equally into the strip at a predetermined point in the
 115 path of reciprocation of said carrier.

3. A machine of the character described, comprising a pair of opposed severing jaws constructed and arranged to move toward and away from the work to be operated
 120 upon and to grip, drive into the work and sever a portion of a continuous fastening strip, means for effecting the reciprocating movement of said jaws and means for positively moving said jaws simultaneously and
 125 equally toward each other at one predetermined point in their reciprocating movement to cause them to bite equally into the strip and for positively moving said jaws
 130 toward each other at another predetermined

point in their reciprocating movement to cause them to sever said strip.

4. A machine of the character described, comprising a pair of opposed severing jaws, a reciprocating carrier upon which said jaws are so mounted that a relative movement of said jaws and carrier in the direction of reciprocation of said carrier effects a movement of the severing edges of said jaws toward each other, means for presenting a strip of fastener material between said jaws and positive means for effecting a relative movement of said jaws and said carrier at a predetermined point in the reciprocation of said carrier.

5. A machine of the character described, comprising a pair of opposed severing jaws, a carrier upon which said jaws are mounted in such manner that relative movement of said jaws and said carrier in one direction effects a movement toward each other of the severing edges of said jaws, means for moving said carrier positively in both directions and positive means for effecting a relative movement of said jaws and said carrier in one direction.

6. A machine of the character described, comprising a pair of opposed severing jaws, a carrier upon which said jaws are so mounted that retardation of the movement of said jaws during the movement of said carrier in the driving direction effects a movement toward each other of the severing edges of said jaws, means for operating said carrier to feed and drive a strip and positive means for retarding said jaws at the beginning of said feeding and driving movement to cause the severing edges of said jaws to bite into the strip.

7. A machine of the character described, comprising a pair of opposed severing jaws, a carrier for said jaws, means for operating said carrier to feed and drive a strip, a slide to which said jaws are connected, and positive means for retarding the slide at the beginning of the feeding and driving movement, said jaws being so mounted upon the carrier that such retardation of the slide causes the severing edges of the jaws to bite into the strip.

8. A machine of the character described comprising a carrier having a recess with walls inclined convergently away from the work, wedge-shaped jaws filling said recess, coacting cutters on said jaws, means for operating said carrier to feed and drive a strip, and positive means for retarding said jaws at the beginning of said feeding and driving movement to cause the cutters to bite into the strip.

9. A machine of the character described comprising a carrier having a recess with walls inclined convergently away from the work, wedge-shaped jaws filling said recess, coacting cutters on said jaws, means for op-

erating said carrier to feed and drive a strip, a slide to which said jaws are connected, and positive means for retarding the slide at the beginning of the feeding and driving movement of the carrier to thereby crowd the jaws and cutters toward the strip.

10. A machine of the character described comprising a carrier having a recess with walls inclined convergently away from the work, wedge-shaped jaws filling said recess, coacting cutters on said jaws, means for operating said carrier to feed and drive a strip, positive means for retarding said jaws at the beginning of said feeding and driving movement to cause the cutters to bite into the strip, and a stop for arresting the jaws at the conclusion of the driving movement to sever a fastener.

11. A machine of the character described comprising a carrier having a recess with converging walls, a slide, wedge-shaped jaws connected thereto located in said recess and bearing against the walls thereof, cutters attached to the jaws, a cam surface on said slide, an eccentric driver for moving said carrier in a direction to crowd the walls of the recess against the jaws and drive a fastener strip, and a projection on said eccentric driver coacting with said cam surface to cause movement of the carrier relatively to the slide.

12. A machine of the character described comprising a carrier having a recess with converging walls, a slide, wedge-shaped jaws connected thereto located in said recess and bearing against the walls thereof, cutters attached to the jaws, a cam surface on said slide, an eccentric driver for moving said carrier in a direction to crowd the walls of the recess against the jaws and drive a fastener strip, and a projection on said eccentric driver coacting with said cam surface to temporarily arrest the slide and jaws at the beginning of the movement of the carrier.

13. In a machine of the character specified, a carrier having a recess, wedge-shaped jaws located therein, and bearing pieces movably located in the walls of the recess arranged to engage the outer sides of the jaws.

14. In a machine of the character specified, a carrier having a recess, wedge-shaped jaws located therein, and blocks having bearing surfaces adapted to engage the outer sides of the jaws and being rotatably mounted in the walls of the recess whereby the bearing surfaces thereof may be accommodated to the jaws.

15. In a machine of the character specified, a carrier having a recess, a slide and jaws having convergent outer sides pivoted thereto located in the recess, cutters connected to the jaws, a strip guide in the slide and between said jaws and cutters,

bearing members having surfaces arranged to engage the outer sides of the jaws mounted in the walls of said recess with provisions for shifting to provide an even bearing, driving means for the carrier, an arrester for the slide, jaws and cutters operative at the beginning, and a stop for the same operative at the end of the driving movement of the carrier.

16. In a machine for feeding, driving and severing fasteners from a strip, a strip guide consisting of two pieces held side by side and having a passage formed partly in each, the passage being of less width than the thickness of the strip at the ends of the guide, whereby a pressure is produced on the strip.

17. In a machine for feeding, driving and severing fasteners from a strip, a strip guide consisting of two pieces of resilient material held closely together and having a passage formed partly in each, the ends of said pieces being sprung toward each other and the passage in said ends being of less width than the strip, whereby a yielding pressure is produced thereon.

18. In a machine of the character described, the combination with means for feeding a strip, driving its end into the work and severing fasteners therefrom, of a guide member movable laterally across the path of the strip adjacent to the work and having strip-guiding portions normally extending beyond said strip and arranged to be withdrawn past the same by the operation of the driving means.

19. In a machine of the character described, the combination with means for feeding a strip, driving its end into the work and severing fasteners therefrom, of a work support located in the line of drive, and a strip-guide normally extending across the path of the strip adjacent to the work support and movable transversely to the lines of feed and drive by the operation of the driving means.

20. In a machine of the character described, the combination with means for feeding a strip, driving its end into the work and severing fasteners therefrom, of a strip-guide normally extending laterally across and beyond the path of the strip adjacent to the work and movable transversely to the line of feed of the work by the operation of the driving means, and means for yieldingly projecting said strip-guide into operative position.

21. In a machine of the character described, the combination with means for feeding a strip, driving its end into the work and severing fasteners therefrom, of a laterally-movable strip-guide provided at one end with a vertical notch adapted to receive the strip and extend across and beyond the path of the same, said guide having an inclined upper face in position to be engaged by the driving means, and a spring normally projecting said guide member into operative position.

22. In a machine of the character described, means for feeding, driving and severing fasteners from a strip, a reel for holding a coiled strip, and a device having a strip-guiding portion movable laterally in any direction with respect to the direction of feed for directing the strip to said feeding and driving means so as to compensate for the bending tendency of the strip.

23. In a machine of the character described, means for feeding, driving and severing fasteners from a strip, a reel for holding a coiled strip, a rotatably adjustable standard for said reel, and a bar connected to said standard and having a guiding passage projecting over said feeding and driving means.

In testimony whereof I have affixed my signature, in presence of two witnesses.

ALBERT F. PRESTON.

Witnesses:

ARTHUR H. BROWN,
E. BATCHELDER.