L. W. G. FLYNT.

SNIPPING MACHINE.

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1,029,058.

Patented June 11, 1912.

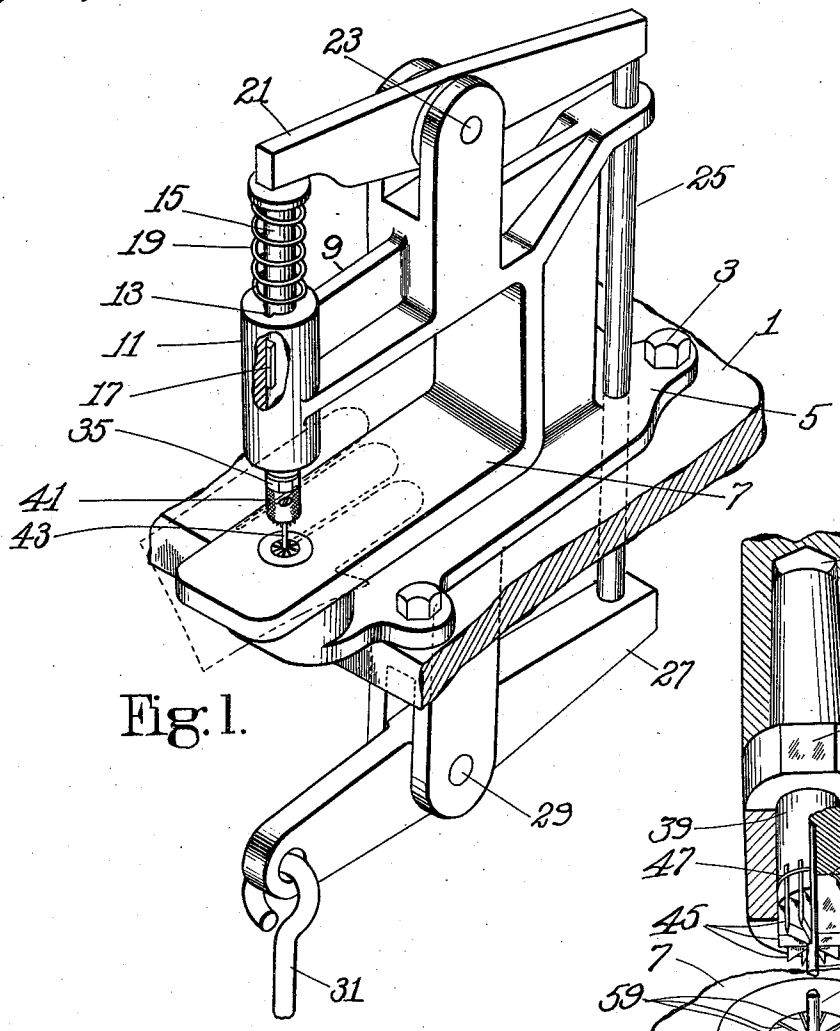


Fig. 1.

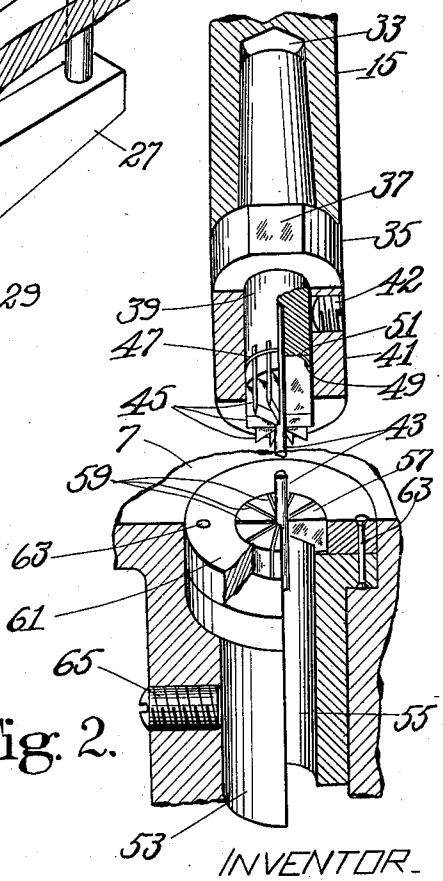
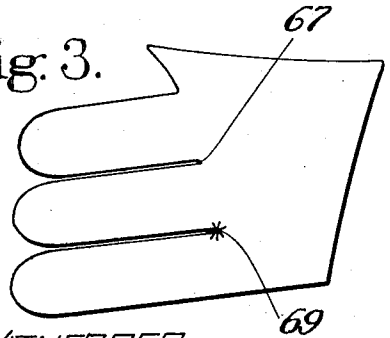


Fig. 2.

Fig. 3.



WITNESSES.

Edith C. Holbrook

Elizabeth C. Coupe

INVENTOR.

Louis W. G. Flynt

By his Attorney

Nelson W. Howard

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LOUIS W. G. FLYNT, OF ROCHESTER, NEW YORK, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SNIPPING-MACHINE.

1,029,058. Specification of Letters Patent. Patented June 11, 1912.

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To all whom it may concern:

Be it known that I, LOUIS W. G. FLYNT, a subject of the King of England, residing at Rochester, in the county of Monroe and State of New York, United States of America, have invented certain Improvements in Snipping-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to machines for snipping curved edges of stock preparatory to folding them and particularly to machines for snipping curved edges of small radius.

In the manufacture of certain kinds of footwear, for example in strap sandals, curved edges are met with wherein the curves are of small radius. Heretofore it has been customary either to prepare such work to be folded by snipping by hand, employing a pair of scissors or a like instrument which is a slow process, or to leave the edges unfolded, which results in an inferior quality of finish.

One object of this invention, therefore, consists in the provision with snipping knives and a cutting bed relatively movable with respect to each other of a slender guide for properly positioning curved edges of small radius. In the illustrated embodiment the knives are mounted in a holder which is capable of being moved toward and from a cutting bed, a slender guide being provided to properly position said knives with respect to curved edges of small radius.

The curved edges referred to above occur in part at the bases of narrow indentations in the stock, a location inaccessible to machines as hitherto constructed to which the stock could be presented from one direction only.

Accordingly another object of this invention consists in the provision with snipping knives and a bed to coöperate therewith of a guide to which the stock may be presented from any transverse direction. In the illustrated embodiment the guide referred to above takes the form of a slender rod which meets the cutting bed at a point remote from any obstructions which might interfere with the presentation of stock. With this construction the guide is unobstructed on all sides so that it may be received wholly within the indentation in the stock and be brought into contact with the curved edge at the base of said indentation.

Another object of this invention consists in the provision of a cutting block provided with a bore which is in communication with the slots which receive the cutting edges of the knives whereby chips from the material being operated upon may escape.

These and other features of the invention including certain details of construction and combinations of parts will be explained in connection with the following description of a machine and will be pointed out in the appended claims.

Referring now to the accompanying drawings:—Figure 1 is a perspective of a machine embodying the invention, a piece of stock being shown in dotted lines in position to be operated upon. Fig. 2 is a perspective showing more in detail the mounting of the knives, the cutting block and their associated parts, and Fig. 3 shows a portion of a strap sandal to illustrate the character of work performed by the machine.

Upon a suitable support 1 there is fastened by means of bolts 3 a frame 5 having a bed 7 and an arm 9 projecting over said bed. At the outer end of said arm is a tubular member 11 provided with a key-seat 13, a plunger 15 being reciprocatingly mounted in said tubular member and having a key 17 slidable in said key-seat. This plunger is held normally in raised position by a spring 19 and may be depressed when desired by depressing the outer end of a lever 21 pivoted at 23 to the frame. In order to operate said lever a rod 25 is reciprocatingly mounted in the frame 5, said rod contacting at its upper end with the inner end of the lever 21 and at its lower end with the inner end of a second lever 27 pivoted at 29 and carrying at its outer end a rod 31 to which a treadle or other suitable operating device (not shown) may be attached. In a flaring socket 33 in the plunger 15 there is mounted a knife-holder, said holder comprising a fixed collar 35 having flattened portions 37 whereby said holder may be engaged to place it in position, a cylindrical portion 39 and a retaining collar 41. The cylindrical portion 39 is provided with a bore at its center in which is mounted a guide 43 (here-

in shown as a slender cylindrical rod) and with diametrical saw cuts at its lower end in which are mounted a plurality of knives 45. A groove 47 is provided in the knife-holder to coincide with notches 49 in the knives when said knives are in place, a wire or broken ring 51 being placed in said groove and notches to prevent the knives from being pulled out of the holder if for any reason a resistance to their withdrawal from the cutting block is encountered. In order to hold the knives securely in place the retaining collar 41 is provided, said collar being held in position by a set screw 42.

Seated in the bed 7 is a cutting block comprising a base 53, said base being formed with a cavity 55 and being provided with a boss 57 in which are slots 59, said slots being connected with said cavity, while a reinforcing ring 61 surrounds said boss and is fixed to said block by any suitable means, as for example rivets 63. The slots 59 are designed to receive the knives during the snipping operation; and by causing said slots to communicate with said cavity chips from the material being operated upon may find escape. In order to permit the cutting block to be adjusted and to hold said block in adjusted position a set screw 65 is threaded through the wall of the bore in which the cutting block is held. The guide 43 extends through a bore in the boss 57 and is of such length that its lower end is always below the upper surface of the boss.

In Fig. 3 there is shown a part of a strap sandal having two curved edges of small radius 67 and 69 the latter of which is shown as having been snipped. These curved edges are located as shown at the bases of narrow indentations and are inaccessible to machines hitherto constructed. In the present machine, however, in which a slender rod unobstructed on all sides serves as a guide, such curved edges can be readily operated upon.

In the operation of the machine the stock is presented from any convenient direction, for example, as shown in dotted lines in Fig. 1, the guide being received within the indentation and being brought into contact with the curved edge, whereupon the treadle attached to the rod 31 is actuated to depress the knives. The rod 31 is then released, the spring 19 raises the knives and the stock may be withdrawn.

The invention has been set forth in connection with a particular machine, but it should be understood that nothing herein contained is to be construed as limiting the invention in the scope of its application to the particular machine shown and described.

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

1. A machine for snipping curved edges of small radius having in combination a knife-holder, a plurality of knives arranged in a curve corresponding approximately to that of the edge to be snipped, a cutting block, means for producing relative movement between said knife-holder and block, and a slender guide adapted to center said knives with relation to said curved edge.

2. A machine for snipping a curved edge located at the base of a narrow indentation having in combination, a plurality of knives, a cutting bed, means for reciprocating said knives, and a slender guide adapted to be received within said indentation and to be forced against said curved edge.

3. A snipping machine, having, in combination, a plurality of knives, a cutting block, means for producing relative movement between said parts, and a guide for the work to which the work may be presented from any transverse direction.

4. A snipping machine, having, in combination, a plurality of knives, a cutting block, means for producing relative movement between said knives and block, and a guide for the work unobstructed on all sides.

5. A snipping machine, having, in combination, a knife holder, a plurality of knives mounted therein, a cutting block, a slender cylindrical guide rod for the work carried by said holder and extending into said block, and means for reciprocating said holder.

6. A snipping machine having, in combination, a plunger, means for reciprocating said plunger, a knife holder carried by said plunger, snipping knives mounted in said holder and arranged in a curve, a guide rod for the work also mounted in said holder and located approximately at the center of curvature of said knives, and a cutting block formed with a bore to receive said rod and with slots to receive said knives.

7. A machine of the class described having, in combination with snipping knives and means for reciprocating said knives, a cutting block, said block comprising a base having a cavity therein and being formed with slots to receive said knives, said slots communicating with said cavity.

8. A machine of the class described having, in combination with snipping knives and means for reciprocating said knives, a cutting block, said block comprising a base having a cavity therein, a boss formed with slots communicating with said cavity, and a supporting member surrounding said boss and fast to said base.

9. A machine of the class described having, in combination, a plurality of knives arranged in a circle, a cutting block having slots similarly arranged to receive said knives, a guide rod for the work located at approximately the center of curvature and means for reciprocating said knives.

10. A machine of the class described hav-

ing, in combination, a plurality of knives arranged in a circle, a cutting block having slots similarly arranged to receive said knives, a guide rod for the work located at the approximate center of curvature, means whereby said block may be adjusted, and means for reciprocating said knives.

11. A machine of the class described having, in combination, a knife-holder provided with a plurality of slots and with a peripheral groove intersecting said slots, knives in said slots, said knives being provided with notches to coincide with said groove, a holding member in said groove and notches, a retaining member surrounding the slotted end of said knife-holder, a cutting bed, a guide and means for reciprocating said knife-holder.

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

LOUIS W. G. FLYNT.

Witnesses:
IRVING E. BOOTH,
FRED. C. PATRICK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."