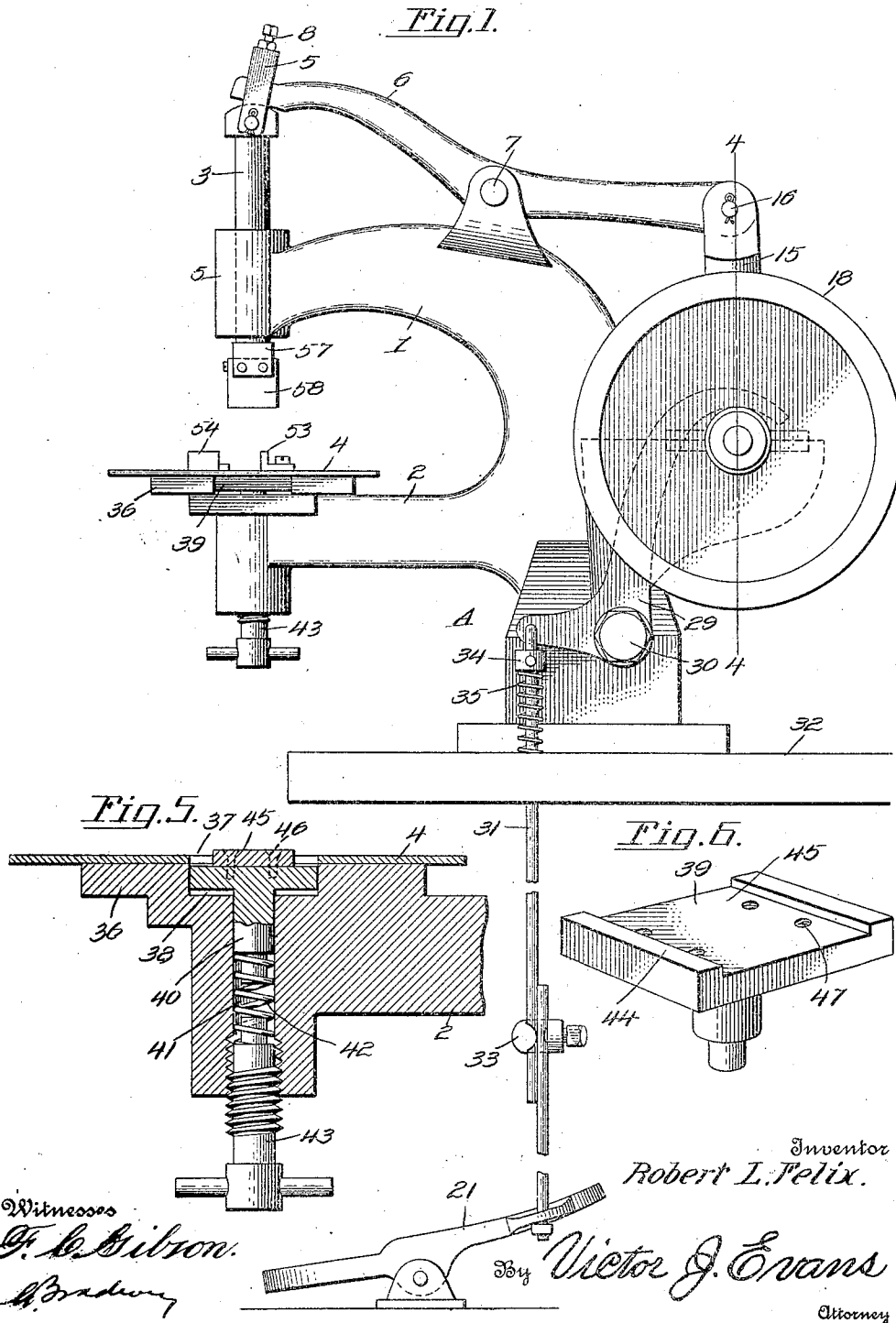


R. L. FELIX.
 SNIPPING MACHINE FOR SHOE TOPS.
 APPLICATION FILED NOV. 21, 1910.

1,035,333.

Patented Aug. 13, 1912.

5 SHEETS—SHEET 1.



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5 SHEETS—SHEET 2.

Fig. 11.

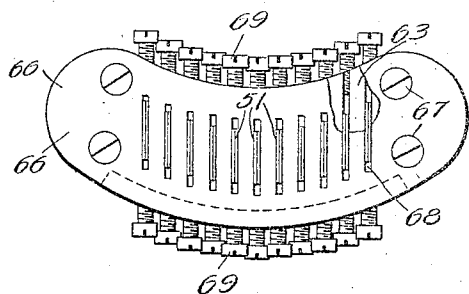


Fig. 13.

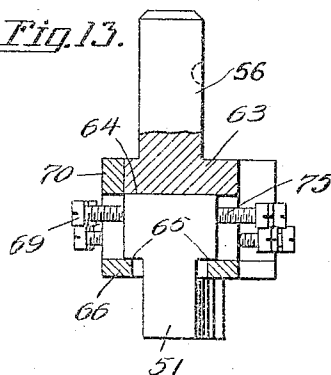


Fig. 12.

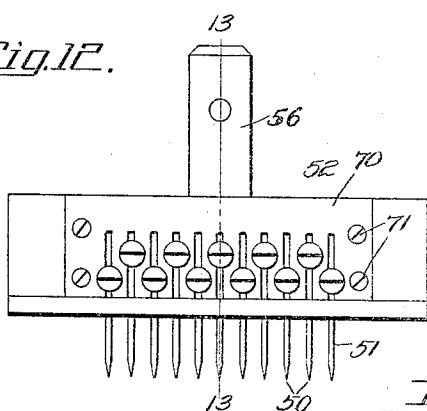
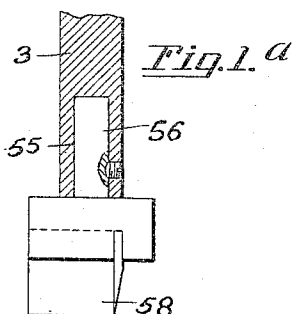
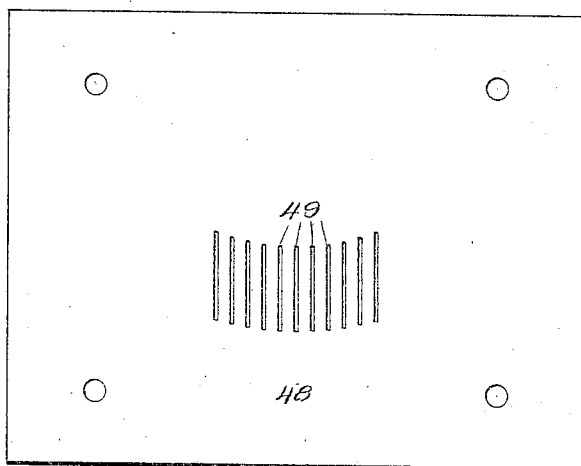


Fig. 14.



Inventor
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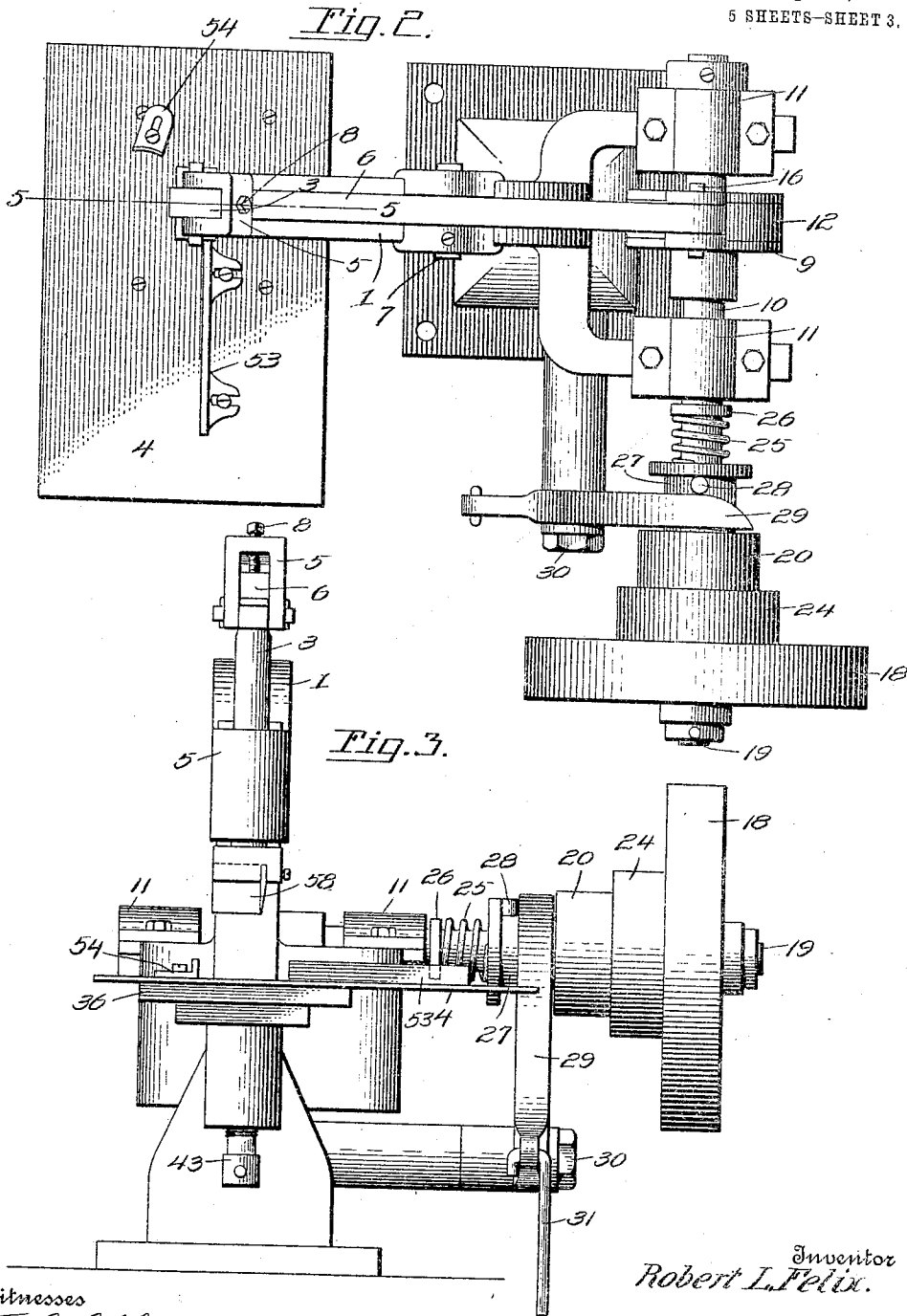
Witnesses
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 C. Brady

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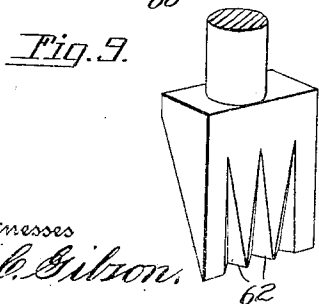
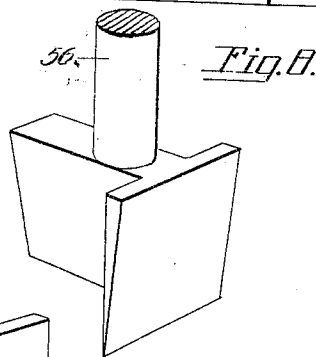
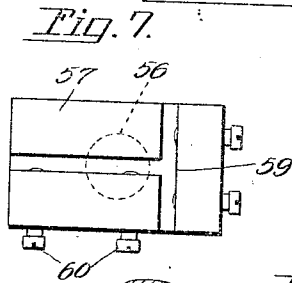
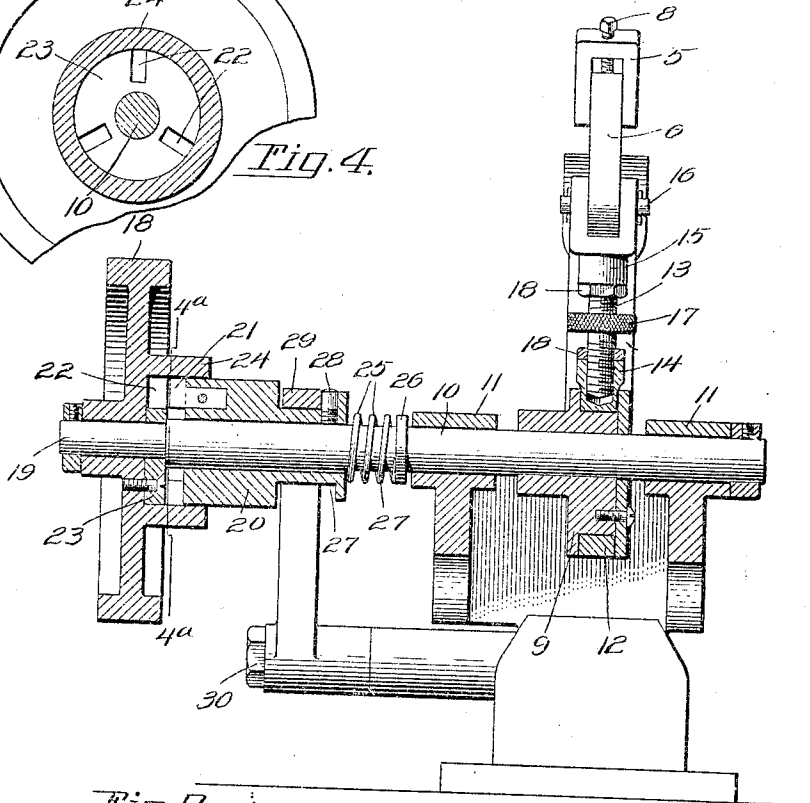
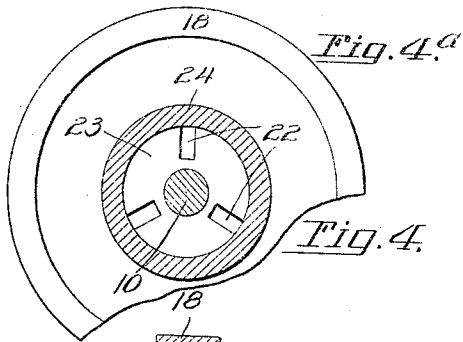
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5 SHEETS—SHEET 4.



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 5 SHEETS—SHEET 5.

Fig. 15.

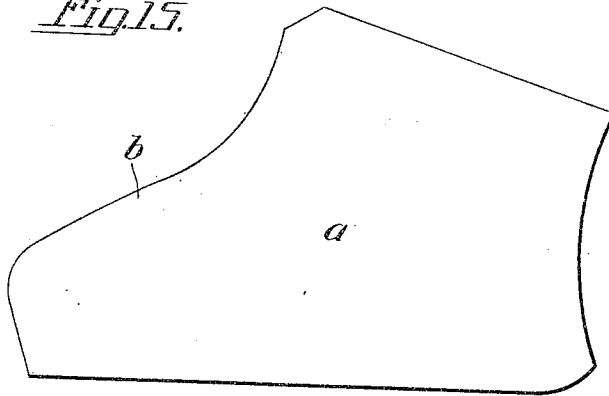


Fig. 16.

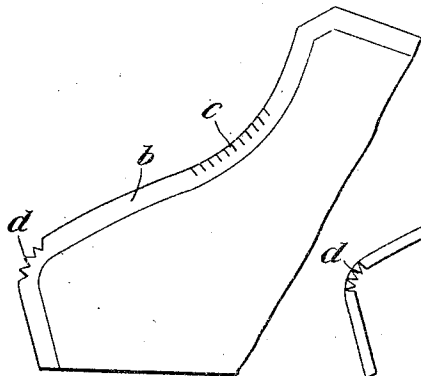


Fig. 17.

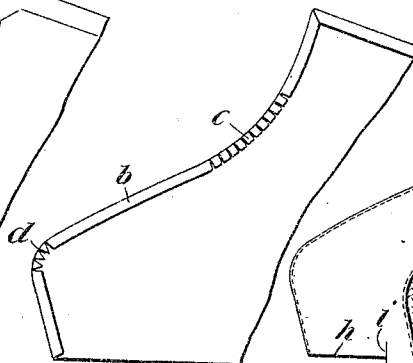


Fig. 18.

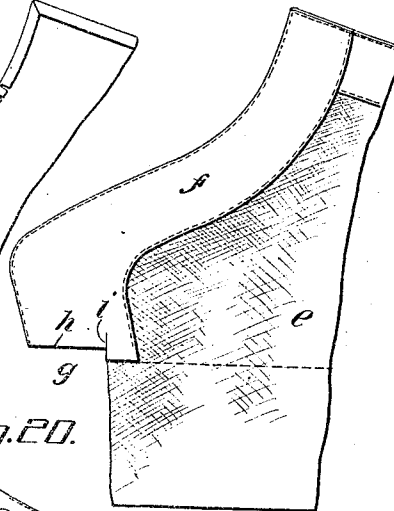


Fig. 19.

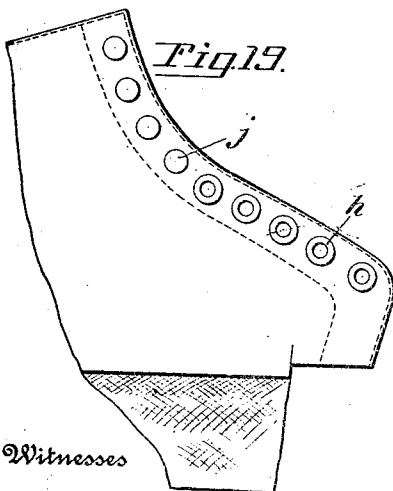
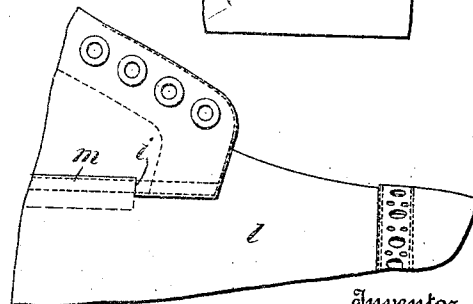


Fig. 20.



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UNITED STATES PATENT OFFICE.

ROBERT L. FELIX, OF MARLBORO, MASSACHUSETTS.

SNIPPING-MACHINE FOR SHOE-TOPS.

1,035,333.

Specification of Letters Patent.

Patented Aug. 13, 1912.

Application filed November 21, 1910. Serial No. 593,487.

To all whom it may concern:

Be it known that I, ROBERT L. FELIX, a citizen of the United States, residing at Marlboro, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Snipping-Machines for Shoe-Tops, of which the following is a specification.

This invention relates to shoe making machinery, and has to do more particularly with a machine for snipping the front edges of shoe tops so that such edges can be turned back in an even fold, irrespective of the contour of such edges.

The invention has for one of its objects to improve and simplify the construction and operation of shoe machinery of this character so as to be comparatively simple and inexpensive to manufacture, reliable and efficient in use, and so designed that shoe tops can be cut or snipped and trimmed with absolute precision, so that loss of stock may be reduced to a minimum and less hands will be required for preparing shoe tops for the vamping, who applies and stitches the tops to the vamps.

Another object of the invention is the provision of novel snipping or cutting knives which can be readily adjusted for edges of different curvatures.

A further object is the employment of a novel work-supporting table and means for operating the cutter.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one embodiment of the invention, Figure 1 is a side view of the machine. Fig. 1^a is a detail view of the cutter bar and removable cutter thereon. Fig. 2 is a plan view of the machine. Fig. 3 is a front view. Fig. 4 is a vertical section on line 4—4, Fig. 1. Fig. 4^a is a sectional view on line 4^a—4^a, Fig. 4. Fig. 5 is a sectional view of the work table taken on the line 5—5, Fig. 2. Fig. 6 is a perspective view of the yielding work support of the work table. Fig. 7 is a bottom plan view of one form of cutter or blade holder. Figs. 8, 9 and 10 are perspective views of different forms of cutters. Fig. 11 is a bottom plan view of the snipping

cutter. Fig. 12 is a side view thereof. Fig. 13 is a transverse section on line 13—13, Fig. 12. Fig. 14 is a plan view of the work table used in connection with the cutter shown in Fig. 11. Figs. 15 to 20 are different views illustrating the successive steps in the preparation of the top for the vamp of a shoe.

Similar reference characters are employed to designate corresponding parts throughout the views.

Before entering into a description of the machine, the work done thereby will first be explained, reference being had to Figs. 15 to 20, inclusive. *a* designates a shoe top in its first stage, as when it leaves the cutting machine. The edge, at *b*, is next skived along the inner surface, as shown in Fig. 16, and then follows the snipping of the skived edge at the concave portion *c* and at the corner or convex portion *d*. At the portion *c*, a plurality of slits are made by parallel knives, whereas the snipping at the corner *d* is in the form of scallops. The skived and snipped edge *b* is next turned backwardly and glued down as shown in Fig. 17, the snipped portions of the edge permitting the leather to be turned back in an even smooth fold. The lining *e* and facing strip *f* are now applied to the top and stitched as shown in Fig. 18. The next step consists in trimming the bottom edge of the upper and facing strip, at *g*, by means of a T-shaped cutter which produces the horizontal straight edge *h* and the vertical slot *i*. The trimmed top is now ready to receive the eyelets and lacing studs *j* and *k*, as shown in Fig. 9. The top is now taken to the vamping machine, where the vamp 1, Fig. 20, is applied, the portion *m* of the vamp being disposed in overlying relation to the bottom edge of the top, while the portion of the top between the slit *i* and front edge lies on the outside of the vamp. The two parts are stitched together while held in this position. The present machine is designed for snipping the edge of the top at the slits *c* and scallops *d* and for making T-shaped cuts and trimming the bottom front corner of the top at *g*, different knives being, of course, necessary to perform these several operations.

The machine comprises a frame A having upper and lower laterally-extending arms 1 and 2 that support, respectively, the cutter bar 3 and work table 4. The cutter bar 3

reciprocates vertically in a guide 5 in front of the arm 1. On the upper end of this bar 3 is pivoted a yoke 5 into which extends the forward end of an operating lever 6 that is fulcrumed at 7 on the top of the frame A. The yoke has a set screw 8 which impinges on the top of the lever 6 and holds the lever and yoke in proper relation. The lever 6 is rocked by means of an eccentric 9 on a rotating shaft that is journaled in bearings 11 on the rear portion of the frame. Surrounding this eccentric is a strap 12 that is adjustably connected with the lever 6. The connection between the strap and lever consists of a right and left hand screw 13 that has its lower end threaded in a boss 14 in the eccentric strap and its upper end threaded in a connector 15 that is pivotally attached to the rear end of the lever by the pivot pin 16. On this screw is a knurled flange 17 whereby the screw can be conveniently turned by hand. On the threaded portions of the screw are jam nuts 18 which are tightened after the screw is adjusted. By adjusting the connection between the eccentric and operating lever 6, the proper cutting relation between the cutter on the lower end of the bar 3 and the work on the table 4 can be effected.

The driving shaft 10 is rotated by means of a pulley or wheel 18 which can be driven by a belt or other suitable means. This pulley is normally loose on the reduced end 19 of the shaft 10 and is adapted to be connected with the latter by means of a clutch 20 which is controlled by a treadle 21, Fig. 1. The clutch element 20 slides on the shaft 10 between the pulley 18 and the adjacent bearing 11, and on this element 20 is a tooth 21 that is adapted to engage in any one of a number of recesses 22 of a disk 23 secured in the chamber of the hub 24. The clutch 20 is urged toward the wheel 18 by means of a spring 25 surrounding the shaft 10 and interposed between the clutch 20 and a collar 26 on the shaft. The clutch 20 has a peripheral groove 27 in which is positioned a stud 28 with which is adapted to engage a cam lever 29 for holding the clutch open. This lever 29 is fulcrumed at 30 on the frame of the machine and has one end connected with an adjustable rod or link 31 that extends downwardly through the bench 32 on which the machine is mounted and connects with the treadle 21. This rod consists of two parts that overlap and are adjustably connected by a clamp 33. On the rod 31, and interposed between the bench 32 and a collar 34 on the rod, is a spring 35 that normally holds the cam end of the lever in the groove 27 of the clutch element 20 and normally holds the rear end of the treadle raised. When the operator presses downwardly on the rear end of the treadle, the spring 35 is compressed so as to return the

parts to normal position when the pressure of the foot is removed from the treadle. In pressing on the treadle, the rear end of the throw-out lever 29 is raised out of the groove 27 of the clutch element so as to permit the said element to move toward the driving wheel 18 by the expansion of the spring 25 and thereby clutch said driving wheel to the shaft 10. When the wheel is clutched to the shaft, the latter causes the eccentric to tilt the lever 6 and move the cutter into engagement with the work on the table 4.

The arm 2 is provided with a flat plate portion 36 to which is fastened the table 4, the same having a rectangular opening 37 directly under the cutter bar 3. Under this opening 37 and set into a chamber 38 in the arm 2 is a yielding support 39 which has a stem 40 extending into a vertical passage 41 in the arm 2. In this passage is a spring 42 that yieldingly supports the support 39. The spring 42 rests on the lower end of an adjusting screw 43 that is threaded in the lower end of the passage 41. The top surface of the support 39 is provided with up-standing marginal flanges 44 between which is set a die plate 45 that is fastened in place by screws 46 that have their lower ends threaded in openings 47, Figs. 5 and 6. Different die plates 45 are used interchangeably, according to the shape of the knife or cutter being employed. When a T-shaped knife, as shown in Figs. 1 and 8, is being used, the die is obviously provided with a T-shaped slot or groove, and when the knives shown in Figs. 9 and 10 are used, a die having a groove corresponding to the cutting edge of each knife is applied to the yielding support 39.

When the cutter shown in Fig. 11 is employed, the die 45 and table plate 4 are removed and a plate 48, Fig. 14, is substituted for the plate 4, the said plate 48 having a plurality of parallel slots 49, arranged on an arc of a circle so as to receive the cutting edges 50 of the blades 51 forming the slit snipping cutter 52, Figs. 11 to 13. Fastened to the table 4 are work gages 53 and 54, Figs. 1 and 2, of any desired form so as to properly position the shoe tops on the work table 4 with respect to the cutter being used.

The lower end of the cutter bar 3 is formed with a socket 55, Fig. 1^a, for receiving the stem 56 of the cutters. This stem may be formed integral with the cutting blades, as shown in Figs. 9 and 8, or it can be formed on a block 57, Figs. 1, 1^a and 7, which carries removable blades 58, the said blades being set into slots or grooves 59 and clamped in place by set screws 60. When a curved blade 61, such as that shown in Fig. 10 is employed, the groove 59 of the blade holding block 57 will be correspondingly shaped. When separate blades 58 are employed, they can be adjusted for producing

cuts of different shapes and sizes. The cutter shown in Fig. 9 has a serrated cutting edge 62 and is used for the purpose of making the scallops *d* in the shoe top, as shown in Fig. 16. The slit snipper or cutter 52, Figs. 11 and 13, produces the slits, at *c*, in the shoe top, Fig. 16. As the folded edge of the shoe top may vary in curvature, the knives 51 of this cutter 52 are adapted to be adjusted to the curvature of the shoe top. The blades 51 are mounted in a block 63 that is provided with a plurality of transversely-extending slots 64 for receiving the inner end of the blades 51. The inner ends of the blades are wider than the lower ends so as to provide shoulders 65, and engaging under these shoulders is a removable bottom plate 66 held in place by screws 67, and in this bottom plate are slots 68 through which the narrow ends of the blades depend. Each blade is adjustable laterally by means of set screws 69 engaging, respectively, the front and rear edges, so that by turning one screw outwardly and the other inwardly, the blade between such screws will be shifted laterally to the front or rear. This means that the blades can be adjusted so that they will lie in a line of any desired curvature to suit the curvature of the shoe tops to be snipped. The screws engaging the front edges of the blades are preferably arranged in a plate 70 that is secured in place by screws 71, so that by removing these screws, the plate 70 can be taken off to permit all the blades to be removed without changing the set of the screws 69, it being, of course, necessary, in removing all the blades together, to take off the bottom plate 66 at the same time.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what I claim as new, is:—

1. A shoe snipping and trimming machine 55 comprising a supporting frame, a work table mounted thereon, a tubular guide on the frame above the work table, a reciprocatory element slidable vertically in the guide and having a socket at its lower end, a cutter 60 provided with a stem fitted in the socket, a yoke pivotally connected with the upper end of said element, an operating lever fulcrumed on the top of the frame and having its forward end slidably engaging the upper 65 end of the said element, a set screw on the yoke for engaging the upper side of the lever to hold the bottom side thereof in contact with the upper end of the said element, a driving shaft mounted on the frame, and an adjustable driving connection between the shaft and rear end of the lever.

2. A snipping cutter comprising a plurality of knives disposed side by side, a holder for the knives, and means for independently adjusting the knives on the holder, said means including a pair of adjustable members engaging opposite edges of each knife. 75

3. A snipping cutter comprising a plurality of knives disposed side by side, a holder for the knives, means for independently adjusting the knives on the holder, said means including axially alining adjustable members engaging opposite edges 85 of the knives, and a common support removably fastened on the holder for the adjusting members at one side of the blades.

4. A snipping cutter comprising a plurality of blades, a holder having slots disposed side by side for receiving the individual blades, a plate on the holder for maintaining the blade in the slots of the holder, and means for independently adjusting the blades laterally, said means including set screws engaging opposite side edges 95 of the blades and threaded in the opposite sides of the holder.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT L. FELIX.

Witnesses:

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ROSE B. POITRAS.