Nov. 26, 1940. F. GARZILLI ET AL 2,223,064

SHOEMAKER'S TOOL

Filed July 12, 1939 2 Sheets-Sheet 1

Fig. 1.

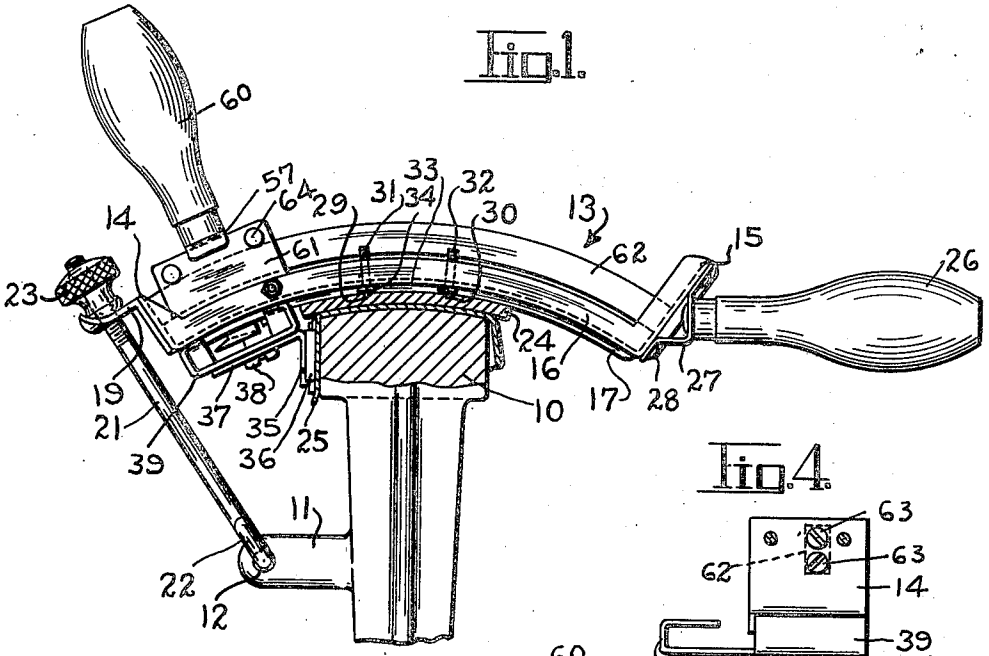


Fig. 4.

Fig. 2.

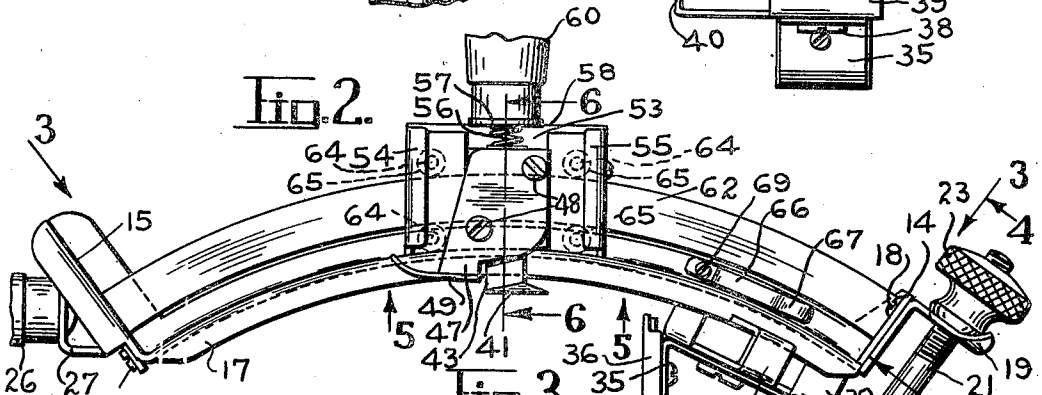


Fig. 3.

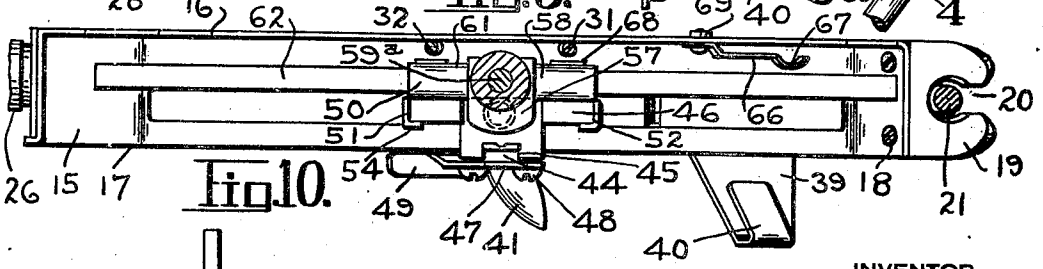
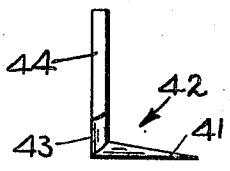


Fig. 10.



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Fig. 5.

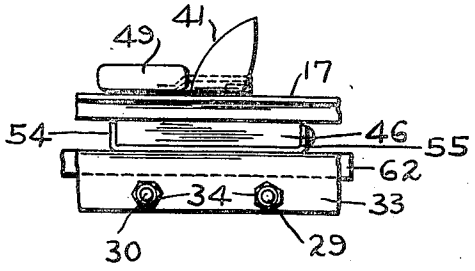


Fig. 6.

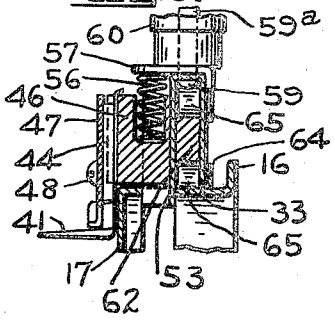


Fig. 7.

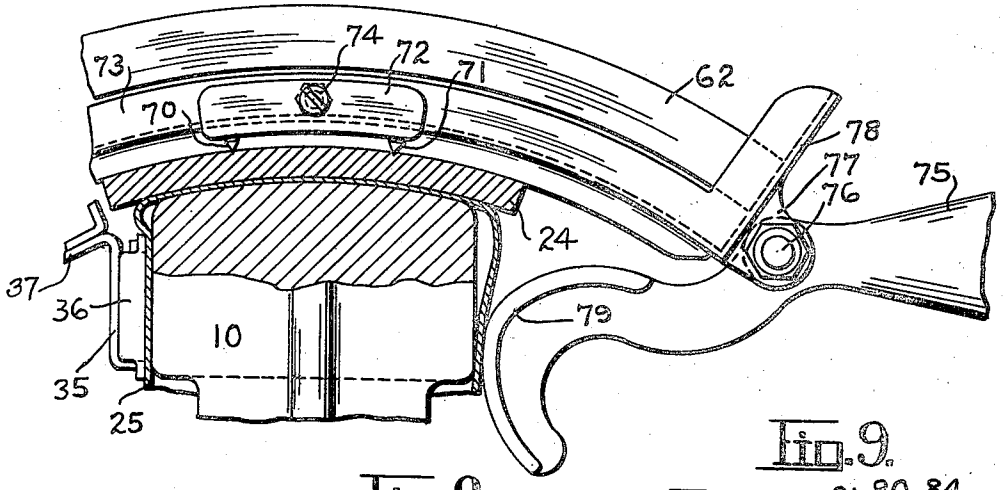


Fig. 9.

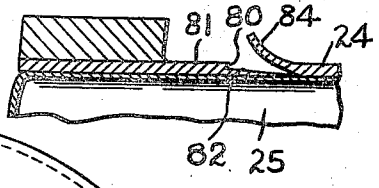
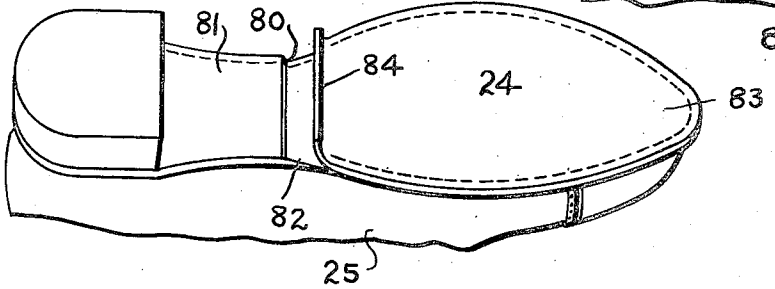


Fig. 8.



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SHOEMAKER'S TOOL

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Application July 12, 1939, Serial No. 284,078

9 Claims. (Cl. 12—17)

This invention relates to shoemakers' tools, and more particularly to a manually operated cutting tool particularly adapted for severing the rear of the front sole of a shoe preparatory to removal of said front sole and applying a new half-sole thereto.

In the past, before applying a half-sole to a shoe, it was customary for the shoemaker to remove the worn front sole by "peeling" it from the front or toe end toward the heel, and then making a cut crosswise of the shoe adjacent the instep portion with a knife. The cut so made was generally somewhat inclined requiring the shaving of the new sole to a thin beveled edge. The fit between the inclined surface of the remaining portion of the old sole and the thin beveled edge on the new sole was often uneven and unsightly, causing the new half-sole to loosen and spring apart at the joint during the subsequent wearing of the shoe.

One object of the present invention is to provide a shoemaker's hand tool of the above nature in which the above and other disadvantages have been overcome. This has been accomplished by the provision of a novel form of sole cutting tool which is adapted to permit the shoemaker to sever the rear end of the worn front sole transversely at the instep with a single rectangular cut forming a square shoulder to which a similarly formed new half-sole may be readily fitted and efficiently secured.

Another object of this invention is to provide a shoemaker's tool of the above nature having means to firmly clamp the tool to the shoe while the transverse cut is being made, and in which the rectangular knife will make a vertical cut and a forwardly extending inclined cut simultaneously in one motion of the tool transverse to the axis of the shoe.

A still further object of this invention is to provide an improved shoemaker's sole-cutting tool of the above nature which will be relatively inexpensive to manufacture, simple in construction, compact, and very efficient and durable in use.

With these and other obects in view, which will appear as the description proceeds, there have been illustrated in the accompanying drawings two forms in which the invention may be conveniently embodied in practice.

In the drawings:

Fig. 1 is a front view in elevation, showing one side of the improved sole-cutting tool embodying the features and principles of this invention.

Fig. 2 is an enlarged rear view of the same.

Fig. 3 is a top plan view of the same.

Fig. 4 is an end view, partly in section, looking in the direction of the arrows 4—4 of Fig. 2.

Fig. 5 is a bottom view of the tool, showing the appearance of the angular cutter and the holder therefor, looking in the direction of the arrows 5—5 of Fig. 2.

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 2.

Fig. 7 is a fragmentary enlarged side view of a modified form of the invention.

Fig. 8 is a perspective view of a "worn" shoe, showing the appearance thereof when a rectangular shoulder has been cut at the rear of the front sole by the improved tool before the old sole has been peeled therefrom forwardly.

Fig. 9 is a broken sectional view of the shoe, showing the exact shape of the cuts made by the tool.

Fig. 10 is a front edge view of the angular cutter used with the improved shoemaker's tool.

Referring now to the drawings wherein like reference numerals indicate corresponding parts throughout the several views, the numeral 10 denotes the upper end of a shoe tree which is adapted to receive and support a shoe 25. The shoe tree 10 is adapted to have its lower end seated in a flat base (not shown), whereby the shoe to be half-soled may be located in a convenient position close to the shoemaker's seat. The shoe tree 10 has a laterally extending lug 11 protruding from one side thereof, which lug 11 is provided with a hole 12 in its outer end for a purpose to be later described.

The improved shoemaker's tool of this invention comprises a frame 13 of arcuate form, having upstanding end plates 14 and 15, an upstanding side flange 16, and a depending side flange 17. In order to detachably lock the frame 13 in the operating position shown in Fig. 1, provision is made of a bracket 19 secured to the end plate 14, as by screws 18, said bracket having a slot 20 through which an elongated depending bolt 21 may pass. The bolt 21 has a hook portion 22 at its lower end adapted to be engaged in the hole 12 in the lug 11. The bolt 21 is screw-threaded at its upper end to permit a thumb nut 23 to be screwed downwardly against the bracket 19, which serves as a fulcrum for holding the frame 13 in operating position upon the sole 24 of a shoe 25 supported upon the shoe tree 10.

In order to permit the opposite end of the frame 13 to be manually held down by the shoemaker, provision is made of a handle 26 riveted

to a bracket 27 which in turn is secured to the end plate 15, as by screws 28. The handle 26 extends away from the frame 13 and may be used to hold the frame flange 17 downwardly upon the shoe sole 24 as indicated in Fig. 1.

To prevent slipping of the shoe 25 laterally with respect to the shoe tree 10, the tool is provided with a pair of laterally spaced-apart depending spikes or points 29 and 30 formed on the lower ends of a pair of threaded studs 31 and 32, which studs are adjustably screwed into the bottom wall 33 of the frame 13 and are locked in place by lock nuts 34. The studs 31 and 32 normally extend below the downwardly extending side flange 17 to cause the spikes 29 and 30 to become slightly embedded in the sole 24 before the flange 17 engages the same.

In order to more firmly attach the shoe 25 upon the shoe tree 10, provision is made of an angular clamping pad 35, covered with leather 36, and extending downwardly along one side of said shoe tree 10. The pad 35 has an inclined lateral projection 37 which is pivotally secured by a screw 38 to a bracket 39 which in turn is secured to and extends across the bottom wall 33 of the frame 10 adjacent to the end plate 14. By means of this construction, the pad 35 may be swung to adjust itself to the angularity of the shoe 25 where it contacts the same.

The bracket 39 extends laterally beyond one side of the frame 13 and has a portion 40 (see Fig. 4) bent upwardly and then backwardly over itself to form a tapered protective guard for the horizontal cutting blade portion 41 of a cutting knife 42. The cutting knife 42 further includes a vertically disposed cutting blade portion 43 which is integral with the horizontal blade portion 41. The blade portion 43 is provided with an upper vertical shank portion 44, which is adapted to be adjustably received in a vertical groove 45 provided in the front face of a slide block 46, and said shank 44 is clamped in said groove 45 by an oval end plate 47 secured to the slide block 46 by screws 48 with the horizontal blade portion 41 disposed below the bottom wall of the frame 13 an amount sufficient to make the desired depth of cut in the shoe sole 24.

In order to insure that the blade portion 41, while being drawn across the shoe sole 24, remains at the desired depth, the shoe sole 24 is adapted to be pressed downwardly in front of and directly adjacent the blade portion 41 by means of a curved flat tongue 49 formed on the lower edge of the clamp plate 47 (see Figs. 2 and 3).

The angular cutting knife 42 and the slide block 46 are mounted for vertical adjustment in a slidable carrier 50 having vertically disposed guideways 51 and 52 formed by a vertical partition 53 and end flanges 54 and 55 (see Figs. 3 and 5) formed integral with said carrier 50. A relatively heavy coiled compression spring 56 reacts between the upper end of the slide block 46 and an overhanging angle-plate 57 to constantly urge the slide block 46 (and with it the knife 42) downwardly. The plate 57 is secured to the top wall 58 of the carrier 50 by the riveted-over end 59 (Fig. 6) of a vertically disposed center rod 59a of a wooden handle 60 when it is secured to the top wall 58 of the carrier 50. The carrier 50 (Fig. 3) has a side wall 61 spaced from the vertical partition 53 and which extends downwardly from its top wall 58 to embrace an arcuate upper guide rail 62 which extends from the end plate 14 to the end plate 15 of the frame 10 and is secured thereto by screws 63 (Fig. 4). Disposed between the partition 53 and the wall 61, and journaled on studs 64 are a plurality of horizontal friction-reducing rollers 65 which ride on the upper and lower edges of the rail 62 to guide the carrier 50 and the cutting knife 42 transversely across the shoe sole 24.

For the purpose of frictionally retaining the carrier 50 adjacent the end plate 14, in which position the horizontal cutting knife blade 41 is protected by the tapered guard portion 40 of the bracket at the end of the cutting stroke, provision is made of a catch leaf-spring 66 secured at one end to the vertical side flange 16 by a screw 69. The spring 66 has a forwardly convex free end 67 which is adapted to engage a head 68 of one of the roller studs 64.

Modified form

The modified form of the invention shown in Fig. 7 differs from the first form described above by having a pair of sole-engaging pointed teeth 70 and 71 corresponding to the spikes 29 and 30, supra, located on the under surface of a bar 72 which is pivotally secured by a bolt 74 to the frame side flange 73, corresponding to the above described side flange 16. In this manner, the teeth 70 and 71 are permitted to adjust themselves so as to uniformly penetrate into the surface of a shoe sole 24 of uneven thickness.

A horizontal handle 75, corresponding to the handle 26 of the previously described form, is in this instance pivoted by a bolt 76 to a lug 77 extending from a frame end plate 78, corresponding to the frame end plate 15, supra. A curved extension 79, which is integrally joined to the handle 75, is adapted to engage the side of the shoe 25 and clamp it to the shoe tree 10 and to simultaneously draw the clamp pad 35 tightly against the other side of the shoe 25.

Operation

In operation, when the tool is drawn transversely across the shoe sole 24, a vertical cut 80 will be produced at its instep portion 81, and a short inclined cut 82 will also be made in the sole 24 extending toward its toe portion 83. The rear extremity 84 of the sole 24 may then be readily lifted therefrom, and gripped by pliers, not shown, to facilitate the peeling of the old sole forwardly from the shoe. It will be understood that the vertical shoulder 80 and the inclined cut 82 will be severed in one operation of the tool rapidly and efficiently.

It will also be understood that prior to the operation just described, the shoe 25 will be placed on the shoe tree 10 in the usual manner with the hook end 22 of the elongated bolt 21 engaged in the hole 12 of the lug 11, and the thumb-nut end swung through the slot 20 in the bracket 19. The thumb-nut 23 may be tightened the desired amount, and the frame 13 will be swung downwardly over the shoe sole 24 by the horizontal handle 26 (or 75) to cause the points 29 and 30 (or 70 and 71) to become embedded in the leather sole 24,—the flange 17 also engaging the sole to hold it rigidly upon the shoe tree 10.

After the sole has been cut, the tool is then raised again away from the shoe 25 and shoe tree 10, and the worn half-sole stripped or peeled off as described above. A new half-sole may then be readily attached to the shoe by nailing, stitching, cementing, etc.,—a smooth and more durable joint being produced at the rear of the

half-sole than could be produced by previous methods and tools.

While there have been disclosed in this specification two forms in which the invention may be embodied, it is to be understood that these forms are shown for the purpose of illustration only, and that the invention is not to be limited to the specific disclosures, but may be modified and embodied in various other forms without departing from its spirit. In short, the invention includes all the modifications and embodiments coming within the scope of the following claims.

Having thus fully described the invention, what is claimed as new, and for which it is desired to secure Letters Patent, is:

1. In a hand tool for cutting a shoe sole, an arcuate frame supported at one end and having means to swing it downwardly against a shoe tree, an arcuate guide bar extending lengthwise of said frame, a cutter slidably mounted on said bar, said cutter comprising an integral inclined substantially horizontal knife and a vertical knife to produce a transverse shouldered cut at the rear of the sole for severing it from the shoe and permitting the worn half sole to be stripped off in a forward direction.

2. In a hand tool for cutting a shoe sole, an arcuate frame supported at one end and having means to swing it downwardly against a shoe tree, an arcuate guide bar extending lengthwise of said frame, a cutter slidably mounted on said bar, said cutter comprising an integral substantially horizontal knife and a vertical knife to produce a transverse shouldered cut at the rear of the sole, and yieldable means to frictionally engage and hold said cutter at the end of its stroke.

3. In a hand tool for cutting a shoe sole, an arcuate frame, an arcuate guide bar extending lengthwise of said frame, a cutter slidably mounted on said bar, said cutter comprising an integral substantially horizontal knife and a vertical knife to produce a transverse shouldered cut at the rear of the sole, means to frictionally hold said cutter at the end of its stroke, and a guard at the free end of said frame to protect said cutter.

4. In a hand tool for cutting a shoe sole, an arcuate frame, an arcuate guide bar extending lengthwise of said frame, a cutter slidably mounted on said bar, said cutter comprising an integral substantially horizontal knife and a vertical knife to produce a transverse shouldered cut at the rear of the sole, a shoe tree, and means to swingably attach said frame with respect to said shoe tree.

5. In a hand tool for cutting a shoe sole, an arcuate frame, means to swingably mount said frame with respect to a shoe tree, means to clamp one side of a shoe against said shoe tree, an arcuate bar extending lengthwise of said frame, and a cutting knife mounted on said bar for movement transversely across the sole of said shoe.

6. In a hand tool for cutting a shoe sole, an arcuate frame, means to swingably mount said frame with respect to a shoe tree, means to clamp one side of a shoe against said shoe tree, an arcuate bar extending lengthwise of said frame, a cutter slidably mounted on said bar to transversely cut the rear of the front sole of a shoe, said cutter comprising an integral vertical blade and a substantially horizontal cutting blade formed at the lower end thereof to produce a shouldered angular cut for severing the rear of said front sole at the instep portion of the shoe.

7. In a hand tool for cutting a shoe sole, an arcuate frame, means to swingably mount said frame with respect to a shoe tree, means to clamp one side of a shoe against said shoe tree, an arcuate bar extending lengthwise of and parallel to said frame, and a cutting knife mounted on said bar for movement transversely across the sole of said shoe.

8. In a hand tool for cutting a half sole, a vertically adjustable transverse arcuate frame, means to press said frame downwardly against a shoe sole mounted on a shoe tree, an arcuate guide bar extending lengthwise of said frame, a cutter slidably mounted on said bar, said cutter comprising an integral horizontal knife having a beveled upper edge and a vertical knife to produce a transverse inclined cut through the rear of the half sole, and means to detachably hold said cutter at the end of its stroke.

9. In a hand tool for severing the rear of a half sole to permit it to be stripped from the shoe by a forward pulling motion, a shoe tree having a shoe mounted thereon, a frame located transversely above said shoe tree and movable downwardly into adjustable engagement with said half sole, an angular cutter mounted to slide in antifriction bearings along said frame to produce a transverse cut of angular cross section through the rear of said half sole to which a new half sole may be smoothly attached flush with the remainder of the shoe sole.

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