July 17, 1934. S. KURLAN 1,967,148

SHOE LAST AND METHOD OF MANUFACTURING THE SAME

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Fig. 1.

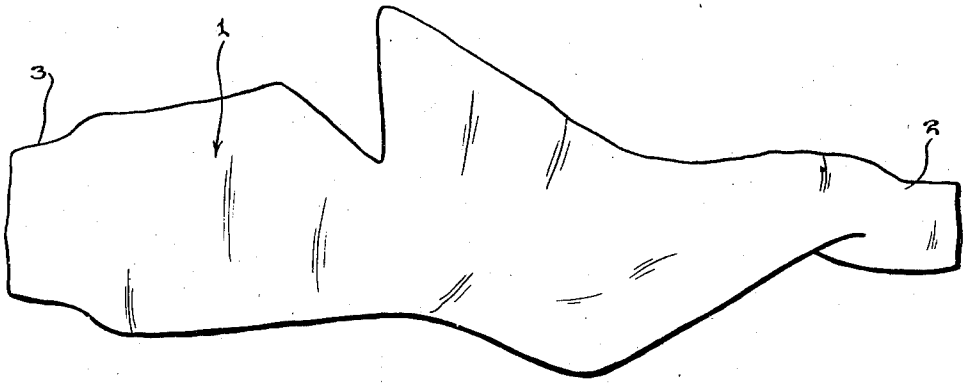


Fig. 2.

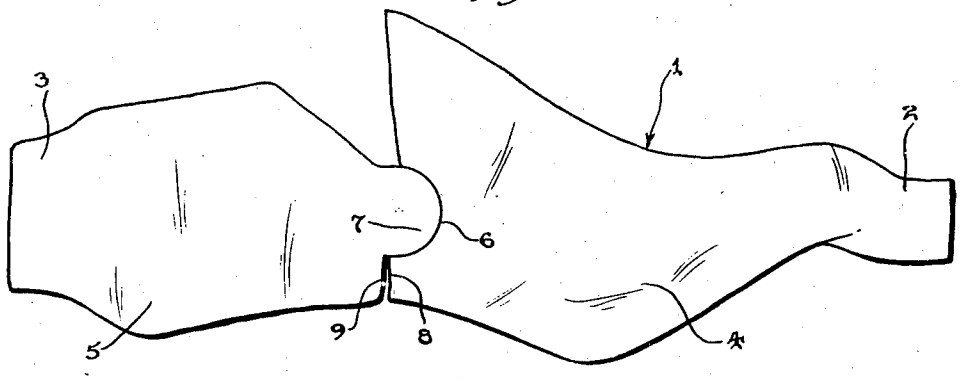
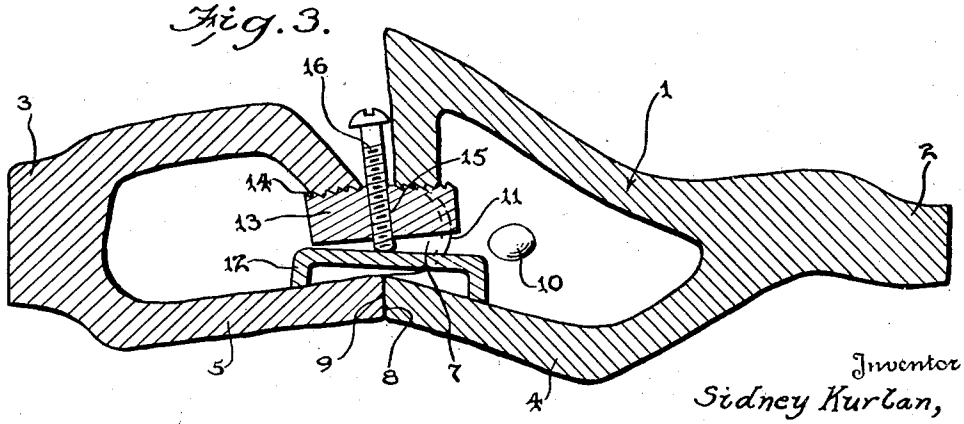


Fig. 3.



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Fig. 4.

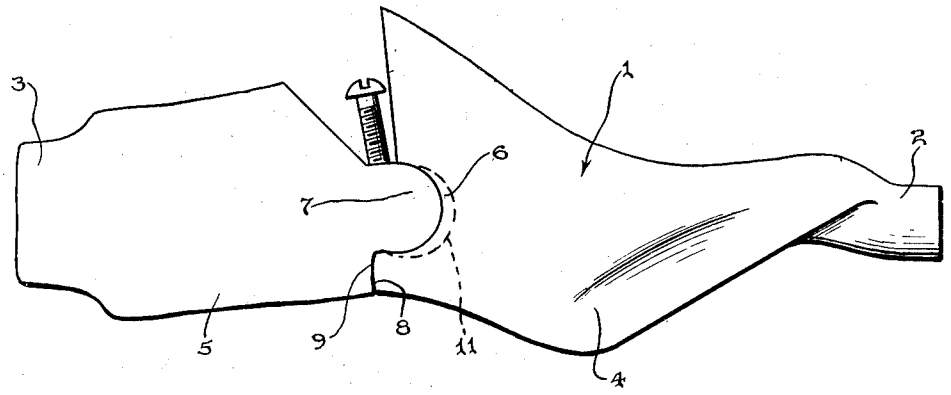


Fig. 5.

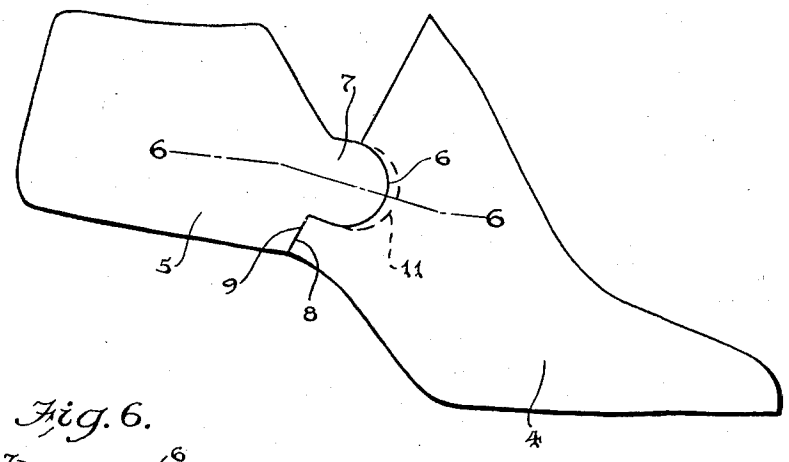
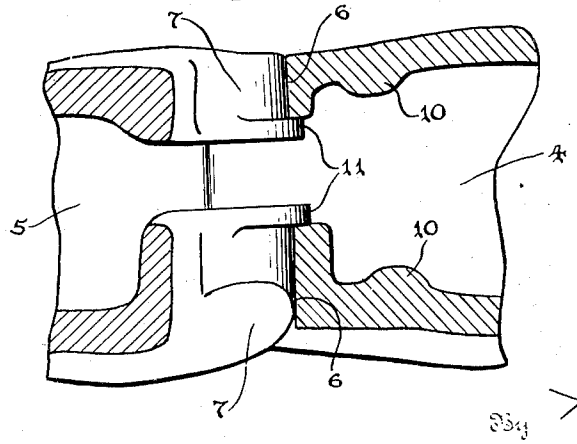


Fig. 6.



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SHOE LAST AND METHOD OF MANUFACTURING THE SAME

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Application June 23, 1932, Serial No. 618,982

4 Claims. (Cl. 29—148)

The invention relates to foot wear manufacture and more particularly to shoe lasts and the method of manufacturing the same.

The primary object of the present invention is to enable shoe lasts of all styles and types to be made of metal and turned or shaped on a woodworking machine with the same speed, facility and accuracy as a wooden shoe last.

A further object of the invention is to provide an exactly accurate metallic shoe last of economical construction which will not deteriorate or be affected by the elements, and which will not warp, crack, check, split or swell.

Another object of the invention is to provide a metallic shoe last which will be substantially as strong as mild steel, and lighter than aluminum, and adapted to be heated, either by means of an interiorly arranged heating element, or by the application of heat exteriorly of the last.

Another object of the invention is to enable either hollow or solid shoe lasts to be constructed of metal and to provide a construction which, when the shoe last is composed of hinge front and rear sections, is adapted to enable the rear section to be readily formed or adjusted for the proper heel height.

Another object of the invention is to provide a metallic shoe last which will indefinitely preserve its specific contour and dimensions which, when the style of the last becomes obsolete, may be melted and recast for making another last of the desired style.

With these and other objects in view, the invention consists both in the novel method of making metallic shoe lasts and in the construction and novel combination and arrangement of the parts of the lasts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

Figure 1 is a side elevation of a magnesium alloy block.

Fig. 2 is a similar view showing the magnesium block cut into two sections with a hinge joint or connection.

Fig. 3 is a longitudinal sectional view of the same, illustrating the means for rigidly holding the sections in fixed adjustment while turning the magnesium alloy block into the desired last shape.

Fig. 4 is a side elevation of the turned or shaped last before removing the terminal lugs.

Fig. 5 is a side elevation of the complete last.

Fig. 6 is a horizontal sectional view on the line 6—6 of Fig. 5.

In the accompanying drawings in which is illustrated the preferred embodiment of the invention, 1 designates a block or blank of magnesium alloy having substantially the shape of a shoe last and possessing sufficient material to enable a shoe last of the desired style, shape and size to be formed of it.

It has been found after experimenting with numerous alloys of various metals that a magnesium alloy within the range of not less than 20% magnesium; nor more than 95% magnesium, may be shaped or turned on an ordinary woodworking lathe or machine with the same rapidity, facility and accuracy as wood in making a wooden shoe last. The magnesium alloy block is cast with terminal lugs or portions 2 and 3 which enable it to be held in a lathe and which are trimmed off after the last has been shaped in a shoe last turning machine or profile machine in the same manner as a shoe last made of wood.

While the method of the present invention is applicable to the manufacture of shoe lasts of all kinds, styles and types, a hollow shoe last composed of hinged front and rear sections 4 and 5 is illustrated in the accompanying drawings. Before shaping the magnesium block in a lathe it is preferable to cut the block transversely into the two sections 4 and 5 with bearing recesses 6 and bearing lugs 7 at the lower portions of their adjacent ends to form a hinge joint or connection to enable the last to break in the usual manner and the said sections 4 and 5 are provided below the bearing recesses 6 and bearing lugs 7 with abutting shoulders 8 and 9 which limit the swinging movement of the sections on each other in one direction and which support the heel portion of the rear section at the desired elevation when the sections are locked in operative position in the usual manner. Any suitable means may, of course, be employed for locking the sections and for permitting the sections to break, and the front section may be provided with interior bosses 10 for the attachment of such means.

The recesses 6 and lugs 7 form contacting bearing faces, and lugs 7 are preferably provided at their inner faces with flanges 11 extending beyond the walls of the bearing recesses 6 and en-

gaging the front section 4 interiorly thereof to prevent any relative lateral movement of the front and rear sections. Instead of forming the front and rear sections from a single block it will be obvious that the sections may, if desired, be cast separately to form a rough blank to be placed in a lathe for forming the last.

Prior to placing the front and rear sections in the lathe for shaping the same into the desired last form, the sections are rigidly locked in fixed adjustment with the heel portion of the rear section at the desired elevation. The elevation of the heel portion of the rear section is determined by the abutting shoulders 8 and 9 which may be trimmed out or otherwise cut away to arrange the heel portion of the rear section in the proper position when the front and rear sections are assembled in operative position.

The locking of the front and rear sections in fixed relation for shaping or turning the same in a woodworking lathe is effected by means of an adjustable connecting device consisting of a lower approximately inverted U-shaped member 12 and a substantially straight upper adjustable jaw member 13 consisting of a short bar provided at its upper face with teeth 14 and having a vertical threaded opening 15 located approximately midway between the ends of the adjustable jaw 13 and receiving an adjusting screw 16.

The inverted U-shaped member 12 bridges the joint formed by the front and rear sections of the last and has its legs engaging respectively the front and rear sections 4 and 5 at the bottom of the interior thereof. The jaw also extends across the joint of the front and rear sections and the teeth 14 at the upper face of the jaw engages each of the sections 4 and 5 interiorly of the same at the top thereof. The screw 16 is adapted to be adjusted by a screw driver or other tool for separating the members of the connecting device and for forcing the same firmly into engagement with the top and bottom walls of the hollow front and rear sections 4 and 5. The connecting device will rigidly maintain the sections in position while the sections are being operated on by the shaping means of a lathe and the alloy block or blank formed by the sections is adapted to be shaped to the minutest dimensions by a woodworking lathe similar to a block of wood employed for making an ordinary wooden shoe last.

When the last is removed from the lathe or other woodworking machine it is in the form illustrated in Fig. 4 of the drawings with the terminal portions or lugs 2 and 3 after which these terminal portions or lugs are trimmed off and the last is completed in its finished form, as illustrated in Fig. 5 of the drawings. Any style or form of last, either solid or hollow, may be constructed by casting a block or blank of magnesium alloy in approximately the shape of a shoe last and then shaping the same to the exact form or style of shoe last desired, in an ordinary woodworking lathe, and while magnesium alloy containing 95% of magnesium is employed, any alloy of magnesium containing not less than 20% of magnesium may be employed.

A magnesium alloy shoe last is much lighter than aluminum and is substantially as strong as mild steel and it is not affected by heat or dampness and can be applied without fear of shrinkage, expansion, swelling or checking, and it will preserve its specific contour and exact dimensions indefinitely. Also, after the style of a magnesium alloy shoe last becomes obsolete, it is not necessary to entirely discard the shoe last, but the magnesium alloy contained therein may be melted and recast into a block or blank for making a new shoe last of the desired style. Also, it will be clear that with the hollow magnesium alloy shoe last a heating element may be provided interiorly of the last for applying heat to the same or the application of heat may be made to the last exteriorly thereof without injuring the last or in any wise affecting the contour and dimensions of the same.

What is claimed is:

1. The herein described method of making metal shoe lasts, consisting in casting a metal block with terminal lugs, cutting the block transversely into front and rear sections, rigidly connecting and locking said sections in fixed relation, then turning the sections of the block to the required last shape in a shoe last turning machine, and finally trimming off the terminal lugs.

2. A shoe last of magnesium alloy containing magnesium within the range of 50% to 95% or more magnesium and sufficiently soft to be turned in a last turning machine.

3. The herein described method of making metal shoe lasts consisting in casting a block of magnesium alloy with projecting terminal lugs, then turning the block of magnesium alloy in a last turning machine to the required last shape, and finally trimming off the terminal lugs.

4. A cast magnesium alloy shoe last blank consisting of a block of magnesium alloy provided with projecting terminal lugs adapted to be trimmed off, said blank containing a sufficient amount of magnesium to enable it to be turned to the required last shape in a last turning machine.

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