Nov. 3, 1931. T. ENGEL 1,830,647

DEVICE FOR MANUFACTURING ARCH SUPPORTS

Filed Dec. 6, 1929

Fig. 1.

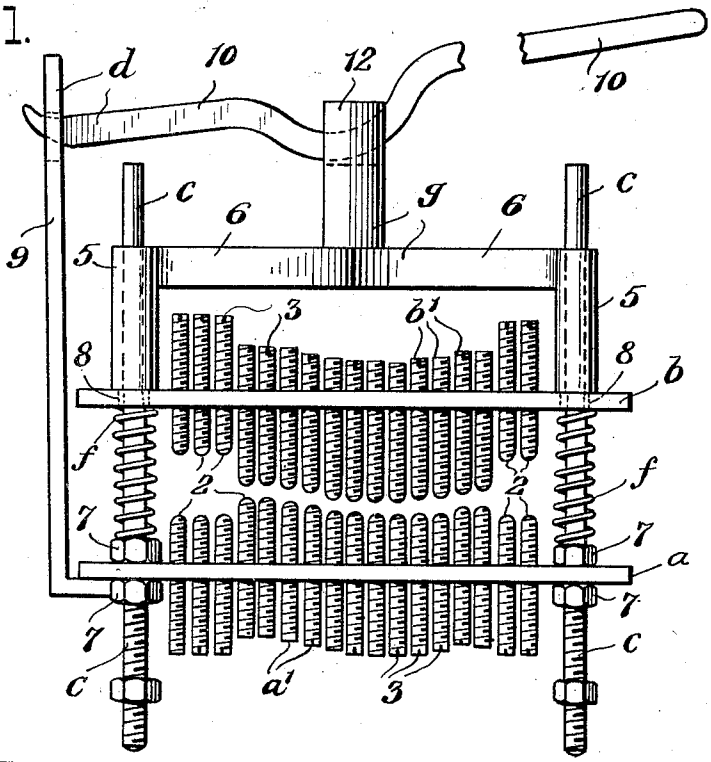
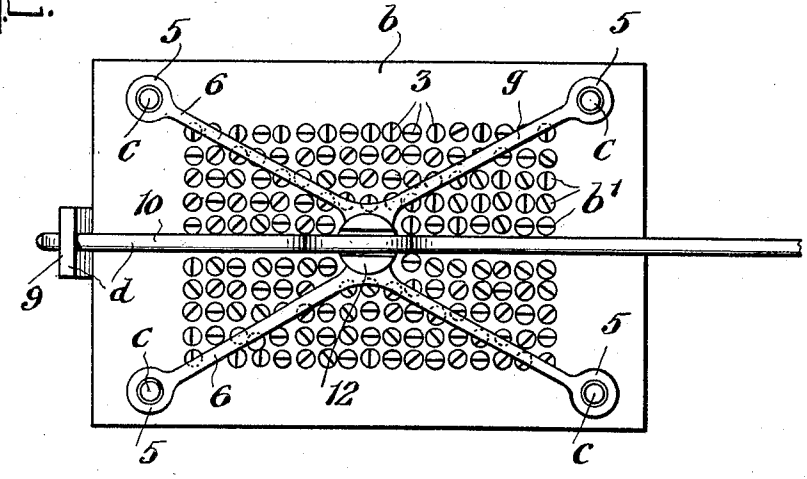


Fig. 2.



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UNITED STATES PATENT OFFICE

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DEVICE FOR MANUFACTURING ARCH SUPPORTS

Application filed December 6, 1929, Serial No. 412,140, and in Germany July 26, 1929.

The present invention relates to a device for manufacturing supports for the arch of the foot, such supports being usually inserted in the shoes of the wearer. The manufacturing of such arch supports has heretofore been had with difficulty, especially if one desired to utilize the moulds commonly used. Such moulds have usually consisted of pins held in a suitable support. The pins have been so held in their support, however, that any attempt to use the same as an anvil or former on which the metal sheet or piece being formed into the arch support, could be shaped, pressed or hammered, resulted in the pins being displaced and the arch support consequently being misformed.

The object of my invention therefore, is to provide a device for determining the under contour of the foot and thereafter arranged to shape the arch support accordingly. Such device is arranged to stand the stress and strain imposed upon it by pressing, forming or hammering a section of metal on it to shape the metal into the proper arch support.

With these objects, and such other objects as may hereinafter appear, in view, I have devised the particular arrangement of parts set forth below and more particularly pointed out in the claim appended hereto.

Reference is to be had to the accompanying drawings, forming a part hereof, in which

Figure 1 is a side elevation of my improved device, and

Figure 2 is a plan view of the same.

Throughout the various views of the drawings, similar reference characters designate similar parts.

In the illustrative embodiment of my invention disclosed in the accompanying drawings, *a* and *b* indicate a pair of spaced similar plates. Each of these plates is provided with a plurality of similar closely-spaced screws, those which extend through the plate *a* being indicated at *a'* while those passing through the plate *b* being designated at *b'*. The screws in one of the plates coincides in longitudinal alignment with those on the other. At one end each screw is provided with a rounded terminal indicated at 2, while the opposite ends are slotted as at 3 for the reception of a screw driver or other suitable tool to adjust the screws longitudinally through their respective supporting plates.

At *g* is disclosed a frame which extends across the face of the plate *b* and which is provided with four bosses 5 which are formed at the ends of arms 6. Bolts *c* are secured to the plate *a* by nuts 7 and these bolts extend through openings 8 in the plate *b* through which they are free to move, and through the bosses 5. Springs *f* surround the bolts between the plates *a* and *b* and tend to normally keep said plates spaced apart. An operating mechanism *d*, consisting of an upright arm 9 extending from the plate *a* and a lever 10 which engages said arm, acts to press the plates *a* and *b* toward one another against the tension of the springs *f*. The frame *g* has an upright member 12 which receives the pressure of the lever 10 and acts through the frame *g* to uniformly distribute the pressure of the lever 10 on the plate *b*.

From the foregoing, the manner in which my improved device for manufacturing arch supports will be readily understood. The shape of the foot for which an arch support is to be made, is first ascertained by means of the plate *b* which is placed beneath the foot with the rounded ends 2 of the screws *b'* bearing against the under side of the foot. The screws are thereupon turned until they form a contacting surface conforming perfectly to the shape of the foot. The plate *b* is then placed opposite to the plate *a* and the screws *a'* of the latter are turned until their rounded terminals touch those appearing on the screws *b'*. When this is done the result is that the surface formed by the screws *a'* forms one side of the arch support to be made while a reverse replica of the same is provided by the surface formed by the screws *b'*. Thus, when a piece of metal is inserted between the two sets of screws and the same are pressed together by pressure on the lever 10, the metal sheet is formed to the correct and proper curvature to fit the foot for which it is adapted. As the screws *a'* and *b'* are threaded in position they are not shifted by the pressure ex-

erted upon them, but can only be manually changed by rotary movement.

Having described one embodiment of my invention, it is obvious that the same is not to be restricted thereto, but is broad enough to cover all structures coming within the scope of the annexed claim.

What I claim is:—

A device for measuring the undershape of the foot and making arch supports to conform thereto, said device comprising a frame composed of a lower fixed plate with uprights extending therefrom, a removable foot-measuring plate received upon the uprights, springs interposed between the two plates, a pressure-imposing frame having portions adapted to fit over the uprights and move thereon and rest upon the removable plate, said frame having an upwardly extending portion located over the center of the removable plate, a lever received in said upright and adapted to exert downward pressure on the pressure-imposing frame, and an extended part on the lower plate adapted to be engaged by the end of said lever.

Signed at Frankfort-on-the-Main, Germany, this 14th day of November, 1929.

DR. MED. THEODOR ENGEL.