

C. RITZ.
 ARCH SUPPORT.
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1,358,018.

Patented Nov. 9, 1920.

Fig. 1

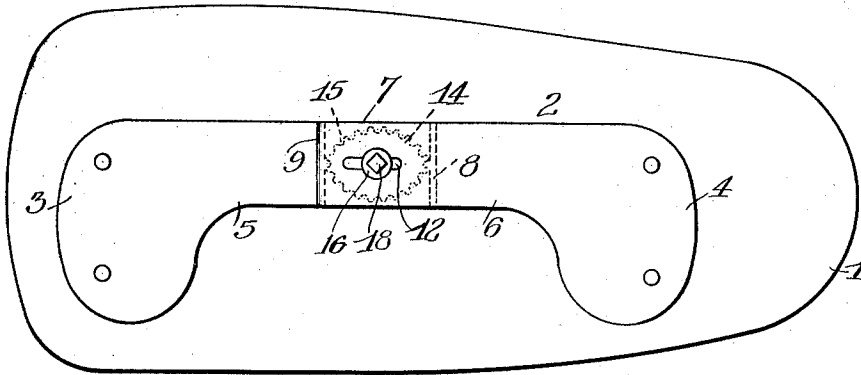


Fig. 2

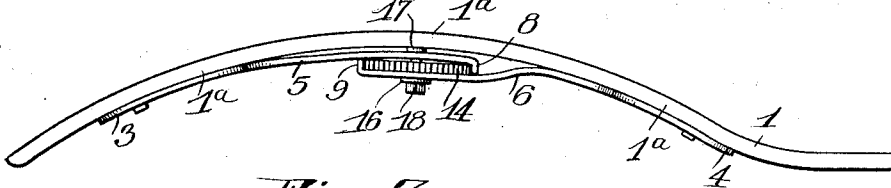


Fig. 3

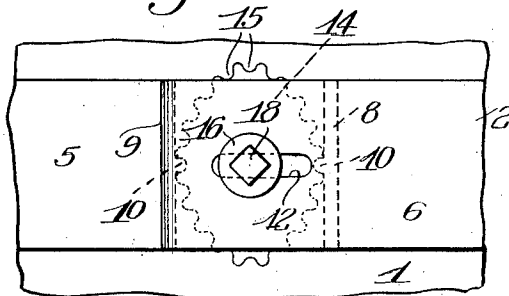


Fig. 5

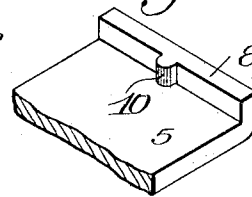
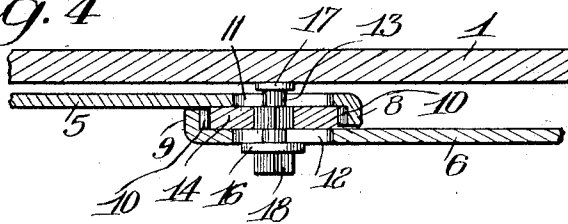


Fig. 4



INVENTOR
 Charles Ritz
 BY Nelson A. Hallauer
 his ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES RITZ, OF ROCHESTER, NEW YORK.

ARCH-SUPPORT.

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To all whom it may concern:

Be it known that I, CHARLES RITZ, a citizen of the United States, residing at Rochester, in the county of Monroe, State of New York, have invented certain new and useful Improvements in Arch-Supports; and I do declare the following to be a full, clear, and exact description of the same, taken in connection with the accompanying drawings, forming a part of this specification.

My invention relates to arch supports, more particularly to the class of arch supports which are worn in the shoe to relieve the effect of broken or fallen foot arches. The object of my invention is to provide an arch of this kind which comprises a support of comparatively rigid fibrous material reinforced by means of single spring or metal strip secured to the underside of the support. Another object of my invention is to provide an arch support with means for adjusting the same to arches of different heights. A further object of my invention is to provide an arch support comprising a support of fibrous material reinforced by means of a metallic plate comprising two parts adjustable to vary the height of the arch.

More specifically the object of my invention is to provide an arch support comprising an arched supporting member of hardened leather or other suitable hard resilient material, reinforced by means of a resilient arched plate comprising two parts each having an enlarged end secured to the supporting member with the free ends overlapping each other and means for adjusting said parts relatively to each other for increasing or diminishing the curvature of the arch.

To these and other ends, my invention resides in the arrangement and combination of parts illustrated in the accompanying drawings and more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a bottom plan view of arch support constructed in accordance with my invention.

Fig. 2 is a side elevation of the same.

Fig. 3 is an enlarged fragmentary view showing the devices for adjusting the reinforcing plate.

Fig. 4 is a longitudinal central section of the devices shown in Fig. 3 and

Fig. 5 is an enlarged view showing a detail.

Similar reference characters refer to the same parts in all the figures of the drawings.

My improved arch comprises a supporting member 1 of fibrous or other suitable material arched as at 1^a and adapted to be worn in a shoe in contact with the sole of the foot of the patient. The member 1 is preferably made of sole leather, hardened but retaining some resilient properties. However, other hard resilient material may be substituted therefor without departing from the spirit or scope of my invention.

The supporting member or arch 1 is reinforced by means of a resilient metallic plate 2 riveted or otherwise suitably secured thereto. The plate 2 has enlarged ends 3 and 4 which are engaged by the securing means and the forward one 4 of which serves to support the metatarsus of the foot. The reinforcing member 2 is arched to conform to the arch of the supporting member 1 and contacts therewith.

An arch constructed as above described, is economical to make, efficient in use and will relieve the effects of fallen or broken arches. I have found however, that the height of arch required, varies with different patients, and have therefore devised means for varying the height of the arch to the requirements of the patient or for readjusting the same if the height of the arch becomes too low through use. For this purpose, I construct the reinforcing plate 2 of two parts 5 and 6 which overlap each other at their free ends as at 7.

The end of the part 5 is turned outwardly to provide a flange or shoulder 8 and the end of the part 6 is similarly turned inwardly to provide a similar flange or shoulder 9 and each of the flanges or shoulders 8 and 9 is provided with a tooth or projection 10 for a purpose presently to be described. The overlapping parts of the members 5 and 6 are provided with longitudinal slots 11 and 12 in which is rotatably and slidably mounted the pivot or shaft 13 of a cam 14 interposed between the overlapping ends of the parts 5 and 6. The periphery of the

member 14 is serrated or notched as at 15 and these notches are adapted to cooperate with the teeth or projections 10 on the flanges 8 and 9. The shaft or pivot 13 extends through the parts 5 and 6 where it is provided with the thrust bearings 16 and 17 and at its outer end may be provided with means 18 whereby the pivot 13 and the cam 14 secured thereto may be adjusted by means of a tool. The form of the notches 15 is such that when the cam 14 is rotated the projections 10 readily slip over the intermediate teeth. The resiliency of the parts readily maintains the projections 10 in engagement with the notches 15. In Fig. 3 the parts are shown in that position of adjustment in which the arch occupies the lowest position. When the cam 14 is turned from the position shown in Fig. 3 to that shown in Fig. 1 the parts 5 and 6 move toward each other with the effect of raising the height of the arch, the engagement of the projection 10 with the serrations on the member 14 being sufficient to hold the parts in adjusted position. When the cam 14 is rotated from the position shown in Fig. 3 to that shown in Fig. 1 the shaft 13 traverses the slots 11 and 12 as the flanges 8 and 9 move away from each other.

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

1. An arch support comprising an arched supporting member, and a reinforcing member therefor, said reinforcing member comprising two parts each secured to the supporting member and a rotatable member for moving said parts relatively to each other.
2. An arch support comprising an arched supporting member, and a reinforcing member therefor said reinforcing member comprising two parts each secured to the supporting member and overlapping each other at their free ends and pivoted means en-

gaging said overlapping portions and adapted to move said parts relatively to each other.

3. An arch support comprising an arched supporting member, and a reinforcing member therefor said reinforcing member comprising two parts having overlapping portions, provided with opposed flanges, and a cam between said flanges adapted to be rotated to adjust said parts relatively to each other.

4. An arch support comprising an arched supporting member, and a reinforcing member therefor, said reinforcing member comprising two parts having overlapping portions provided with toothed projections and rotatable means cooperating with said projections and adapted to adjust said parts relatively to each other.

5. An arch support comprising an arched supporting member, and a reinforcing member therefor, said reinforcing member comprising two parts, having overlapping portions provided with opposed flanges, a cam rotatable between said flanges, and interlocking means between said cam and flanges.

6. An arch support comprising an arched supporting member, and a reinforcing member therefor, said reinforcing member comprising two parts having slotted overlapping portions and opposed flanges, and a cam between said flanges mounted on a pivot projecting into said slots.

7. An arch support comprising an arched supporting member, and a reinforcing member therefor, said reinforcing member comprising two parts, having slotted overlapping portions and opposed flanges, a cam between said flanges mounted on a pivot projecting into said slots, and means adapted to be engaged by a tool for rotating said cam for moving said parts relatively to each other.

CHARLES RITZ.