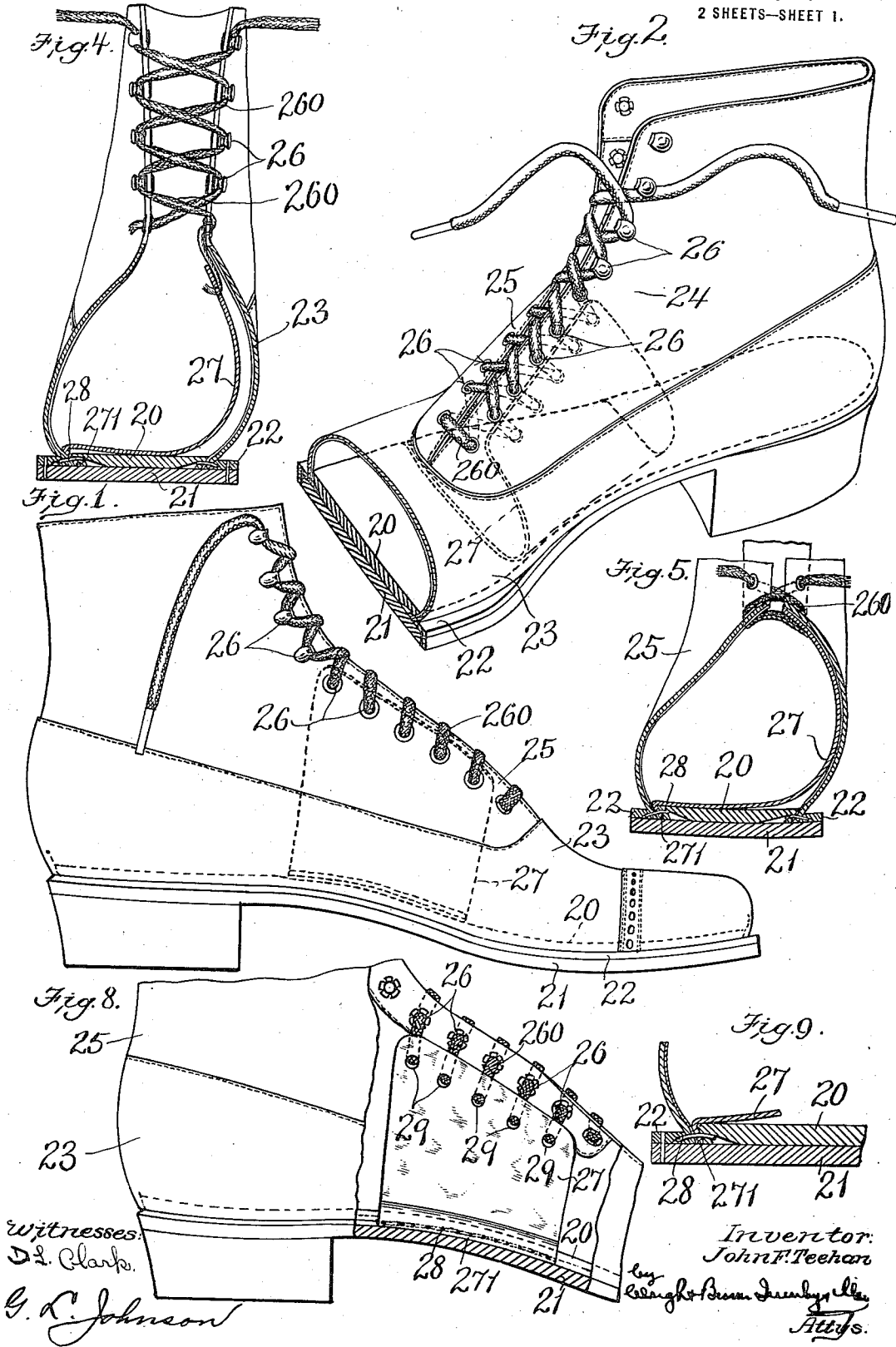


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ARCH SUPPORTING SHOE.  
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1,137,807.

Patented May 4, 1915.

2 SHEETS—SHEET 1.



Witnesses:  
D. L. Clark.  
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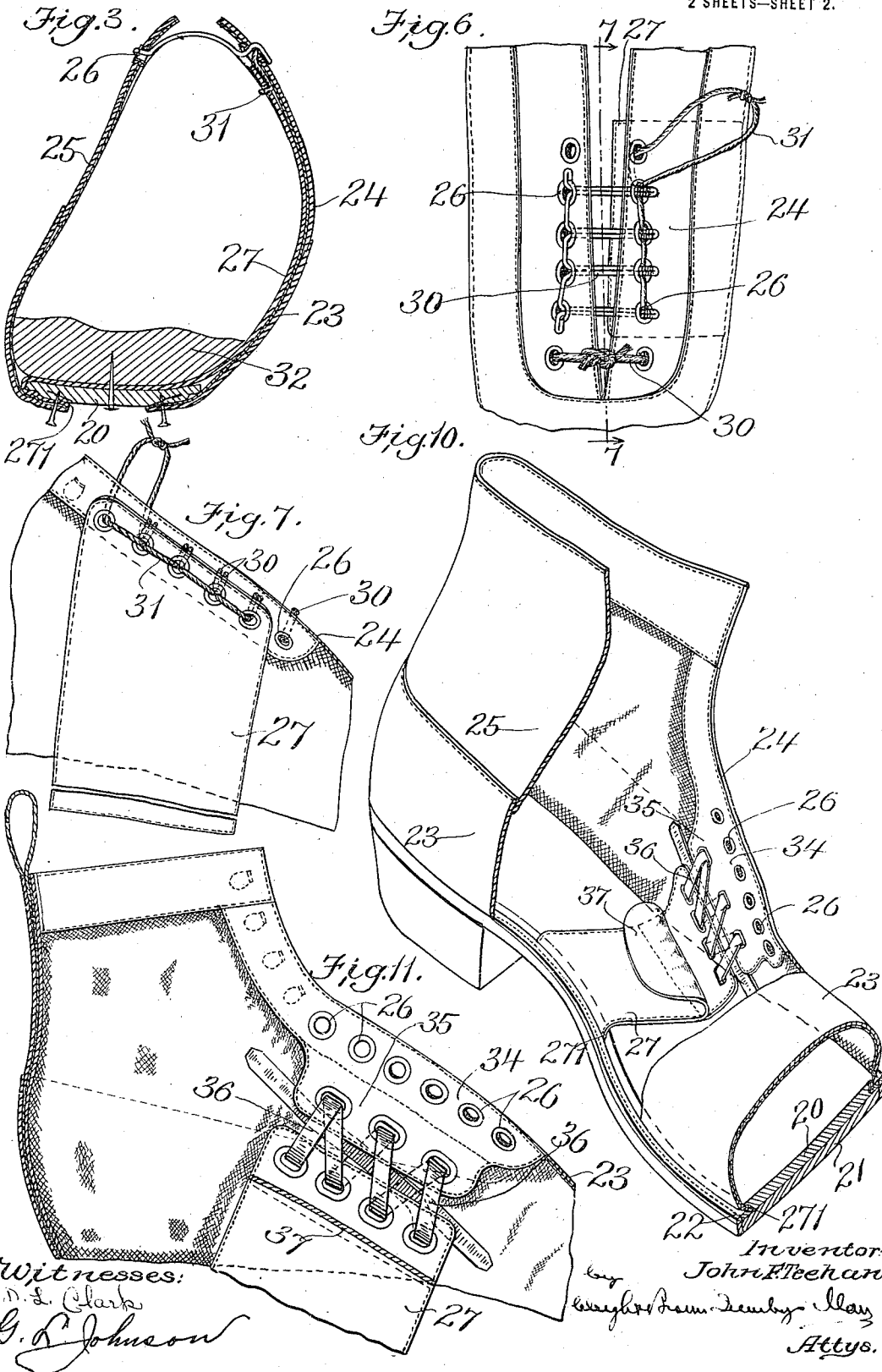
Inventor:  
John F. Teehan  
by *George F. Teehan, Jr.*  
Attys.

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John F. Teehan  
by  
Wright & Son, Dumbys & May  
Attys.

# UNITED STATES PATENT OFFICE.

JOHN F. TEEHAN, OF BROCKTON, MASSACHUSETTS.

## ARCH-SUPPORTING SHOE.

1,137,807.

Specification of Letters Patent.

Patented May 4, 1915.

Application filed October 24, 1912. Serial No. 727,584.

*To all whom it may concern:*

Be it known that I, JOHN F. TEEHAN, a citizen of the United States, and resident of Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Arch-Supporting Shoes, of which the following is a specification.

This invention has relation to arch supports, for preventing or relieving "flat foot." Where there is a tendency of the arch to break or flatten, it may frequently be avoided by rocking the foot slightly outward so that the weight is shifted to the outer side of the sole. To accomplish this result, numerous supports such as metallic plates and springs to be worn within the shoe have been on the market, but ordinarily they have proved to be uncomfortable to the wearer, and in some cases have caused much pain, since they provide a relatively hard abutment on which the inner portion of the sole under the arch rests.

In considering the problem of how to cause the outward rocking of the foot and to support the arch without any discomfort, it seemed to me that this should be accomplished without the employment of metallic plates or springs, that the element used for the purpose should form a component part of the shoe itself, and that such element should be capable of adjustment by the wearer to suit his particular needs. With these considerations in mind, I have produced a shoe having an arch-supporting element which is flexible and non-metallic, which will effectively support the arch and rock the foot outward, and which is adjustable to suit any wearer or the condition of his foot. The element consists of a band or strap of flexible material such as canvas or other textile fabric, leather, or even relatively strong elastic webbing. It is affixed at one end to the sole at the juncture of the upper with the outer side thereof, and, after extending transversely across the inner sole below the arch at the shank above the insole, is attached to the upper at a point considerably above the insole. Then when the shoe is laced or buttoned, the strap is placed under sufficient tension to rock the foot outward and support the sole at the inside. The free end of the strap may be secured in any one of a variety of ways as will be readily appreciated. For instance, it may be secured to a flap formed or secured to the

stay on the inside of the quarter, or else it may be engaged with the laces which draw the edges of the quarters together over the foot.

On the accompanying drawings,—Figure 1 represents in side elevation a shoe embodying the invention. Fig. 2 is a perspective view of the same. Fig. 3 (Sheet 2) represents a transverse section through the shoe after it has been located preparatory to the welting operation. Fig. 4 (Sheet 1) represents a similar section through the shoe after it has been welted and the lace has been inserted. Fig. 5 represents a similar section of the shoe after the lace has been drawn taut. Fig. 6 (Sheet 2) shows in plan view a portion of the vamp, with the free end of the arch support temporarily secured in the upper prior to the lasting operation. Fig. 7 represents a section on the line 7—7, Fig. 6. Fig. 8 represents a partial vertical longitudinal section through the shoe when it is ready for wear. Fig. 9 (Sheet 1) illustrates, by a transverse section, one way of securing the fixed end of the support. Fig. 10 is a perspective view and Fig. 11 represents a vertical section of a shoe containing another form of the invention.

It will be understood that the invention may be embodied in shoes of all kinds, though for the purposes of illustration I have shown it as embodied in a lace shoe, the particular construction of the shoe *per se* or the method of making it being of no importance. The shoe illustrated, however, is of the Goodyear welt type and comprises the innersole 20, the outsole 21, the welt 22, the vamp 23 and the quarters 24, 25, the latter having the usual eyelets and hooks 26. The arch support is indicated at 27, and it consists of one or more thicknesses of any suitable material such as canvas or other textile fabric, leather, elastic webbing or the like. It may be formed, if desired, of sole leather molded into shape, but, for general purposes, I prefer some soft flexible material such as two layers of thin upper leather stitched together at their edges so that it will conform to the shape of the foot. If desired, a layer of some cushioning material, such as felt, may be interposed between the outer layers, but this need be used only in exceptional cases. One end of the support is permanently affixed to the shoe on or near the outer edge of the innersole at the shank by suitable fastenings. In Goodyear

welt shoes, in the lasting operation, one end of the support may be inserted between the edge of the vamp and the innersole, as shown in Fig. 3, so that, when the shoe is subsequently welted, the stitches will pass through the end of the support which becomes a part of the "between substance" so-called. In Fig. 9, the end of the support 27, is indicated at 271, and the stitches are indicated at 28. The free end of the support is provided with a series of holes 29 (see Fig. 8) which are utilized in connecting the free end of the support to one or both quarters of the shoe. Eyelets may be inserted in the apertures if desired and the apertures correspond approximately in their spacing to the eyelets in the quarters.

In first assembling the upper, after a lacer 30 has been inserted to connect the adjacent edges of the quarters, a cord or tape 31 may be passed through the eyelets of the inner quarter 24 temporarily to secure the support to the upper and to hold it in place during the subsequent operations. The support is of such length that, when the last 32 is in the shoe as shown in Fig. 3, the line of apertures 29 in the end of the support is spaced laterally some little distance from and below the line of eyelets in the inner quarter. Then, when the shoe has been completed, the lace 260 is threaded through the eyelets in the usual way and is also threaded through the apertures 29 in the support as shown in Figs. 2 and 4, so that the free end of the support will be thus connected by the lace with both quarters of the upper. The strap forms a support for the arch of the foot, which support is attached at one end to the shank of the sole of the shoe near the outer edge thereof and the other end of which is attached to the upper at or near the front edges of the quarter. The arch of the foot is thus lifted and supported and the foot is caused to be rocked slightly outward. By tightening the lace, the effective length of the support may be varied and the band drawn as taut as desired according to the condition of the foot of the wearer.

I have not illustrated the shoe as having a tongue but it will be understood that the shoe may be provided with the usual tongue which will of course lie below the free end of the support and the lace, and protect the foot of the wearer. Instead of securing the free end of the support to the upper by the usual lace, it may be attached to the upper in a variety of ways. For instance, it may be secured to a flap 35 on the stay 34, as shown in Figs. 10 and 11. In this case, the flap 35 will be provided with eyelets, and a separate lace 36 may be employed to connect the free end of the support with the flap. In this case, the support preferably will be provided with a tongue 37 to cover the lace and the eyelets.

The width of the support may be varied as desired, but it should be wide enough so as to afford no discomfort to the wearer. The length of the support also may be increased so that it may be drawn entirely across the instep of the foot at the top, in which case it will be laced or otherwise secured to the outside quarter of the shoe.

From the foregoing description, it will be seen that the support extends transversely across the sole of the shoe at the shank, that one end is fixed to or near the outer edge of the insole, and that the other end is adjustably connected to the upper above the sole so that it may be raised or lowered to rock the foot outward more or less as may be needed, or to afford the desired support to the inside of the sole of the foot below the instep.

In employing the term "shoe", I mean to include boots as well.

Having thus explained the nature of my said invention and described a way of making and using the same, although without attempting to set forth all of the forms in which it may be made, or all of the modes of its use, what I claim is:

1. A shoe having an arch support extending across and above the shank within the shoe and having its ends attached to the innersole and the upper respectively.
2. A shoe having as a component part thereof a flexible band located therein and extending transversely across and above the shank of the innersole to form an arch support, and means for attaching the opposite ends of the band to the shoe and arranged to elevate the body of the band above the inner side of the shank of the innersole.
3. A shoe having as a component part thereof a flexible band located within the shoe and extending across and above the innersole, means for attaching one end of the band at the junction of the innersole and the upper, and adjustable means for attaching the other end of the band to the upper and arranged to elevate the body of the band from the inner side of the shank of the innersole.
4. A shoe having an arch support permanently secured therein at the junction of the innersole and the upper at one side thereof and crossing the upper face of the innersole therefrom to a point above and relatively remote from the inner edge of the innersole, and means for securing the free end of the support to the upper to raise said support from the face of the innersole.
5. A shoe having an arch support permanently secured therein at its inner end and crossing the upper face of the innersole from a point adjacent the outer edge of the innersole to a point above and relatively remote from the inner edge of the innersole, and means connected with the shoe for varying

the effective length of said arch support transversely of the innersole.

6. A shoe having in its interior a flexible band located within and attached at its opposite ends to the interior of shoe with its middle portion crossing the upper face of the innersole one of said ends being higher than the other to raise the band above the inner edge of the innersole to constitute a support for the arch of the foot.

7. A shoe having in its interior an arch support extending across and above the shank of the insole so as to pass under the arch of the foot, and permanently attached at one end adjacent the outer edge of the insole, said arch support having its other end adjustably connected to the upper at a point remote from the innersole to lift the arch support from the inner edge of the insole.

8. A shoe having an arch support extend-

ing across and above the shank of the insole, and attached to the shoe at one end adjacent the outer edge of the insole, and a lace connecting the other end of the arch support to the upper, said support being unattached to the inner edge of the innersole so that it may be elevated thereabove.

9. A shoe having a band or strap extending across the innersole, one end of said band or strap being secured between the outer edge of the innersole and the upper, and means for adjustably attaching the other end of said band or strap to the inner quarter of the upper.

In testimony whereof I have affixed my signature, in presence of two witnesses.

JOHN F. TEEHAN.

Witnesses:

MARCUS B. MAY,  
PETER W. PEZZETTI.