No. 881,343. PATENTED MAR. 10, 1908.

B. RUHMANN.

ARCH SUPPORTER FOR FLAT FEET.

APPLICATION FILED APR. 10, 1907.

2 SHEETS—SHEET 1.

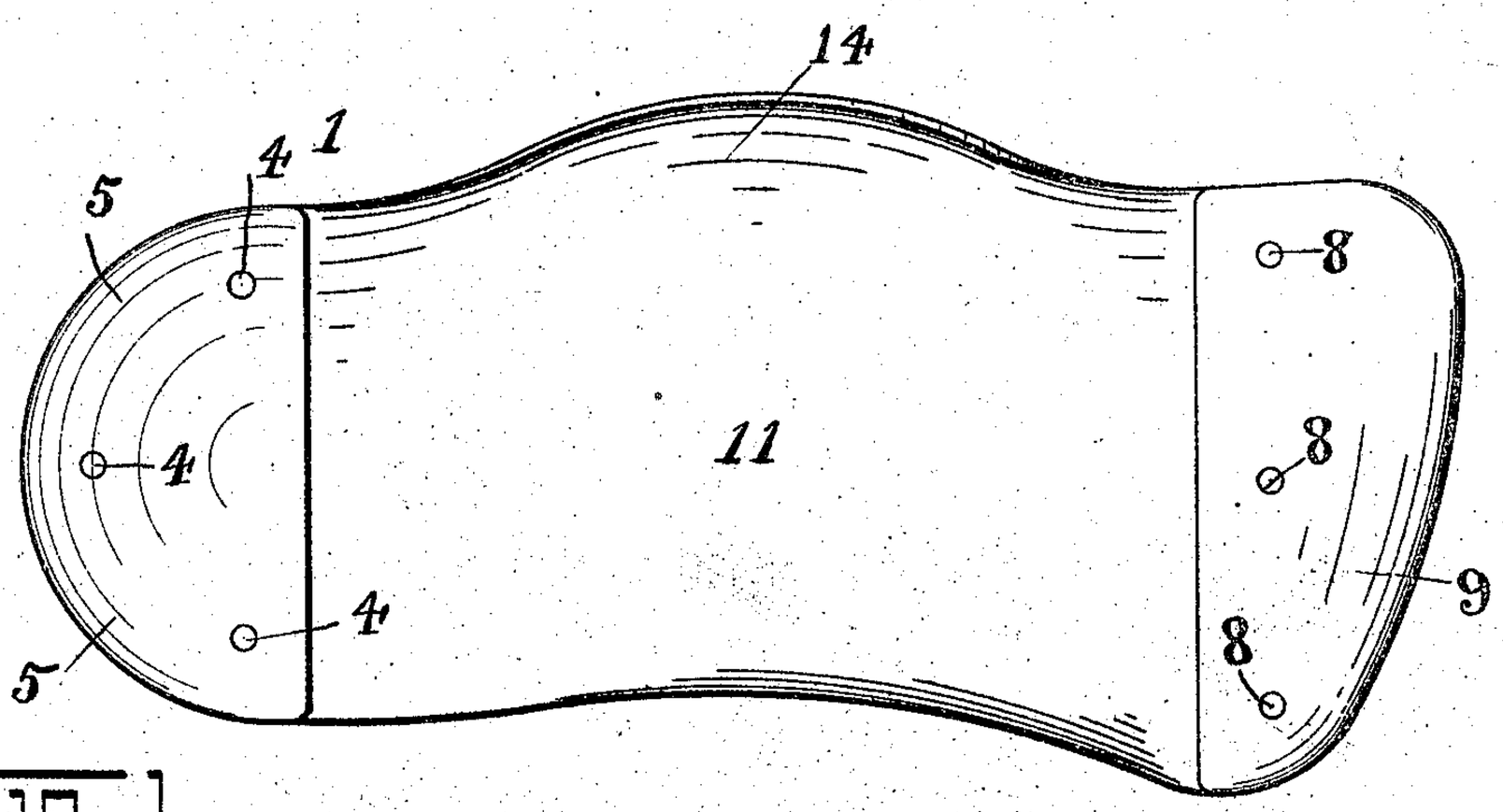

Fig. 1

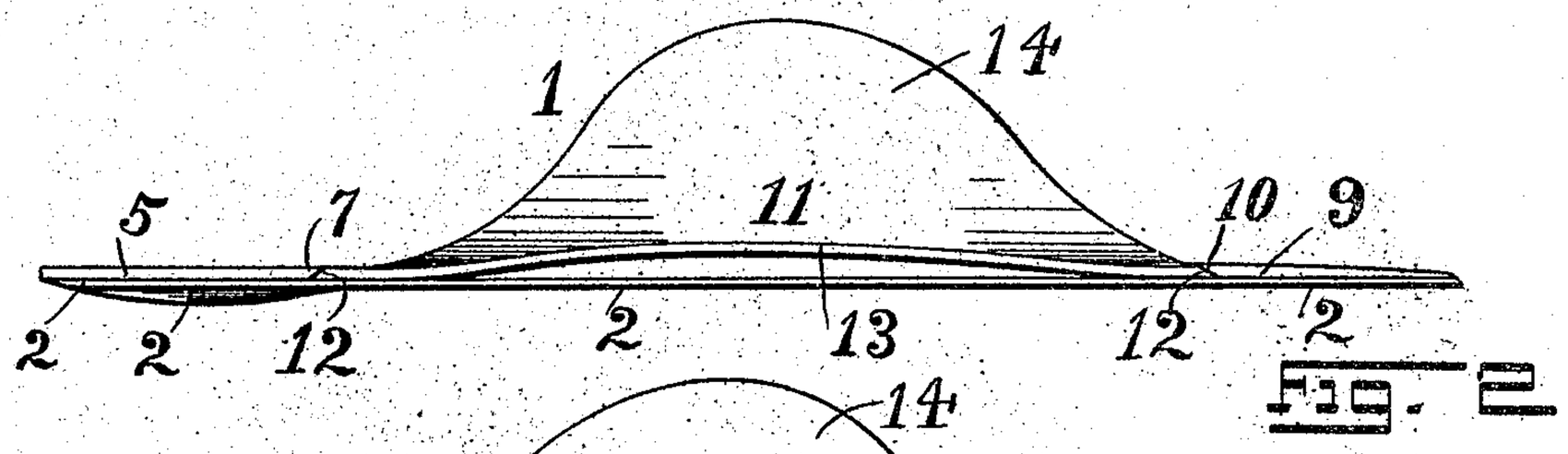

Fig. 2

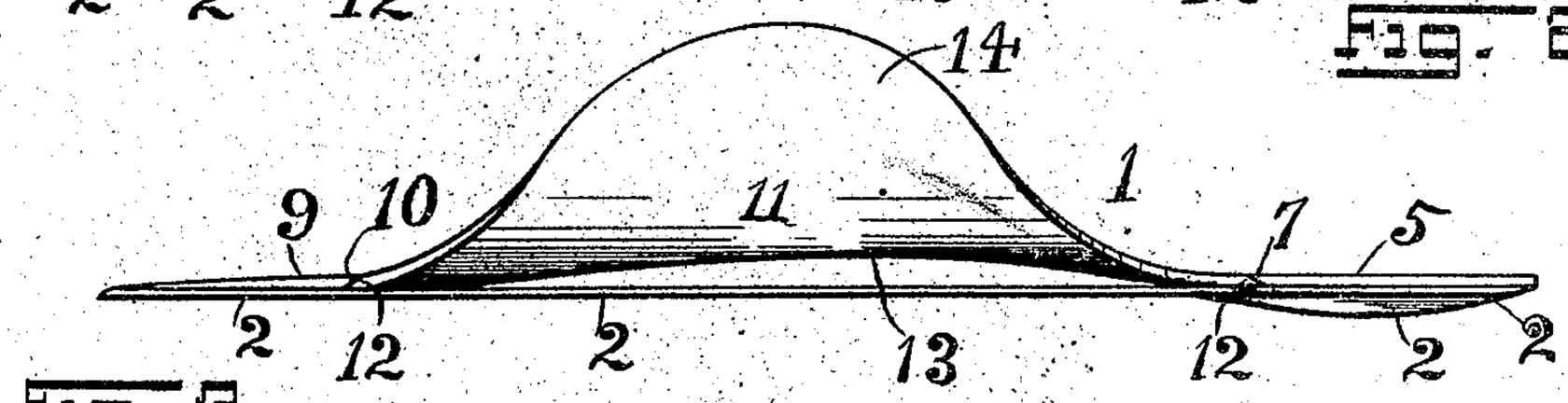

Fig. 3

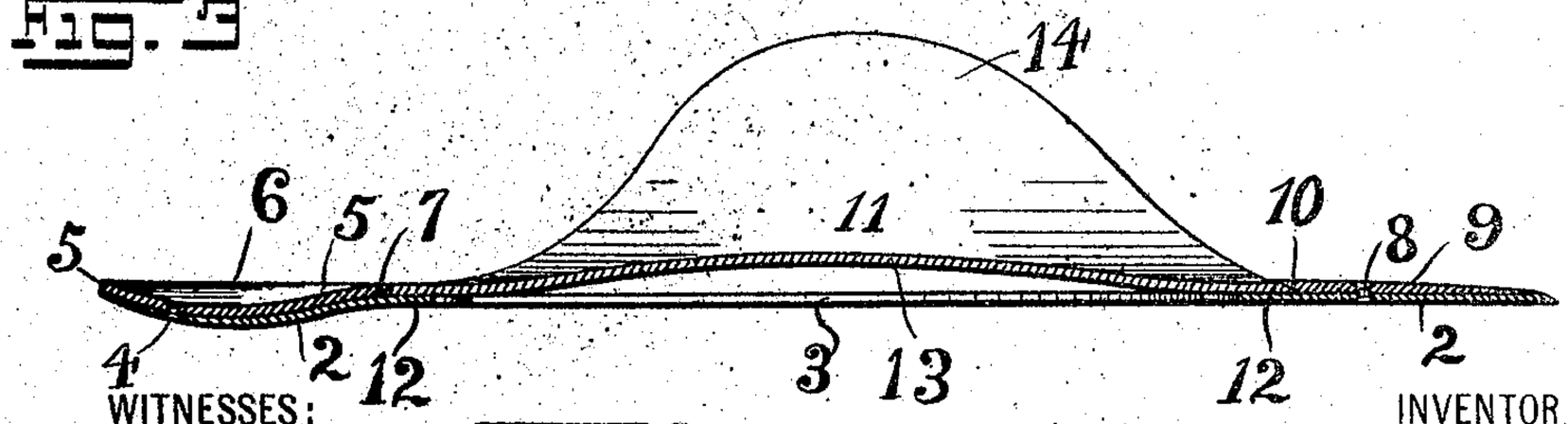

Fig. 4

WITNESSES:

F. H. W. Fraentzel

Frederick Jamison

INVENTOR

Benjamin Ruhmann,

BY

Fraentzel and Richards,

ATTORNEYS

No. 881,343. PATENTED MAR. 10, 1908.

B. RUHMANN.

ARCH SUPPORTER FOR FLAT FEET.

APPLICATION FILED APR. 10, 1907.

2 SHEETS—SHEET 2.

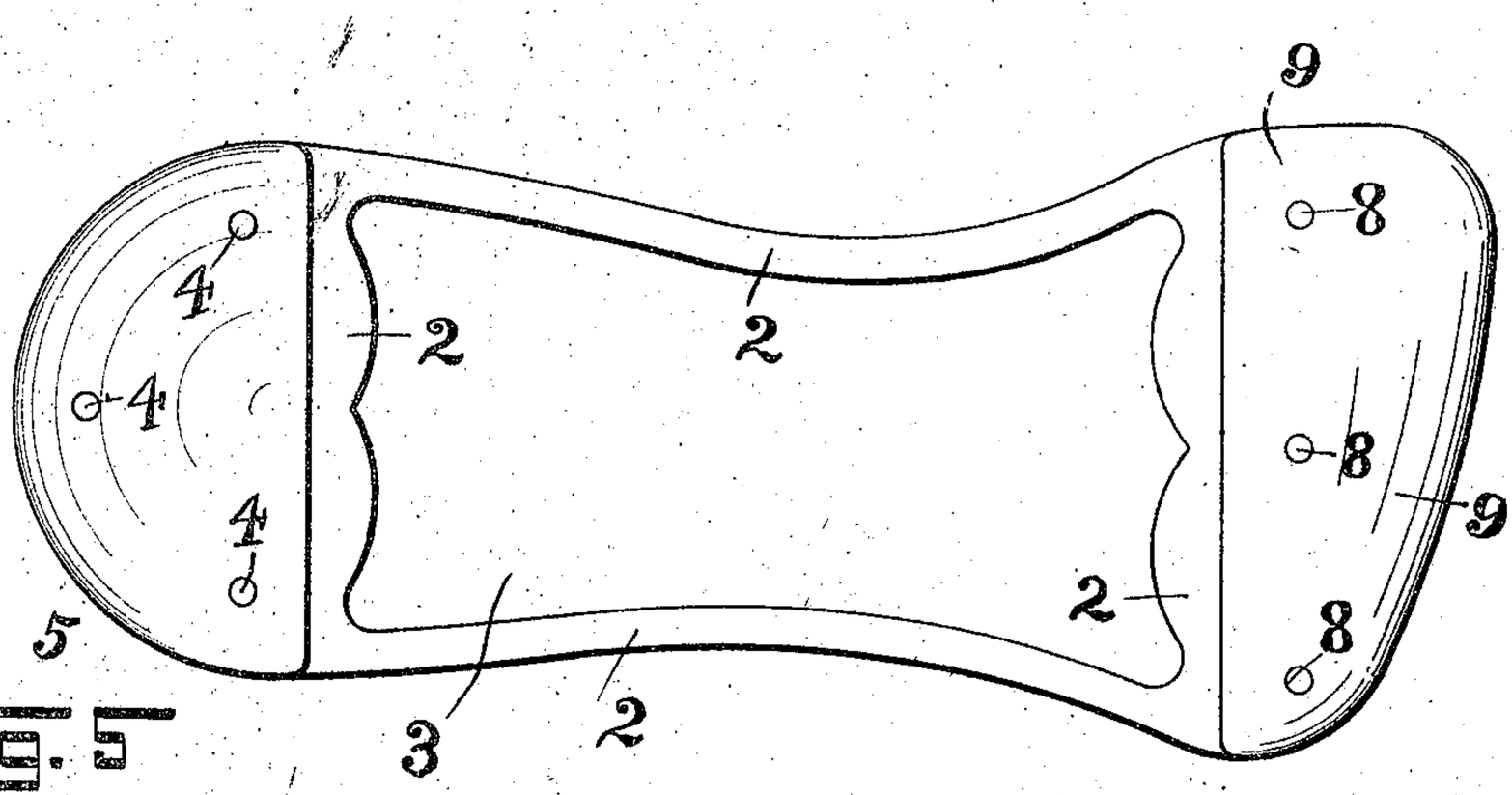

FIG. 5

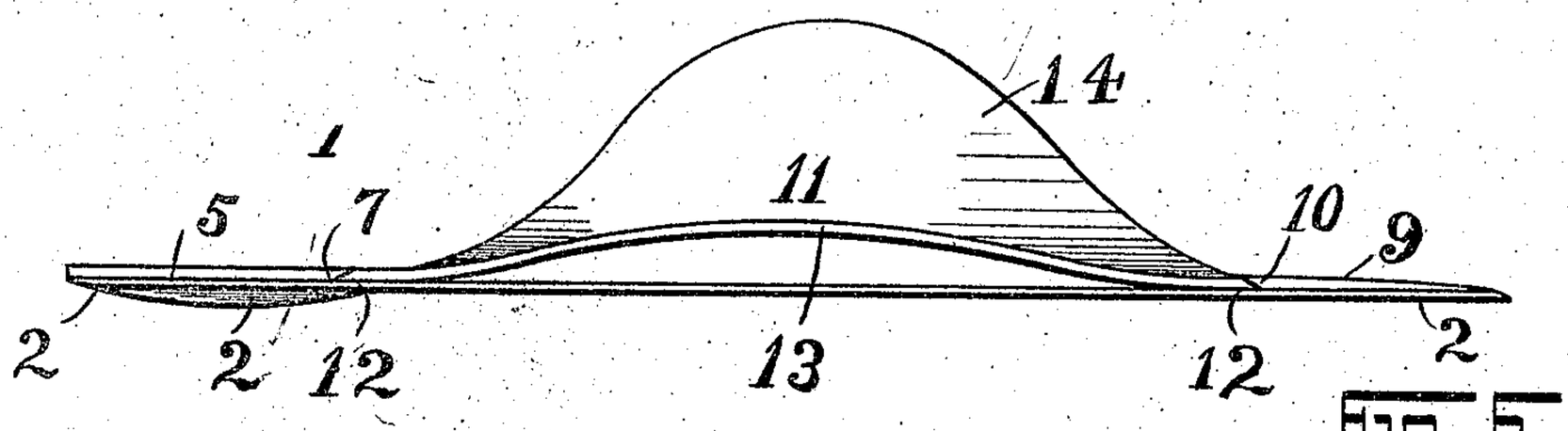

FIG. 6

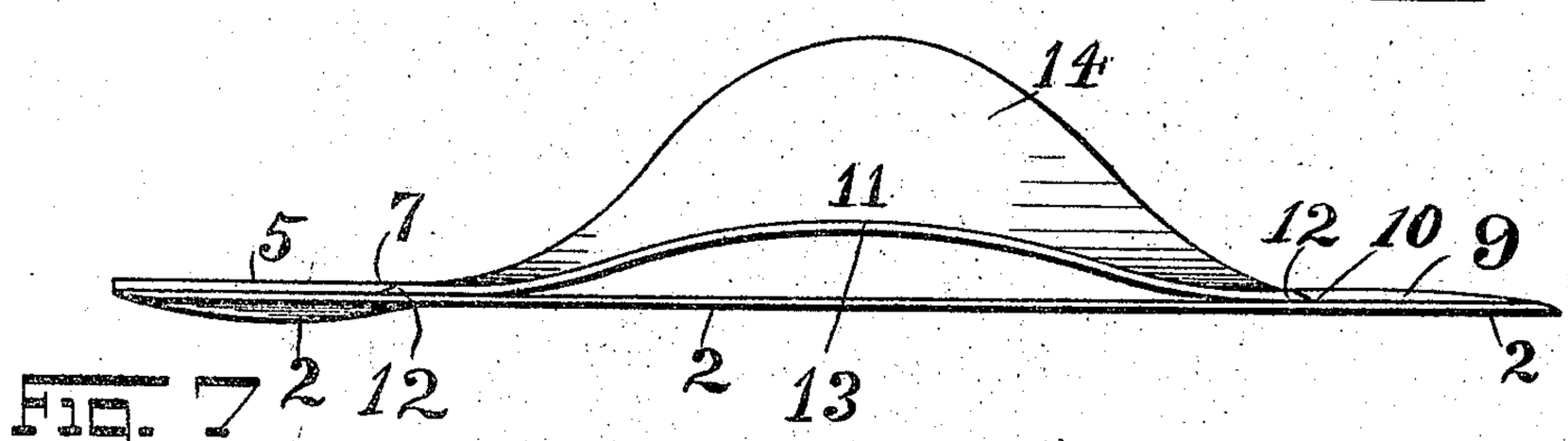

FIG. 7

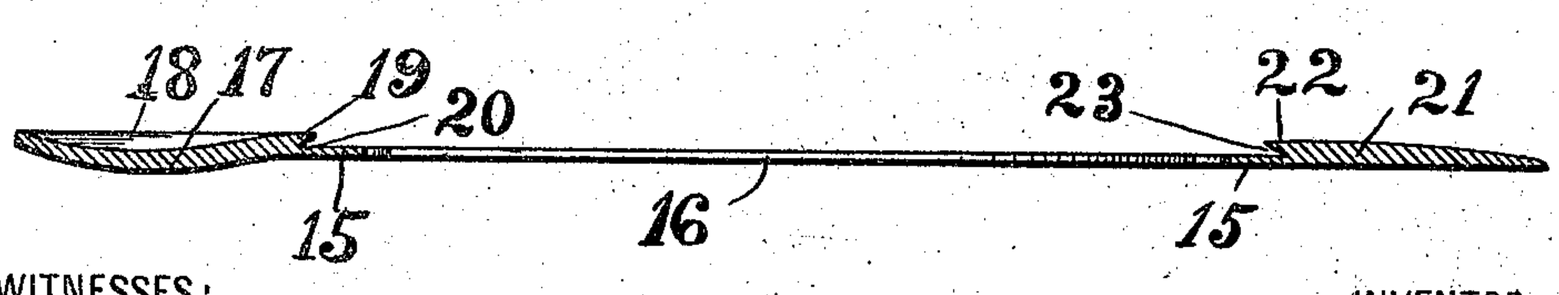

FIG. 8

WITNESSES:

F. H. W. Graentzel

Frederick Jamison

INVENTOR

Benjamin Ruhmann,

BY

Graentzel and Richards.

ATTORNEYS

UNITED STATES PATENT OFFICE.

BENJAMIN RUHMANN, OF JERSEY CITY, NEW JERSEY.

ARCH-SUPPORTER FOR FLAT FEET.

No. 881,343. Specification of Letters Patent. Patented March 10, 1908.

Application filed April 10, 1907. Serial No. 367,307.

To all whom it may concern:

Be it known that I, BENJAMIN RUHMANN, citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new an useful Improvements in Arch-Supporters for Flat Feet; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The present invention has reference, generally, to improvements in that class of devices known in the art and to the trade as "arch-supporters"; and the present invention relates, more particularly, to a novel form and construction of arch-supporter which is designed to be worn upon the inside of a boot or shoe of a person suffering with the disease of the foot known as flat-foot.

This invention has for its principal objects to provide a novel and simply constructed arch-supporter which is especially designed for the purpose of gradually building up the broken-down condition of "flat-feet," without pain or perceptible discomfort to the patient or user of the device, and thereby causing such "flat-feet" to assume their natural arch shape or natural condition; and, furthermore, this invention provides a novel arch-supporter in which the supporting arch-member is interchangeable, whereby the height of the said supporting-arch may be gradually increased, until the foot is returned to its normal shape.

A further object of the present invention is to provide a simple, strong endurable, as well as an adjustable arch-supporters, for the purposes hereinabove stated.

The invention consists, primarily, in the novel arch-support for flat-feet, hereinafter more fully set forth; and the invention consists, furthermore, in the various arrangements and combinations of the parts comprising the device, as well as in the details of the construction of the same, all of which will be hereinafter more fully set forth, and then finally embodied in the clauses of the claims which are appended to and which form an essential part of this specification.

The said invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is plan view of a complete arch-supporter embodying the principles of the present invention; and Figs. 2 and 3 are the respective opposite side edge-views of the device. Fig. 4 is a longitudinal vertical section of the arch-supporter. Fig. 5 is a plan view of the holder or base of the arch-supporting-member or element, said arch-supporting-member being removed therefrom. Figs. 6 and 7 are, respectively, side-edge-views of the arch-supporter, illustrating a holder or base equipped with the interchangeable arch-supporting-members of different heights. Fig. 8 is a longitudinal vertical section of a slightly modified construction of holder or base for the said arch-supporting-members.

Similar characters of reference are employed in all of the above described views, to indicate corresponding parts.

Referring now to the several figures of the drawings, the reference-character 1 indicates the complete arch-supporter, ready to be inserted in the boot or shoe of the wearer, the same comprising a base-plate 2, which is preferably provided with a centrally disposed cut-away portion or opening 3 adapted to lighten or reduce the weight of the said base-plate, the said base-plate being preferably constructed of metal, and furthermore being adapted to conform in its outside periphery or marginal configuration to the outline of the bottom of the foot. Secured upon the base-plate 2, by means of rivets 4, or in any other suitable manner, is a heel-plate, being made of a slightly concave or depressed conformation so as to provide a depression 6 in the said heel-plate 5, whereby a more comfortable and secure seat for the heel of the wearer is provided. The inner edge-plate of the heel-plate 5 is provided with a downwardly or inwardly chamfered portion 7, and adapted to form a groove between said heel-plate 5 and said base-plate 2. Secured to the forward part of the base-plate, by means of rivets 8, or in any other suitable manner, is a ball-plate 9, upon which will rest the ball of the foot of the wearer, the said ball-plate 9

being formed with a slight taper or incline toward the forward edge, so as to provide a comfortable connection of the same with the sole of the shoe. The inner edge of said ball-plate 9 is also provided with a downwardly and inwardly chamfered portion 10, which provides a groove between said ball-plate 9 and said base-plate 2, said groove being situated directly opposite the groove formed by the chamfered edge 7 of the heel-plate 5 and base-plate 2, substantially as illustrated.

Adapted to be slidably and removably arranged in the grooves formed upon the base-plate 2, in the manner hereinabove described, are arch-supporting members 11, the opposite end edges of said interchangeable arch-supporting members being provided with chamfered portions 12 adapted to coincide with the chamfered portions 7 and 10 of the heel-plate 5 and ball-plate 9, respectively, and which form in connection with the base-plate 2 the above mentioned grooves. The said arch-supporting members 11 are provided with upwardly curved or bowed portions 13 of different degrees of height, said portions 13 being adapted to support and gradually raise or lift the arch of the foot of the wearer, in the manner to be presently more fully described. Each arch-supporting member is furthermore provided with an upwardly extending side-supporting plate 14, said side-supporting plate being adapted to be curved or shaped in such a manner, that it will conform to the general shape of the foot of the wearer.

Referring now more particularly to Fig. 8 of the drawings, there is illustrated therein, a slightly modified construction of base-plate, designed to be made of cast metal. In this construction, the base-plate 15 is also provided with a cutaway portion or opening 16 for lightening the weight; and, furthermore, the heel-portion 17 is cast slightly thicker and formed with the depression 18 and an inwardly projecting edge 19 which forms a groove 20. In the same manner, the ball-portion 21 is slightly thicker and tapers or declines toward the forward edge, and an inwardly projecting edge 22 is provided which forms a groove 23.

From the above description of the device and an inspection of the several figures of the drawings, it will be clearly evident, that the present invention provides a comfortable and very complete and efficient arch-supporter for those suffering with flat-feet. The feature, whereby interchangeable arch-supporting members of different heights may be operatively connected or secured to the holder or base-plate, is a very desirable one, since it permits the wearer or user of the arch-supporter to gradually accustom himself to the support, by first using a low arch-supporting member. As soon as the patient becomes accustomed thereto, the arch-supporting member 11 is readily removed and replaced with a higher arch-supporting member, which in time is also removed, and replaced with a still higher member 11, without pain or discomfort to the patient, the flat foot being finally built up to its natural and normal condition.

I claim:

1. In an arch-supporter, the combination, of a base-plate, a concave heel-plate connected therewith, a chamfered portion upon the inner edge of said heel-plate adapted to form in connection with the base-plate a groove, a ball-plate connected with the forward part of said base-plate, a chamfered portion upon the inner edge of said ball-plate adapted to form in connection with the base-plate a groove, and an arch-supporting member adapted to be slidably and removably arranged in the said grooves formed in the base plate, substantially as and for the purposes set forth.

2. In an arch-supporter, the combination, of a base-plate, a concave heel-plate connected therewith, a chamfered portion upon the inner edge of said heel-plate adapted to form in connection with the base-plate a groove, a ball-plate connected with the forward part of said base-plate, a chamfered portion upon the inner edge of said ball-plate adapted to form in connection with the base-plate a groove, and an arch-supporting member adapted to be slidably and removably arranged in the said grooves formed in the base-plate, said arch-supporting member comprising an upwardly bowed portion, chamfered portions on each of the end edges of the said upwardly bowed portion, adapted to coincide with the chamfered portions of the said heel-plate and the said ball-plate, and an upwardly extending side-supporting plate adapted to conform generally to the shape of a foot and embrace a part of the side of a foot, substantially as and for the purposes set forth.

3. In an arch-supporter the combination, of a base-plate provided with a heel-plate and a ball-plate, said heel-plate and said ball-plate being provided with chamfered inner edges adapted to form in connection with said base-plate a pair of oppositely situated grooves, and an arch-supporting member slidably and removably arranged in said grooves, substantially as and for the purposes set forth.

4. In an arch-supporter the combination, of a base-plate provided with a heel-plate and a ball-plate, said heel-plate and said ball-plate being provided with chamfered inner edges adapted to form in connection with said base-plate a pair of oppositely situated grooves, and an arch-supporting member slidably and removably arranged in said

grooves, said arch-supporting member comprising an upwardly bowed portion, and an upwardly extending side-supporting plate adapted to conform generally to the shape of a foot and embrace a part of the side of said foot, substantially as and for the purposes set forth.

In testimony, that I claim the invention set forth above I have hereunto set my hand this eighth day of April, 1907.

BENJAMIN RUHMANN.

Witnesses:

FREDK. C. FRAENTZEL,

ANNA H. ALTER.