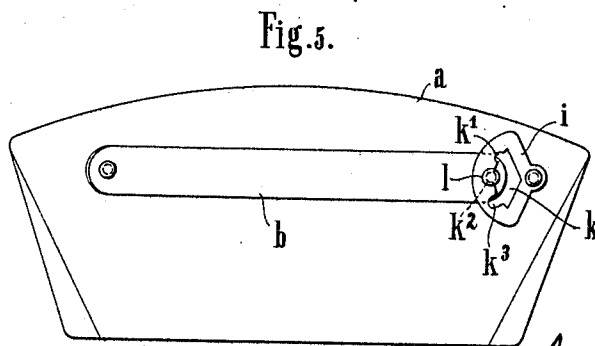
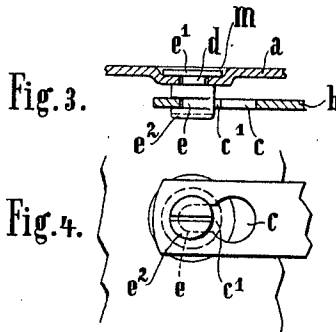
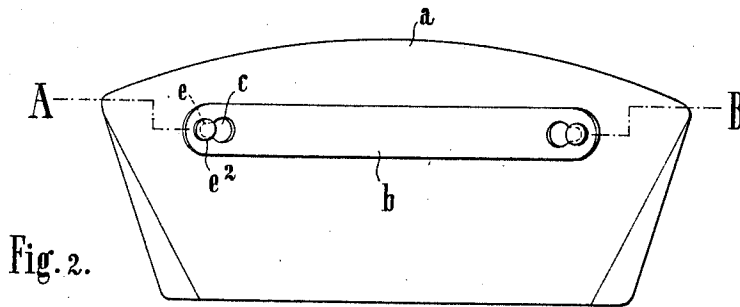
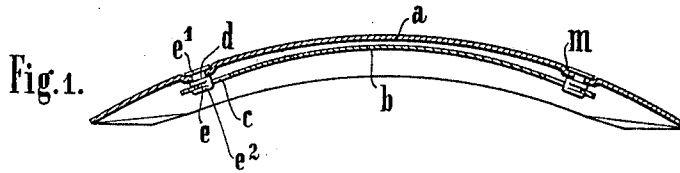


J. MAY.
 ADJUSTABLE ELASTIC SUPPORT FOR CONCAVE AND FLAT FEET.
 APPLICATION FILED AUG. 28, 1909.

989,171.

Patented Apr. 11, 1911.



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UNITED STATES PATENT OFFICE.

JOSEPH MAY, OF FRANKFORT-ON-THE-MAIN, GERMANY.

ADJUSTABLE ELASTIC SUPPORT FOR CONCAVE AND FLAT FEET.

989,171.

Specification of Letters Patent. Patented Apr. 11, 1911.

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To all whom it may concern:

Be it known that I, JOSEPH MAY, a subject of the King of Prussia, and residing at No. 39 Dannecker street, Frankfort-on-the-
5 Main, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Adjustable Elastic Supports for Concave and Flat Feet.

The subject-matter of my invention is an
10 adjustable, elastic support for concave and flat feet.

It comprises a principal supporting spring and a one or more part draw band arranged under the same for limiting the deflection, said band being provided with a tensioning
15 device for adjusting the height of the arch of the supporting spring. This tensioning device can be fixed to or arranged detachably on the principal spring at one or both places
20 of connection of the draw band. The attaching means provided at these places may be formed simultaneously as tensioning means also. When a divided draw band is used the connecting means between its free,
25 separated ends is formed as tensioning device and the two draw band portions can be attached permanently or detachably to the limbs of the principal spring. In order
30 to transmit their tensioning action to the entire breadth of the principal spring the parts of the draw band can be suitably broadened toward their places of attachment.

In order to allow the attachment means
35 for the tensioning devices or the attachment pins not to project beyond the surface of the principal spring this can be provided at the places in question with impressed recesses for receiving the rivet or screw heads, plates,
40 nuts or the like serving for the attachment of said devices.

The accompanying drawings represent some embodiments of my invention together
45 with appertaining details by way of example.

In said drawings: Figure 1 is a longitudinal section on the bent line A—B in Fig. 2, and Fig. 2 is a bottom plan view of an adjustable elastic support having a one-
50 part detachable draw band and attachment pins formed as revoluble and adjustable eccentric members attached in the recesses in the principal spring; Fig. 3 is a longitudinal section on an enlarged scale through the left-hand place of attachment of the pin and
55 draw band, and Fig. 4 a bottom plan view

of the latter, whereas Fig. 5 is a bottom plan view of an adjustable elastic support having a one-part draw band fixed at one end to one limb of the principal spring, the other
60 end being hung in a rotary slide having slots of different lengths arranged on the other limb of the principal spring.

Referring to the drawings, *a* designates the principal or supporting spring of suitable
65 material, *b* the draw band. The draw band *b* has at its outer ends holes or perforations *c* such as are usual for bayonet joints, namely a wider aperture for admitting the pin head or turning the eccentric
70 and connected therewith the narrower slot *c'* corresponding to the size of the pin. The attachment pins *d* according to the illustrative embodiment in Figs. 1 to 4 are attached
75 revolubly around their central axes in the principal spring *a* and their central portions surrounded by the ends of the draw band *b* are formed as eccentrics *e*. Parallel to the direction of the band the eccentrics are
80 somewhat flattened and adapted to the breadth of the slots *c'*. After the band has been hooked over the pin having its eccentric *e* in the direction of the slot *c'* the
85 flattened portion of the eccentric enters into this slot and prevents the eccentric being unintentionally pushed or turned into another position while the elastic support is in use.

In the position of the eccentric *e* illustrated in Fig. 1 the principal spring *a* has
90 the smallest amount of curvature. If this is to be increased, by pressing together the ends of the spring *a* one eccentric *e* is brought into the corresponding circular enlargement of the aperture *c*, is rotated 180° and
95 by releasing the ends of the spring is allowed to enter into the corresponding slot *c'* of the draw band. The edge of the eccentric which was originally directed outwardly now abuts against the draw band
100 and the spring *a* is curved more than previously since the actual distance of the edge of the eccentric from its center has now become greater but the length of the draw band has remained unchanged. A further in-
105 crease in the curvature of the spring *a* is obtained by the other eccentric being turned 180° in the same manner.

The stem of the eccentric will preferably be screwed or riveted to, or made out of one
110 piece with its base plate *e'* and placed from above through the principal spring, in which

event, however, the bottom head e^2 must be specially attached.

The larger head e^2 of the eccentric can be made detachable in order to admit of all the operative parts being more readily exchanged. Also in suitable instances eccentrics of unequal eccentricity can be employed.

Instead of the principal spring being adjusted in height or the draw band being tensioned with the aid of eccentrics, tensioning couplings in the form of revoluble movable slides can be employed as represented in Fig. 5.

In Fig. 5 the coupling is shown as a flat, revoluble slide i having an opening k and three slots k^1, k^2, k^3 of different lengths proceeding therefrom which are directed toward the center of the arch of the principal spring. The draw band b has one end attached firmly to one limb of the principal spring a whereas the revoluble slide i is attached to the other limb of the same. In this illustrative embodiment the free end of the band b has fixed to it an attachment pin l which fits into the slots k^1, k^2, k^3 . According as the free end of the band carrying the pin is attached in the one or other of these slots the curvature of the principal spring varies, since the distance between the points of attachment or application of the band is varied by moving the slide, the length of the band remaining constant.

In order that the principal spring a may have on its surface no projecting parts of rivet heads, base plates, nuts or the like which, when the patient uses the support, would disturb and pain him, for receiving the same recesses m are made in the principal spring. These enable the rivet heads, base plates, nuts or the like to be made sufficiently large and strong in order to guarantee the attachment pins which are brought into the principal spring holding securely and permanently, these attachment parts

being able to be individually detachable for the purpose of ready exchangeability.

The herein described elastic support enables even amateurs to adjust readily and to various extents the degrees of curvature of the same as is desired and as is necessary for adaptation to the different degrees of arching of the foot, greatest possible durability being also obtained.

I claim:—

1. In an adjustable, elastic, foot support, the combination, with a spring plate shaped longitudinally to fit the arch of the foot, of eccentric tensioning attachment means mounted movably on said plate, and a draw band having an elongated aperture at each end detachably engaged by the eccentric portions of said attachment means.

2. In an adjustable, elastic, foot support, the combination of a spring plate shaped longitudinally to fit the arch of the foot, said plate having a perforated recess, a headed pin having an eccentric portion arranged in said plate with its head in said recess, with a draw band having an elongated aperture detachably held by the eccentric portion of said pin.

3. In an adjustable, elastic, foot support, the combination with a spring plate shaped longitudinally to fit the arch of the foot of a draw band arranged at the concave wall of said spring plate, a curved tensioning attachment means revoluble on said spring plate and adapted to bear an end of said draw band.

4. In an adjustable, elastic, foot support, an attachment pin having a laterally flattened eccentric portion, a base plate and a head, substantially as shown.

In witness whereof I have hereunto set my hand in presence of two witnesses.

JOSEPH MAY.

Witnesses:

JEAN GRUND,
CARL GRUND.