No. 717,205. Patented Dec. 30, 1902.

F. F. HUSSEY.

FOOT PLATE.

(Application filed Feb. 28, 1901.)

(No Model.)

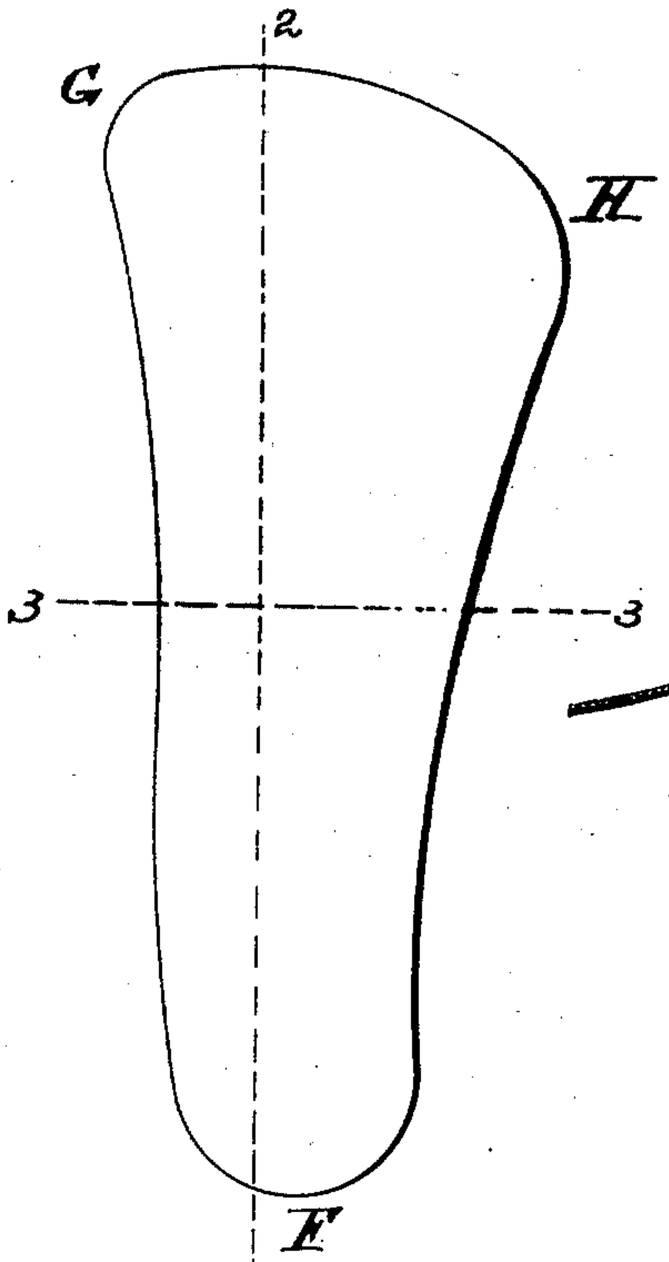

Fig. 1.

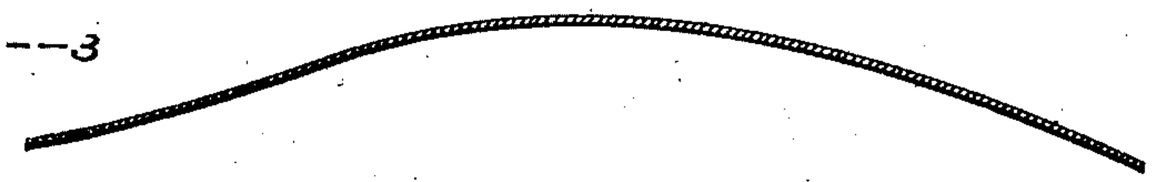

Fig. 2.

Fig. 3.

Fig. 4.

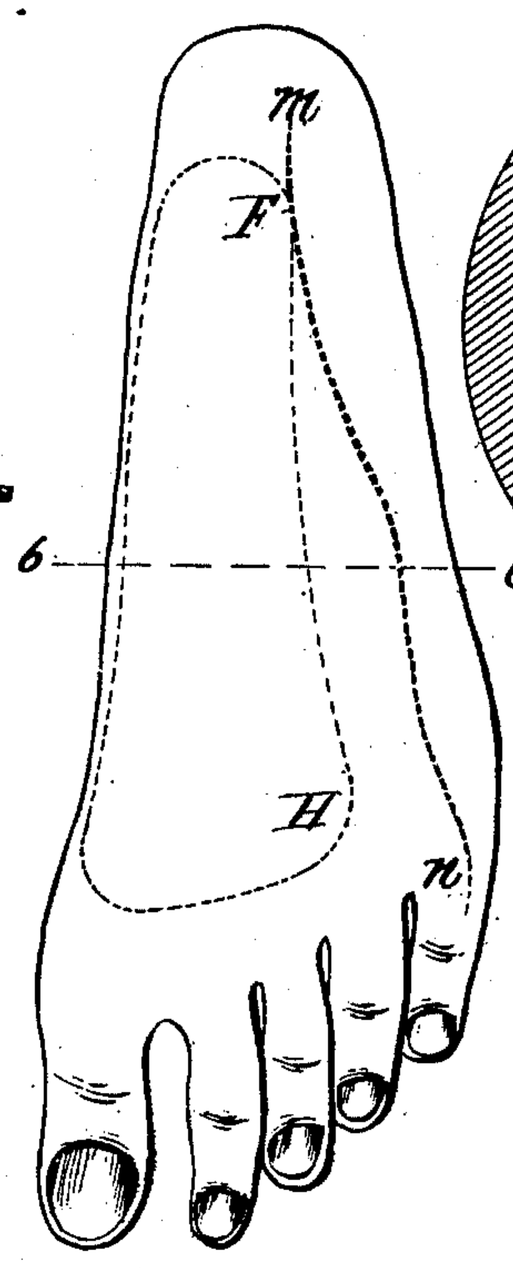

Fig. 5.

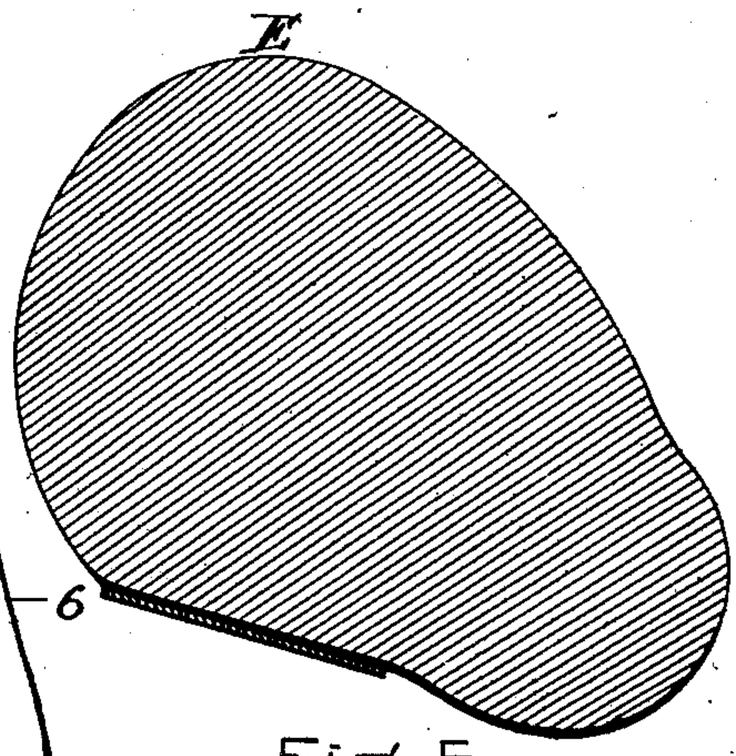

Fig. 6.

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FOOT-PLATE.

SPECIFICATION forming part of Letters Patent No. 717,205, dated December 30, 1902.

Application filed February 28, 1901. Serial No. 49,186. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS F. HUSSEY, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Foot-Plates, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention comprises a foot-plate for supporting a portion of the foot having the characteristics hereinafter indicated.

It consists of an improved form of metal plate or spring designed to force the central portion of the plantar fascia, together with the muscles lying immediately beneath it, up into the hollow of the foot and to otherwise serve to support and relieve other portions of the foot, as will better appear by reference to the drawings, wherein—

Figure 1 represents the plan of a No. 6 plate, actual size. Fig. 2 is a view in longitudinal section thereof. Fig. 3 is a view in cross-section upon the dotted line 3 3 of Fig. 1. Fig. 4 is a view in cross-section representing the plate as associated with leather coverings. Fig. 5 is a view in plan of the left foot, representing the position in dotted lines of the plate beneath it. Fig. 6 is a view in vertical cross-section, enlarged, upon the dotted line 6 6 of Fig. 5, also representing in cross-section the plate.

The shape of my plate in its broadest part G H, Fig. 1, corresponds very nearly to a line drawn just back of the heads of the metatarsal bones of the foot under which it rests on the sole of a shoe, and the plate gradually tapers through nearly its entire length, broadening out slightly at its second point of contact F with the shoe just forward of the heel of the foot. Its breadth in its widest point is for the purpose of affording a firm foundation or support, thus preventing any twisting of the plate either to one side or the other, and it is generally not necessary to carry it any farther outward than the third or fourth metatarsal bone—viz., the point H, Fig. 5.

The inward curve F H given to the outer edge of the plate (see Figs. 1 and 5) is for the purpose of avoiding pressure by the plate upon the muscle known as the "abductor minimi digiti," the course of which is represented in Fig. 5 by the dotted line *m n*, and especially under the outer border of the os calcis and cuboid bones and also to bring the greatest pressure just back of the instep E (see Fig. 6) or what would correspond to a position under the outer border of the astragalus and navicular bones and the inward border of the cuboid bone. The lateral slant of the arc of the plate varies according to different feet, but is always such as to press very lightly, if at all, (in the normal foot,) against the muscle called the "abductor hallucis."

The shape of the inner edge of the plate corresponds to the inner border of the foot, (see Figs. 1 and 5,) except that it has a general tendency to curve outward, (from the line 2 2 in Fig. 1.)

In general the outward curve of the inner edge of the plate above referred to is very slight, as is shown in the drawings, when the weakened arch of the foot in question is not too pronounced, but is very apparent when the deformity is marked, and greater pressure is necessary under the inner border of the foot.

In other respects the shape of the surface of the plate conforms as nearly as practicable to the portion of the arch of the foot which it supports. When a very rigid support is required, as for cases of chronic flat-foot, the shape of the outer edge of the plate corresponds more nearly to the inner border of the abductor minimi digiti muscle already referred to, and the broader base of the plate is carried out under the fourth or fifth metatarsal bone.

The plate is made of steel and is spring-tempered, as it is intended to provide a yielding support to the foot; but in rare cases it may be necessary to make it perfectly rigid. It is usually covered with leather in the ordinary way, (see Fig. 4,) but may be permanently fastened in the shoe and covered with a suitable insole.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

A foot-plate of rigid material and adapted to be carried in the shoe having the broad forward base G H, the narrow rear bearing

F, the side curves F H and G H of varying curvature as described, an inside lateral slanting surface of varying degree, and the plate longitudinally arched throughout to conform as nearly as possible to the arch of the normal foot, all for the purpose of raising the flattened arch, avoiding interfering muscles and allowing the pivotal action of the foot, thereby correcting the deformity as described.

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