Jan. 6, 1953 H. GULBRANDSEN 2,624,057

PAD BOX

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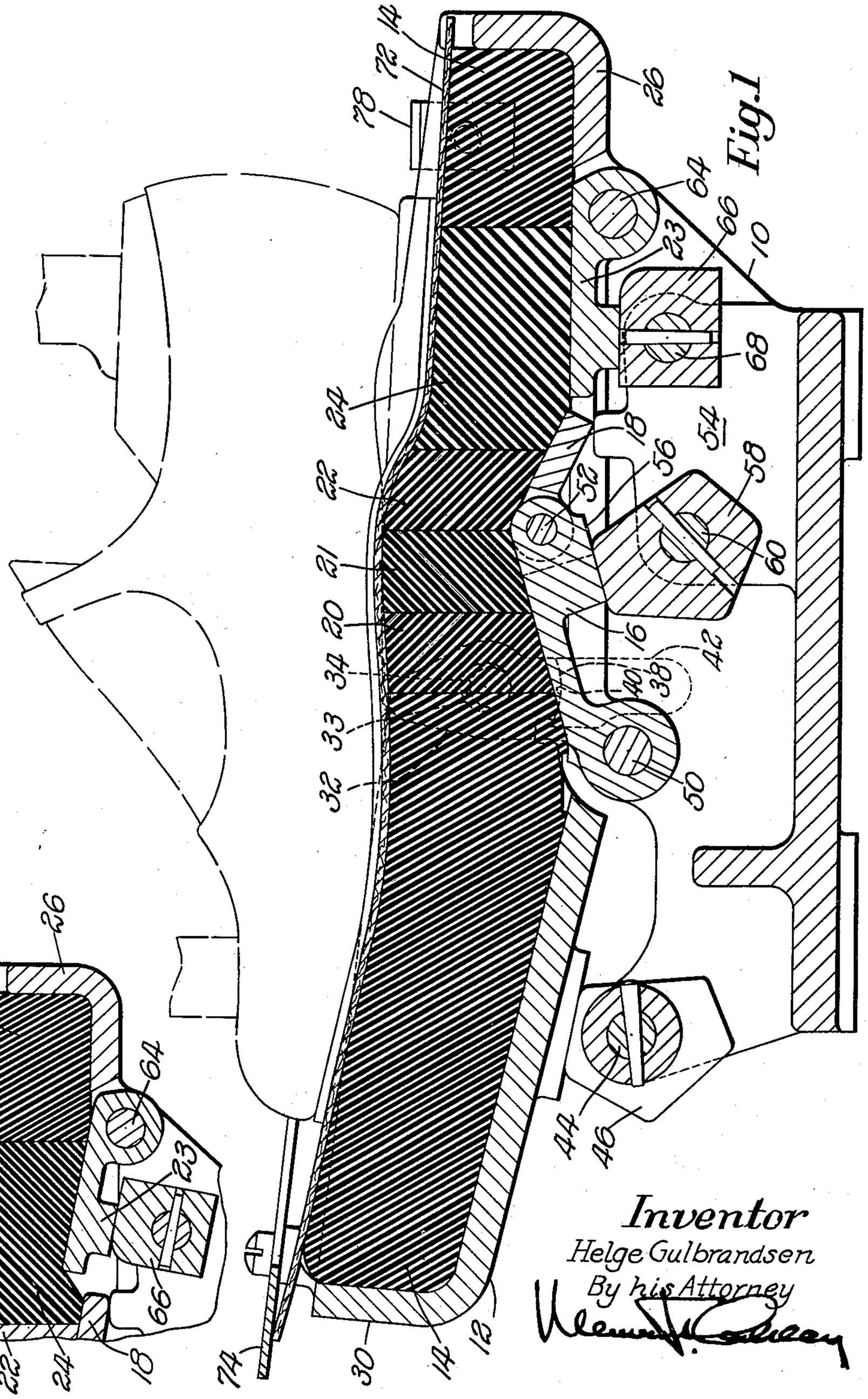

Fig. 1

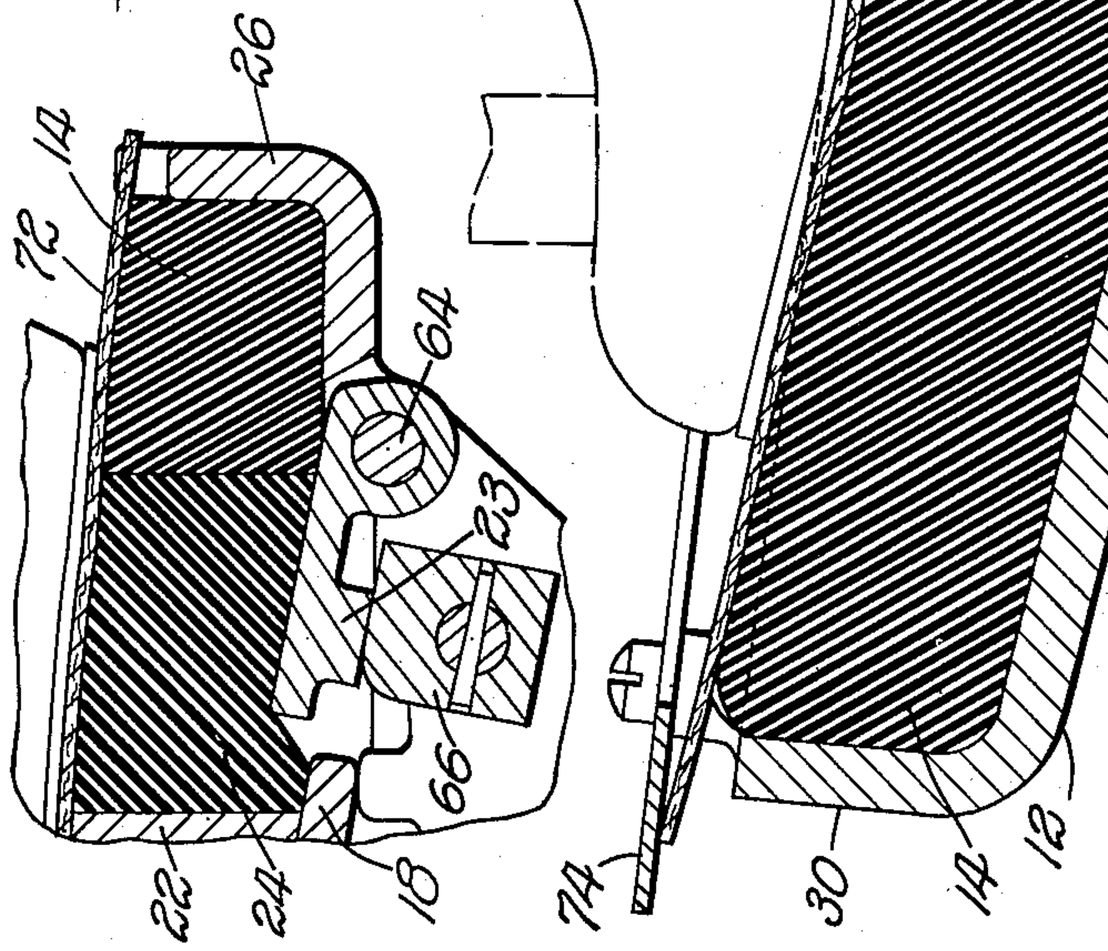

Fig. 2

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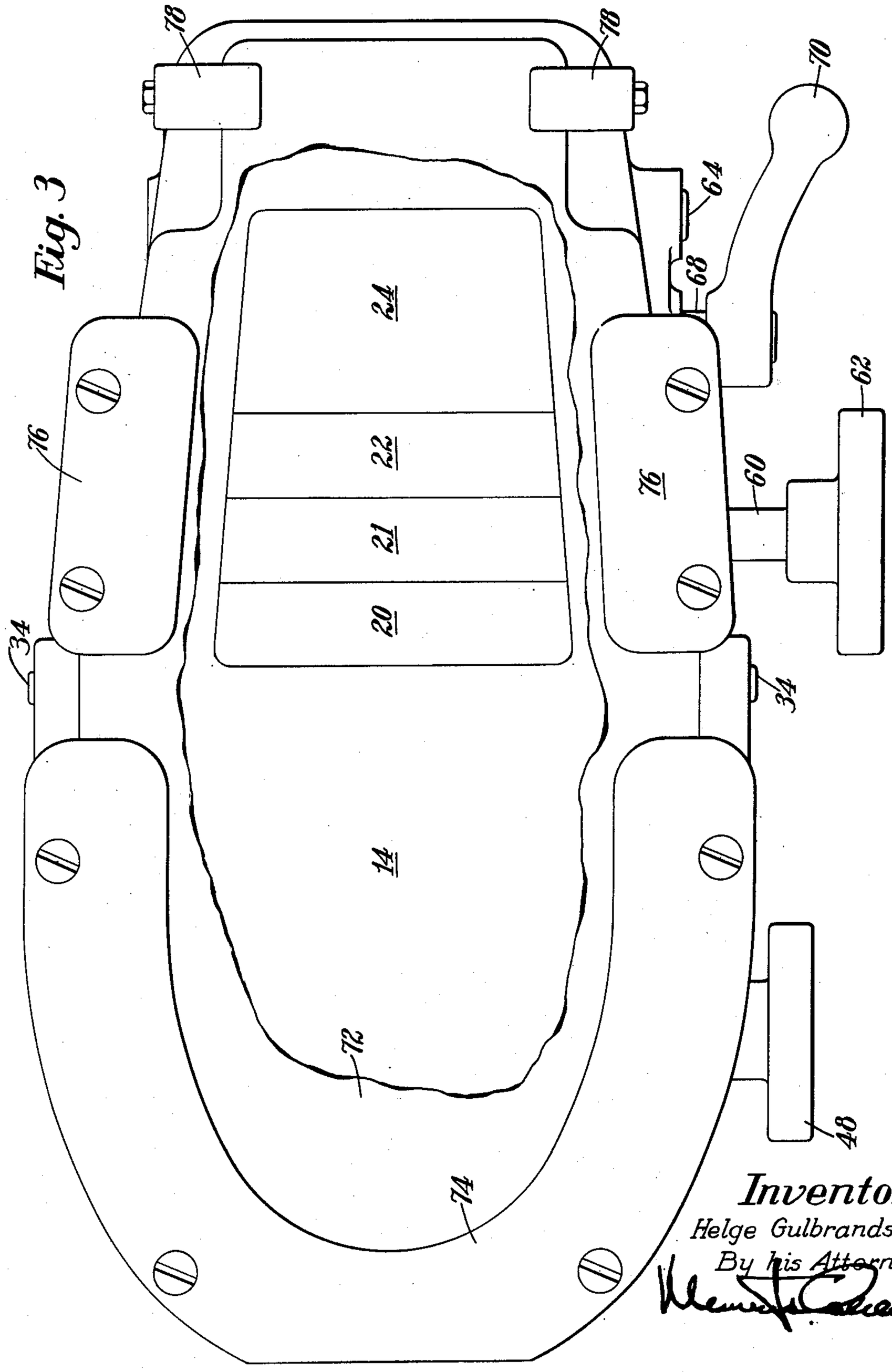
Fig. 3



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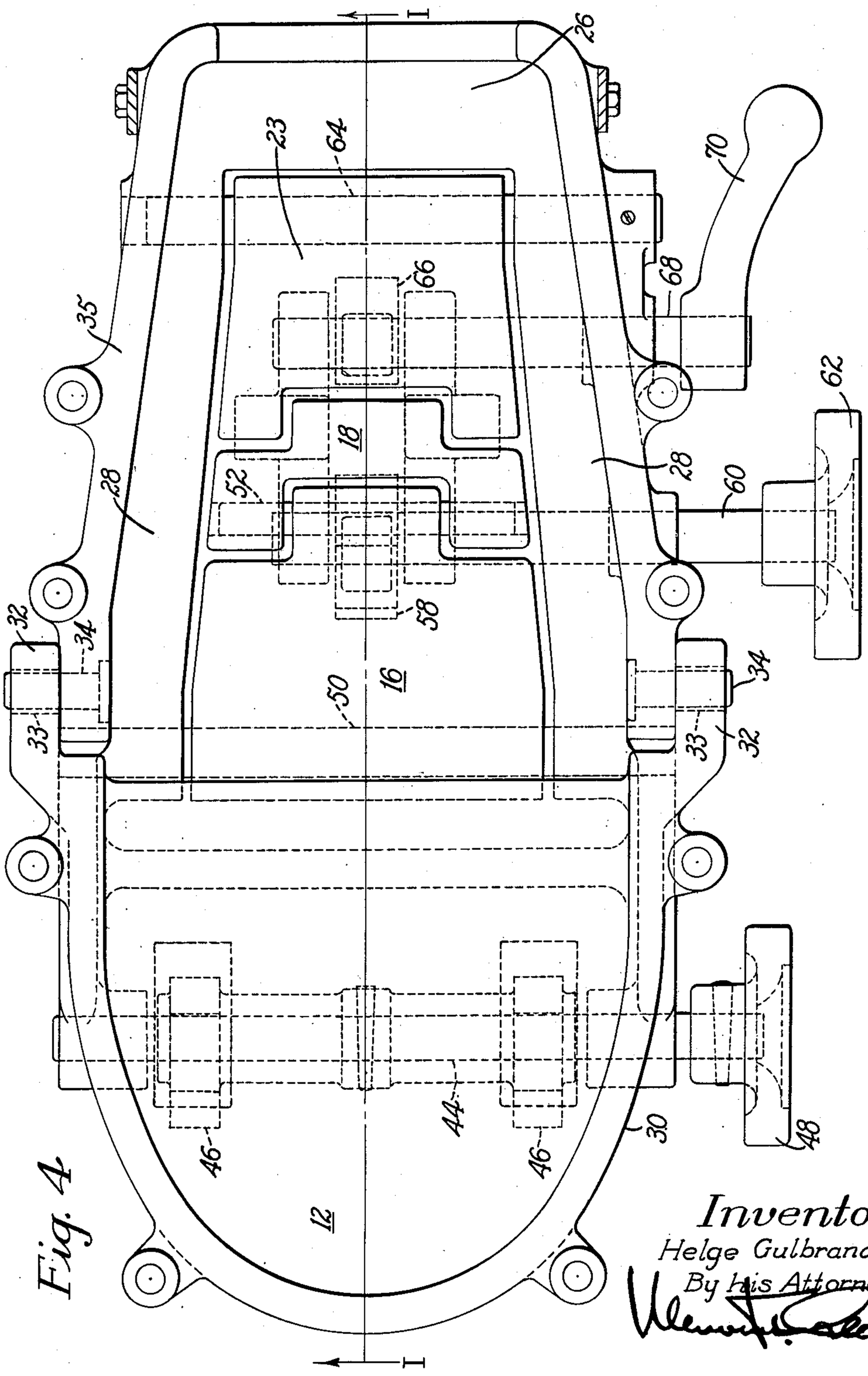

Fig. 4

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UNITED STATES PATENT OFFICE

2,624,057

PAD BOX

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10 Claims. (Cl. 12—38)

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This invention relates to apparatus for use in applying pressure to shoe bottoms and more particularly to pad boxes for use in attaching soles to the bottoms of shoes by cement although it will be understood that the invention is not thus limited in its application.

It is an object of the present invention to provide an improved pad box of simplified construction suitable for use with a wide range of sizes of juvenile shoes and suitable for operation upon such shoes having either a spring heel or a flat heel.

In accordance with a feature of the invention the pad box employs a pad of yielding material such as rubber the central portion of which is apertured to receive inserts of like material which operate on the shank and heel portions of the shoe. Provision is made for imparting relative heightwise adjustments to the inserts in the shank and heel portions to accommodate and properly distribute the pressure to the shank and heel portions of shoes of a wide range of sizes. The insert under the heel portion of the shoe is adjustable vertically to accommodate the pad to shoes having spring heels or flat heels. Further to accommodate different sizes and styles of juvenile shoes the forepart portion of the pad is adjustable about an axis extending transversely of a shoe on the pad, the axis being located adjacent to the forward portion of the aperture in which the inserts are located.

The above and other objects of the invention including various details of construction and novel combinations of parts will now be described by reference to the drawings and pointed out in the claims.

In the drawings,

Fig. 1 is a vertical longitudinal section through one form of pad box in which the invention is embodied, illustrating the positions of the parts when a large size juvenile shoe with a spring heel is being operated upon, the section being taken along the line I—I of Fig. 4;

Fig. 2 is a fragmentary sectional view of a portion of the structure shown in Fig. 1, illustrating the positions of the parts when operating upon a shoe having a flat heel;

Fig. 3 is a plan view of the pad box with a portion of the cover removed to illustrate the arrangement of the inserts in the rubber pad; and

Fig. 4 is a plan view of the pad box with the pad removed to illustrate the supporting plates therefor.

The pad box includes a supporting base 10 upon which is pivotally carried a supporting plate 12

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for the forepart portion of a pad 14, supporting plates 16, 18 for inserts 20, 21, 22, adapted to underlie the shank portion of a shoe on the pad, a supporting plate 23 for an insert 24, arranged to underlie the heel portion of the shoe and a fixed supporting plate 26 for the heel end portion of the pad 14. The plate 26 which constitutes a fixed portion of the base 10 has forwardly extending supporting portions 28 (Fig. 4) for supporting those portions of the pad 14 which extend alongside the aforementioned inserts. As shown in Fig. 3, the inserts 20, 21, 22, 24 are located in a vertically extending aperture in the pad 14 and are surrounded on their sides by the pad 14.

The supporting plate 12 is provided with a vertical wall 30 which engages the sides of the forepart portion of the pad 14 and is provided with ears 32 (Fig. 4) which are apertured at 33 to receive pins 34 carried by side walls 35 of the base 10 extending upwardly from the pad-supporting portions 28. As shown in Figs. 1 and 4, the pins 34 are smaller than the apertures 33 and merely provide means for holding the supporting plate 12 in assembled relation with the base 10 but are not intended to sustain the force exerted on the plate during a pressure applying operation. For thus supporting the rearward portion of the plate 12 the ears 32 are formed on their undersides with curved bearing portions 38 (Fig. 1) which rest on correspondingly curved portions 40 of upwardly extending lugs 42 carried by the base 10. The center of curvature of these portions is coincident or nearly so with the pins 34. Also journaled in the base at its toe end is a shaft 44 carrying a pair of five-sided cams 46 for sustaining the pressure on the supporting plate 12 forwardly of the pins 34. The shaft 44 is provided with a handle 48 by which it can be rotated to adjust the positions of the cams 46 and consequently to vary the amount of tipping of the plate 12 about the center of curvature of the bearing surfaces 38 in accordance with the size or toe spring of the shoe being operated upon.

The supporting plate 16 by which the shank supporting inserts 20 and 21 and the adjacent portions of the pad 14 are carried is journaled on a shaft 50 carried by the base and the supporting plate 18 for the insert 22, and the adjacent portion of the insert 24 is connected to the rearward end of the plate 16 by a pin 52. The rearward end of the plate 18 rests on a flat bearing surface of a bracket 54 carried by the plate 10. Near its rearward end the plate 16 is provided with a bearing surface 56 arranged for contact with a

five-sided cam 58 secured to a shaft 60 journaled in the base 10 and provided at its outer end with a handle 62 by which the shaft and the cam 58 may be rotated to present any one of the five sides of the cam to the bearing surface 56. It will be apparent that rotation of the cam 58 will adjust the inclination of the plate 16 by tipping it about the axis of the shaft 50 thus to vary the heightwise position of the inserts 20, 21 supported by the plate, the insert 21 being adjusted to a greater extent than the insert 20. The supporting plate 18 being pivoted to the plate 16 moves with the plate 16 during its adjustment, the lower or rearward end of the plate 18 sliding along the bearing surface provided on the bracket 54 thus to vary the heightwise position of the insert 22 as well as the forward portion of the insert 24 which is arranged to underlie the heel portion of the shoe being operated upon.

The plate 23 by which the insert 24 is principally carried is journaled for tipping movement about the axis of a shaft 64 and the forward portion of the supporting plate 23 rests on a cam 66 secured to a shaft 68 journaled in the base of the apparatus and provided at its outer end with a handle 70 by which the position of the cam 66 may be adjusted. As illustrated herein this cam is intended to assume either one of only two positions as shown in Figs. 1 and 2 although it will be understood that by a proper choice of cams the plate 23 might be moved into any one of more than two positions. By moving the plate into the position shown in Fig. 2 the insert 24 is lifted to accommodate a flat or substantially flat heel shoe.

The block 14 and the inserts 20, 21, 22 and 24 are provided with a cover 72 of leather or other suitable material engageable with the bottom of the shoe during the pressure applying operation. A U-shaped plate 74 is secured to the wall 30 of the forepart supporting plate 12 to overlie the marginal portions of the cover 72 retaining it in place. Plates 76 secured to the side walls 35 overlie the marginal portions of the cover 72 and plates 78 overlie the heel end of the cover so that the cover is properly held in place throughout its length.

With the parts positioned as shown in Fig. 1, the inserts 20, 21 and 22 are in their uppermost positions insuring the proper distribution of pressure along the shank portion of a large size juvenile shot having a spring heel. The heel supporting plate 23 is in its lowermost position because the shoe is equipped with a spring heel. If now a smaller shoe is to be operated upon the cam 58 may be turned to lower the plates 16 and 18 in accordance with the size of the shoe to change the contour of the pad in the shank portion by lowering the inserts as required. When operating upon a flat heel shoe the insert 24 should be elevated to close the space between the pad and the heel end of the shoe which would otherwise exist due to the flat contour of the shoe bottom. This insert is raised by turning the cam 66 into the position shown in Fig. 2 at which time the inserts 20, 21 and 22 are lowered as indicated by the position of the supporting plate 18. Further adjustments of the apparatus to accommodated varying conditions are accomplished by rotation of the shaft 44 and with it the cams 46 to vary the angular position of the forepart pad-supporting plate 12.

From the above it will be seen that a pad box of simple construction has been provided in which it is possible to operate on a wide range of sizes of juvenile shoes having various bottom contours, and a pad box of the type illustrated herein is capable of operating upon shoes from very small infant sizes such as size 3 or smaller up to children's size 12 or larger without the necessity of utilizing auxiliary pad members which must be added or removed to accommodate different sizes or types of shoes.

Having thus described the invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. A pad for use in applying pressure to shoe bottoms comprising a block of yieldable material, that portion of the pad which underlies the shank portion of a shoe placed thereon having a vertical aperture at least coextensive with the shank portion of the shoe, and a plurality of discrete members relatively adjustable vertically, said members substantially filling said aperture.

2. In apparatus for use in applying pressure to shoe bottoms, a pad comprising a block of yieldable material, that portion of the pad which underlies the shank portion of a shoe placed thereon having a vertical aperture at least coextensive with the shank portion of the shoe, a plurality of discrete members relatively adjustable vertically substantially filling said aperture, and means for adjusting said members relatively to said block.

3. In apparatus for use in aplying pressure to shoe bottoms, a pad comprising a solid rubber block having a vertically extending aperture in its central portion, a plurality of discrete rubber inserts in said aperture, means mounting said inserts for heightwise adjustments relatively to each and other and to the block, and means for thus adjusting said inserts.

4. In apparatus for use in applying pressure to shoe bottoms, a pad comprising a solid rubber block having a vertically extending aperture in that portion which underlies the shank and heel portion of a shoe on the pad, a rubber insert in the shank portion of said aperture, a rubber insert in the heel portion of said aperture, and means for adjusting said inserts heightwise with respect to each other and to the block.

5. In apparatus for use in applying pressure to shoe bottoms, a pad comprising a block of yieldable material, that portion of the pad which underlies the shank portion of a shoe placed thereon having a vertical aperature at least coextensive with the shank portion of the shoe, a plurality of members relatively adjustable vertically substantially filling said aperture, means for adjusting said members relatively to said block, and means for tipping the toe end of said block about an axis extending transversely of a shoe on the pad, said axis being located near the forward portion of the aperture.

6. A pad for use in applying pressure to shoe bottoms comprising individual vertically movable shank and heel supporting members of yieldable material, and a forepart supporting member of similar material, said forepart supporting member having heelwardly extending portions surrounding said shank and heel supporting members.

7. In apparatus for use in applying pressure to shoe bottoms, a pad comprising individual vertically movable shank and heel supporting members of rubber, a forepart supporting member of similar material, said forepart supporting member having heelwardly extending portions surrounding said shank and heel supporting mem-

bers, means for adjusting the relative heightwise positions of said shank and heel supporting members, and means for vertically adjusting the toe end of said forepart supporting member.

8. In apparatus for use in applying pressure to shoe bottoms, a pad comprising a plurality of shank supporting members relatively adjustable heightwise of a shoe thereon, a pair of supporting plates for said shank supporting members pivoted together about an axis extending transversely of the pad, means pivotally supporting one end of one of said plates about an axis extending transversely of the pad, a bearing member for the remote end of the other plate, means for adjusting the pivotal connection between said plates vertically, heel and forepart supporting members, and means supporting said members for vertical adjustments relative to each other and to the shank supporting members.

9. In apparatus for use in applying pressure to shoe bottoms, a pad comprising a plurality of shank supporting members relatively adjustable heightwise of a shoe thereon, a pair of supporting plates for said shank supporting members pivoted together about an axis extending transversely of the pad, means pivotally supporting one end of one of said plates about an axis extending transversely of the pad, a bearing member for the remote end of the other plate, means for adjusting the pivotal connection between said plates vertically, heel and forepart supporting members, and means supporting said members for tipping movements about axes rearwardly of said members and extending transversely of the pad.

10. In apparatus for use in applying pressure to shoe bottoms, a pad comprising individual vertically movable shank and heel supporting members of rubber, a forepart supporting member of similar material, said forepart supporting member having heelwardly extending portions surrounding said shank and heel supporting members, a pair of supporting plates for said shank supporting members pivoted together about an axis extending transversely of the pad, means pivotally supporting one end of one of said plates about an axis extending transversely of the pad, a bearing member for the remote end of the other plate, means for adjusting the pivotal connection between said plates vertically, supporting plates for the forepart supporting member and the heel supporting member, and means supporting the said last-named plates for tipping movements about axes rearwardly of said members and extending transversely of the pad.

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