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M. D. PICKENS

2,343,701

FOOTWEAR

Filed May 19, 1943

Fig. 1.

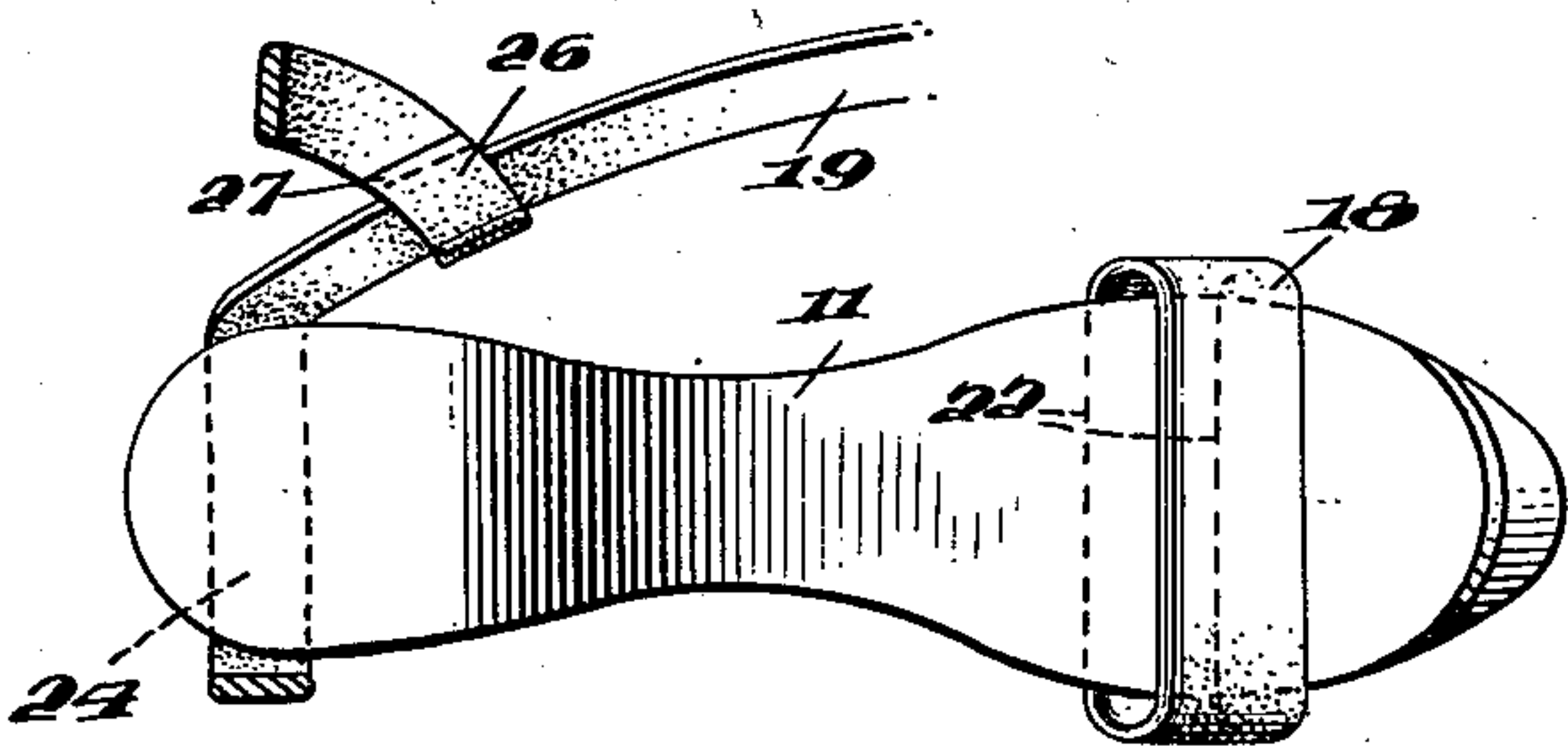


Fig. 3.

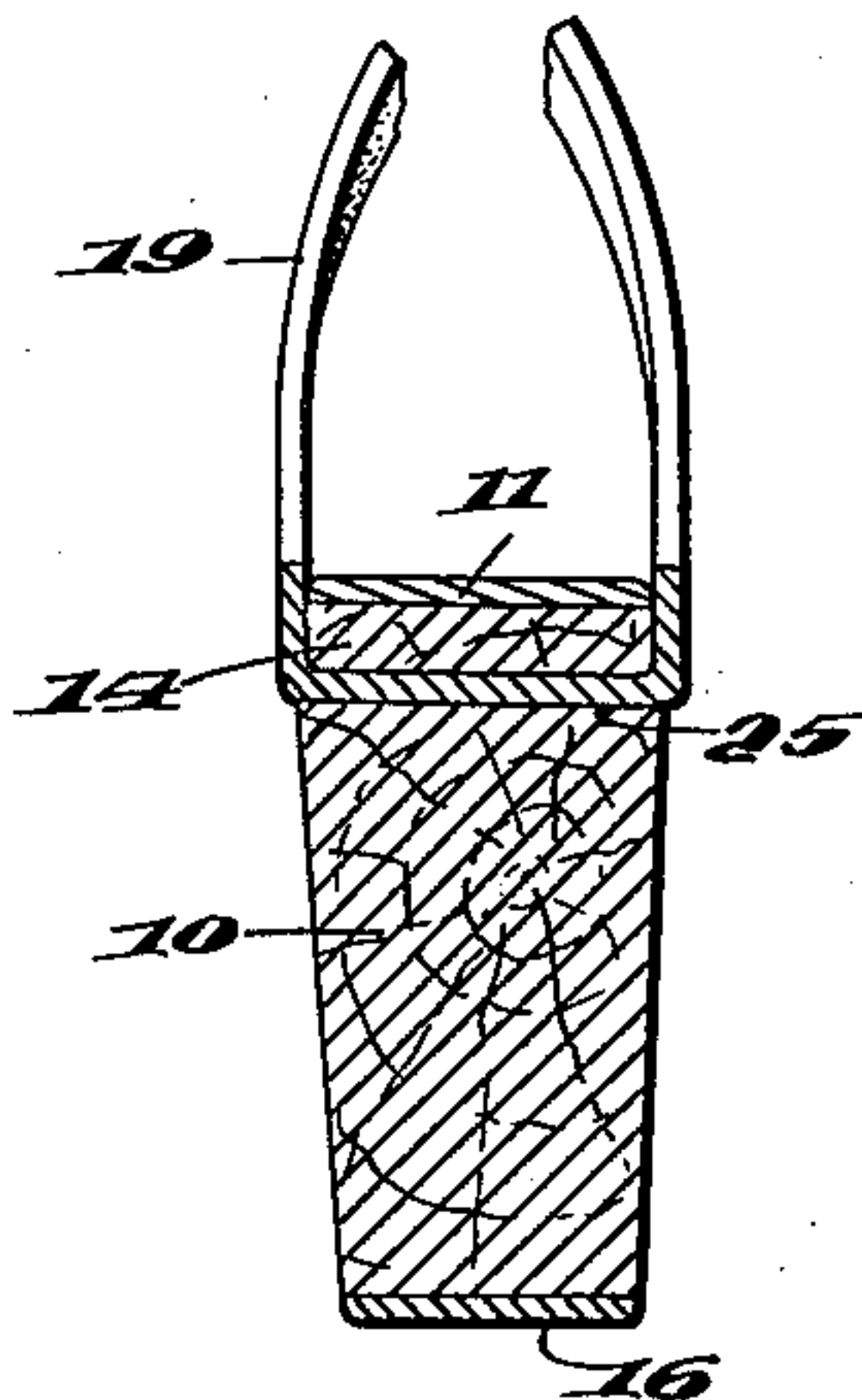


Fig. 2.

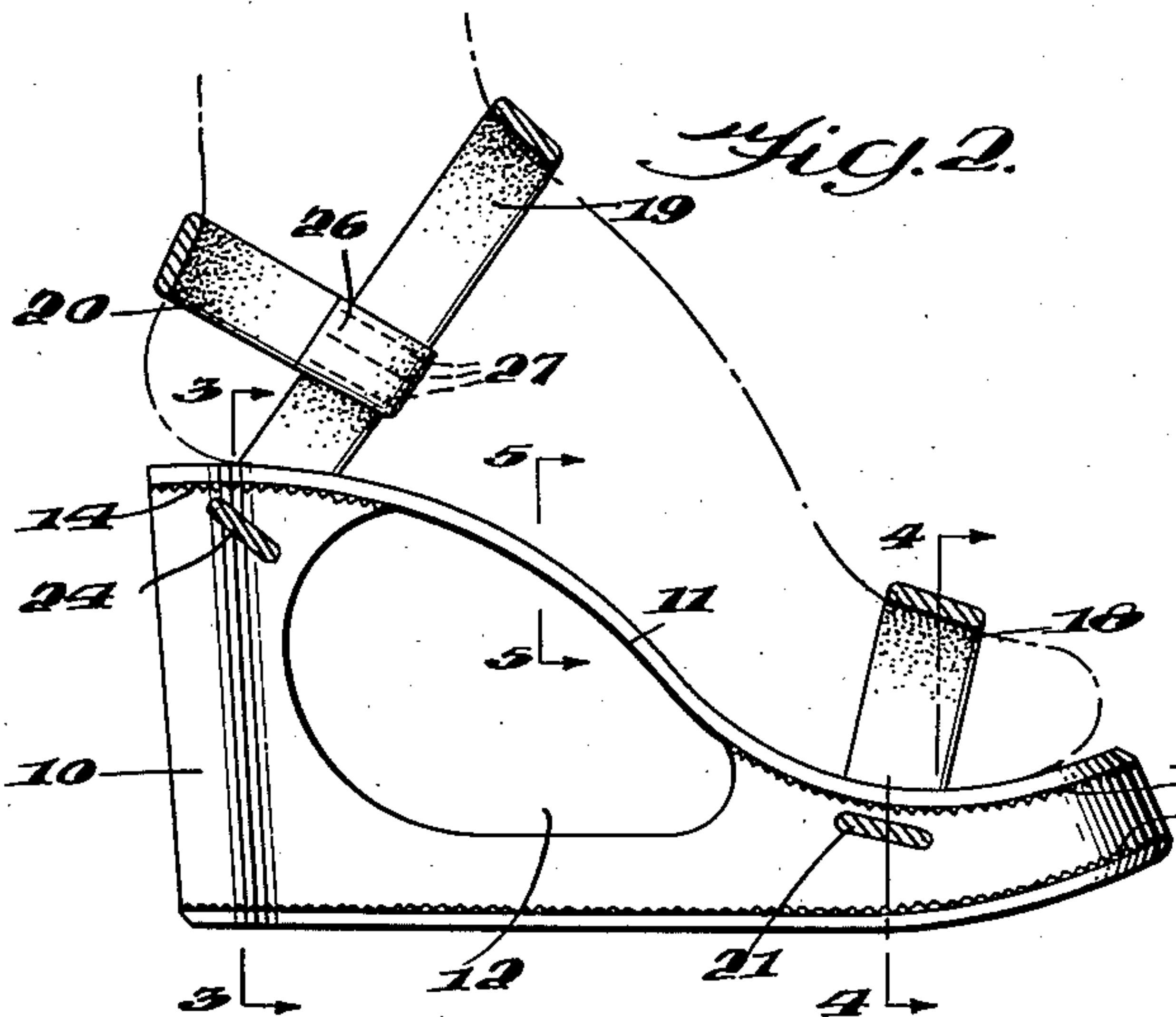


Fig. 4.

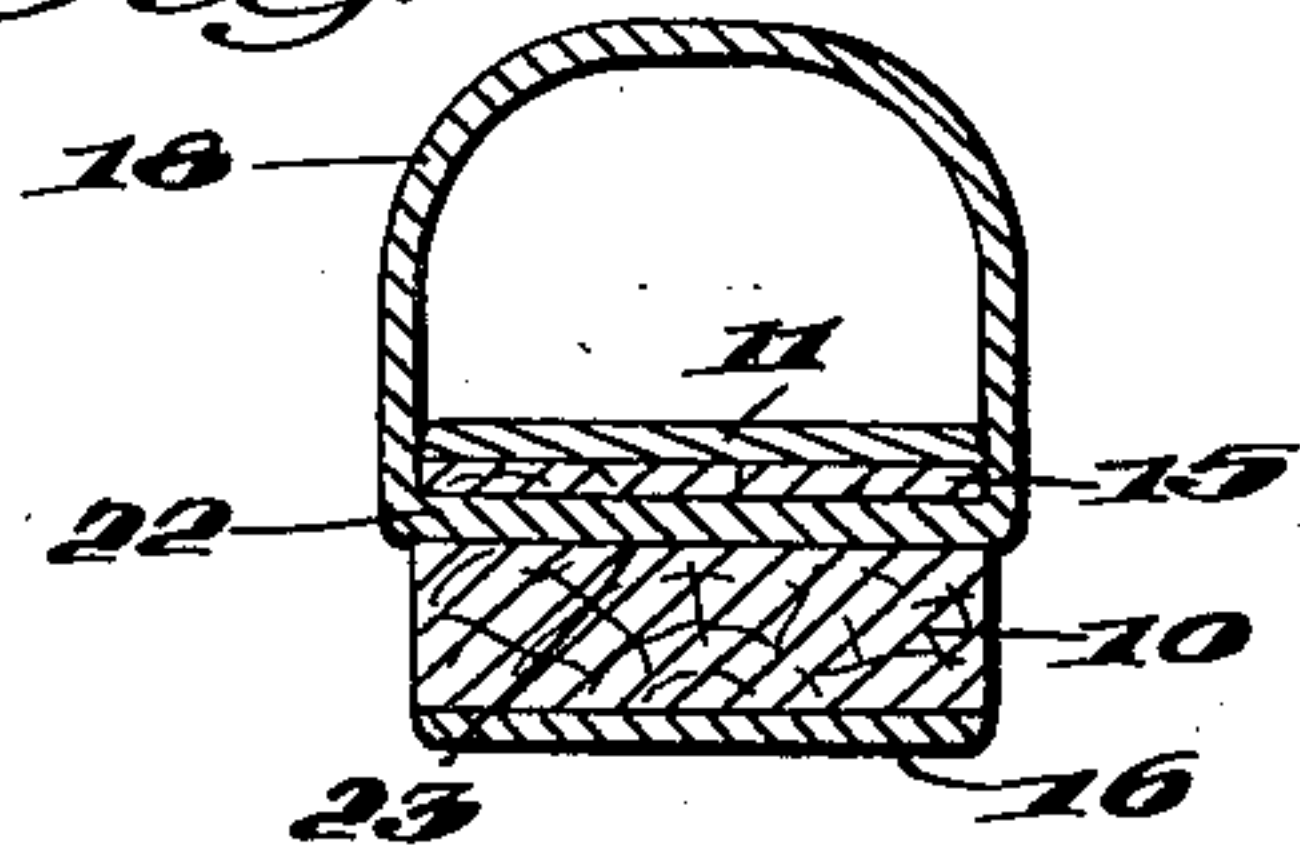


Fig. 5.



Fig. 7.

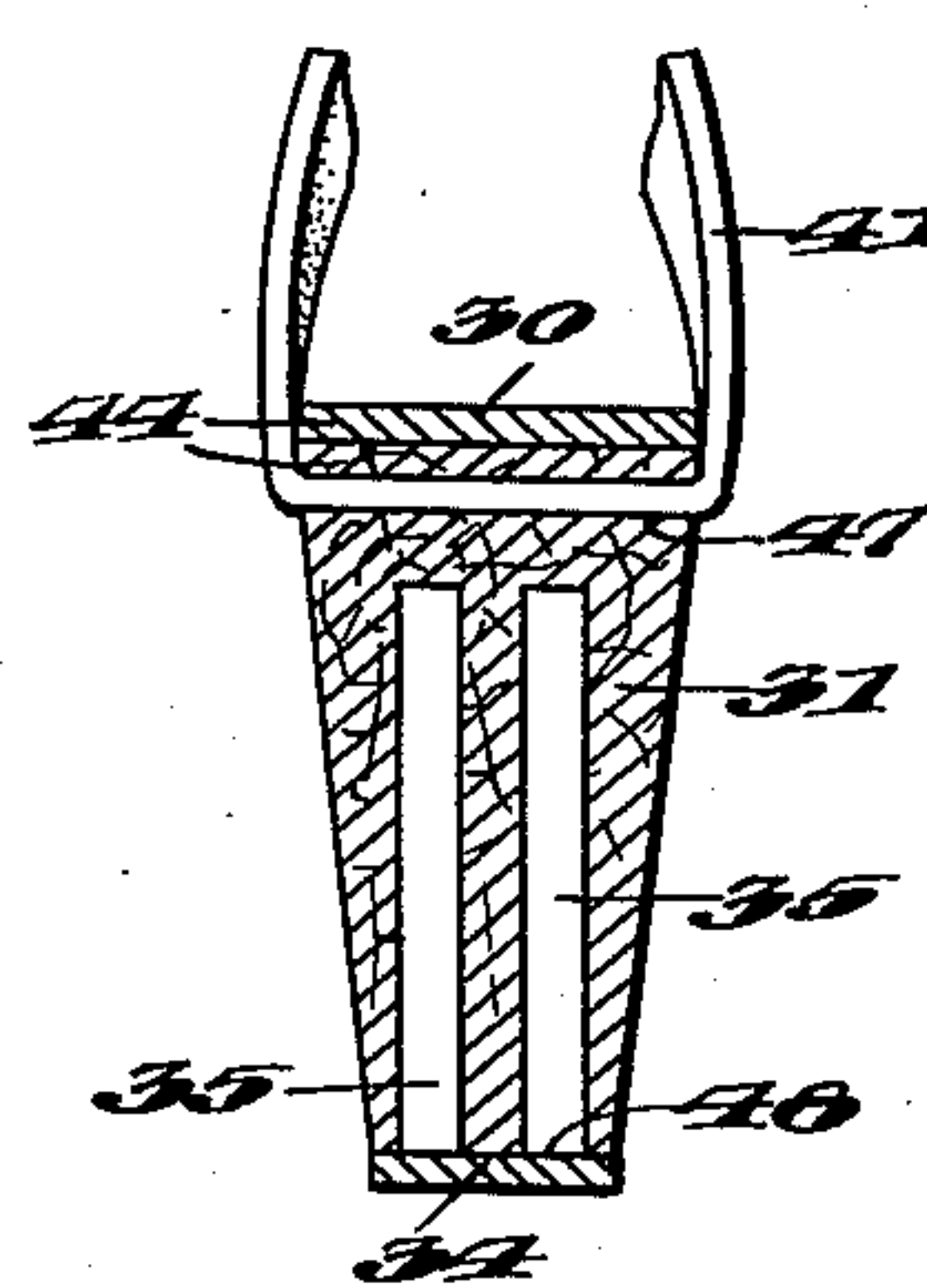


Fig. 8.

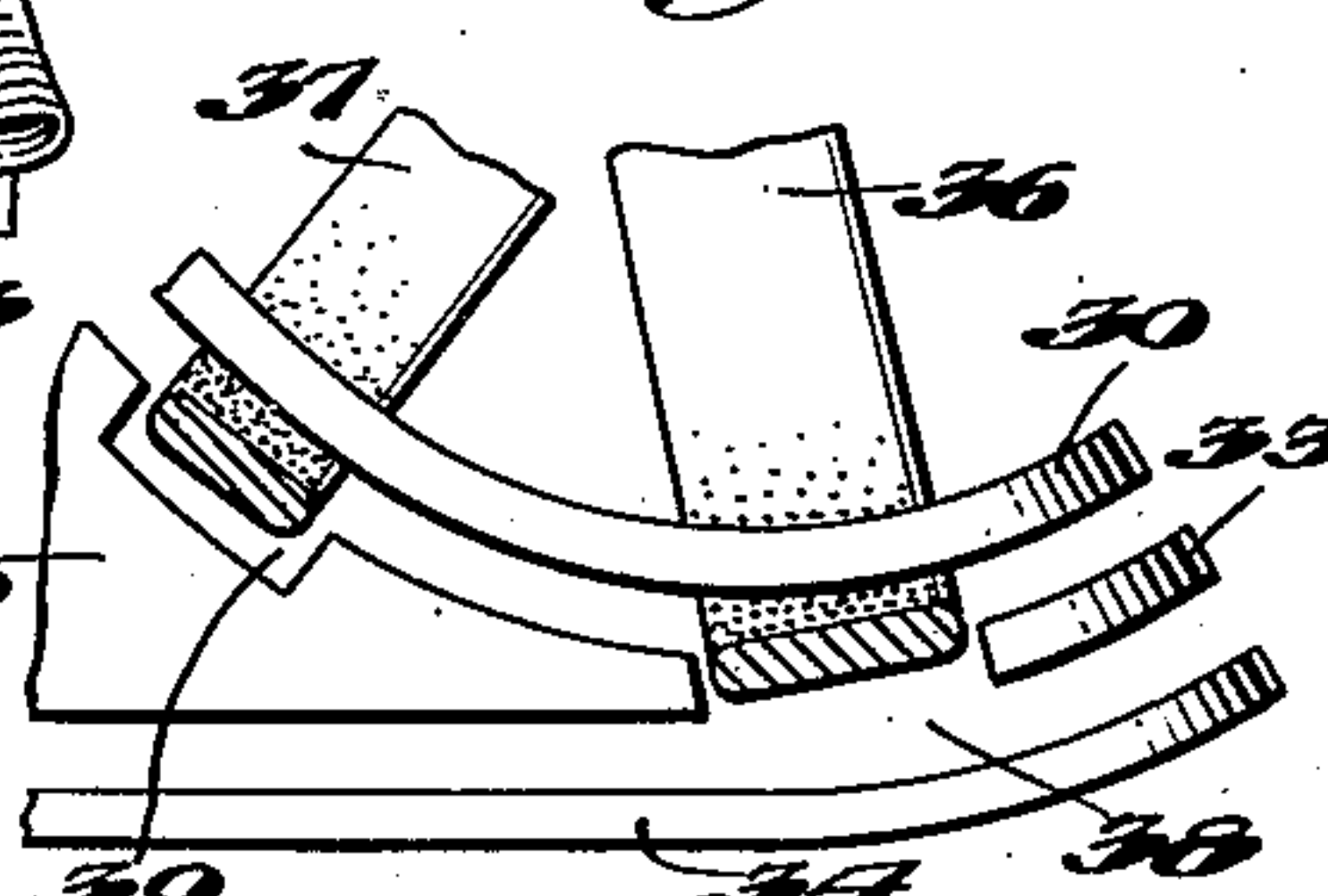
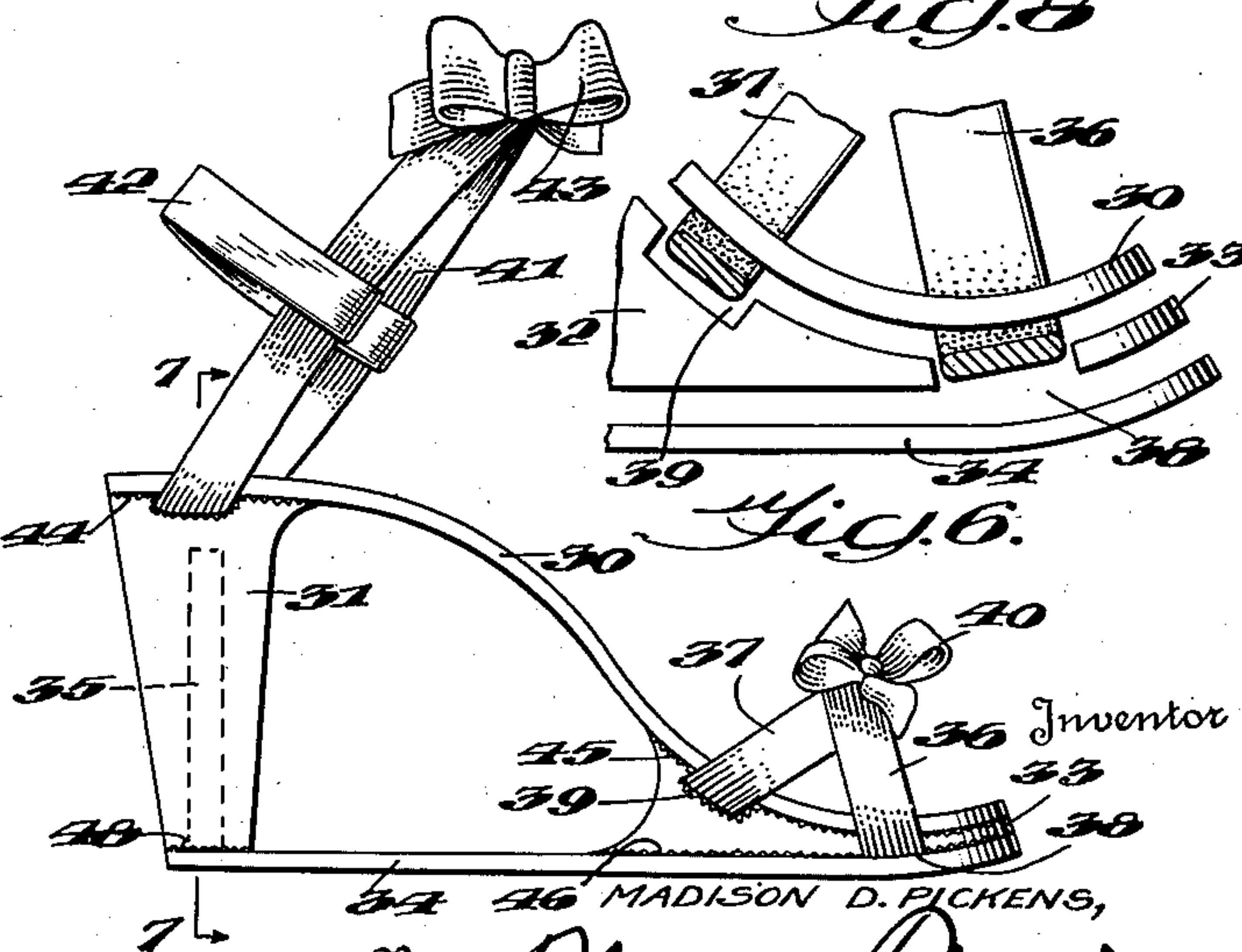


Fig. 6.



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2,343,701

FOOTWEAR

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2 Claims. (Cl. 36—11.5)

This invention relates to footwear and, in particular, to the provision of new and improved shoes or sandals for sport and other wear, which may be constructed entirely of wood, "Pregwood," "Compregwood," plastic, textile and other non-strategic materials, in order to relieve the shortage in leather and in metal hardware necessary for the construction of conventional shoes or sandals.

It is a particular object of this invention to provide such footwear which is of extreme lightness and flexibility and which may be cheaply manufactured in large quantities, in order to relieve the leather footwear shortage.

These and other objects and advantages will appear from the following description taken in conjunction with the accompanying drawing.

In the drawing:

Fig. 1 is a top plan view of a shoe constructed according to the principles of this invention with portions of the straps, or upper, cut away in the interest of clearness of disclosure;

Fig. 2 is a view in side elevation of the structure shown in Fig. 1;

Fig. 3 is a section taken on the line 3—3 of Fig. 2;

Fig. 4 is a section taken on the line 4—4 of Fig. 2;

Fig. 5 is a section taken on the line 5—5 of Fig. 2;

Fig. 6 is a view in side elevation of a modified form of the invention;

Fig. 7 is a view taken on the line of 7—7 of Fig. 6; and

Fig. 8 is an exploded view, partly cut away, illustrating the manner in which the toe straps are connected to the insole, outsole, and separator block.

Referring to the drawing in detail, the shoe illustrated in Figs. 1-5 comprises a block 10 forming the sole and heel of the shoe as well as providing a support for the insole 11. The upper surface of the heel and toe portions of the block 10 is formed substantially complementary to the under surface of a foot, except that the central portion is cut away at 12 for lightness and also for support of the insole 11, in such manner as to utilize to the fullest, the yieldability or resilience thereof.

The insole 11 is bonded to the heel portion at 14 and also to the toe portion at 15 by any suitable cement or adhesive as, for instance, hot glue or cold glue in the case of a wood block 10 and plywood insole 11. Optionally, the lower surface of the main or block portion 10 is pro-

vided with an outsole 16 of plywood, plastic, composition or the like, which is particularly advantageous where the main or block portion 10 is formed of a light material, such as balsa, basswood or cypress, lacking, somewhat, in wearing qualities though possessed of such lightness as to make it otherwise desirable. The outsole 16 is attached to the block 10 by any suitable adhesive.

Since the shoe illustrated in Figs. 1 to 5 inclusive is of the sport type, the upper portion thereof is of skeleton form and comprises, generally, a toe or instep strap 18, an ankle strap 19, and a heel strap 20.

The forward or toe portion of the block 10 is provided with a slot 21 adjacent but below the upper surface of the toe portion, through which slot the toe strap or instep strap 18 extends. As shown in Fig. 4, the ends of the toe strap 18 are preferably overlapped at 22 and secured together in any suitable manner as by stitching. The overlapped, attached, end portions of the toe strap or instep strap 18 are drawn into the slot 21 and adhesively secured in position after their attachment together in order that the seam therebetween shall be invisible.

A slot 24 similar to the above described slot 21 is provided adjacent to the upper surface of the heel portion of the block 10 to receive the ankle strap 19 which extends therethrough as shown in Figs. 1 and 2. By means of suitable adhesive 25, the central portion of the ankle strap 19 is secured immovably in the position desired as shown in Fig. 3. Each end of the heel strap 20 is secured at 26 to one branch of the ankle strap 19, as shown in Figs. 1 and 2, by stitching 27 or by any other suitable means.

The relative inclination of the surfaces at opposite sides of the cutout portion 12 is such as to bring the intermediate or arch portion of the insole 11 into an arch supporting position for forming a structure closely engaging the arch portion of a wearer's foot.

As shown in Fig. 5 the plywood is preferably formed of a multiplicity of plies 28 bonded together into an integral sheet, with the grain direction of the respective plies 28 non-parallel. The arch formed thereby is possessed of considerable strength and is possessed of substantial resiliency. It forms, in effect, a spring arch support integral with the shoe.

In the embodiment illustrated in Figs. 6, 7 and 8, the block 10 is omitted and the yieldable, resilient insole 30 has its heel portion supported by the heel 31 and its toe portion supported by

the spacer block 32 and spacer plate 33 (Figs. 6 and 8).

Bonded to the lower surfaces of the heel 31, spacer block 32 and spacer plate 33 is the outsole 34. It will be noted that the forward ends of the insole 30 and outsole 34 are given an initial inclination before their joint attachment to the spacer plate 33. This insures that the forward end of the sole shall conform closely to the natural curvature of the wearer's foot.

For lightness, the heel 31 is optionally provided with a plurality of bores 35 extending from the lower end of the heel partway to the top thereof. The heel portion of the outsole 34 effectively seals the lower ends of these bores as shown in Fig. 7.

The upper of the shoe illustrated in Figs. 6, 7 and 8 may be of any known type but is shown of skeleton form for convenience of illustration. As shown the forward part of the upper comprises a toe portion comprising toe straps or loops 36 and 37. The loop 36 passes through a space 38 provided between the insole 30 and outsole 34 and between the forward end of the spacer block 32 and the rear end of the spacer plate 33 as shown in Fig. 8. The loop 37 passes under the insole 30, between insole 30 and spacer block 32 being accommodated in the space provided by the recess 39 in the upper surface of the spacer block 32.

The ends of the straps 36 and 37 are preferably overlapped and stitched together in the manner in which the ends of strap 18 are connected as described above. The intermediate portions of the straps or loops 36 and 37 are connected by any suitable connecting means, if desired, such as the ornament 40.

The rear part of the upper comprises an ankle strap 41 corresponding with the above described ankle strap 19 and a heel strap 42 corresponding with the above described heel strap 20 and having its ends secured in suitable manner to opposite branches of the ankle strap 41. As shown the ends of the ankle strap 41 may be tied into a bow 43 or other type of knot. A transverse recess 44 is provided in the upper surface of the heel 31 to provide space for accommodating the intermediate portion of the ankle strap 41, which passes between the heel portion of the insole 30 and the heel 31.

A bond 45 secures the lower toe surface of the insole 30 to the upper surfaces of the spacer block 32 and spacer plate 33 while fixedly securing the intermediate overlapped portions of loops

36 and 37 in the spaces 38 and 39, while a similar bond 46 secures the upper or inner toe surface of the outsole 34 with the lower surfaces of the spacer block 32, the spacer plate 33 and strap or loop 36.

In like manner, a bond 47 secures the intermediate portion of the ankle strap 41 in the space provided by the recess 44 while securely attaching the lower heel surface of the insole 30 to the upper surface of the heel 31.

The lower surface of the heel 31 is securely attached to the outsole 34 by a bond 48.

The shape and extent of the heel 31 and spacer block 32 may be widely varied to change the length of the unsupported and unattached intermediate portions of the insole 30 and outsole 34 to control the characteristics of the shoe by variation of the resiliency of the yieldable arch supporting structure provided by the intermediate, free, portion of the insole 30 and the flexibility of the shoe proper by variation of the flexibility of the shoe sole, or outsole.

From the above description, it will clearly appear that I have provided new and improved footwear adapted particularly to production, conveniently and cheaply, from readily available non-strategic materials and which footwear is possessed of properties, namely, flexibility and lightness, heretofore possessed only by footwear constructed of more expensive, unavailable strategic materials, such as leather, rubber and the like.

It is, of course, to be understood that the above description is merely illustrative and in nowise limiting and that I desire to comprehend within my invention all modifications embraced within the scope of the appended claims.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A shoe having an inner sole, a block of rigid material having a heel portion, a toe portion, and a connecting web between said portions, and provided with a cut-out portion lying beneath the inner sole between the heel and toe portions of said block.

2. A shoe having an inner sole, composed of laminated flexible material, a block of rigid material having a heel portion, a toe portion, and a connecting web between said portions, and provided with a cut-out portion lying beneath the inner sole between the heel and toe portions of said block.

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