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SANDAL WITH ADJUSTABLE FRONT AND REAR STRAPS

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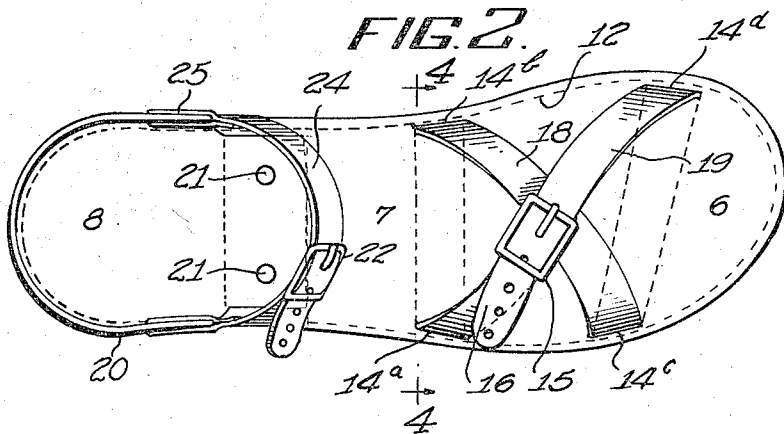
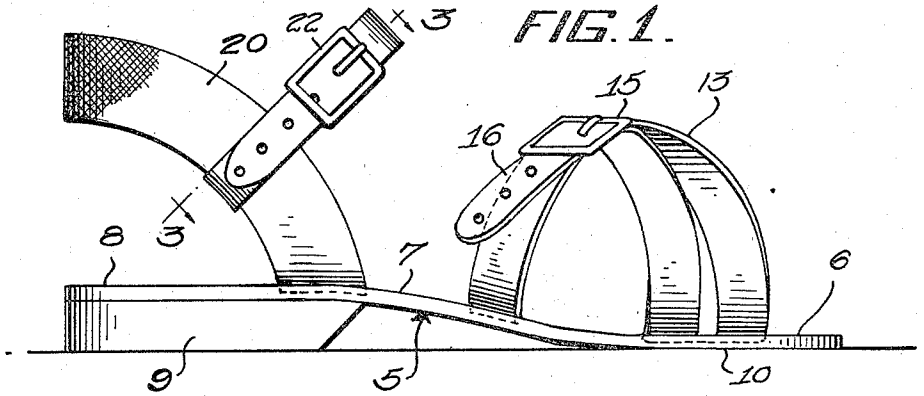


FIG. 3.

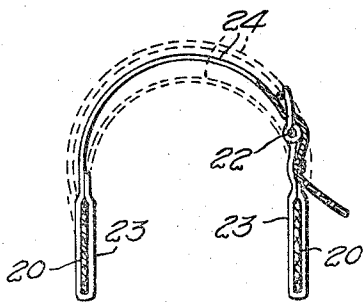
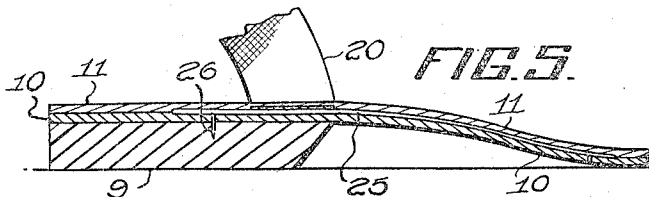
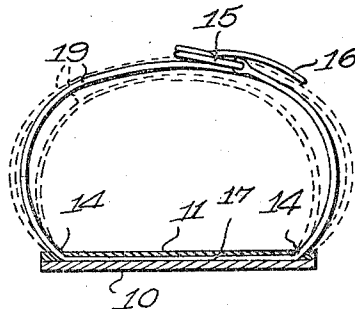


FIG. 4.



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# UNITED STATES PATENT OFFICE

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## SANDAL WITH ADJUSTABLE FRONT AND REAR STRAPS

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2 Claims. (Cl. 36—11.5)

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This invention relates to certain new and useful improvements in sandals.

The primary object of the invention is to provide a sandal with improved strap-attaching means whereby the connection of the straps with the sole portion of the sandal automatically positions the straps to a comfortable fit on the foot of the wearer.

A further object of the invention is to provide a sandal of the foregoing character wherein a single vamp strap has spaced slide connections with the sole of the sandal and in a manner to present strap loops at the upper side of the sandal in crossed relation, and with the strap freely shiftable relative to the sole of the sandal to accommodate itself to the shape of the foot of the wearer.

A still further object of the invention is to provide a sandal having a vamp strap retainer of the foregoing character and in combination with a heel strap fixedly attached to the front end portion of the heel of the sandal with the ankle or instep strap having sliding engagement therewith to promote comfortable contact of the heel and instep straps with the ankle of the wearer.

In sandals of the type disclosed herein there is considerable flexibility in the sole portion thereof which tends to cause the sandal to lose its original shape and also by such flexibility carries a minimum of support provided for the foot of the wearer, and to overcome such objections, it is a further and important object of the invention to include in the sole portion of the sandal a metallic reinforcing resilient strip positioned between the upper and lower sole plies of the sandal with the rear end of the resilient metallic strip anchored in any convenient manner to the heel portion of the sandal approximate the center thereof, with the strip extending forwardly over the instep portion of the sole with the front end of the metallic strip being free or anchored.

With the above and other objects in view that will become apparent as the nature of the invention is better understood, the same consists of the novel construction, combination and arrangement of parts to be hereinafter more fully described and then claimed.

In the accompanying drawing:

Figure 1 is a side elevational view of a sandal constructed in accordance with the present invention,

Figure 2 is a top plan view of the sandal showing the separate vamp and heel or instep straps,

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Figure 3 is a detailed sectional view taken on line 3—3 of Figure 1, showing the sliding connection between the ankle and the heel straps.

Figure 4 is a cross-sectional view taken on line 4—4 of Figure 2 and illustrates the slide connection between the vamp strap and sole portion of the sandal, and

Figure 5 is a fragmentary side elevation, partly in section, showing the metal arch support interposed between the top and bottom plies of the sandal.

While the sandal may be constructed of any material desired and of any size for use by adults it may be noted that the sandal with its novel strap constructions well adapts itself to the manufacture in children's sizes and by such strap constructions, simple and easy adjustment to a child's growing foot is made possible. Referring more in detail to the accompanying drawing, the reference character 5 designates in general the sole portion of the sandal that includes the toe portion 6, shank 7 and heel 8 with a heel lift 9 of any suitable material, either leather or rubber, secured in any preferred manner to the underside of the heel portion 8.

The sole portion 5 that is preferably constructed of leather comprises a tread portion 10 and an upper ply section 11 that is secured to the tread portion 10 in any suitable manner adjacent its marginal edge, preferably by a line of stitching 12 indicated by dash lines in Figure 2.

A single vamp strap designated in general by the reference character 13 is associated with the forward sole and toe portion 6 and has portions of its length passing through slots 14 adjacent marginal portions of the sole with the slots arranged in pairs as shown in Figure 2. The vamp strap 13 has a buckle end 15 and an attaching perforated end 16 engageable with the buckle end, intermediate portions of the strap 13 being extended through the slots 14 to lie between the sole tread 10 and the upper ply section 11 as indicated by the reference character 17 in Figure 4. As viewed in Figure 2, the apertured end 16 of the vamp strap 13 is inserted through the slot 14<sup>a</sup> and extends between the lower and upper plies of the sole and is fed through the opposite slot 14<sup>b</sup> to extend forwardly as at 18 for passage through the slot 14<sup>c</sup> and between the upper and lower plies of the sole to outlet at the slot 14<sup>d</sup> and be directed as at 19 toward the buckle end 15 of the strap. With the vamp strap 13 so attached to the sole portion of the sandal, intermediate portions of the strap freely extend between the lower and upper sole por-

tions 10 and 11 which permits the vamp strap automatically to adjust itself to the shape and size of the foot of the wearer.

A looped heel strap 20 has its free ends positioned between the upper and lower plies 10 and 11 of the sole portion 5 in proximity of the forward edge of the heel portion 8 and said ends are there anchored by rivets 21 or other appropriate fastening means. The ankle strap comprises a buckle 22 carried by a strap loop 23 that is freely adjustable on one side of the heel strap 20 and the co-acting ankle strap 24 has a loop 25 at one end that is also slidable on the side of the heel strap 20 opposite the buckle strap loop 23. The heel strap 20 is formed of fabric that is cut on the bias to present the rear loop portion thereof in a normally elevated position somewhat above the heel of the foot, and with this arrangement of heel and ankle straps automatic adjustment is accomplished for comfortably fitting the straps to the heel and ankle of the wearer.

As illustrated in Figure 5, an arch support is embodied in the sandal construction and is active in providing a substantial support for the foot of the wearer as well as acting to maintain the sandal in its original shape. As shown, an elongated arcuate resilient metallic strip 25 is embedded between the two plies of the sole and heel portion and is anchored in position at its rear end in proximity of the center of the heel 10 by a brad, or other fastening device 26, the arch supporting strip 25 extending forwardly of the heel and well into the instep portion as indicated, and while such forward end may be anchored to the instep portion 5 or the sole portion 6, it is preferable to omit such anchoring of the forward end of the metallic strip which gives the latter more play in flexure for the comfort of the wearer but still is active in maintaining the shape of the sandal and providing proper support for the foot of the wearer. Also, it is to be understood that a cushion or filler may be inserted between the inner and outer soles of the sandal comparable with the thickness of the straps passing between said soles to provide an even surface on the upper face of the inner sole and the elimination of any ridges or the like that may result when the straps alone extend between two soles. With the filler provision easy flexing of the soles is present and a cushion effect provided for the foot as well as the elimination of "squeaking" usually present in shoes or sandals when two leather surfaces or the like rub in contact with each other.

As above pointed out, the sandal herein disclosed is especially designed for use by children with a view to meeting the changing requirements of the growing feet of children, the sandal being of a type which can provide lengthy service. As is apparent, growing feet require enlargement and possible reshaping of the strap of the vamp zone and material changes in connection with the heel and ankle zones.

In the present invention the strap of the vamp zone is adjustable as to effective length, and with its freely movable, concealed portion enables proper adjustment to be made to the growing dimensions of this portion of the foot and the inward spacing of the points of emergence of the strap from the concealed portion permits desired adjustment without causing the foot to project beyond the sole edge, thus tending to protect the foot, since the latter can have considerable growth before equalling the width of the sole zone of the sandal.

A similar condition is present in connection

with the heel and ankle, both of which are enlarged through the growth of the foot. With strap 20 formed of material cut on the bias, the strap can conform to the changes in heel dimensions, even though the strap ends are secured to the sole. The strap 24, slidably mounted on strap 20 and itself adjustable as to effective length, permits the proper positioning of the ankle strap on strap 20 to compensate for the changes in shape of the ankle, with the buckle adjustments permitting proper adjustments as to the changed dimensions of the growing ankle.

The sandal of the present invention provides for such compensation in both zones through a single adjustment in the vamp zone and the dual adjustment characteristics present in the heel and ankle zone, with all of such adjustments being needed to secure the proper fit for the growing foot. As is evident, these adjustments may be made through a material range, so that the sandal remains serviceable for a greatly increased period of time.

From the above detailed description of the invention, it is believed that the construction and use thereof will at once be apparent and while there is herein shown and described the preferred embodiment, it is to be understood that minor changes may be made in the details of construction, such as will fall within the scope of the invention as claimed.

I claim:

1. A sandal having a vamp zone and a heel zone with independent foot-retaining assemblies thereat, the vamp zone having strap means partially concealed in the direction of sole width, the upper portion of said strap means being exposed, means for adjustably connecting said exposed upper portions together, said sandal being further characterized in that the heel assembly has a heel strap having its ends permanently connected to opposite sides of the sole at points approximating the front portion of the heel, the strap body being exposed and formed with a mid-zone spaced from the sole and adapted to lie above the heel of the wearer, the side portions of the heel strap extending upwardly and rearwardly in an arcuate path between the mid-zone and the end securing zones, said heel assembly also including a divided ankle-strap having loops each embracing a side portion of the heel strap with each loop freely movable in the direction of length of the heel strap, the free ends of the ankle-strap extending forwardly and upwardly and carrying complemental means for adjustably varying the effective length of the ankle-strap, whereby the vamp and heel zone assemblies are each adjustable to compensate for growth of the foot of the wearer with a single adjustment for the vamp strap and dual adjustments for the ankle-strap of the heel assembly, the heel strap being formed of fabric material cut on the bias to thereby permit self-compensating shifting of the position of the mid-zone portion of the heel strap as needed by the foot growth.

2. A sandal as in claim 1 characterized in that the points of emergence of the vamp strap from the concealed position are spaced inward from the peripheral edge of the vamp zone of the sole to thereby permit adjusted increase in the effective length of the vamp strap in presence of increase in dimensions of the foot of the wearer without projecting the foot contour beyond the peripheral contour of the sole.

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(References on following page)

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## REFERENCES CITED

The following references are of record in the file of this patent:

## UNITED STATES PATENTS

Number	Name	Date
1,944,664	Maxey -----	Jan. 23, 1934
2,112,884	Gillette -----	Apr. 5, 1938
2,205,091	Geffner -----	June 18, 1940
2,239,471	Srajer -----	Apr. 22, 1941
2,259,273	Smith -----	Oct. 14, 1941
2,259,559	Filsinger -----	Oct. 21, 1941

Number
2,343,701
2,352,098
2,388,744
5 2,421,818

6

Name	Date
Pickens -----	Mar. 7, 1944
Hess -----	June 20, 1944
Hoy -----	Nov. 13, 1945
Tibiletti -----	June 10, 1947

## FOREIGN PATENTS

Number	Country	Date
366,446	Great Britain -----	July 29, 1930
686,325	France -----	Apr. 8, 1930
760,714	France -----	Dec. 14, 1933
820,906	France -----	Aug. 9, 1937