Nov. 15, 1960 A. D. FAIRGRIEVE 2,960,151

FOOT REST, PROTECTOR, AND LIMB GUARD

Filed April 20, 1959

3 Sheets-Sheet 1

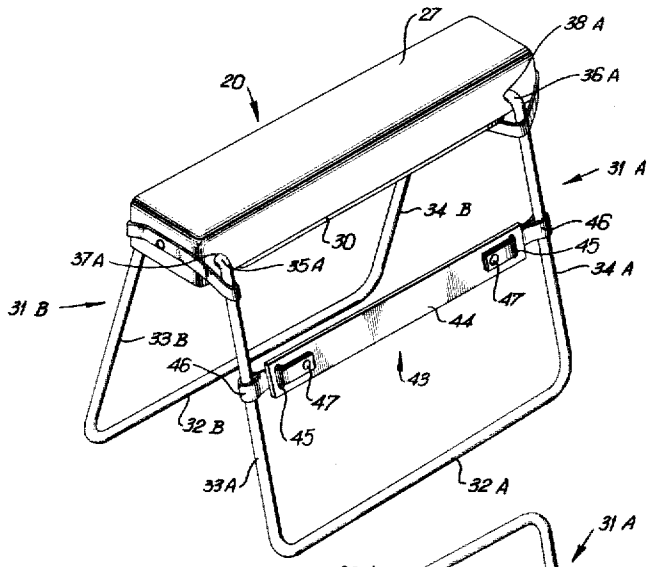


FIG. 1

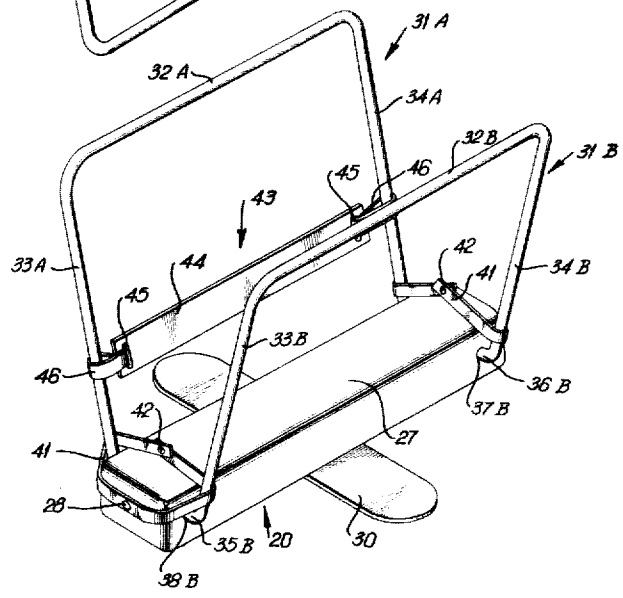


FIG. 2

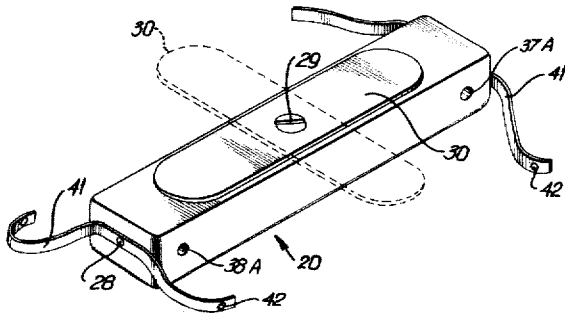


FIG. 3

INVENTOR.

ALBERT D. FAIRGRIEVE

Nov. 15, 1960 A. D. FAIRGRIEVE 2,960,151

FOOT REST, PROTECTOR, AND LIMB GUARD

Filed April 20, 1959 3 Sheets-Sheet 2

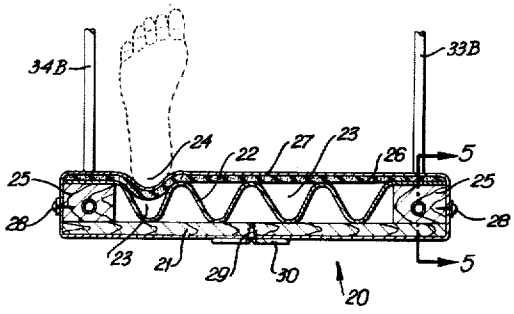


FIG. 4

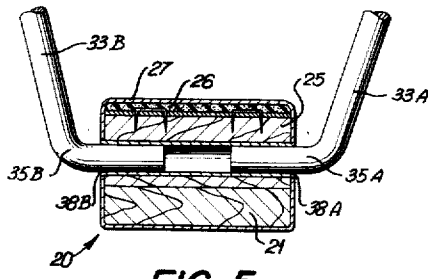


FIG. 5

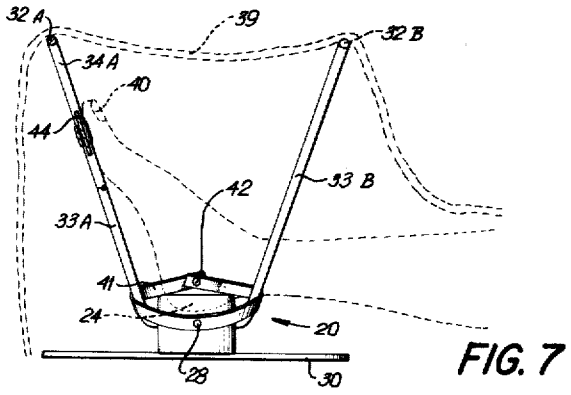


FIG. 7

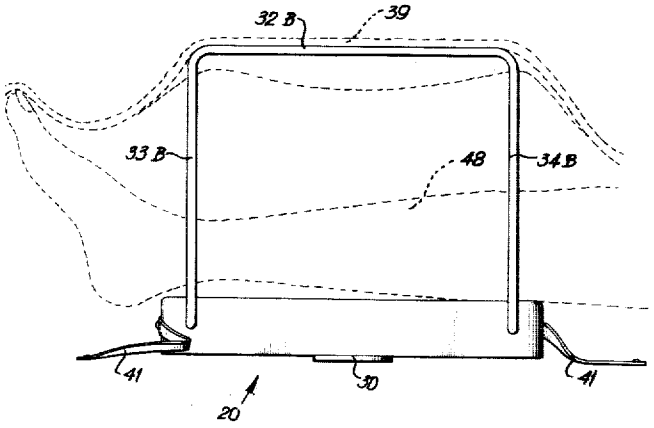


FIG. 8

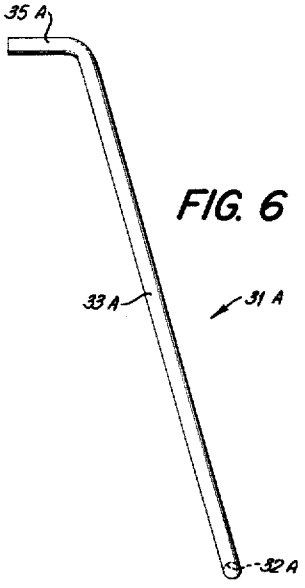


FIG. 6

INVENTOR.

ALBERT D. FAIRGRIEVE

Nov. 15, 1960 A. D. FAIRGRIEVE 2,960,151

FOOT REST, PROTECTOR, AND LIMB GUARD

Filed April 20, 1959 3 Sheets-Sheet 3

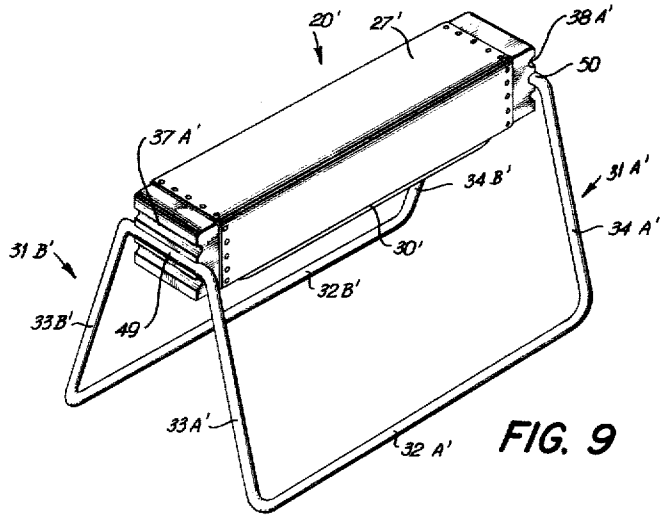


FIG. 9

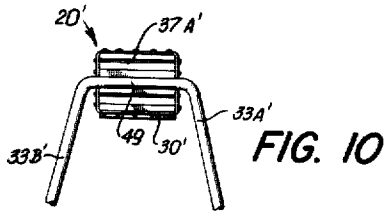


FIG. 10

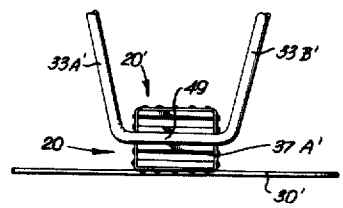


FIG. 11

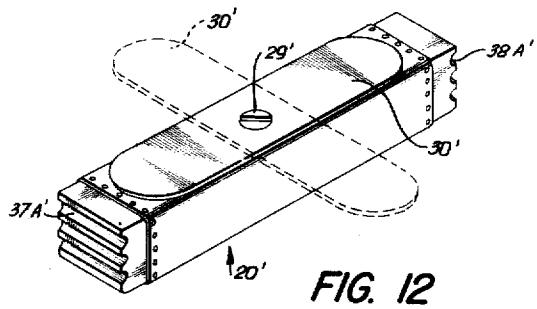


FIG. 12

INVENTOR.
ALBERT D. FAIRGRIEVE

United States Patent Office 2,960,151 Patented Nov. 15, 1960

2,960,151

FOOT REST, PROTECTOR, AND LIMB GUARD

Albert D. Fairgrieve, 1226 W. 11th Ave., Vancouver, British Columbia, Canada

Filed Apr. 20, 1959, Ser. No. 807,518

4 Claims. (Cl. 155—172)

The present invention consists of apparatus which may be used as a foot rest for a person in bed and adapted to keep the weight of the bed clothing off of the person's feet while simultaneously providing an elastomeric cradle or rest for the person's heels to rest in, or which may be used as a leg or arm shield to protect an injured leg or arm from the weight of the bed clothing, or which may be used outside of a bed, and with the leg means of the apparatus in reversed position, as a conventional foot rest or foot stool for a person sitting in a chair, or the like, and resting his heels in the cradles or nests provided by the apparatus. Furthermore, it should be noted that, when employed as a foot rest for use in a bed to hold the bed clothing out of contact with a user's feet, the apparatus may also include a transversely directed resiliently mounted toe strap means located in the proper position for abutment by the front or toe portions of the feet of a user of the device. This is particularly important for invalids afflicted with partial muscle paralysis of the type which is sometimes referred to as "drop foot trouble," which merely means that the muscles attached to the front of the leg and the front of the foot are partially paralyzed to an extent which allows the toes to fall under the action of gravity into a fully extended position as low as it can possibly attain. The toe strap means of the present invention prevents this from occurring.

It is an object of the present invention to provide a foot rest, protector, and limb guard of the type generally referred to above, which includes a main (usually longitudinal) body member and leg means provided with body-engageable means or ends removably and oppositely reversibly engageable with the body member in a first position projecting upwardly away from said body member in a manner having a vertical directional component and in a second position projecting downwardly away from said body member in a manner having a vertical directional component; said first upwardly projecting configuration comprising an arrangement where the device can be used as a foot rest adapted to be positioned in a bed and to receive the heels of a person using the device while the upwardly projecting leg means holds the weight of the bed clothing off of the user's feet, and said first upwardly projecting configuration also providing an arrangement adapted to longitudinally receive an injured leg or arm of a user of the device with the leg means projecting upwardly and maintaining the weight of the bed clothing out of contact with the injured arm or leg; said second downwardly projecting configuration comprising an arrangement where the device can be used as a foot rest or a foot stool by a person sitting in a chair, or the like, who may extend his feet forwardly from the chair and rest his heels on the main body member.

It is a further object to provide a device of the character set forth in the preceding object, wherein the main body member is provided with an underlying longitudinal stabilizer member, usually of flat planar configuration,

centrally rotatively mounted thereunder and normally parallel to said main body member and, therefore, substantially inoperative, but being controllably rotatively movable into a stabilizing position perpendicular to said main body member and adapted to contact the surface of a bed so as to stabilize and firmly support said body member and the upwardly directed leg means so that upwardly directed leg means can support the weight of bed clothing above a user's feet in a stable manner. The stabilizing member may also be used when the device is longitudinally oriented with respect to a user's limb, such as a leg or an arm, which is injured and which is adapted to be positioned between adjacent portions of the leg means so that the upstanding leg means can adequately protect said injured leg or arm while the stabilizing member firmly and in a very stable manner supports the entire device and the bed clothing carried by the upwardly projecting ends of the leg means.

It is a further object to provide a device of the character set forth in the preceding object, wherein the body member is of longitudinal configuration and includes a rigid base portion, an intermediate rigid corrugated portion defining a plurality of upwardly open V-shaped troughs of a width adequate to at least partially receive therein the back edge of a human heel, with each of said V-shaped troughs extending across said longitudinal body member and with the plurality of said troughs being transversely spaced along said body member in parallel relationship, and with said body member further including an elastomeric top cushioning member such as sponge rubber, foam rubber, or the like, lying over said intermediate rigid corrugated portion whereby to provide a number of very effective resilient cradles or nests for the heels of a user of the device.

It is a further object to provide a device of the character set forth in any of the preceding objects, wherein the leg means is provided with a transversely directed toe strap means so positioned as to be conveniently abuttable by the toe portions of the feet of a user of the device when it is used as a foot rest in bed for supporting the weight of bed clothing out of contact with the feet of a user of the device.

It is a further object to provide a device of the character set forth in any of the preceding objects, wherein the leg means takes the form of two portions, with a first leg portion adapted to be positioned on one side of a vertical central plane longitudinally bisecting the longitudinal body member, and a second leg portion adapted to be positioned symmetrically on the other side of said vertical plane, with said leg portions being provided with body-engageable means and with said body member being provided with leg-engageable means controllably and removably reversibly engageable with each other whereby said leg means can be positioned in upwardly oriented symmetrically disposed relationship with respect to said body member or can be positioned in downwardly oriented symmetrically disposed relationship with respect to said body member.

It is a further object to provide a device of the character set forth in any of the preceding objects which is of extremely simple, cheap, foolproof construction such as to be conducive to widespread use of the device.

Further objects will be apparent to persons skilled in the art after a careful study hereof.

For the purpose of clarifying the nature of the present invention, two exemplary embodiments are illustrated in the hereinbelow-described figures of the accompanying three sheets of drawings, and are described in detail hereinafter.

Fig. 1 is a reduced-size perspective view of one exemplary form of the invention showing it in the downwardly directed configuration wherein the leg means ex-

tend downwardly from the logitudinal main body member and wherein the device is adapted for use as a foot rest or foot stool by a person sitting in a chair, or the like, who extends his feet forwardly from the chair and rests his heels on the upper surface of the foot rest main body member.

Fig. 2 is a perspective view of the device in the upwardly directed configuration wherein the leg means have been reversed from the position shown in Fig. 1 and extend upwardly from the longitudinal main body member, which has been turned around, and wherein the device is adapted for use as a foot rest by a person lying in bed, and wherein the upwardly projecting leg means are adapted to hold the weight of bed clothing out of contact with a user's feet, which may rest upon the upper surface of the main body member, as is clearly shown in Figs. 4 and 7.

Fig. 3 is an inverted perspective view of the main body member alone without the leg means.

Fig. 4 is a longitudinal central sectional view through the main body member and with one portion of the leg means shown fragmentarily and the other portion not shown at all because of the plane of the vertical section. This view also shows in broken lines the general position of one foot of a user showing how the heel thereof is carried by a nest or cradle formed out of the downwardly deflected elastomeric top cushioning member and one of the V-shaped troughs of the rigid corrugated intermediate member of the longitudinal base member.

Fig. 5 is a larger scale fragmentary cross-sectional view taken through the entire width of the main body member in the plane indicated by the arrows 5—5 of Fig. 4.

Fig. 6 is an end elevational view of one portion of the complete leg means adapted to be positioned on one side of the main longitudinal body member.

Fig. 7 is a fragmentary, partly broken away, partly sectional, and partly elevational end view of the device in the upwardly directed configuration shown in Fig. 2 illustrating its use in supporting the feet of the user when said user is in bed and the device rests upon the surface of the bed and supports the bed clothing above the user's feet.

Fig. 8 is an elevational view illustrating the device in the configuration illustrated in Figs. 2 and 7 except that the controllably engageable retaining strap means are shown disengaged, and the device is longitudinally oriented with respect to an injured limb of the patient so as to support the bed clothing thereabove and protect the injured limb.

Fig. 9 is a perspective view very similar to Fig. 1, but illustrates a slightly modified form of the invention wherein the entire leg means is of integral construction including two spaced horizontal central connection portions resiliently and vertically adjustably engageable with similar pairs of a plurality of oppositely open horizontally directed receiving notch means carried by opposite ends of the main body member.

Fig. 10 is a fragmentary end elevational view of the left end of Fig. 9 clearly showing the plurality of notches at one end of the main body member into which the corresponding connection portion of the leg means may be selectively engaged.

Fig. 11 is a fragmentary end elevational view somewhat like Fig. 10, but shows the fragmentary near portion of the leg means in the upwardly directed configuration generally similar to that shown in Figs. 2, 4, 5, 7, and 8, and intended for similar use.

Fig. 12 is a view similar to Fig. 3, but of the modified form of the invention illustrated in Figs. 9–11.

In the specific embodiment of the invention illustrated in Figs. 1–8, the above-mentioned longitudinal body member takes one specific form, indicated generally at **20**, wherein it includes a rigid base portion **21** which may be made of a longitudinal substantially rectangular piece of wood, although not so limited, and further includes an intermediate rigid corrugated portion **22** which may be made of fiber, molded plastic, or any other suitable material, and which defines a plurality of upwardly open V-shaped troughs **23** of a width adequate to at least partially receive therein the back edge of a human heel, such as the human heel shown at **24** in Figs. 4 and 7. In the specific example illustrated, the body member, indicated generally at **20**, also includes end blocks **25**, an elastomeric top cushioning member **26**, such as foam rubber, sponge rubber, or the like, although not specifically so limited, lying over the intermediate rigid corrugated portion **22** and a flexible elastic fabric cover member **27**, which is fastened by suitable fastening tacks, or the like, to the body member **20** at various locations, and also to the end blocks **25**, as indicated at **28**, and which extends under the rigid base portion **21** and is suitably fastened thereto by one or more fasteners.

A rotative fastening screw **29** centrally rotatively carries the flat longitudinal stabilizer member **30**, which may be made of fiberboard or any other suitable material, which is normally rotatively positioned parallel to and directly under the rigid base portion **21** of the longitudinal main body member **20** in the manner clearly shown in Fig. 1 and in solid lines in Fig. 3 showing the base member inverted. The function of this stabilizer member **30** will be described more fully hereinafter.

Also, in the specific embodiment of the invention illustrated in Figs. 1–8, the above-mentioned leg means takes a specific form wherein it includes two leg means indicated generally at **31A** and **31B**, which actually comprise a first leg portion and a second leg portion adapted to be positioned on opposite sides of the main body member **20** and to be controllably removably and reversibly engaged in said oppositely disposed positions on opposite sides of the main body member **20** by means of body-engageable means carried by said leg means and by leg-engageable means carried by said body member. In the specific example illustrated, each of the leg means or portions **31A** and **31B** consists of a longitudinal member of substantially rectangular elevational shape having a longitudinal transverse remote portion, **32A** and **32B**, respectively, adapted to be positioned parallel to the longitudinal main body member **20**, and having two spaced side portions **33A** and **33B** and **34A** and **34B**, respectively, adapted to be positioned perpendicular to the longitudinal main body member, and having said body-engageable means taking the form of engaging ends **35A** and **35B** and **36A** and **36B**, respectively, which engage said leg-engageable means, which in the specific example illustrated in Figs. 1–8, take the specific form of a plurality of engaging and receiving recess means **37A** and **37B** and **38A** and **38B**, respectively. It should be noted that the recesses **37A** and **37B** are tubularly lined and extend oppositely and in aligned relationship into one of the blocks **25** while the recess means **38A** and **38B** are tubularly lined and similarly extend in aligned relationship into opposite surfaces of the other block **25**. This is best shown in Figs. 4 and 5, as is the mounting engagement thereof with respect to the ends of the legs (particularly **35A** and **35B**, although **36A** and **36B** are similarly mounted).

It should be clearly noted that, in Fig. 1, the body-engageable ends **35A** and **35B** and **36A** and **36B**, respectively, are engaged with the corresponding leg-engageable recess means **37A**, **37B**, **38A**, and **38B**, respectively, in a manner such that each of the two leg means or portions **31A** and **31B** is in a first position wherein it projects downwardly away from the longitudinal main body member **20** in a manner having a vertical directional component and in a manner such that the device can be used as a foot stool positioned in front of a chair, or the like, and with the transverse portions **32A** and **32B** resting on a horizontal floor, and with a user's feet resting on the top surface of the main body member **20**, which will deflect downwardly in the manner of the cover

27, and the elastomeric cushioning 26 shown in Fig. 4 into one of the V-shaped troughs 23 so as to effectively support each heel in such fashion.

It should be noted that Fig. 3 merely shows the main body member in inverted position so that the construction and operation of the stabilizer member 30 can be better understood. Figs. 2, 4, 5, and 7 illustrate the same structural form of the invention as illustrated in Fig. 1 in complete form and in Fig. 3 in partial form. However, as shown in Fig. 2 the two leg means or portions 31A and 31B have been reversed with respect to the main body member 20 (which has been turned around) to be in a second position projecting upwardly away from the main body member 20 and having a vertical directional component so that the transverse portions 32A and 32B may effectively support bed clothing, indicated in dotted lines at 39 in Fig. 7, out of contact with the toe portion, indicated in dotted lines at 40, in Fig. 7, of a user's foot. It will be noted that the stabilizer member 30 has been rotated about the pivotal fastening screw 29 into a position perpendicular to the longitudinal main body 20 so that it may rest upon a surface of the bed (not shown) so as to firmly support the device in a stable manner, such as shown in Figs. 2, 4, and 7.

It should be noted that the form of the invention illustrated also includes controllably engageable retaining strap means, indicated at 41, fastened as indicated at 28 to opposite ends of the main longitudinal body member 20 and having snap fasteners 42 at the free ends thereof whereby they may be controllably placed in encircling relationship around adjacent portions of the two leg means or portions 31A and 31B, so as to maintain them in locked engagement with the main body member 20 and yet be easily controllably releasable, when desired.

It should also be noted that the device may include toe strap means, such as indicated generally at 43, mounted in a manner such as to be abuttable by the ball of the foot or toe portion of a foot (or both feet) of a patient when the patient is resting his heel on the device in the manner shown in Fig. 7 and the upwardly extending leg portions 31A and 31B are supporting the bed clothing 39 out of contact with his foot. This effectively supports the toe portions 40 of a person's feet so that they will not drop downwardly in the event that the person is afflicted with a partial paralysis of the frontal foot and lower leg muscles. In the specific example illustrated, the toe strap means 43 comprises a rigid member 44 having slots 45 at each end and a resilient elastic tape 46 encircling the two side portions 33A and 34A of the leg portion 31A, with ends of said elastic strap 46 being tacked, as indicated at 47, to said rigid member 44.

Fig. 8 illustrates the device in the same upwardly directed configuration shown in Figs. 2, 4, 5, and 7, but used for a different purpose. In this application of the device, the main body member 20 is longitudinally positioned with respect to the leg, indicated in broken lines at 48 in Fig. 8, of a user of the device so that said leg (or, for that matter, an arm) may be longitudinally placed on the top surface of the main body member 20 between the two leg portions whereby to be adequately protected from overlying bed clothing 39 which is maintained out of contact with the injured leg 48 by reason of the upwardly directed leg portions.

Figs. 9–12 illustrate a slight modification of the invention, and similar parts will be indicated by similar primed reference numerals. In this modification, the two leg portions 31A' and 31B' are integrally connected by two spaced horizontal connection portions 49 and 50, which are resiliently engageable with a modified form of leg-engageable means comprising the plurality of vertically spaced outwardly open horizontally directed notches 37A' and 38A' at opposite ends of the longitudinal main body member 20', whereby the two connection portions 49 and 50 may be resiliently sprung outwardly and released into any horizontally aligned pair of the notches 37A' and 38A' so as to effectively engage the entire leg means with respect to the main body portion 20' and to do so in a vertical height-adjustable manner by reason of the multiple notches 37A' and 38A'.

Figs. 9 and 10 illustrate this modification of the invention in the downwardly directed foot stool type of configuration similar to that shown in Fig. 1 in connection with the first form of the invention, while Fig. 11 shows this modified form of the invention in the upwardly directed configuration for invalids' bed use generally similar to the usage illustrated in Figs. 2, 4, 5, and 7, and also in Fig. 8 as an alternate form. Therefore, a specific description of this figure is not thought necessary.

Fig. 12 is generally similar to Fig. 3 but illustrates the modified form of main body member having a plurality of end notches 37A' and 38A' as comprising the leg-engageable means.

It will be understood that in certain forms of the invention the retaining strap means and/or the foot strap means may be modified substantially or eliminated entirely, and that the specific construction of the leg means and the main body member and the apparatus bringing about controllably removable and reversible interengagement thereof, may also be modified substantially within the spirit of the present invention.

It should be understood that the figures and the specific description thereof set forth in this application are for the purpose of illustrating the present invention and are not to be construed as limiting the present invention to the precise and detailed specific structure shown in the figures and specifically described hereinbefore. Rather, the real invention is intended to include substantially equivalent constructions embodying the basic teachings and inventive concept of the present invention.

I claim:

1. A foot rest, protector, and limb guard, comprising: a main body member, said body member being provided with leg-engageable means at oppositely symmetrically spaced locations, said leg-engageable means including spaced outwardly open horizontally directed leg-receiving notch means at opposite ends of said body member; leg means including a first leg portion adapted to be positioned on one side of a vertical central plane longitudinally bisecting said body member and a second leg portion adapted to be positioned symmetrically on the other side of said vertical plane, with said leg portions being integrally connected by two spaced horizontal body-engageable connection portions resiliently and oppositely reversibly engageable with said receiving notch means at opposite ends of said main body member in a first position projecting upwardly away from said body member in a manner having a vertical directional component and in a second position projecting downwardly away from said body member in a manner having a vertical directional component.

2. A device of the character defined in claim 1, wherein said body member includes a rigid base portion, an intermediate rigid corrugated portion defining a plurality of upwardly open V-shaped troughs of a width adequate to at least partially receive therein the back edge of a human heel directed across said body member and transversely spaced therealong, and an elastomeric top cushioning member lying over said intermediate rigid corrugated portion.

3. A device of the character defined in claim 1, wherein one of said leg portions is provided with an intermediately positioned transversely directed resiliently mounted toe strap means extending between spaced side portions thereof.

4. A device of the character defined in claim 1, wherein said main body member is provided with an underlying longitudinal stabilizer member rotatively mounted thereunder for movement from a normal position parallel

to said main body member into a stabilizing position perpendicular to said main body member.

References Cited in the file of this patent

UNITED STATES PATENTS

619,071	Criddle	Feb. 7, 1899
1,547,879	Lambert	July 28, 1925
2,572,205	Shanks	Oct. 23, 1951
2,813,576	Mayer	Nov. 19, 1957
2,829,705	Godshalk	Apr. 8, 1958

FOREIGN PATENTS

105,863	Great Britain	May 3, 1917
153,992	Great Britain	Nov. 25, 1920