Sept. 11, 1956 E. RUBIN 2,762,367

WALKING-AID FOR A SPLINTED HUMAN LEG DRESSED IN PLASTER OF PARIS

Filed July 10, 1953

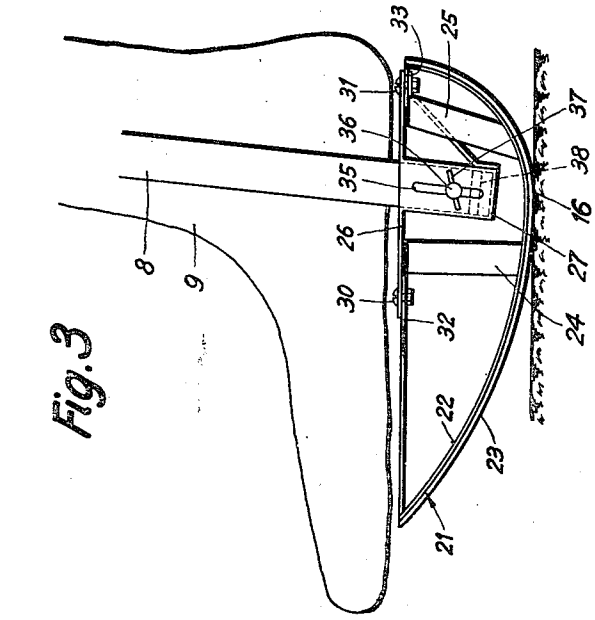

Fig. 3

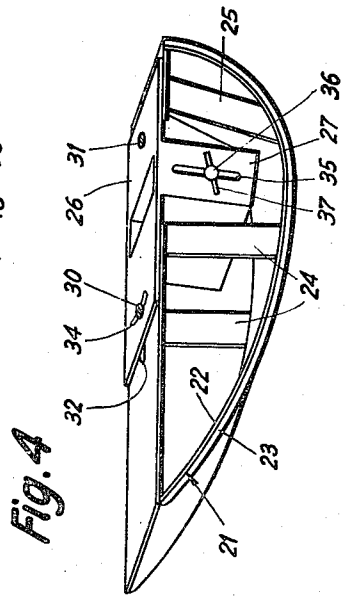

Fig. 4

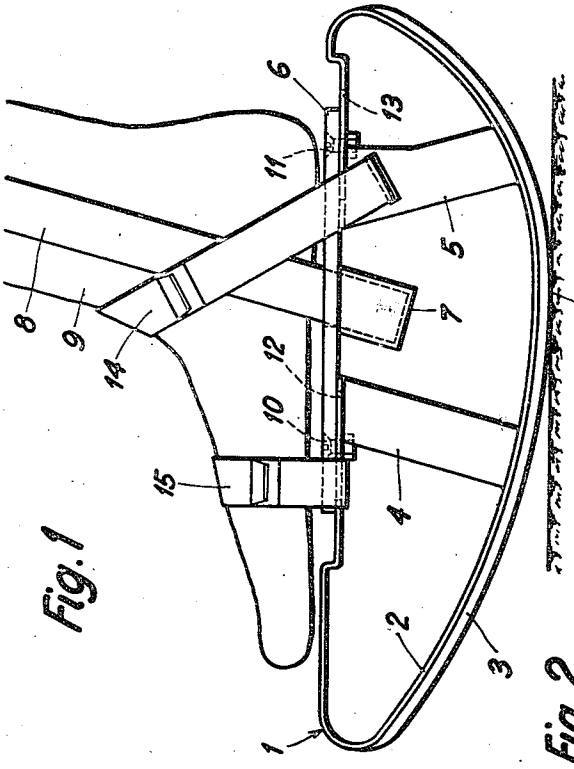

Fig. 1

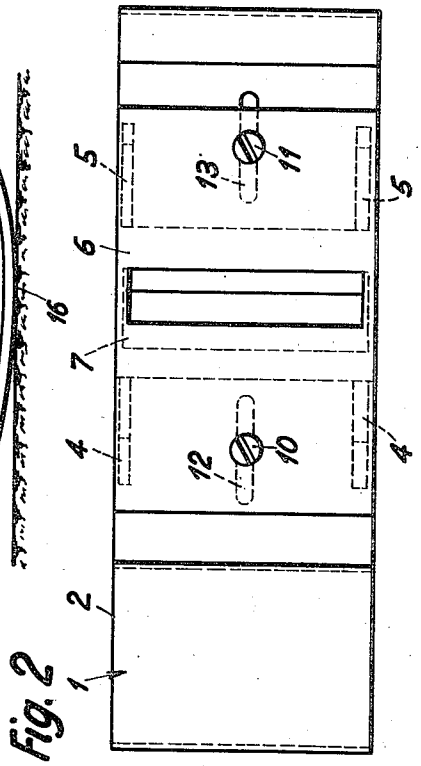

Fig. 2

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WALKING-AID FOR A SPLINTED HUMAN LEG DRESSED IN PLASTER OF PARIS

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Application July 10, 1953, Serial No. 367,272

6 Claims. (Cl. 128—83.5)

My present invention relates to improvements in walking-aids for a human leg in splints and in a plaster-of-Paris dressing, and is characterized by a supporting structure provided with means for detachably fixing it to the plaster-of-Paris dressing underneath the foot sole, whereby the lower side of the supporting structure is curved outwardly in the walking-direction in order to make a rolling-off of the walking foot possible.

Two forms of my invention are shown in the accompanying drawings, in which

Fig. 1 shows a side view of the walking-aid secured to the walking stirrup or truss of a human leg in a plaster-of-Paris dressing, in the first form,

Fig. 2 is a top plan view of the walking-aid shown in Fig. 1,

Fig. 3 depicts a side view of the second form, and

Fig. 4 is a perspective view of the latter.

The walking-aid of Figs. 1 and 2 designated generally by **1**, may be made of metal, for example aluminium, and comprises as essential part a strap **2**, the middle portion of which forms the lower side of the walking-aid and the two horizontal ends of which facing each other form the upper side of the walking-aid. The lower side of the strap **2**, which is provided with a replaceable coating **3**, is curved outwardly in the walking-direction in order to make the rolling-off of the walking foot possible. To increase the stability of the strap **2**, two pairs of stiffening ribs **4** and **5** are provided. The ends of the strap **2** are connected with each other by means of a supporting plate **6** to which is secured a cradle **7**, such plate and cradle together forming a truss for a walking-stirrup **8** of a splinted human leg **9** in a plaster-of-Paris dressing. The plate **6** is secured to the ends of strap **2** by means of two screws **10** and **11**. Said upper portion has two slots **12** and **13** to receive the screws **10**, **11** so as to make the truss **6**, **7** adjustable relatively to the aid **1**. A fastening lace or band **14** may be passed through slots provided in the ribs **5**, and a further fastening band **15** is disposed further in front of aid **1**.

Application and use of this walking-aid structure is very simple. The truss **6**, **7** is secured to the strap **2** so that the center of gravity of the patient is situated above the lowermost point **16** in order to ensure a painless devolution of the foot on walking. Furthermore, care has to be taken to ensure that the patient's leg does not bear on the walking-aid **1**, rather the entire weight of the patient shall be transferred through stirrup **8**. The walking-aid **1** then is attached to the patient's leg **9** by means of the bands **14** and **15**.

In the second form of invention, shown in Figs. 3 and 4, the walking-aid which is designated generally by **21**, also may be made of metal such as aluminum, and comprises a convex underside **22** having a replaceable coating **23**. Two pairs of stiffening ribs **24** and **25** serve to increase the stability of aid **21**. The top opening of the latter is covered by a supporting plate **26** to which is attached a cradle **27**. Plate **26** and cradle **27** together form a truss for the walking-stirrup **8** of the patient's

leg **9**. The plate **26** is secured to the upper portion of walking-aid **21** by means of two screws **30** and **31**. Said upper portion has two slots **32** and **33** for the screws **30** and **31** so as to make the truss adjustable in its longitudinal direction relatively to the aid **21**. The truss itself is provided with a curved slot **34** so as to be pivotable on screw **31**. Each short-side wall of cradle **27** is provided with a vertical slot **35** in which is engaged a screw **36** having a wing nut **37**. Rubber pads **38** are disposed in the cradle **27**. The second form of walking-aid is used as follows. The truss is secured to the upper portion of the aid so that the center of gravity of the patient is situated above the lowermost point **16** in order to ensure a painless devolution on walking. Here also the foot must not bear on the walking-aid, but rather the entire weight of the patient is transferred through the truss.

For such latter purpose, a plurality of rubber pads **38** are inserted in the cradle **27** so that the foot is correctly positioned.

Two holes are bored through the stirrup **8** (suitably before applying the plaster-of-Paris dressing) to permit to pass the screw **36** therethrough and to fix the same by means of nut **37**.

While I have shown and described different embodiments of my invention, I wish it to be understood that I do not wish to be limited to the details thereof as various modifications may occur to a person skilled in the art.

I claim:

1. In a walking-aid device for attachment to the sole portion of a plastic cast on a person's leg, frame structure having a convex bottom surface and flat top surface portions defining a gap between them, truss structure, said truss structure including means for receiving the walking stirrup incorporated in said cast, and adjustable means connecting said truss structure with said top surface portions in bridging relation to said gap, said convex surface extending in the direction of the bottom of a person's foot when said device is connected with said stirrup.

2. A walking-aid device as claimed in claim 1, said truss structure having a recess cradle portion for receiving the lower end of said walking stirrup.

3. A walking-aid device as claimed in claim 1, said truss structure having a recess cradle with side walls having vertical slots, and stirrup attachment means adjustably engageable in said slots.

4. A walking-aid device as claimed in claim 1, said adjustable means including means permitting adjustment of said truss structure in the direction of the bottom of a person's foot.

5. A walking-aid device as claimed in claim 1, said adjustable means comprising a pivot pin and a combination arcuate slot and adjustment screw, said pivot pin pivoting one end of said truss structure to one of the said top portions of said frame structure to permit swinging movement of said truss structure about a vertical axis with said adjustment screw loosened with respect to said arcuate slot.

6. In a walking-aid device for attachment to the sole portion of a plastic cast on a person's leg, frame structure having a bottom convex surface and a flat top surface, said top surface having an elongated slot and a pivot opening spaced from said slot, said frame structure being adapted for attachment to said cast with said convex and top surfaces extending in the direction of the bottom of the person's foot, truss structure including a recess cradle having vertically adjustable stirrup securing means, said stirrup projecting from said cast and being insertable in said cradle, a pivot screw securing said truss structure to said frame structure for swinging movement with respect to said pivot opening, said truss structure having an arcu-

ate slot, and adjustment means engaged in said elongated and arcuate slots to permit said swinging movement and also longitudinal adjustment of said truss structure to take place.

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