July 31, 1945. W. F. HOMRIGHAUSEN 2,380,437

SEAT ATTACHMENT FOR CRUTCHES

Filed June 26, 1944 2 Sheets-Sheet 1

Fig. 1.

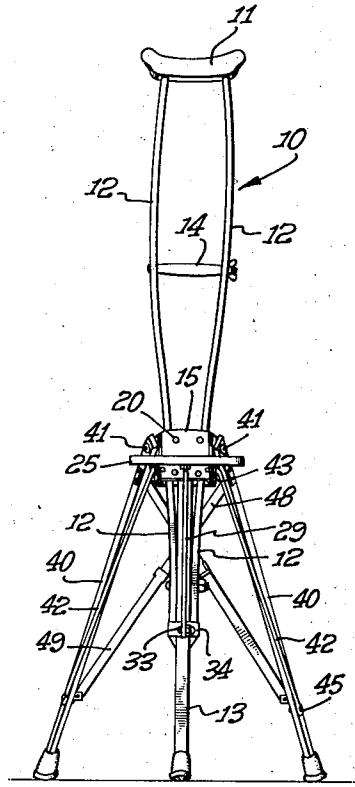
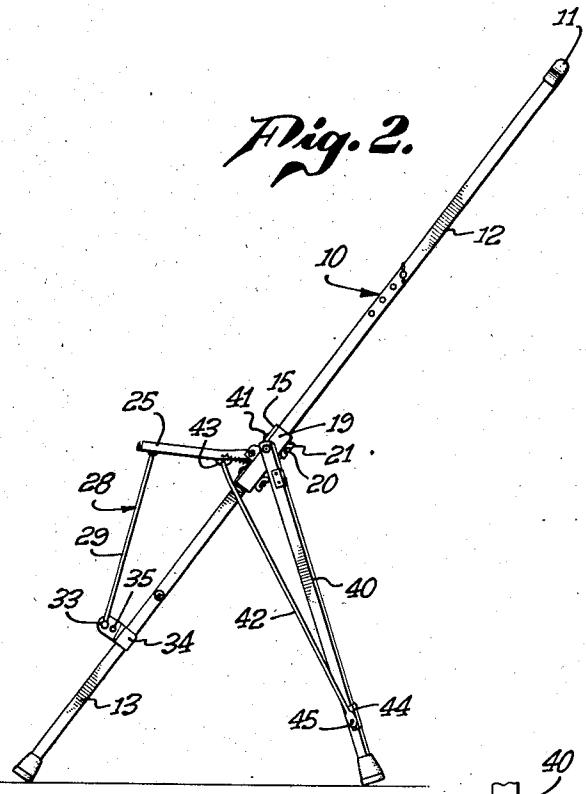


Fig. 2.



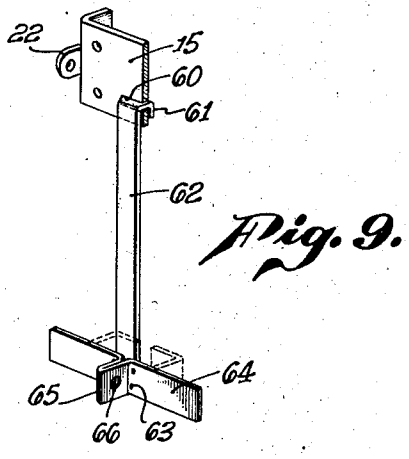
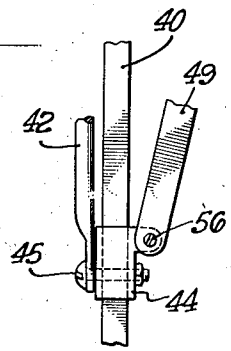


Fig. 9.

Fig. 8.



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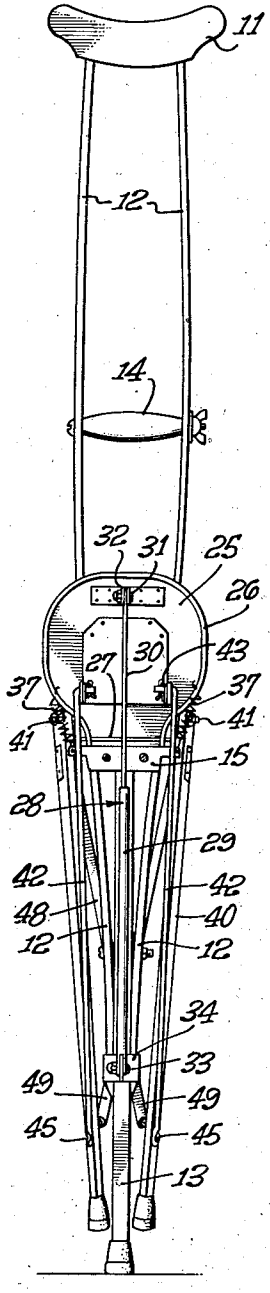


Fig. 3.

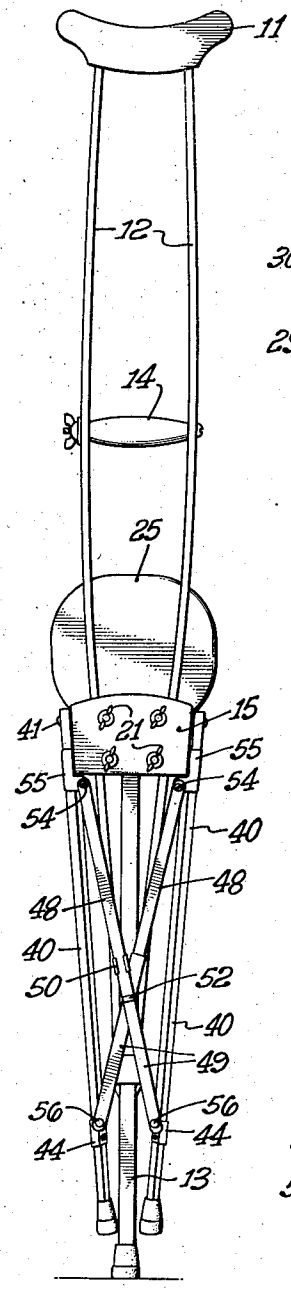


Fig. 4.

Fig. 5.

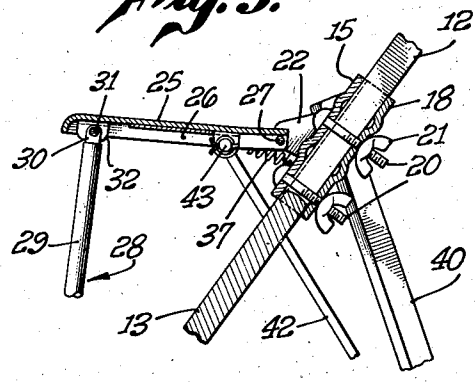
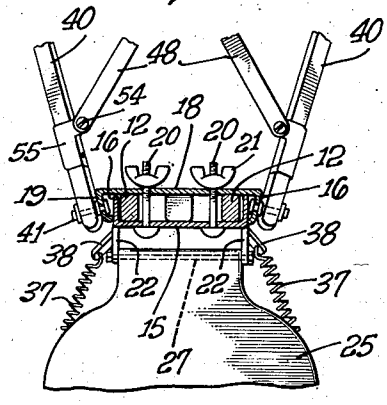


Fig. 6.



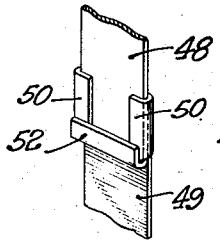


Fig. 7.

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UNITED STATES PATENT OFFICE

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SEAT ATTACHMENT FOR CRUTCHES

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Application June 26, 1944, Serial No. 542,133

10 Claims. (Cl. 155—41)

The present invention relates to a seat unit or seat attachment which may be readily attached to common forms of crutches.

The crutches referred to herein are those which are commonly used as a support when walking for those who, through some circumstance, have been deprived of the normal use of a leg or legs.

This seat attachment of the present invention is designed to be readily applied to any of the common form of crutches without modification or change in any particular of the structure of the crutch and which may be readily removed therefrom, as it is not necessary to drill holes in the crutch or mar the crutch in any manner.

It is one of the principal objects of this invention to provide a seat attachment for crutches of simple form and construction in which the seat is foldable and which is provided with legs which in combination with the crutch itself provide a three-legged support for the seat.

It is a further object of this invention to provide a seat attachment for crutches of simple form and construction provided with legs which are foldable along the sides of the crutch in such a manner as to not interfere with the use of the crutch for its ordinary functions.

It is a further object of this invention to provide a seat attachment for crutches of simple form and construction which may be attached to the common form of crutch without the drilling of holes or marring of the crutch.

Other objects and advantages will appear hereinafter from the following description and drawings.

Referring to the drawings, which are for illustrative purposes only:

Fig. 1 is a face view of a crutch showing a preferred form of the seat attachment mounted thereon, the parts of the attachment being in extended position such as assumed when the seat is ready for use;

Fig. 2 is a side view of the crutch and seat attachment shown in Fig. 1;

Fig. 3 is an enlarged face view similar to Fig. 1 showing the seat and legs in folded position;

Fig. 4 is a view similar to Fig. 3, looking at the back of the crutch;

Fig. 5 is an enlarged section elevational view of a portion of the crutch and portion of the seat attachment, the seat being in lowered position;

Fig. 6 is an enlarged plan view partly in section showing a portion of the seat and seat attachment;

Fig. 7 is an enlarged perspective view showing a part of the brace connection;

Fig. 8 is an enlarged fragmentary view showing the connection of the lower end of the struts and braces to the legs; and

Fig. 9 is a fragmentary perspective view showing a modification in which a connecting strap extends from the clamp to the band.

Referring more particularly to the drawings, 10 designates a common form of crutch having a shoulder rest 11, two bowed shafts indicated at 12 and a central shaft indicated at 13 which extends upwardly between the lower ends of the shafts 12.

14 designates a handle such as is commonly used on crutches and which forms a brace between the shafts 12 at their bowed portion. The seat attachment consists of a front plate 15, preferably of thin steel, bent to form rearwardly extending side flanges 16 which embrace the sides of the crutch shafts 12 as best shown in Fig. 6. 18 designates a back plate which likewise is bent along its sides to form forwardly extending flanges 19 which engage the flanges 16 of the plate 15 therebetween. These two plates 15 and 18 are clamped together on the shafts 12 of the crutch by means of bolts indicated at 20 provided with butterfly nuts 21. A portion of the flanges 16 of the plate 15 at each side of the plate are bent forwardly, forming ears indicated at 22 to which the seat is attached as hereinafter described.

The seat in the form shown is a rounded flat plate indicated at 25, having the front and side edges bent down to form flanges 26, although it is to be understood that the seat may be shaped as may be desired and either cast or otherwise formed. The seat is mounted pivotally at the back ears 22 by means of a pintle or rod 27 which extends through the ears 22 and the side flanges 26 of the seat. The front edge of the seat is provided with a telescoping member or leg indicated at 28. The telescoping member 28 consists of a tube indicated at 29 into which slidably extends a rod 30, the rod 30 being pivotally mounted on a pintle or rod 31 supported in ears 32 extending downwardly from the underside of the seat 25. The lower end of the telescoping member, that is, the tube 29, is pivotally connected by means of a bolt indicated at 33 to a collar 34 which consists of a strip of metal extending around the lower ends of the shafts 12 and the shaft 13 therebetween. This collar is tightened on the crutch by means of a bolt indicated at 35. The tube 29 is of proper

length so that when the seat is in lowered position, as shown in Figs. 2 and 5, the ears 32 rest upon the upper end of the tube and thereby form a firm support on the crutch for the outer end of the seat. For the purpose of assisting in the lowering of the seat from folded position to extended or open position, two springs indicated at 37 are provided, the front ends of the springs being attached in any suitable manner to the sides of the seat and the back or rearward ends of the springs being connected to lugs indicated at 38 formed on the plate 15. The springs 37 also tend to hold the seat in folded position as the longitudinal axis of the springs pass through and over the pivotal point of the seat as the seat is moved upwardly into folded position.

Legs are provided which, together with the crutch, form a firm support for the seat when the seat is in extended position, as follows: 40 indicates legs, there being two provided, the upper ends of such legs being pivotally connected to the flanges 19 on the back plate 18 by means of pins or bolts 41. These legs when in extended position together with the lower portion of the crutch below the seat all extend downwardly and outwardly from each other, thereby forming a tripod support for the seat. The legs are directly connected to the seat by means of struts indicated at 42, the upper ends of which are pivotally connected to ears extending downwardly from the seat as indicated at 43 and the lower ends are pivotally connected to a bracket 44 near the lower ends of the legs as indicated at 45 (see Fig. 8). The legs 40 are connected to each other by means of extensible crossed braces, each brace consisting of an upper strap of metal 48 and a lower strap of metal 49, the lower strap having its upper side edges bent inwardly to form guides as indicated at 50 and the lower end of the upper strap 48 being bent outwardly and upwardly to form together with the guides a stop indicated at 52. The upper end of the crossed braces, that is, straps 48, are pivotally connected to ears 54 formed on brackets indicated at 55 which are secured to the legs 40 in any suitable manner and the lower ends of straps 49 are pivotally connected to the brackets 44 as indicated at 56 (see Fig. 8).

It is to be understood that when the crutch attachment is in a non-operative position as shown in Figs. 3 and 4, that is, with the seat folded upwardly against the shaft 12 of the crutch, the crutch may be used as a crutch is ordinarily used. However, should the user of the crutch, due to fatigue or for any other reason, desire to rest, the seat is pushed outwardly from the crutch and downwardly into the position shown in Figs. 1, 2 and 5, and when in this position the extensible member 28 supports the front portion of the seat as heretofore described and the crutch is placed in an inclined position as shown in Figs. 2 and 3 with the legs extending outwardly and rearwardly, and when in such position the lower end of the crutch and legs form a three pointed or tripod support for the seat.

When the seat is not in use it is to be understood that the attachment may be placed in inoperative position merely by grasping the front of the seat and swinging it upwardly into the position shown in Figs. 3 and 4.

It is to be noted that the attachment of the springs 37 to the seat and to the front plate 15 are so placed that when the chair is in folded position the pivotal point of the seat indicated at 27 is in front of the line of tension of the spring so that the tendency of the spring when the seat is in folded position is to yieldingly hold the seat into such position.

In Fig. 9 I have shown a modification of a part of the attachment in which I make provision for supporting from the clamp what I have hereinabove referred to as a band or collar. The front plate of the clamp 15 is provided with a slot or opening 60 which receives the upper hooked end 61 of a strap indicated at 62. The lower end of this strap is secured by means of rivets indicated at 63 to a foldable strip of metal indicated at 64. This strip of metal is folded back upon itself to form an outwardly extending flange 65 which is provided with a perforation 66 to receive a pin or other pivotal connection for the lower end of the telescoping member 28, heretofore referred to. With the construction just described, after the clamp has been attached to the crutch, the ends of the strip 64 are bent around the crutch forming a collar as indicated in dotted lines in Fig. 9. This construction provides a ready way of securing the band or collar 64 to the crutch and makes the attachment readily adjustable to the crutch regardless of the contour of that portion of the crutch to which the band or collar is attached. While I have shown the upper end of the strap 62 hooked through an opening or slot in the plate 15, it is to be understood that this upper connection can be made in any conventional manner, as by riveting or otherwise securing the two parts together.

Although a preferred form of the invention has been particularly shown and described, it is contemplated that various changes and modifications can be made without departing from the scope of the invention and it is intended to cover such changes and modifications as come within the scope of the claims.

I claim as my invention:

1. A seat attachment for crutches comprising: a clamp adapted to be mounted on a crutch; a seat pivotally mounted on said clamp; a collar adapted to be mounted on a crutch below the clamp; a telescoping leg pivotally connected at its upper end to the front portion of said seat and at its lower end to said clamp; a pair of supporting legs pivotally connected at their upper ends to said clamp and extending downwardly and rearwardly therefrom and a pair of struts pivotally connected at their upper ends to said seat and at their lower ends to said last-named legs.

2. A seat attachment for crutches comprising: a clamp adapted to be mounted on a crutch; a seat pivotally mounted on said clamp; a collar adapted to be mounted on a crutch below the clamp; a telescoping leg pivotally connected at its upper end to the front portion of said seat and at its lower end to said clamp; a pair of supporting legs pivotally connected at their upper ends to said clamp and extending downwardly and rearwardly therefrom and a pair of struts pivotally connected at their upper ends to said seat and at their lower ends to said last-named legs; a pair of extensible cross braces pivotally connected at their ends to the supporting legs and means for limiting the extension of said braces.

3. An attachment for crutches comprising: a clamp adapted to engage around a crutch; said clamp comprising a front plate and a back plate; means for securing said plates together; a seat pivotally mounted on the front plate of said clamp; a collar adapted to be mounted on a crutch below said clamp; a telescoping member

pivotally connected at its upper end to said seat and at its lower end to said collar, means for limiting the collapsing movement of said telescoping member; a pair of supporting legs pivotally connected at their upper ends to the back plate of said clamp; a pair of struts pivotally connected at their upper ends to said seat and at their lower ends to said legs and means for limiting the spreading movement of said legs.

4. An attachment for crutches comprising: a clamp adapted to engage around a crutch; said clamp comprising a front plate and a back plate; means for securing said plates together; a seat pivotally mounted on the front plate of said clamp; a collar adapted to be mounted on a crutch below said clamp; a telescoping member pivotally connected at its upper end to said seat and at its lower end to said collar, means for limiting the collapsing movement of said telescoping member; a pair of supporting legs pivotally connected at their upper ends to the back plate of said clamp; a pair of struts pivotally connected at their upper ends to said seat and at their lower ends to said legs and a pair of extensible crossed braces pivotally connected at their ends to the supporting legs and means for limiting the extension of said braces.

5. A seat attachment for crutches comprising: a clamp adapted to be mounted on a crutch; a seat pivotally mounted on said clamp; a collar adapted to be mounted on a crutch below the clamp; a telescoping leg pivotally connected at its upper end to the front portion of said seat and at its lower end to said clamp; a pair of supporting legs pivotally connected at their upper ends to said clamp and extending downwardly and rearwardly therefrom and a pair of struts pivotally connected at their upper ends to said seat and at their lower ends to said last-named legs; a pair of extensible cross braces pivotally connected at their ends to the supporting legs and means for limiting the extension of said braces; and a pair of coiled tension springs each having one end attached to said clamp below the pivotal axis of said seat and having their other ends connected to said seat forward of the pivotal axis of said seat.

6. An attachment for crutches comprising: a clamp adapted to engage around a crutch; said clamp comprising a front plate and a back plate; means for securing said plates together; a seat pivotally mounted on the front plate of said clamp; a collar adapted to be mounted on a crutch below said clamp; a telescoping member pivotally connected at its upper end to said seat and at its lower end to said collar, means for limiting the collapsing movement of said telescoping member; a pair of supporting legs pivotally connected at their upper ends to the back plate of said clamp; a pair of struts pivotally connected at their upper ends to said seat and at their lower ends to said legs and a pair of extensible crossed braces pivotally connected at their ends to the supporting legs and means for limiting the extension of said braces; said collar comprising a strip of metal foldable about the leg of a crutch and means connecting said collar to said clamp.

7. An attachment for crutches comprising: a clamp adapted to engage a crutch intermediate its length; said clamp comprising a front plate and a back plate; means for securing said plates together; a seat pivotally mounted on said clamp; a removable collar below said clamp engageable with a crutch; a telescoping member pivotally connected at its upper end to front portion of said seat, means for limiting the collapsing movement of said telescoping member; a pair of supporting legs pivotally connected at their upper ends to said clamp; a pair of struts pivotally connected at their upper ends to said seat forwardly of the pivotal axis of the seat and at their lower ends to said legs and a pair of extensible crossed braces pivotally connected at their ends to said supporting legs; and means on said braces for limiting the extension of the braces.

8. An attachment for crutches comprising: a clamp adapted to engage around the crutch; said clamp comprising a front plate and a back plate; said front plate having ears extending forwardly therefrom; a seat pivotally mounted on said ears; forwardly extending angularly disposed side flanges on said back plate; a pair of legs pivotally connected to the side flanges of the back plate and extending downwardly therefrom; means for clamping the front and back plates of the clamp together; a collar engageable with the crutch below the seat; a telescoping member pivotally connected at its upper end to said seat and at its lower end to said collar; means for limiting the collapsing movement of said telescoping member; a pair of struts pivotally connected at their upper ends to said seat forwardly of the pivotal axis of the seat and at their lower ends to said supporting legs; a pair of crossed braces pivotally connected at their ends to said supporting legs; means for limiting the extension of said braces; and spring tension means connected at one end to the front plate below and back of the pivotal axis of said seat and at the other end to said seat forwardly of the pivotal axis of the seat.

9. A crutch assembly comprising: a crutch; a seat pivotally connected at its inner end to said crutch; a seat supporting leg extending from said seat to said crutch; a pair of crutch supporting legs pivotally connected at their upper ends to said crutch and a pair of stuts pivotally connected at their ends to said seat and the crutch supporting legs.

10. A crutch assembly comprising: a crutch; a seat pivotally mounted on said crutch; a collar on the crutch below said seat; a telescoping seat supporting leg pivotally connected at its ends to said seat and said collar; a pair of crutch supporting legs pivotally connected at their upper ends to said seat and engageable with the floor at their lower ends; struts pivotally connected at their upper ends to said seat and pivotally connected at their lower ends to the crutch supporting legs and a pair of crossed braces pivotally connected at their ends to said crutch supporting legs.

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