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P. HALLSTEDT

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SLING FOR USE IN THE TREATMENT OF UNILATERAL LEG DISEASES

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Fig. 1

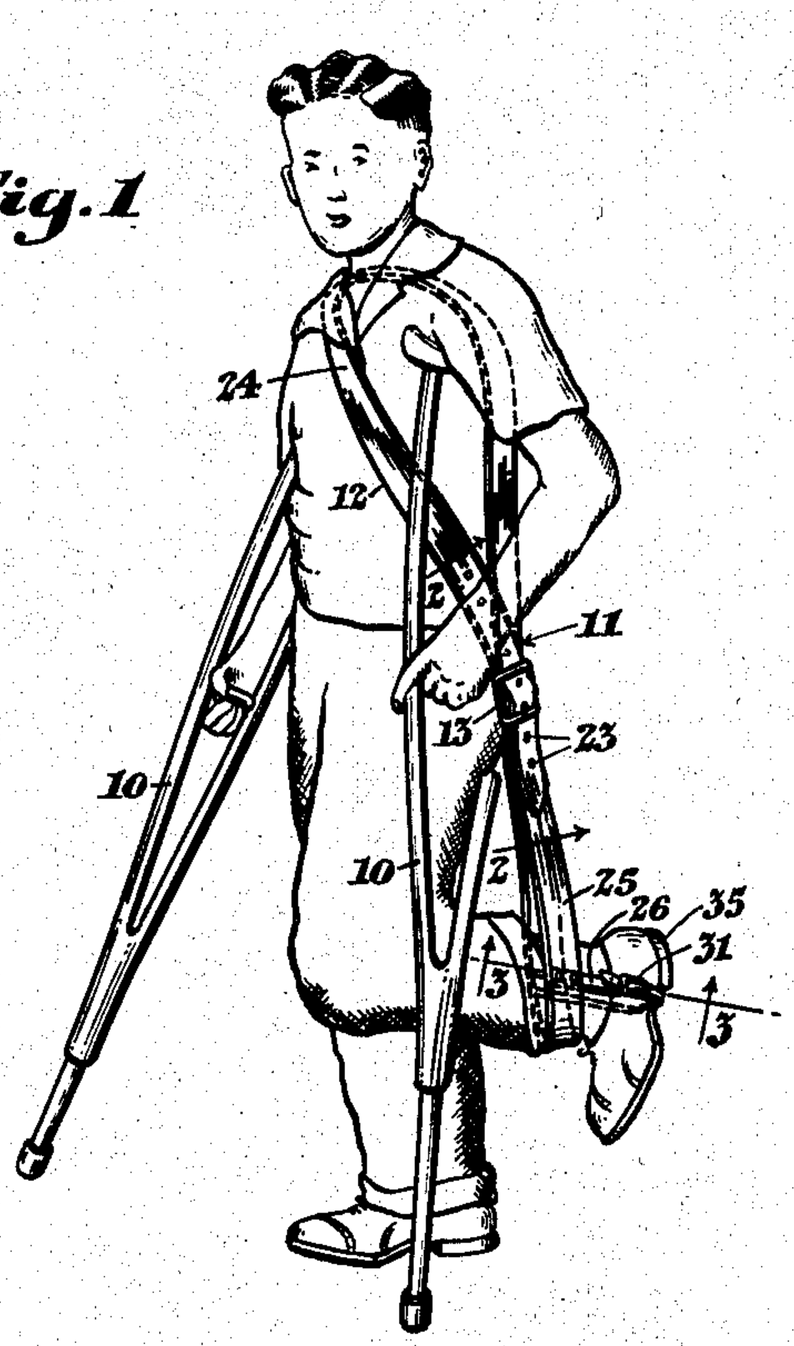
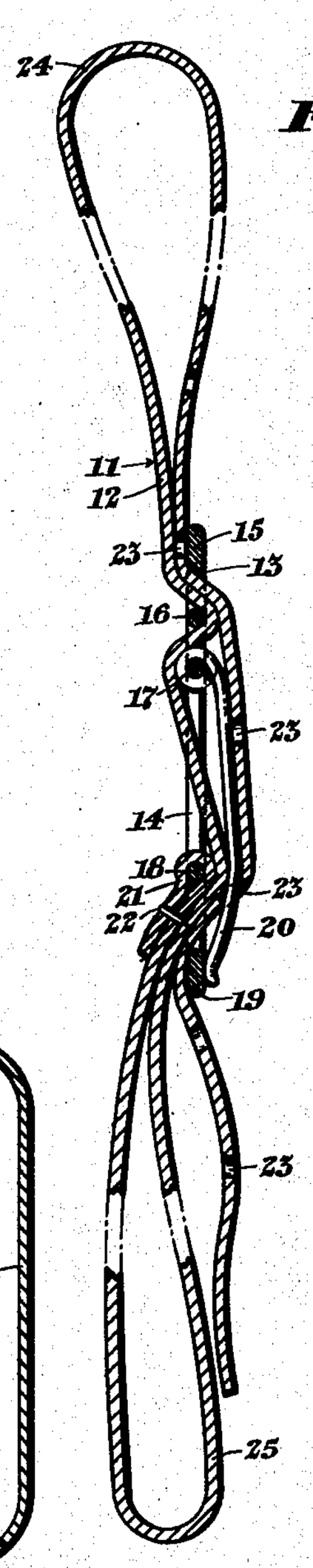


Fig. 2



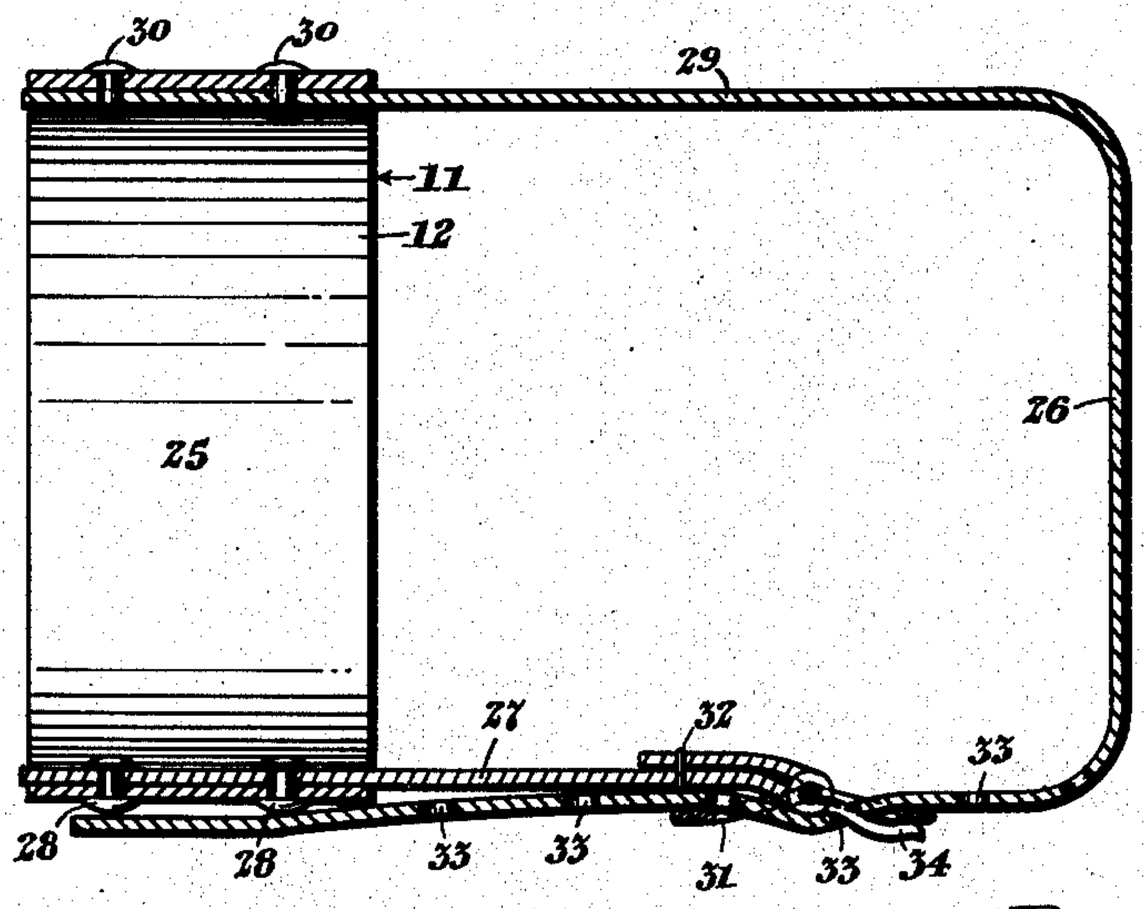


Fig. 3

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SLING FOR USE IN THE TREATMENT OF UNILATERAL LEG DISEASES

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3 Claims. (Cl. 128—94)

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The present invention relates to an appliance for use in the treatment of unilateral leg diseases.

In certain types of unilateral leg diseases, for example the disease known to the medical profession as Legg-Perthes disease, it is extremely important that, during the convalescent period, the ambulatory patient's afflicted leg be freed from bearing any of the patient's weight. If the leg is not so freed from weight-bearing the disease will be prolonged and the bones of the leg (particularly the femur) will not become properly mended, and a frequent result will be a very considerable shortening of the afflicted leg. This importance of relieving the afflicted leg of all weight-bearing has long been recognized by the medical profession, but in practice the perfect relief from such weight-bearing has not been achieved and especially is this true in the cases of children. Plaster casts and the so-called non-weight-bearing calipers do not effectively relieve the afflicted leg from all weight-bearing. The use of crutches, with the patient holding the foot of the afflicted leg off the floor or ground has proven helpful, but notwithstanding all care and conscientiousness on the part of the patient and careful observation by others, the patient will at times inadvertently apply some weight to the afflicted leg.

In view of the circumstances explained above, my invention has for its object to provide an appliance for use in the treatment of unilateral leg diseases which will eliminate all weight-bearing by the afflicted leg and at the same time permit reasonably great freedom of movement by the patient. The invention comprehends providing the patient with a conventional pair of crutches and in addition to provide a means for maintaining the shank of the afflicted leg in rearwardly directed, elevated position, and the appliance of the invention is a sling which constitutes said means for maintaining the leg in such elevated position.

The invention in a preferred form is illustrated by the accompanying drawing, wherein:

Figure 1 is a view showing a patient employing crutches and the leg sling of the invention, a portion of one crutch being broken away in order to more clearly illustrate the sling;

Figure 2 is a fragmentary, enlarged, central longitudinal sectional view of the sling, portions thereof being shown in section taken on line 2—2 of Figure 1; and

Figure 3 is an enlarged, central longitudinal sectional view of other portions of the sling, shown in section taken on line 3—3 of Figure 1.

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Referring now in detail to this drawing wherein like parts are designated by the same numerals in the several views, the patient illustrated in Figure 1 has been provided with crutches 10 which together with the unafflicted right leg of the patient bears all of his weight while walking. The shank of the patient's afflicted left leg is suspended in a rearwardly directed elevated position so that no weight can be placed on the left leg. This is accomplished by means of a sling generally designated 11 applied to the patient's body, and the provision of such means for elevating the left leg in combination with the crutches, constitutes the new method for treating a unilateral leg disease.

The appliance or sling 11 comprises an elongated flexible strap 12 of leather, webbing or other suitable material, and a buckle 13 having side portions 14, connecting portions or bars 15, 16, 17, 18 and 19 (see Figure 2), and a fastener tongue 20 pivotally mounted on the connecting bar 17 of the buckle. The strap 12 has one end 21 thereof secured to the connecting bar 18 of the buckle as by means of stitching 22. The sling is positioned with the buckle alongside the patient's hip, on the side of the afflicted leg. The strap 12 extends from its end 21 which is secured to the buckle, downwardly and around the elevated shank of the patient's afflicted leg, thence upwardly through the buckle and over the patient's shoulder opposite the afflicted leg, and thence downwardly to detachable connection with the buckle. This detachable connection is effected by means of the buckle's fastener tongue 20 engaging in one of a series of apertures 23 in the strap 12, which are provided for making the effective length of the strap adjustable.

It will be seen that by the arrangement above described the single length of strap 12 is utilized to provide two loops which are adjustable independently as to length. These are an upper or depending loop 24 which encircles the patient's body and depends from his shoulder, and a lower or suspending loop 25 which supports the shank of the patient's afflicted leg in elevated position as shown.

In order to secure the suspending loop 25 on the shank of the patient's elevated leg, I provide a stirrup of leather or other suitable material, generally designated 26. This stirrup has an element 27 secured as by rivets 28 to one of the portions of the strap 12 which are disposed on opposite sides of the patient's elevated foot, and another element 29 secured as by rivets 30 to the

opposite portion of the strap 12. A buckle 31 is secured to the element 27 as by stitching 32, and the free end of the element 29 is provided with apertures 33 any one of which may be engaged by the tongue 34 of buckle 31 for adjustably and detachably securing together the stirrup's elements 27 and 29. The stirrup passes beneath the heel 35 of the shoe on the patient's elevated foot as illustrated in Figure 1, and the suspending loop 25 of the sling 11 is thus maintained in proper position on the shank of the patient's elevated leg.

It will thus be seen that an effective appliance for use in the treatment of unilateral leg diseases has been provided, and while but one embodiment of the invention has been herein shown and described, it will be understood that numerous details of construction may be altered or omitted without departing from the spirit of the invention as the same is defined by the claims which follow.

I claim:

1. A unitary sling for use in the treatment of unilateral leg diseases, comprising: a depending loop portion adapted to encircle the patient's body depending from his shoulder opposite the afflicted leg and extending to the side of the affliction, a suspending loop portion suspended from the depending loop portion at the side of the affliction and adapted to encircle the shank of the afflicted leg for suspending said shank in rearwardly directed elevated position, and a stirrup portion connected to the suspending loop portion, said stirrup portion being adapted to engage beneath the forward part of the heel of a shoe worn on the foot of the patient's elevated leg shank for maintaining the suspending loop in position on said shank.

2. A sling for supporting the shank of an afflicted leg in a rearwardly directed elevated position, comprising: a buckle adapted to be positioned alongside the patient's hip on the side of the afflicted leg, a single elongated flexible strap having one end thereof fixedly connected to the buckle, said strap passing from the buckle downwardly and around the elevated shank of the afflicted leg, thence upwardly through the buckle and over the patient's shoulder opposite the afflicted leg, and thence downwardly to adjustable and detachable connection with the buckle, and a stirrup having its opposite ends connected to the portions of the strap on opposite sides of said shank and passing around and beneath the heel of the shoe on the patient's elevated foot.

3. A sling for supporting the shank of an afflicted leg in a rearwardly directed elevated position, comprising: a buckle adapted to be positioned alongside the patient's hip on the side of the afflicted leg, a single elongated flexible strap having one end thereof fixedly connected to the buckle, said strap passing from the buckle downwardly and around the elevated shank of the afflicted leg, thence upwardly through the buckle and over the patient's shoulder opposite the afflicted leg, and thence downwardly to adjustable and detachable connection with the buckle, and a stirrup comprising flexible elements each having one end fixedly connected to one of the portions of the strap on opposite sides of said shank, one of said elements passing around and beneath the heel of the shoe on the patient's elevated foot and being adjustably and detachably connected to the other of said elements.

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