Sept. 29, 1942. C. W. SHIPMAN ET AL 2,297,173

MOBILE CRUTCH

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Fig. 1.

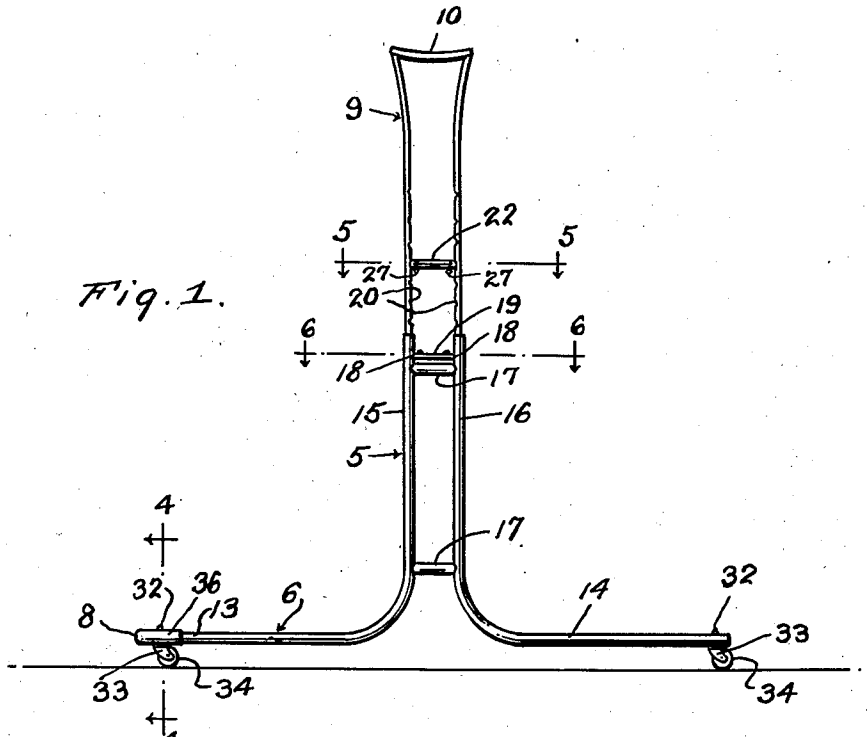


Fig. 2.

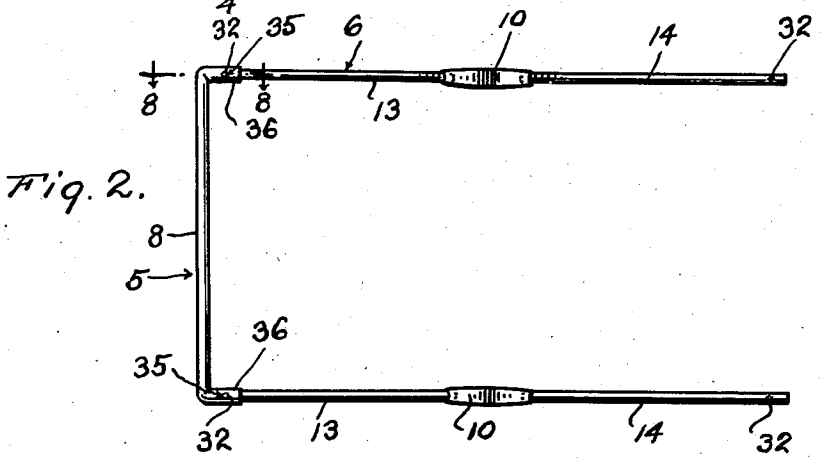
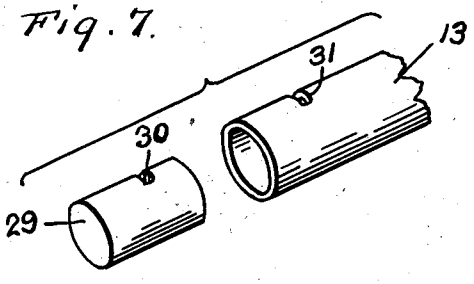


Fig. 7.



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Fig. 3.

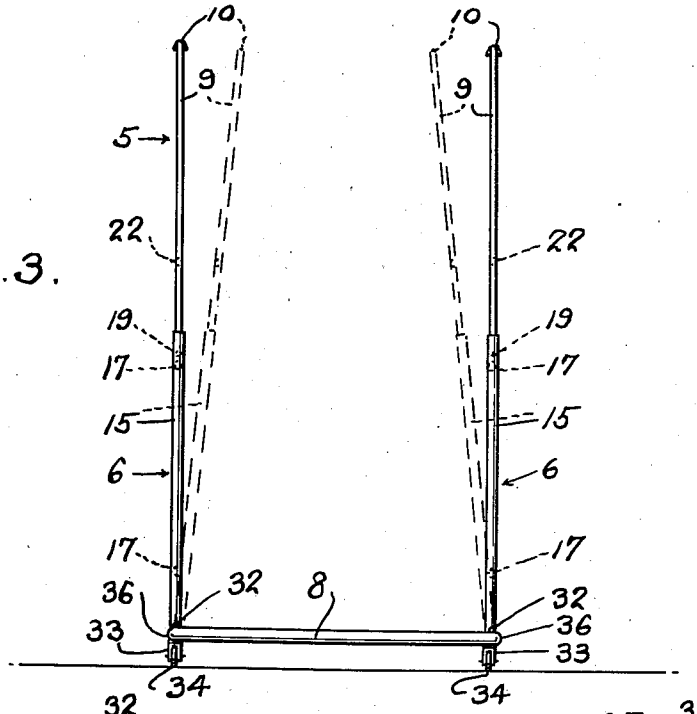


Fig. 8.

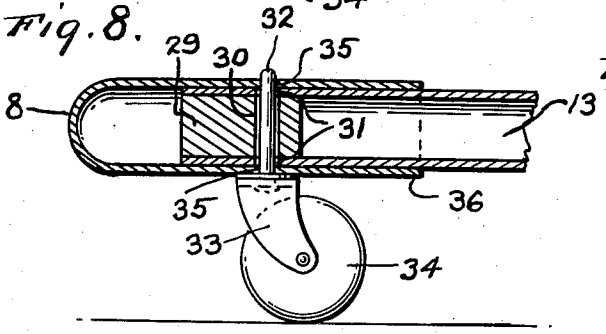


Fig. 4.

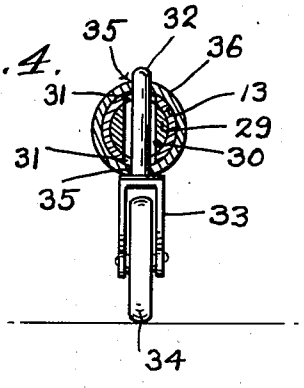


Fig. 5.

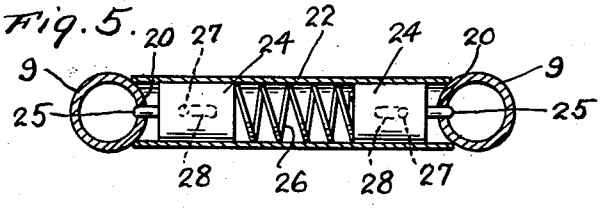
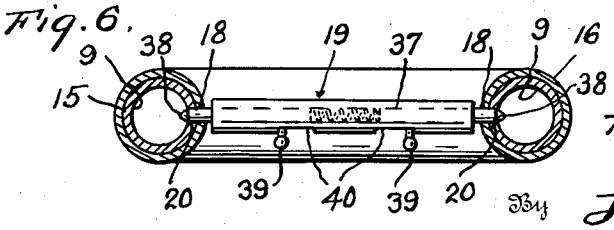


Fig. 6.



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UNITED STATES PATENT OFFICE

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MOBILE CRUTCH

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Application March 22, 1941, Serial No. 384,770

1 Claim. (Cl. 155—22)

This invention relates to the official class of surgical supplies and more particularly crutches.

The primary object of this invention resides in the provision of a crutch adapted to be used in assisting re-establishment of normal leg action of individuals who have been crippled.

Another object of this invention resides in the provision of a mobile crutch adapted to comfortably support individuals regardless of their stature.

A further object of this invention resides in the particular construction of the adjusting means for the arm supporting members.

A still further object of this invention resides in the particular construction of the chassis.

Aside from the aforesaid objects this invention resides in the particular construction of the adjustable hand grips.

In addition to the foregoing objects this invention resides in the particular construction of the cross-bar and means for connecting the front ends of the side members thereto.

Among the many objects of this invention is the particular construction of the castor receiving bearings carried by the side members.

With these and other objects in view this invention resides in certain novel features of construction and arrangement of elements to be hereinafter more fully set forth in the specification, illustrated in the accompanying drawings and pointed out in the appended claim and, while this disclosure depicts my present conception of the invention, the right is reserved to resort to such changes in construction and arrangement of elements as come within the spirit of the invention.

In the accompanying drawings forming a part of this application:

Fig. 1 is a side view of the mobile crutch.

Fig. 2 is a plan view thereof.

Fig. 3 is a front view of the crutch showing it in full lines as used by an individual having broad shoulders and in dotted lines as used by an individual having narrow shoulders.

Fig. 4 is an enlarged detail cross sectional view taken approximately on line 4—4 of Fig. 1.

Fig. 5 is an enlarged detail sectional view taken approximately on line 5—5 of Fig. 1.

Fig. 6 is a similar view taken approximately on line 6—6 of Fig. 1.

Fig. 7 is a perspective view of one of the front bearing blocks and associated end of one of the side members.

Fig. 8 is a sectional view of line 8—8 of Fig. 2.

In the present embodiment of this invention the numeral 5 designates, in general, a mobile crutch consisting of a chassis 6 formed of spaced side members 7 journalled to a cross-bar 8 at their front ends to permit limited lateral movement of substantially U-shape arm supporting member 9 carried thereby for comfortable disposition of shoulder rests 10 or the like thereon beneath the shoulders of individuals regardless of their stature.

The side members 7 are formed from tubular steel or the like bent at right angles to form aligned front and rear arms 13 and 14 and spaced parallel upright arms 15 and 16 connected together by suitable braces 17, said upright arms extend beyond the uppermost brace thereof and are provided with opposed apertures 18 to removably receive a locking bolt 19 adapted to pass therethrough into similar opposed apertures 20 in the branches of the U-shaped arm supporting members 9 which are telescopically disposed in the uprights 15 and 16.

In order to comfortably fit beneath the arms of individuals of various statures the upper ends of the arm supporting members 9 diverge to the ends of the shoulder rests 10, padding of which being optional with the manufacturer or user of the crutch.

Disposed between the branches of the U-shaped arm supporting members 9 are adjustable hand grips 22 having their opposite ends cut out as at 23 to coincide with the configuration of the branches of the U-shaped arm supporting members, said hand grips are constructed from tubular steel or the like to slidably accommodate, adjacent their opposite ends, blocks 24 having pins 25 projecting from their outer surfaces for engagement with the apertures 20. The blocks 24 are retained within the hand grips under the influence of expansion coil springs 26 disposed therebetween by finger engaging knobs 27 screwed or otherwise secured thereto and operating in elongated slots 28 in the hand grips.

Rigidly disposed within the ends of the front and rear arms 13 and 14 of the uprights 15 and 16 are bearing blocks 29 having vertically disposed bores 30 therethrough registering with apertures 31 in the top and bottom sides of the arms 13 and 14 to rotatably accommodate trunnions 32 formed on yokes 33 carrying rollers 34, the apertures in the front arms 13 and bore 30 registering therewith are circumferentially elongated and register with aligned round apertures 35 in tubular branches 36 formed on the cross-bar at right angles thereto, said branches 36 telescopically accommodating the ends of the front arms 13,

and the apertures 35 therein are approximately of diameters equal to those of the trunnions 32 so as to provide a working fit between the branches 36 and trunnions of the front rollers and yet permit the ends of the front arms 13 to have a limited rotating movement relative thereto at all times. With the aforesaid front arms 13 telescopically connected to the branches 36 of the cross-bar by the trunnions of the rollers 34 in the manner heretofore set forth, the side members can be swung inwardly of their normal perpendicular positions as said circumferential elongated apertures 30 and 31 permit free oscillation of the ends of the arms 13 within the branches 36, the trunnions acting to secure the same together and also as stops to limit the oscillatory movement of the ends of the side members.

The aforesaid locking bolt 19 is formed from a tubular sleeve 37 housing slidable spring projected pins 38 held therein through the instrumentality of finger knobs 39 or the like screwed or otherwise secured thereto and operable through elongated slots 40 in the sleeve.

In order to adjust the arm supporting members to comfortably fit individuals of different heights, the pins 38 are retracted by squeezing the knobs 39 toward one another whereupon elected apertures in the branches of the arm supporting members are brought in registry with the apertures 18 in the upright arms 15 and 16 and the pins released for seating therein.

Operation of the hand grips is similar to that of the locking bolt with the exception that the same must be initially disposed between the upright arms 15 and 16 on planes diagonal thereto until the cut out portions thereof fully straddle the arms with the pins in registry with the apertures 20.

To facilitate packing or storing the crutch in a small space the rollers are removed whereupon the side members are separated by withdrawing the cross-bar from telescopic engagement with the front sections subsequent to which the arm supporting members are removed from the uprights and said several elements laid on one another, the minimum area thus required being equal to that of a triangle constructed from the dimensions of the side members.

With this invention fully set forth it is manifest that a mobile crutch is provided which not only permits an individual to mount the same from a chair without subjecting his legs to the weight of his body but, through the instrumentality of the adjustable features thereof, maximum safety and comfort to individuals using the same will be afforded while taking walking exercises thereon.

Having thus fully described our invention what we claim and desire to protect by Letters Patent is:

A crutch comprising laterally spaced side members of substantially inverted T-shape, shoulder rests on the upper ends of the side members, a tubular U-shaped cross-bar having its arms loosely rockingly receiving the certain ends of the base portions of the side members, said arms of the cross-bar being provided with vertically aligned round apertures in register with vertically aligned circumferential slots in the ends of the side members disposed therein, bearing blocks in those ends of the side members disposed in the arms of the cross-bar and having circumferential slots therein registering with those in the aforesaid ends of the side members, castor wheels supporting the opposite ends of each T-shape side member and trunnions formed on the castor wheels, certain of which passing through the aforesaid registering apertures and slots and housing connecting the cross-bar to the ends of the side members loosely disposed therein while the others pass through round apertures in the opposite ends of the side members.

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