April 9, 1946. F. J. REDCLIFFE 2,398,247

CRUTCH

Filed Nov. 22, 1944

Fig. 1.

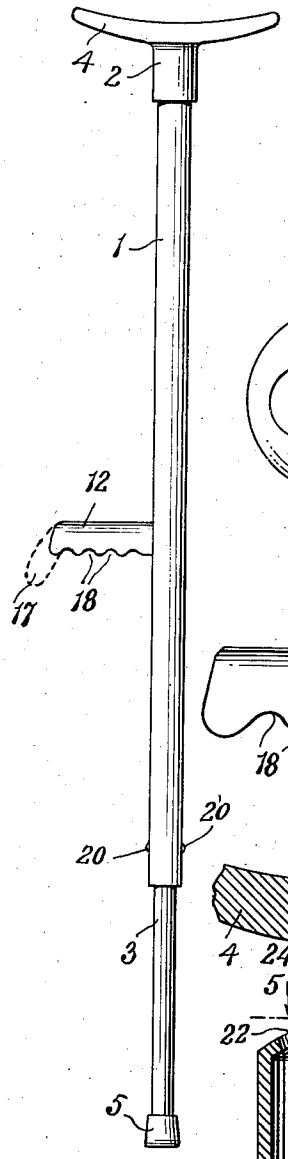


Fig. 2.

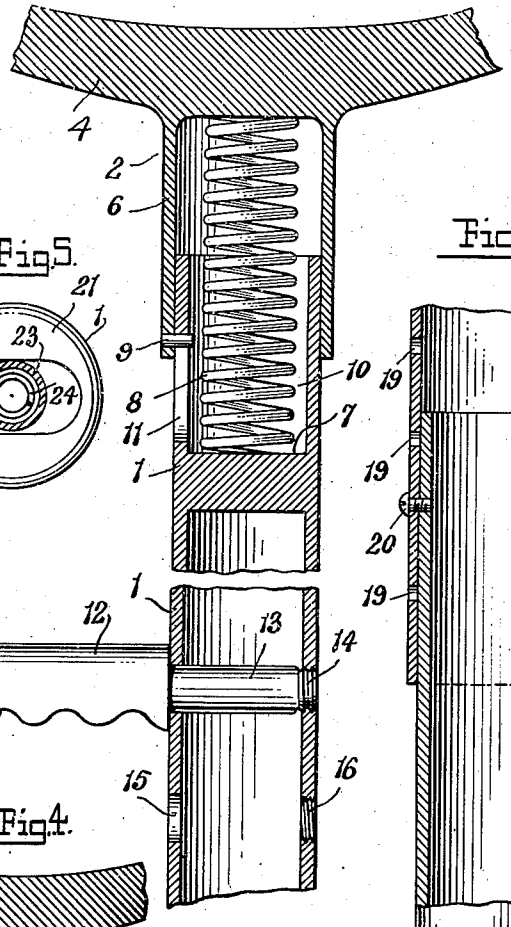


Fig. 5.

Fig. 4.

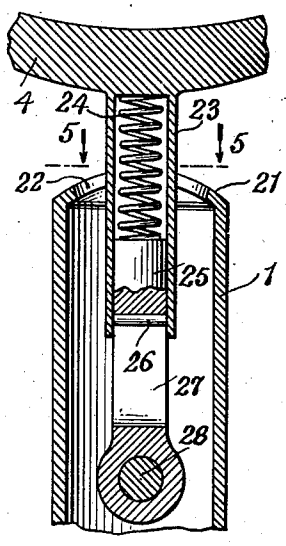
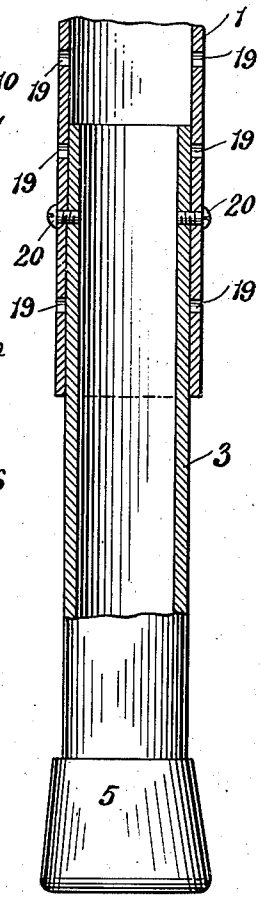


Fig. 3.



INVENTOR

Frederick J. Redcliffe

BY

Harry Radzinsky

ATTORNEY

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CRUTCH

Frederick J. Redcliffe, New York, N. Y.

Application November 22, 1944, Serial No. 564,564

6 Claims. (Cl. 135—50)

This invention relates to crutches for use by the lame or disabled, and the primary object of the invention is to provide an article of this character which will be light in weight but of sturdy and substantial construction and have various features of adjustability to enable it to be fitted to persons of different physical stature.

One of the objects of the invention is to provide a crutch having means by which its effective over-all length can be regulated to enable it to comfortably accommodate persons of different heights. Another feature of the invention resides in means by which the handle or hand-grip of the crutch can be positioned at any one of a number of points to thereby situate it in a position most suitable to the individual.

A still further feature of the invention resides in the arm rest mounting, the same being of such a construction that it provides a resilient support for the arm rest to thereby provide exceptional comfort during the use of the crutch. The invention also contemplates the provision of means by which the arm rest, in addition to being resiliently supported, shall also have a limited pivotal movement in respect to the body of the crutch, thus facilitating the forward swing of the crutch during walking.

These and other objects are accomplished by the invention, a more particular description of which will hereinafter appear and be set forth in the claims appended hereto.

In the accompanying drawing, wherein an illustrative embodiment of the invention is shown, Fig. 1 is a side elevation of a crutch constructed in accordance with the invention; Fig. 2 is a vertical sectional view through the upper portion of the crutch, showing the resilient mounting of the arm rest and also the handle attaching means; Fig. 3 is a vertical sectional view through the lower portion of the crutch, showing how the foot is adjustably fitted in place; Fig. 4 is a vertical sectional view through a modified structure in which the resiliently mounted arm rest has a limited swinging movement, and Fig. 5 is a sectional view on the line 5—5 of Fig. 4, looking in the direction of the arrows.

With reference to the structure shown in Figs. 1 to 3 inclusive, 1 indicates the body portion of the crutch, the same preferably being in the form of a lengthy metal tube of suitable wall-thickness and diameter to easily support the weight of the normal individual. The tubular body portion 1 is open at its lower end to telescopically receive the foot portion 3 of the crutch which can be moved in or out of the body 1 to the required extent and located at any suitable point to thereby determine the effective length of the crutch as a whole. Thus, the lower portion of the body 1 of the crutch is provided with a plurality of spaced holes 19 through which screws or other fastening means may extend to enter in receptive holes in the foot 3. The screws are shown at 20 and it will be apparent that by extending the same through selected holes 19 in the body 1 will result in the foot being held at the desired position to govern the over-all length of the crutch. The foot 3 is provided with the usual pad 5 of rubber or other suitable material.

The handle or hand-piece for the crutch is shown at 12 and the same may be provided with the finger-engaging recesses 18 and may also be provided with the bent or curved end 17 indicated in dotted lines in Fig. 1, if desired to prevent possible slippage of the hand from the handle. The handle is provided with a shank or stud portion 13 having a threaded end part 14. This shank or stud portion projects through a pair of holes 15, 16 in the crutch body, the holes being diametrically opposite to one another, and one of the holes, or that indicated at 16, being provided with screw threads for the reception of the threaded part 14 of the shank or stud 13. A number of sets of the holes 15, 16, are provided in vertically spaced relation so that the handle may be placed in any one of the sets, thereby locating it at a position most suitable and comfortable to the individual. When in place, the handle extends radially from the body 1 as clearly seen in Fig. 1, and it may be most conveniently held for the manipulation of the crutch.

The upper end of the body portion 1 is open to provide a recess or pocket 10 having a base or seat portion 7 for the reception of a coil spring 8. Fitted over the open top of the body 1 is the arm rest 4 which is provided with an integrally formed downward tubular extension 6 arranged for vertically sliding movement. This tubular portion 6 extends over and closes the top of the body portion 1 and rests on top of the coil spring 8 and in this manner is the arm rest unit 2, consisting of the arm rest 4 proper and the connected tubular extension 6, resiliently mounted to provide a comfortable, springy support for the weight of the crutch user.

Upward movement of the arm rest, under the impulse of the spring 8 is restricted by means of the pin 9 movable in the slot 11 formed in the wall of the body portion 1. It is, of course, understood that the arm rest may be padded or other-

wise treated to afford a maximum of comfort to the user, the padding and covering being omitted for simplicity in illustration.

In the modification of the invention, disclosed in Fig. 4, the body portion 1 is provided with a closed top 21 provided with a slot 22 in which a downward tubular extension 23 on the arm rest 4 is movable. Said extension 23 encloses a coil spring 24, supported on the end of a rod 25 over which the tubular extension 23 is slidable. A cross pin 26 operative in a slot 27 in the bar 25 limits the sliding movement of the arm rest. The bar 25 is pivoted at 28 between the walls of the body portion 1. With this arrangement, it will be observed that the arm rest, while resiliently supported on the spring 24, is provided with means by which it may have a restricted swing, thus enabling the body of the crutch to be readily swung back and forth during walking, while the arm rest remains stationary under the arm.

While I have shown several embodiments of the invention it is obvious that the same is not to be restricted thereto, but is broad enough to cover all structures coming within the scope of the annexed claims.

What I claim is:

1. In a crutch, a tubular body portion, an arm rest at one end of the same, said arm rest being mounted for limited vertical movement in respect to the body portion, and a spring housed within the arm rest and in the body portion for resiliently resisting downward vertical movement of the arm rest.

2. In a crutch, a tubular body portion provided with a seat near its upper end, a coil spring resting on said seat, an arm rest having a tubular extended part fitting over the top of the body portion and extending over the spring whereby said arm rest may be moved downwardly against the force of the spring, and means for limiting the movement of the arm rest under spring pressure.

3. In a crutch, a tubular body portion, an arm rest mounted for vertical movement with respect to the body portion, spring means for resisting the movement of the arm rest in one direction, the arm rest being pivotally mounted to facilitate a limited swinging movement of said arm rest with respect to the body portion.

4. In a crutch, a tubular body having an open top, a seat within the body near the top, a spring resting on said seat, an arm rest having a tubular downward extension fitted over the top of the body portion and over a part of the spring extending therefrom whereby said arm rest is resiliently supported on the spring, and a pin-and-slot connection between the tubular part of the arm rest and the body portion for limiting the sliding movement of the arm rest on the body portion.

5. A crutch having a body portion consisting of a single, straight tube provided with a closed upper end, said end being provided with a slot, an arm rest having a tubular downward extension extending through the slot, a bar pivotally mounted within the body portion, the tubular extension on the arm rest fitting over and sliding on said bar, spring means interposed between the bar and the arm rest, the slot through which the tubular extension passes being of a size to allow limited swinging movement of the tubular extension within it.

6. A crutch consisting of a single, straight tube provided with a resiliently mounted arm rest at one end and a foot portion at the other, the foot portion consisting of an element slidably adjustable into one end of the body, means for securing the foot portion at any one of a number of selected points to regulate its degree of extension from the body portion, spring means supported within the body portion for the resilient support of the arm rest, said resiliently mounted arm rest having a limited swinging movement in respect to the body portion.

FREDERICK J. REDCLIFFE.