Nov. 25, 1941. J. D. BENNETT 2,264,015

CRUTCH

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Fig. 1.

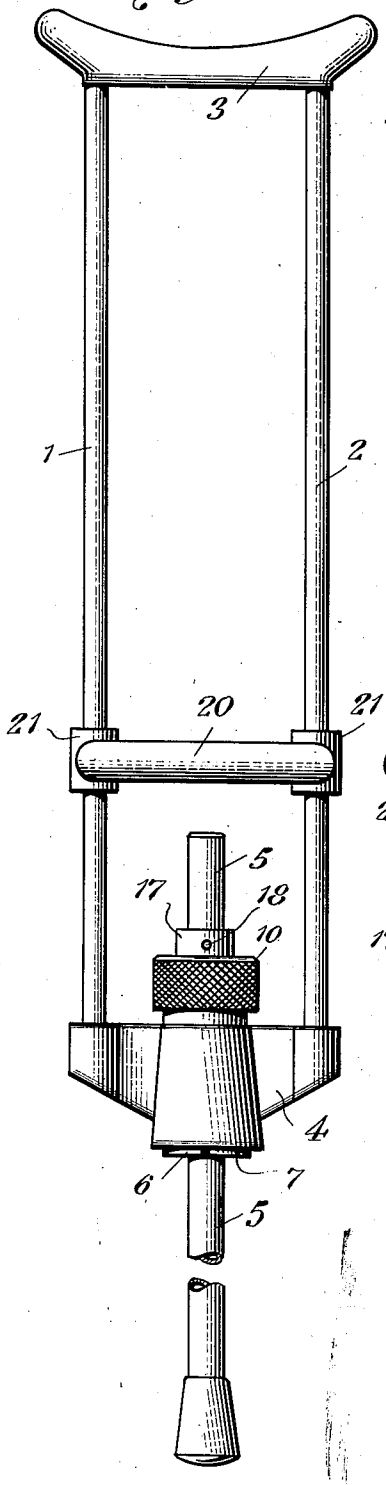

Fig. 2.

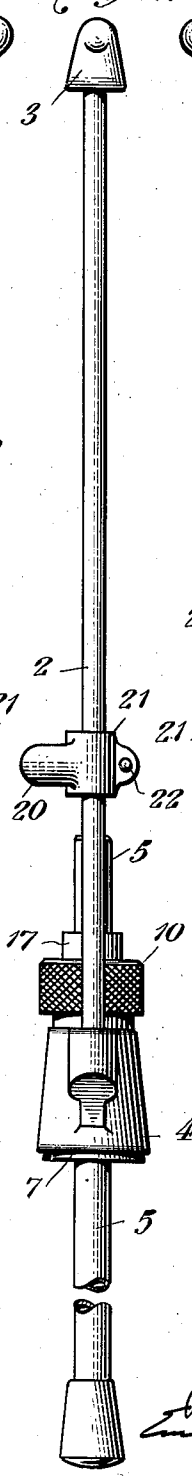

Fig. 3.

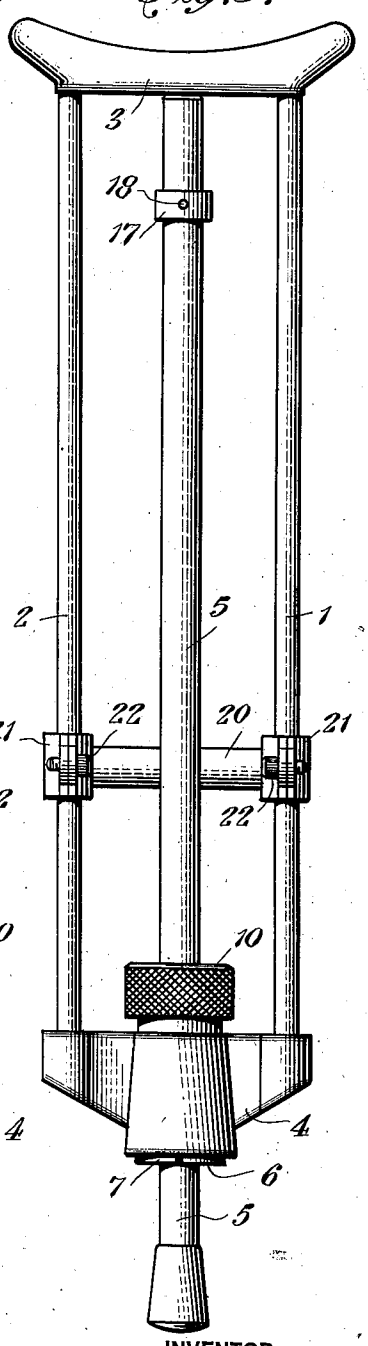

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Fig. 4.

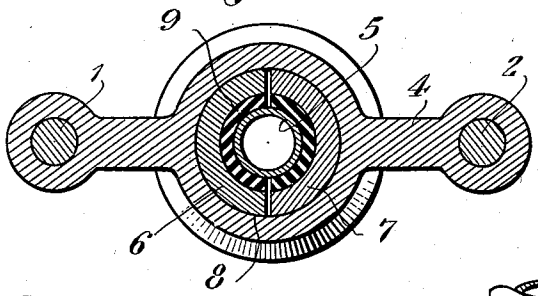


Fig. 5.

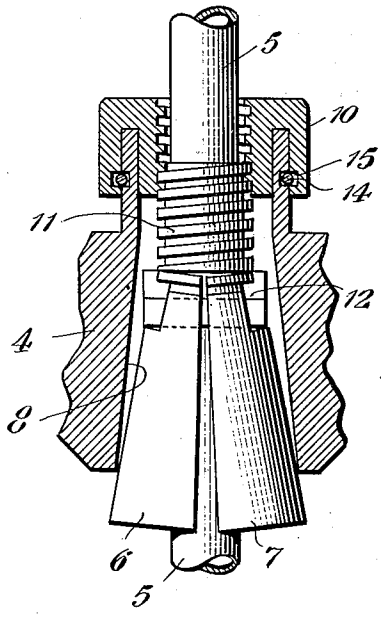


Fig. 7.

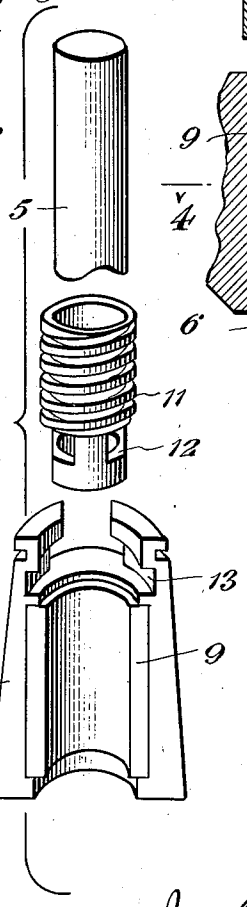
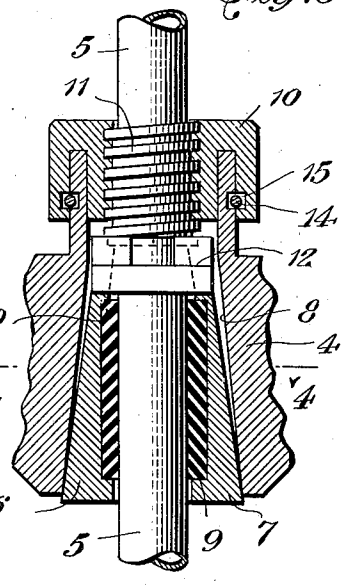


Fig. 6.



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Patented Nov. 25, 1941

2,264,015

UNITED STATES PATENT OFFICE

2,264,015

CRUTCH

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Application February 6, 1941, Serial No. 377,589

6 Claims. (Cl. 135—50)

This invention relates to crutches.

Many disabled persons who are forced to use crutches find them an awkward encumbrance when not in use. Thus, in automobiles, railroad cars, theatres and many other places, a pair of crutches, or even a single crutch is difficult to dispose of because of its length.

It is an object of the present invention to provide a crutch which may be collapsed to approximately half of its normal length, so that when not in use it may be easily stowed away in a relatively small space.

It is a further object of the invention to provide a crutch which is fully adjustable so that it may be easily adjusted, not only to persons of different height, but also to persons of different arm length.

Other objects and advantages of the invention will appear hereinafter.

A preferred embodiment of the invention selected for purposes of illustration is shown in the accompanying drawings, in which,

Figure 1 is a front elevation of the crutch showing the leg in extended position.

Figure 2 is a side elevation of the same.

Figure 3 is a rear elevation showing the leg in collapsed position.

Figure 4 is a transverse section on the line 4—4 of Figure 6.

Figures 5 and 6 are vertical sectional views, Figure 5 showing the gripping members released, and Figure 6 showing said members in gripping position, and

Figure 7 is an exploded perspective view.

According to the present invention the crutch is preferably made entirely of metal and comprises a pair of tubular members 1, 2 having their upper ends secured in the shoulder rest 3, and having their lower ends secured in the sleeve block 4. A tubular leg 5 extends through the sleeve block and is held between a pair of gripping members 6, 7 which are located within a recess 8 in the lower part of the sleeve block.

Each of the gripping members 6, 7 are provided with a rubber liner 9 which engages the leg 5, and it has been found that when the gripping members are squeezed against the leg an extremely tight non-slip joint is provided. Furthermore, the use of the rubber lined gripping members prevents wear or deterioration of the leg, since there is no metal to metal contact and the rubber liners prevent abrasion and scoring.

In the preferred embodiment illustrated, the recess 8 is conical in shape and the gripping members which are also conical, are squeezed against the leg by means of a collar 10 having an internal thread which engages the external threads of a sleeve 11 which is slidably mounted on the leg 5. The lower end of the sleeve, below the threaded portion is cut away to provide flanges 12 which fit into and engage the grooves 13 of the gripping members.

The collar 10 is rotatably mounted on the sleeve block, but is held against longitudinal movement by a lock ring 14 mounted in suitable grooves 15. Thus, by turning the collar in one direction the gripping members may be pulled upwardly in the conical recess, which movement forces the gripping members against the leg holding it tightly against longitudinal movement. By turning the collar in the opposite direction the gripping members may be pushed downwardly to release the leg, and when this is done, the leg may be moved freely. Figure 5 shows the parts in loose condition such that the leg may be moved, and Figure 6 shows the parts in position to grip the leg. It will be understood that the arrangement of the conical gripping members is such that any pressure applied to the lower end of the leg, as in the normal use of the crutch, tends to force the gripping members further into the conical recess, thus tending to cause the members to grip the leg even more tightly.

If desired an adjustable collar 17 may be carried on the upper end of the leg 5, which said collar may be fixed to the leg in any desired position by means of a set screw 18. In using the crutch, this collar may be adjusted to any desired position along the leg and serves as a limit stop, so that in extending the leg from collapsed position, the user merely pulls the leg out until the collar 17 engages the collar 10, as shown in Figure 1, then turns the collar 10 to cause the gripping members to grip the leg, and the crutch is then ready for use with the leg in its proper predetermined position.

A handle 20 is also provided, said handle terminating in split sleeves 21 which are adapted to slide on the tubular members 1, 2. The sleeves are provided with tightening screws 22 by means of which the sleeves may be caused to grip the tubular members in any desired position of adjustment. In this manner the handle may be adjusted to fit the arm length of the user. It will be noted that the handle is offset outwardly to permit the leg to be moved without interfering with the handle.

It will be understood that the invention may be variously modified and embodied within the scope of the subjoined claims.

I claim as my invention:

1. A crutch, comprising, in combination, a sleeve block, an extensible leg carried by said sleeve block, rubber lined gripping members carried by said sleeve block, and means for operating said gripping members to cause them to grip or release said leg.

2. A crutch, comprising, in combination, a sleeve block, rubber lined gripping members carried on said sleeve block, an extensible leg carried by said sleeve block and passing between said gripping members, and means to squeeze said leg between said gripping members to hold said leg in fixed position in said sleeve block.

3. A crutch, comprising, in combination, a sleeve block having a recess therein, rubber lined gripping members in said recess, a leg passing between said gripping members, and means to squeeze said leg between said gripping members to hold said leg in fixed position in said sleeve block.

4. A crutch, comprising, in combination, a sleeve block having a conical recess therein, gripping members in said recess, a leg passing between said gripping members, and means for moving said gripping members axially of said conical recess to cause them to grip or release said leg.

5. A crutch, comprising, in combination, a sleeve block having a conical recess therein, gripping members in said recess, a leg passing between said gripping members, a sleeve slidably mounted on said leg and engaging said gripping members, and means for moving said sleeve along said leg to thereby move said gripping members axially of said conical recess to cause them to grip or release said leg.

6. A crutch, comprising, in combination, a sleeve block having a conical recess therein, gripping members in said recess, a leg passing between said gripping members, and means for moving said gripping members axially of said conical recess to cause them to grip or release said leg, the walls of said conical recess being inclined inwardly from the bottom of said recess to the top so that pressure on the lower end of said leg tends to cause said gripping members to grip said leg more tightly.

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