May 23, 1939. C. D. UPTON 2,159,301

CRUTCH OR SUPPORTING DEVICE

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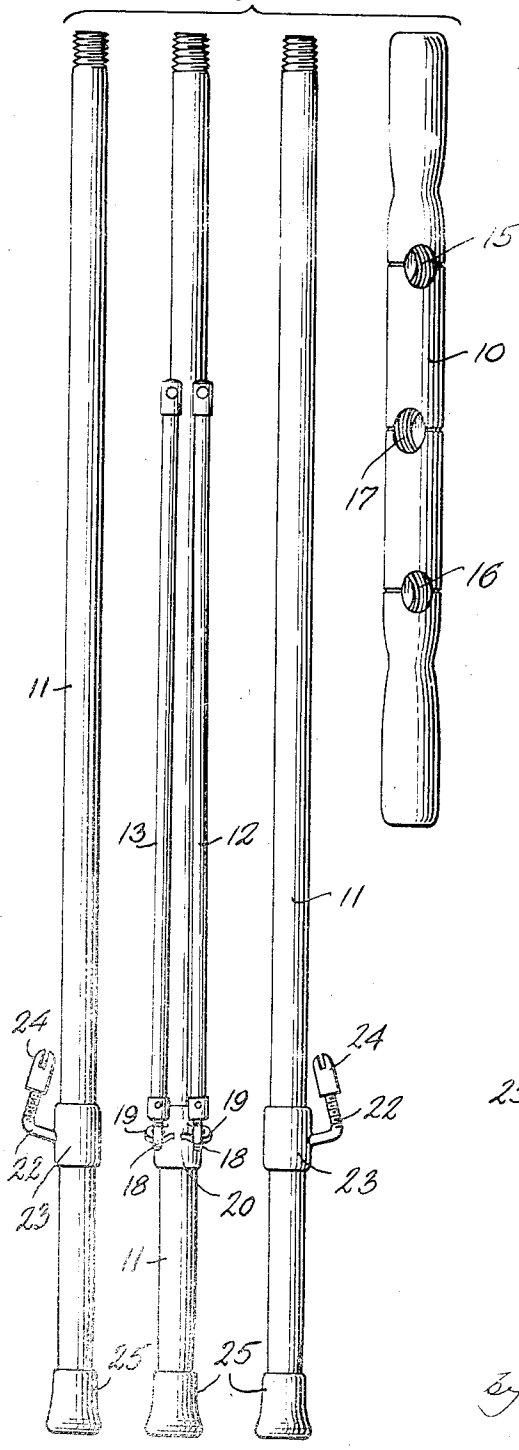
Fig. 2.



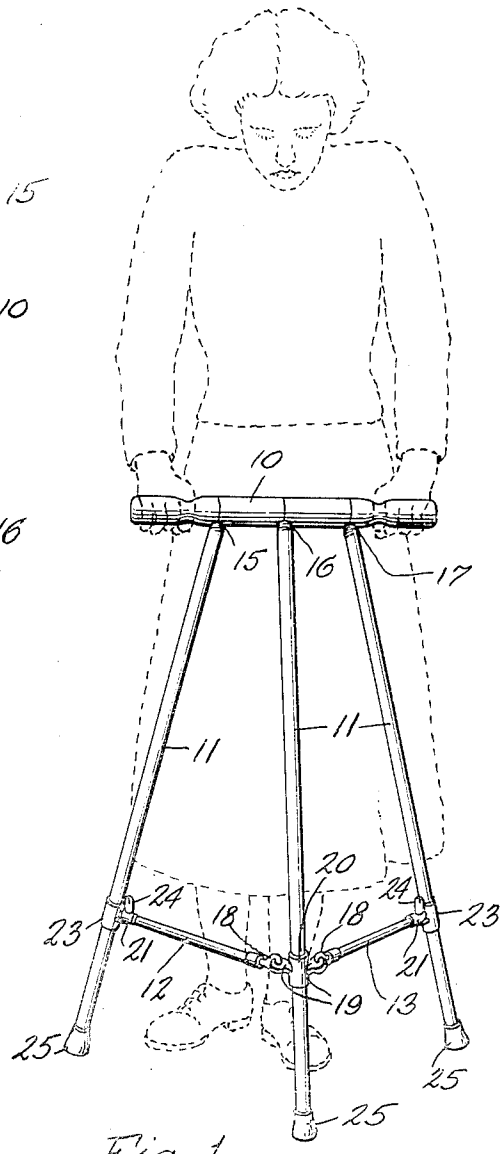


Fig. 1.

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Fig. 3.

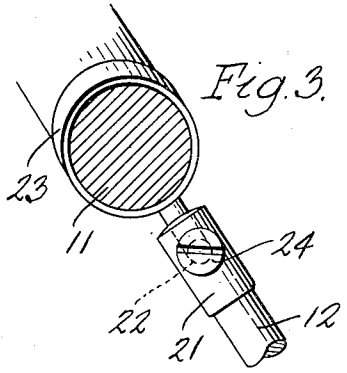
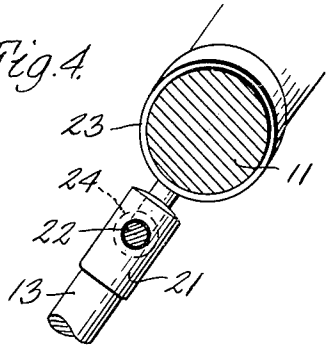


Fig. 4.



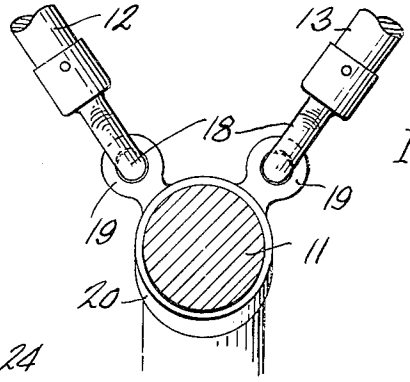
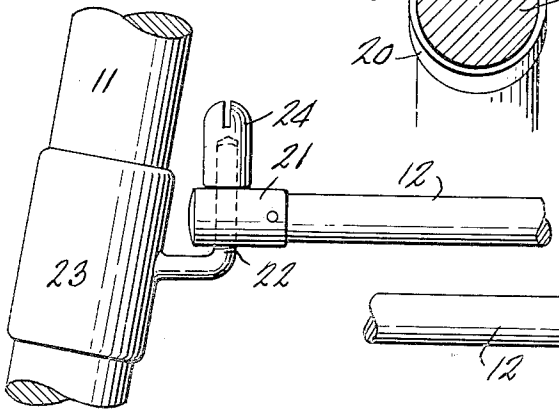


Fig. 5.

Fig. 6.



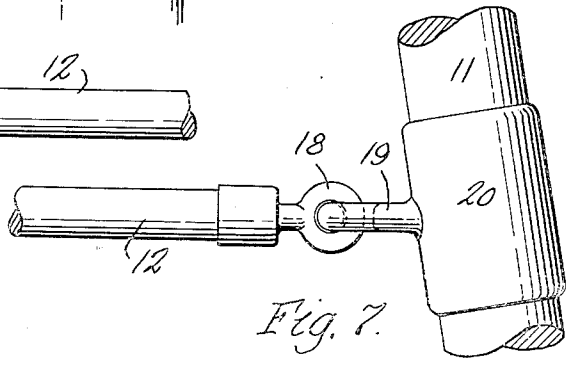
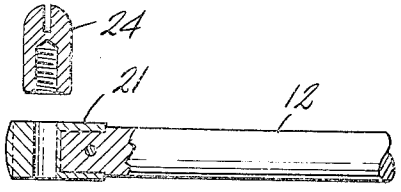


Fig. 7.



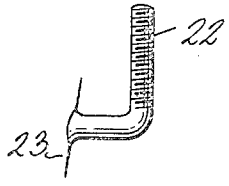


Fig. 8.

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UNITED STATES PATENT OFFICE

2,159,301

CRUTCH OR SUPPORTING DEVICE

Clifford D. Upton, Covington, Ohio

Application December 11, 1937, Serial No. 179,345

2 Claims. (Cl. 155—22)

This invention relates to crutches or devices for supporting lame or infirm persons or cripples in walking, and more particularly to improvements in crutches for use by persons, who from any cause, are too weak, infirm or timid to walk with the usual separate crutches which the user holds under the armpits in walking with them.

The objects of my invention are to provide a strong and rigid but light crutch of novel form and construction, which can be easily handled and used by a weak or infirm person, and in the use of which he will have a feeling of security and cannot lose his balance, as in the use of ordinary separate crutches; which is self-supporting and provides a support which the user can push or move along in front of him and bear his weight on as he progresses; which is of collapsible or knockdown construction adapting the parts to be grouped in a compact form or bundle convenient for transportation; and which has the other features of improvement and advantage hereinafter described and set forth in the claims.

In the accompanying drawings:

Fig. 1 is a front elevation, on a reduced scale, of a crutch embodying my invention and illustrating the manner of using the same.

Fig. 2 is an enlarged view of the parts knocked down and grouped side by side, thus adapting them to be secured in a compact bundle or package convenient for carrying or transporting the device.

Figs. 3, 4 and 5 are sectional plan views on a still larger scale through the several legs of the crutch, respectively showing the connections between the several legs and the connecting braces therefor.

Fig. 6 is a fragmentary, side elevation of one leg and the detachable connection between the same and the associated brace.

Fig. 7 is a similar view of the hinge connection between the brace and another leg.

Fig. 8 is a sectional elevation showing the detachable connection between the brace and the leg with the parts disconnected.

While it is important that the crutch be self-supporting or adapted to stand alone stably on the floor and have the required strength and rigidity to afford the necessary support and sense of security to the user, it is also important for the crutch to be of light weight and compact form, capable of being conveniently handled and used by an infirm or feeble person without fatigue or undue exertion. The crutch is therefore constructed so as to give these results.

As best shown in Fig. 1, the crutch or device comprises a horizontal handle-bar **10**, and legs **11** firmly secured to and extending downwardly therefrom in such diverging relation as to rest on the floor or ground at relatively widely spaced points so that the crutch will stand alone and form a stable support for a person grasping and bearing his weight on the handle-bar. Preferably, there are three of the legs **11**, arranged so that their lower ends are disposed at the three corners of a triangle, with the middle or front leg extending forwardly with relation to the handle-bar and the other two or rear legs. The legs are connected below the handle bar, preferably at their lower portions, by cross rods or braces **12** and **13** which extend from the front leg to the two rear legs. A cross brace is not used between the lower portions of the two rear legs, thus leaving the space between the rear legs unobstructed, so that the feet and lower legs of the user can be moved freely in between the rear legs of the crutch in the use of the same, as indicated in Fig. 1.

In the preferred construction shown, the handle-bar and legs of the device are made of some wood which is strong and stiff or rigid, but light, and the legs are detachably connected to the handle-bar, as by threading the upper ends of the legs and screwing them into threaded sockets **15**, **16** and **17** in the handle-bar, these sockets being bored at appropriate angles, such that when the legs are screwed therein, they will diverge downwardly in the stated triangular relation to each other. The brace rods are connected to the legs so as to permit the disconnection of the legs from the handle-bar, and the shifting or grouping of the handle-bar, legs and braces in substantially parallel positions beside one another. Preferably the brace rods **12** and **13** are hinged to the front or middle leg, and the opposite end of each brace rod is detachably connected to one of the rear legs. Each brace rod has a metal ring or eye **18** secured on its front end and passing through and adapted to turn in a hole in a lug **19** projecting from a sleeve **20** fixed on the front leg of the crutch. Fixed on the opposite end of each brace rod is a ferrule or sleeve **21** made with a transverse hole adapted to engage over a stud **22** projecting from a sleeve **23** fixed on the adjacent leg, and the ferrule of the brace rod is removably held in place on the stud by a nut **24** screwed on the end of the stud above the brace rod. By unscrewing and removing the nuts **24**, the rear ends of the brace rods can be disengaged from the rear legs and the rods swung on their hinge connection with the front leg into positions

alongside of this leg, as shown in Fig. 2, and each of the legs can then be unscrewed from its socket in the handle-bar. Then the handle-bar and all of the legs with the brace rods can be placed side by side and placed in a suitable carrying case or tied or otherwise secured together in this position for convenience in carrying the device about.

The lower ends of the legs of the crutch are preferably equipped with shoes or ferrules **25** of rubber or other suitable material which will prevent the crutch from slipping on smooth or slippery floors or surfaces.

In using the described crutch, it is placed to stand on the floor in front of the user who grasps the handle-bar so as to support her weight thereon while standing back of the crutch. As represented in Fig. 1, the user can then step between the rear legs of the crutch and advance the latter by successive movements as successive steps are taken, the crutch always being in a position where the user can steady or support herself by her grasp on the handle-bar.

The described crutch being light, is easy to manipulate in use, and being collapsible, can be conveniently carried from place to place, as may be necessary. Nevertheless it provides a strong, firm support for the user which gives one a feeling of security in its use and prevents the user from losing his or her balance.

Invalids who have found the use of ordinary crutches practically impossible, can get around with comparative ease and rapidity with the aid of the crutch described.

I claim as my invention:

1. A crutch for supporting a person in walking comprising a horizontal handle-bar, rods rigid with said handle-bar and extending downwardly therefrom forming front and rear legs which diverge downwardly having their lower ends arranged to bear on the floor at points widely spaced apart in both lateral and fore and aft directions so that the crutch will stand stably on the floor, and brace rods connecting said front and rear legs below the handle-bar, the space between the lower portions of said rear legs being left unobstructed to allow the feet of the user to move freely between the rear legs of the crutch, said legs having releasable connections with the handle bar and said braces which adapt said members to be shifted into a compact side by side relation.

2. A crutch for supporting a person in walking comprising a horizontal handle-bar, rods rigidly but removably attached to said handle-bar and extending downwardly therefrom forming downwardly diverging front and rear legs having their lower ends arranged to bear on the floor at points widely spaced apart in both lateral and fore and aft directions so that the crutch will stand stably on the floor, and brace rods rigidly connecting said front and rear legs below the handle-bar, the space between the lower portions of said rear legs being left unobstructed to allow the feet of the user to move freely between the rear legs of the crutch, each of said brace rods being detachably connected at one end to one leg and movably connected at its other end to anothor leg to fold to a position beside this latter leg, for placing the handle-bar, legs and braces in a compact side by side relation.

CLIFFORD D. UPTON.