April 16, 1963 M. A. WOLFERTS 3,085,258

HOLDER FOR INVALID WALKER

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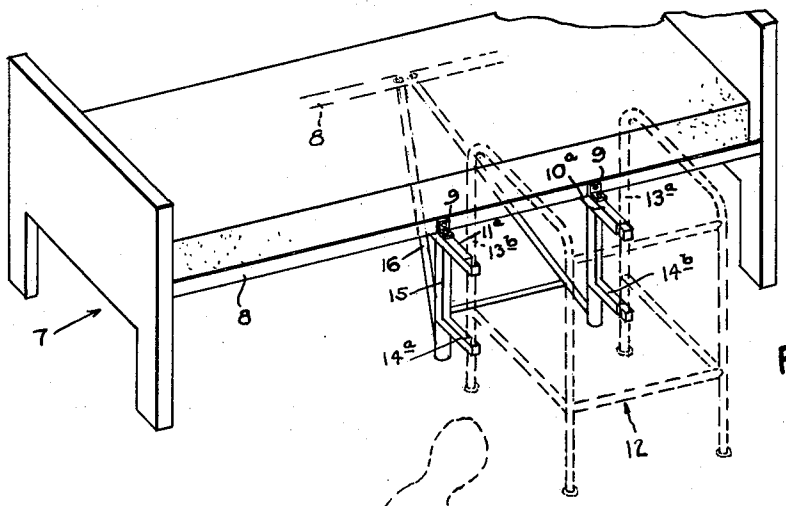


Fig. 1.

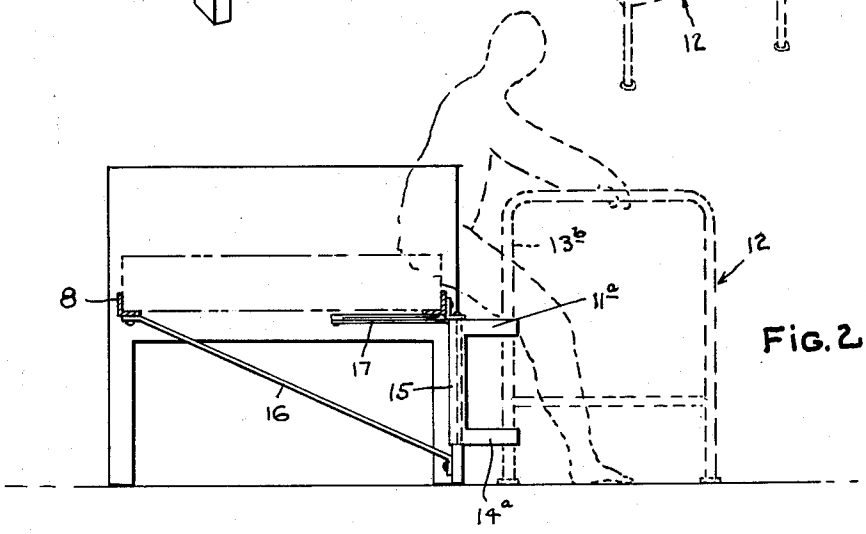


Fig. 2.

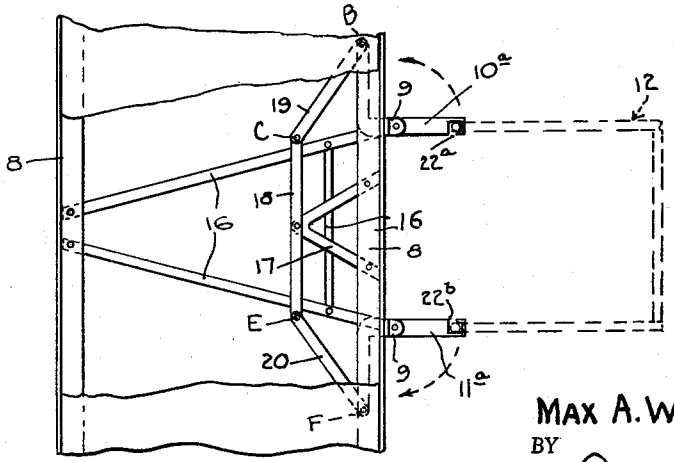


Fig. 3.

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HOLDER FOR INVALID WALKER

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Fig. 4.

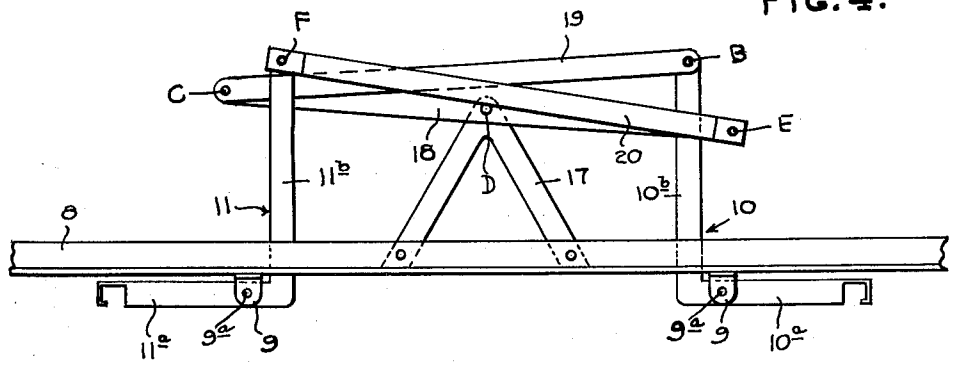
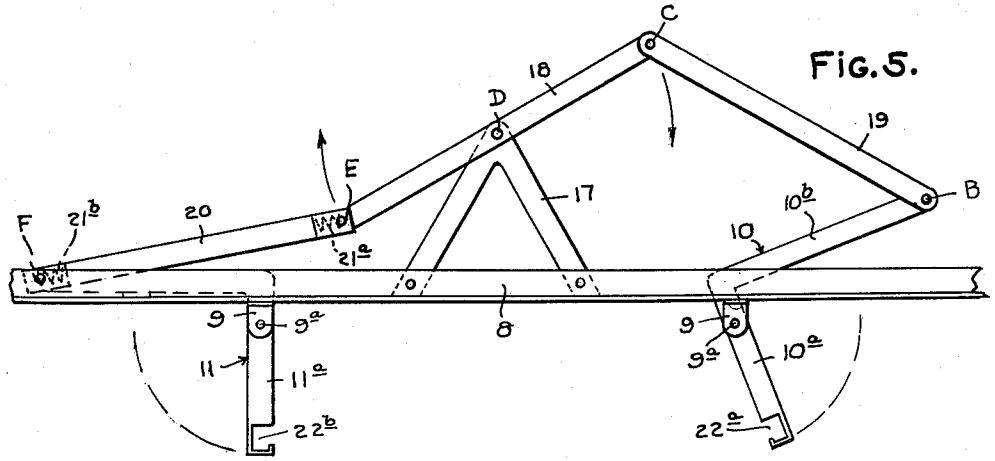


Fig. 5.



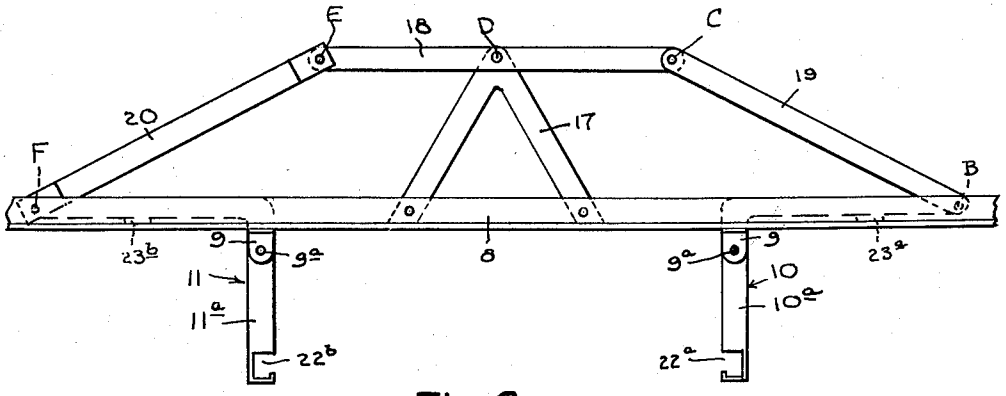


Fig. 6.

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United States Patent Office 3,085,258 Patented Apr. 16, 1963

3,085,258

HOLDER FOR INVALID WALKER

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Filed Oct. 4, 1961, Ser. No. 142,888
7 Claims. (Cl. 5—92)

This invention relates to means for connection with a hospital or other bed for detachably holding invalid walkers or the like against accidental shifting while an invalid or the like moves to and from a bed to support himself in a walker. The invention is herein called an invalid walker-holder.

Extreme difficulty has been experienced in holding a walker in position while an invalid is either getting out of bed to engage the walker or, to hold the walker against shifting when the invalid returns to bed. Frequent accidents have occured when an invalid attempts to move between bed and walker due to the shifting of the walker laterally or outwardly as the invalid attempts to transfer himself from one to the other, and the purpose of this invention is to securely hold the walker against shifting while the invalid is entering or leaving the walker.

The invention embodies novel connecting means, carried by the bed rails, that normally are retracted to lie parallel with the rails of the bed so that the invalid can move his legs over the edge of the bed with a minimum of interference from the walker-holder. The connecting means to be manually shifted outwardly away from the rail of the bed to engage opposite posts of the walker, such means being actuated by the invalid and through the medium of linkage and past center locking means, the device, including a pair of spaced apart double arms which are simultaneously swung to a position at right angle to the rail of the bed and with each of the arms having a hook-like socket means to engage the posts of the walker.

Novel features of construction and operation of the device will be more clearly apparent during the course of the following description, reference being had to the accompanying drawings wherein has been illustrated a preferred form of the device and wherein like characters of reference are employed to denote like parts throughout the several figures.

In the drawings:

FIGURE 1 is a perspective view of a bed having the invention applied thereto and with the device being in the projected or operative position to support a walker,

FIGURE 2 is a transverse section through the bed and the associated parts of the invention,

FIGURE 3 is a plan view of the device in the supported position,

FIGURE 4 is a plan view of the device in the retracted position,

FIGURE 5 is a plan view, showing the several link elements initially shifted to a projecting position, and

FIGURE 6 is a plan view, with the device in the fully extended position and with certain of the links being shifted to a past center locking position.

Referring specifically to the drawings, there has been illustrated a bed **7**, having conventional angle bed rails **8**. Mounted in fixed position upon one bed rail **8**, as by angle brackets **9**, is a pair of spaced apart bell crank levers **10** and **11**. The bell crank levers have their short arms **10***a* and **11***a* pivotally connected to the brackets **9** by pivots **9***a*. The bell crank levers are adapted to swing in a horizontal plane by manual shifting. Since the walker, indicated in dotted lines at **12**, embodies an open and generally tubular frame, having rear posts **13***a* and **13***b*, it has been found desirable that the posts **13***a* and **13***b* be engaged at two points in their height and for this purpose, there have been provided second levers **14***a* and **14***b* connected through the pivotal points **9***a* with the upper bell cranks

10 and **11** by tubular members **15** (**10**, **14***a*, and **15** function as one piece). The tubular members **15** and the lower levers **14***a* and **14***b* are braced to the opposite rail **8** of the bed by braces **16** so that, when the bell cranks **10** and **11** are swung in a horizontal plane, the lower levers **14***a* and **14***b* partake of a similar movement.

Riveted or otherwise connected to the flange of one bed rail **8** is an A-frame **17**. The A-frame **17** has pivoted or otherwise connected to its apex, as at D, an elongated center link **18**. The center link **18**, at one end, is pivotally connected to a floating link **19**, as shown at C. The opposite end of the floating link **19** is pivotally connected to the long arm **10***b* of the bell crank lever **10**, as at B. The opposite end of the center link **18** is pivotally connected at E to a yieldable link **20**. The pivotal points E and F are yieldable by springs **21***a* and **21***b*, constituting a yieldable connection and allowing a past center swinging of the links **18** and **20**. Swing-limiting stops **23***a* and **23***b* are fastened to the bed rail **8** to limit the swing of the two bell crank levers **10** and **11** so that the arms **10***a* and **11***a* are stopped at a right angle to the bed rail **8**.

In the use of the device, the several parts being supported upon the rails of a conventional bed and with the parts in the position illustrated in FIGURE 4, the invalid swings one arm **10***a* outwardly, manually. The swinging of the arm **10***a* functions through the arm **10***b* to pull or push upon the floating link **19**, such action, through the medium of the floating link **19** causes the center link **18** to swing upon its pivot D carried by the A-frame **17** and causing yieldable link **20** to be simultaneously moved with the movement of the link **18**, rocking the follower bell crank **11** outwardly so that the arms **10***a* and **11***a* move in an opposed relation. As the links **18** and **20** continue to swing, the yieldable pivotal points E and F permit the links **18** and **20** to move to a past center position, illustrated in FIGURE 6, securely locking the bell crank levers **10** and **11** against accidental shifting movement. Prior to the full motion to the past center locking position, post **13***b* of the walker is engaged into the socket **22***b* of the arm **11***a* and at the full past center locking movement, the opposite arm **10***a* and its socket **22***a* engages the post **13***a* of the walker, securely holding the walker against accidental shifting. The past center swing of links **18** and **20** together with the swing-limiting stops **23***a* and **23***b* and the engagement of the rear posts **13***a* and **13***b* of the walker **12** constitute a very effective locking mechanism as the various links and levers of the walker-holder arrive in the operative position.

Four-sided hook-like sockets **22***a* and **22***b* have one side partly open to allow the upright posts **13***a* or **13***b* of the walker **12** to enter. When both bell cranks **10** and **11** are in locked or operative position, the walker is pushed slightly forward or away from the bed so that the posts **13***a* and **13***b* are encircled on three sides by the hook-like holders **22***a* and **22***b*. This prevents adverse shifting, twisting, turning or tipping of the walker **12** by forces an invalid applies in moving from bed to walker or walker to bed. When the invalid is engaged in the walker and wishes to release the walker from the walker-holder he shifts the walker slightly backwards or toward the bed so that the rear post **13***a* and **13***b* are opposite the open portion of the hook-like sockets **22***a* and **22***b*. Now the invalid pushes the walker, using post **13***a* against arm **10***a* opening the past center lock and freeing post **13***b* of the walker **12** from hook-like socket **22***b* on arm of bell crank **11***a*. The post **13***a* is now withdrawable from the socket **22***a* on arm **10***a* of the bell crank **10** and mechanism is left in position as in FIGURE 5.

To return to the bed, the mechanism is located as in FIGURE 5. The invalid engages post **13***a* of the walker in socket **22***a* of bell crank **10**, he moves the walker slightly forward entrapping post **13***a* on three sides. Now

post 13*b* is pushed toward socket 22*b* of bell crank arm 11*a*. Post 13*a* in socket 22*a* on arm 10*a* draws socket 22*b* on 11*a* toward post 13*b* of the walker 12 through the various levers and links of the mechanism to the past center locking position. When the walker holder is in its locked position, the walker is pushed slightly forward so that both posts 13*a* and 13*b* are each engaged on three sides by the sockets 22*a* and 22*b*. When the invalid is seated upon the bed he swings the lever 10*a* in a direction toward the bed rail 8 moving the various links and causing the bell crank lever 11*a* to swing toward the bed rail 8 to fully retract the device so that the arms 10*a* and 11*a* lie closely parallel to the bed rail, providing a minimum of interference to the invalid as he lifts his legs into the bed. It will of course be apparent that the lower levers 14*a* and 14*b* are parallel to the arms 10*a* and 11*a* are, are provided with similar sockets, not shown, and function in a similar manner. The device thus functions as a desirable means for securely holding a walker against shifting when the invalid is either leaving a bed or entering a bed. The parts are simple, are strong, quickly and easily attached to any conventional bed and are most effective in preventing accidental falling of an invalid when entering or leaving a conventional walker.

It is evident that the invention herein described is useable with a large variety of walkers and can be affixed to beds having several different designs or shapes in their side rails.

While the several links are shown as being flat bars, it will be apparent that the bars may be angle irons, channels or other cross-sectional configuration, also that they are not necessarily straight in their length but can be bent or curved to allow them to clear or pass one another as required as they move through their several rotations.

The levers, links and A-frame are in ratio, and their size or height is determined by the distance between the two rear legs of the walker.

The novelty of this invention resides in the following vitalizing elements. It is never necessary for the invalid to release his hold on the walker for the purpose of manipulating the levers of the walker-holding device. The walker holding device makes it possible for an invalid to remove himself from a bed and place himself into a walker, move about, remove himself from a walker and replace himself into bed without the aid of an attendant. The combination and arrangement of the hook-like sockets, bell crank levers, link, A-frame, past center lock, pivots, stops and braces and their relationship to bed and walker.

The retractability of the walker-holder placing it out of the way when not in use, and out of the way of the invalid when moving his legs over the side of the bed to which the walker-holder is attached.

The invalid capable of using a walker with the aid of an attendant, whose only function is to steady the walker while the invalid engages or disengages himself therefrom, may dispense with that attendant when using a walker-holder.

The knowledge required of an invalid to understand use of the walker-holder is nominal. He needs to swing only one bell crank with one hand or forearm or transmit movements to the walker-holder through the walker while engaged therein.

It is to be understood that the invention is not limited to the precise construction shown, but that changes are contemplated as readily fall within the spirit of the invention as shall be determined by the scope of the subjoined claims.

What I claim is:

1. An apparatus for connecting an invalid walker to a bed and in which the walker includes a pair of spaced vertical posts and the bed includes a side rail, a pair of levers pivoted to the side rail, each lever having a socket for detachable engagement with one of the posts of the walker, each lever being provided with a projecting arm, a frame fixedly attached to the side rail, a link centrally pivoted to said frame, and link members pivotally attached at one end to the ends of said link and pivoted respectively at their opposite ends to the ends of the projecting arms, whereby a manual movement of one of the arms in one direction will cause both of the arms to be moved toward one another to engage the walker between them, and a movement of one of the arms in the opposite direction will cause both arms to be moved away from one another to release the walker.

2. An apparatus for connecting an invalid walker to the side of a bed comprising, a walker having a pair of vertical posts, the bed having a side rail, a pair of levers pivoted in spaced relation to the side rail, each of the levers having a socket for detachable engagement with one of the posts of the walker, and linkage connecting said levers and effective to cause the levers to be moved toward one another to engage and retain the posts when one of the levers is moved in the proper direction, and also effective to separate the levers and permit detachment of the walker when one of the levers is moved in the opposite direction.

3. An apparatus as provided for in claim 2, wherein the linkage includes elements which are pivotal to a beyond dead center position to thereby lock the levers in walker-engaging position.

4. An apparatus for connecting an invalid walker to a bed and in which the walker includes a pair of spaced vertical posts and the bed includes a side rail, a pair of bell-crank levers pivotally attached in spaced relation to the bed rail, each lever having an arm provided with a socket for the reception of one of the posts of the walker, each lever having a second arm, an A-shaped frame attached to the side rail, a rocking link centrally pivoted at the apex of said frame, a link pivoted at one end to one end of the rocking link and pivoted at its other end to the end of the second arm on one of the levers, and a link pivoted at one end to the second arm of the rocking link and pivoted at its opposite end to the second arm of the second lever.

5. An apparatus for connecting an invalid walker to a bed comprising, a bed side rail, a pair of bell-crank levers attached to the side rail, each of said levers having a first arm provided with a socket for engaging with a part of the walker and maintaining it in close proximity to the bed, each of the levers having a second arm, a triangular frame fixed to the bed side rail between the points of pivotal attachment of the bell-crank levers thereto, a rocking link centrally pivoted to the frame, links respectively pivoted at one end to the ends of the rocking link, and said links respectively pivoted at their opposite ends to the ends of the second arms of the bell-crank levers.

6. An apparatus for connecting an invalid walker to a bed and in which the walker includes a pair of spaced vertical posts and the bed includes a side rail, a pair of bell-crank levers pivotally attached in spaced relation to the bed rail, each lever having a first arm provided with a socket for the reception of one of the posts of the walker, each lever having a second arm, an A-shaped frame fixedly attached to the side rail between the levers, a rocking link centrally pivoted at the apex of said frame, a link pivoted at one of its ends to one end of the rocking link and pivoted at its other end to the end of the second arm of one of the levers, a link pivoted at one of its ends to the second end of the rocking link and pivoted at its opposite end to the second arm on the second lever, and stop means on the side rail for limiting the movement of the first arms of the levers in a direction toward one another.

7. An apparatus for connecting an invalid walker to the side of a bed comprising, a walker having a pair of vertical posts, the bed having a side rail, a pair of levers pivoted in spaced relation to the side rail, each of said levers having an open-sided socket for detachable engagement with one of the posts of the walker,

linkage connecting the levers and effective to cause the levers to be moved toward one another to engage and retain the posts in their sockets when one of the levers is moved in the proper direction and also effective to separate the levers and permit detachment of the walker from the sockets when one of the levers is moved in the opposite direction, and spring means effective on

parts of the linkage at pivotal points thereof to constitute a yieldable connection between said parts and permit movement to a beyond dead center position.

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