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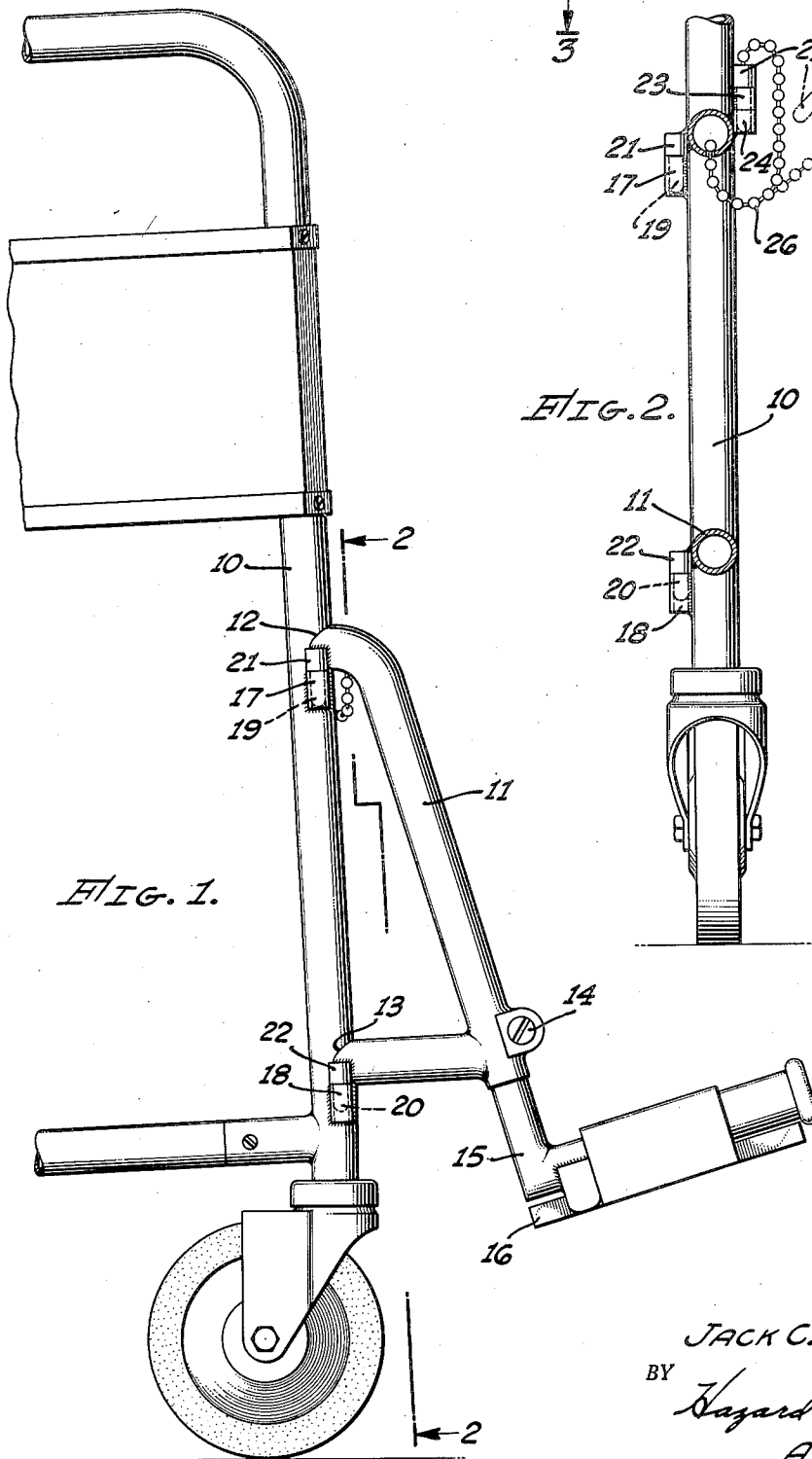
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REMOVABLE FOOTREST FOR WHEEL CHAIRS

Filed Nov. 20, 1950

2 SHEETS—SHEET 1



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2 SHEETS—SHEET 2

FIG. 3.

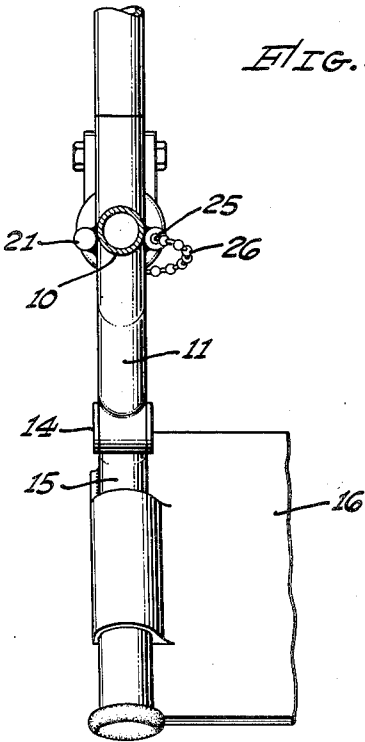


FIG. 5.

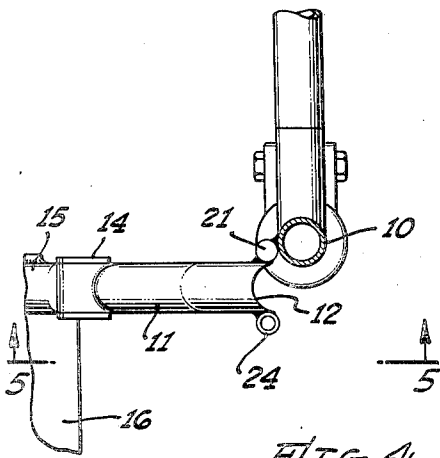
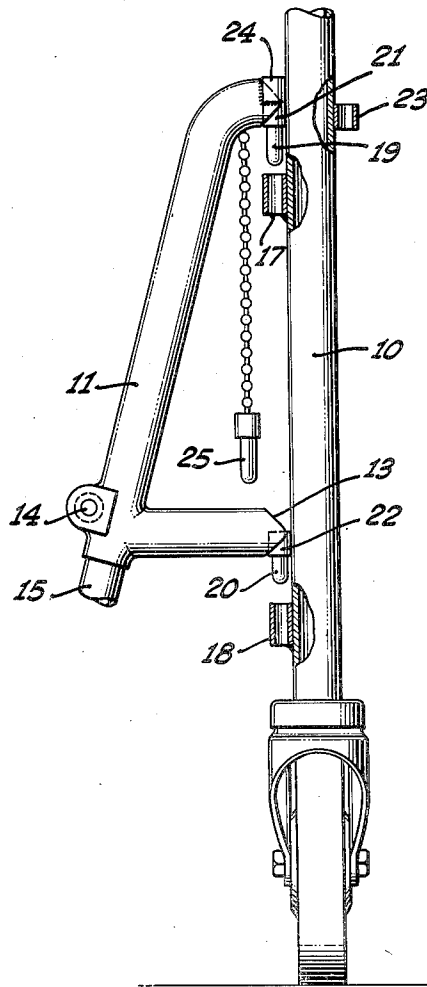


FIG. 4.

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REMOVABLE FOOTREST FOR WHEEL CHAIRS

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5 Claims. (Cl. 155—165)

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This invention relates to improvements in wheel chairs and particularly to the footrests therefor.

In the conventional wheel chair the frame of the chair provides upright forward legs, and footrest structures are usually permanently mounted thereon or are rigid therewith so as to extend downwardly and forwardly to a position that will suitably support the feet of the invalid seated in the chair. This position assumed by the footrest structures is disadvantageous when the structures are either integral with the front legs of the chair frame or are permanently or rigidly mounted thereon in that the footrests interfere with the invalid approaching upright surfaces. There are many situations where the invalid, although enjoying the footrests under normal circumstances, finds that the forwardly projecting footrests interfere materially with his approaching tables, beds, and other structures in that they prevent the body of the chair from closely approaching them.

The forwardly projecting footrest structures also materially increase the overall length of the chair from front to rear and frequently this increase in overall length interferes with storage of the chair or its transportation.

It is highly desirable to have the footrest structures so mounted on the frame of the chair that these structures may optionally be swung laterally to assume positions along the sides of the chair enabling the frame of the chair to be moved very close to an upright surface. In other words, the invalid may optionally dispense with the use of the footrests and allow his legs to be merely suspended from the seat of the chair in approaching upright structures. It is also desirable to have the footrest structures arranged so as to be optionally capable of swinging movement relative to the frame of the chair or releasably locked in their normal position and to have the releasing means so arranged that it may be operated by the invalid himself while seated in the chair.

It is further desirable to have the footrest structures removably mounted on the frame of the chair so that for storage or shipping purposes they may be completely detached from the frame of the chair thus decreasing its overall length and facilitating the storage or shipment of the chair in a relatively small space.

An object of the present invention is to provide an improved wheel chair wherein the footrest structures are so mounted on the frame of the chair that they may optionally be releasably

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locked in their normal position or released for lateral swinging movement from their projected positions or even detached from the frame of the chair entirely.

With the foregoing and other objects in view, which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figure 1 is a partial view in side elevation of the forward portion of a wheel chair illustrating a footrest structure embodying the present invention as having been mounted thereon;

Fig. 2 is a partial view taken substantially upon the line 2—2 upon Fig. 1 in the direction indicated;

Fig. 3 is a partial view taken substantially upon the line 3—3 upon Fig. 2 in the direction indicated;

Fig. 4 is a view similar to Fig. 3 but illustrating the foot rest structure as being in the process of being swung laterally; and

Fig. 5 is a view taken substantially upon the line 5—5 upon Fig. 4 but illustrating the manner in which the footrest structure can be completely detached from the chair.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, the conventional wheel chair is usually made up of two opposed side frames which may or may not be capable of being collapsed towards each other. These side frames are usually made of metal tubing for purposes of strength and lightness. The side frames provide upper forward legs and as the legs and footrest structures embodying the present invention are counterparts of each other, only one such forward upright leg 10 has been illustrated herein for purposes of clarity. The footrest structures each comprise tubular brackets 11 made up of sections of tubing the ends of which are concaved as at 12 and 13 so as to be complementary to the cylindrical forward faces of the upright legs 10. The brackets 11 are usually split and may be tightened as by an adjusting bolt 14 to grip upon an angular arm 15 on which a treadle or footrest 16 is hingedly or swingably mounted between limits.

In accordance with the present invention, gudgeons 17 and 18 are welded, brazed or otherwise secured to the outer sides of the legs 10. These gudgeons form upwardly open sockets adapted to receive the downwardly directed pin-tiles 19 and 20 which are welded, brazed or other-

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wise secured to the outer sides of the brackets 11. Preferably the upper pintle 19 is somewhat longer than the lower pintle 20 so that in applying the footrest structure to its leg 10 the upper pintle 19 may be caused to enter its gudgeon or socket 17 before the pintle 20 enters the lower socket or gudgeon 18. Thus with the entry of the pintle 19 into the upper gudgeon the lower pintle 20 can be easily guided into its gudgeon 18 and the entire footrest structure allowed to drop until downward movement is limited by the engagement of the shoulders 21 and 22 on the pintles with the top surfaces of the gudgeons 17 and 18.

Each leg has a knuckle 23 welded, brazed or otherwise secured to the inner side thereof and a similar knuckle 24 is welded, brazed or otherwise secured to the inner side of the bracket 11. These knuckles 23 and 24 are so arranged as to assume positions in registration or in alignment with each other when the planes of the brackets 11 are in direct forward alignment with their respective legs 10. In this position a locking pin 25 is receivable in the aligned knuckles and serves to releasably lock the footrest structure in its forwardly projecting or normal position. The locking pin is preferably permanently attached to the bracket 11 as by a chain 26 to prevent its becoming lost.

It will be noted that the knuckle 24 on the bracket 11 assumes a position beneath the knuckle 23 when the knuckles are aligned and in this position the knuckle 24 prevents the bracket and footrest from being bodily shifted upwardly with relation to the leg 10 although the pintles 19 and 20 are otherwise free to move in an upward direction in their respective gudgeons 17 and 18. The mutual engagement of the knuckles 24 and 23 thus contributes to the rigid or solid connection between the footrest structure and its leg when the footrest structure is in its forward or normal position.

If the invalid seated in the wheel chair desires to approach an upright surface of an upright structure, it is merely necessary for him to withdraw the locking pin 25 on each leg 10. When the locking pin is withdrawn from the aligned knuckles 23 and 24 the footrest structure is still supported on the leg 10 by means of the pintles 19 and 20 in their respective gudgeons or sockets. However, each footrest structure is then capable of swinging laterally or from a position shown in Fig. 3 through the position shown in Fig. 4 and may even be caused to assume a position wherein the plane of the bracket 11 is approximately parallel to the plane of the side frame of the wheel chair. In such position each footrest structure is disposed entirely behind the front leg 10 enabling the invalid to approach an upright surface as close as his legs will permit. In such laterally swung position the knuckle 24 has swung laterally from beneath the knuckle 23 and the entire footrest structure may be bodily lifted into the position shown in Fig. 5, thus completely detaching it from the frame of the wheel chair. When thus detached the overall length of the wheel chair is materially reduced, thus facilitating its storage or its transportation in a relatively small space. It will be appreciated that each footrest structure may be re-assembled with the wheel chair by merely dropping it or lowering it from the position shown in Fig. 5, thus causing the pintles 19 and 20 to re-enter their gudgeons 17 and 18 and then on swinging each footrest structure forwardly the knuckle 24 may be re-aligned with

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the knuckle 23 and the locking pin again applied. Preferably the parts are so designed that when the locking pin is in locking position the rear edges of the tubing sections making up the bracket 11 are in direct abutment with the forward face of the leg 10.

From the above described construction it will be appreciated that an improved wheel chair is provided wherein the footrest structures are detachably mounted on the frame of the wheel chair so that they can be readily removed at all times. The footrest structures are also swingably mounted on the front legs of the wheel chair frame and may optionally assume a forward or normal position or be swung laterally with respect thereto. When in the forward position they may be releasably locked in that position by the locking pins 25 and these pins are so arranged that they are accessible to the invalid while seated in the chair. When the locking pin is in applied position not only is the footrest structure locked thereby against swinging movement relative to the leg 10 but by reason of the fact that the knuckle 24 on the bracket 11 is beneath the knuckle 23 on the leg 10, the footrest structure is also effectively locked against removal of the wheel chair.

Various changes may be made in the details of the construction without departing from the spirit and scope of the invention as defined by the appended claims.

I claim:

1. In combination with a wheel chair having upright forward legs, a footrest structure for each leg, pintles on the footrest structures, gudgeons on the legs in which the pintles are receivable, a knuckle on each leg and a knuckle on each footrest structure alignable therewith when each footrest structure is in a position extending forwardly from its leg, and a locking pin receivable in the aligned knuckles.

2. In combination with a wheel chair having upright forward legs, a footrest structure for each leg, pintles on the footrest structures, gudgeons on the legs in which the pintles are receivable, a knuckle on each leg and a knuckle on each footrest structure alignable therewith when each footrest structure is in a position extending forwardly from its leg, and a locking pin receivable in the aligned knuckles, the knuckle on the footrest being arranged to assume a position beneath the knuckle on the leg as and for the purpose described.

3. In combination, a wheel chair having upright forward legs, gudgeons on the legs, footrests having pintles receivable downwardly in the gudgeons enabling the footrests to be applied and removed from the legs and when in applied position to swing laterally with respect to the legs, and means for releasably locking the footrests against swinging movement and against removal from the legs comprising a knuckle on each leg, a knuckle on each footrest alignable therewith and locking pins receivable in the aligned knuckles.

4. In combination, a wheel chair having upright forward legs, gudgeons on the legs, footrest structures having pintles receivable downwardly in the gudgeons enabling the footrest structures to be applied and removed from the legs and when in applied position to swing laterally with respect to the legs, and means for releasably locking the footrest structures against swinging movement and against removal from the legs comprising a knuckle on each leg, a knuckle on each

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footrest structure alignable therewith and locking pins receivable in the aligned knuckles, the knuckles on the footrest structures being adapted to assume positions beneath the knuckles on the legs as and for the purpose described.

5. In combination, a wheel chair having upright forward legs, gudgeons on the legs, footrest structures having pintles receivable downwardly in the gudgeons enabling the footrest structures to be applied and removed from the legs and when in applied position to swing laterally with respect to the legs, and means for releasably locking the footrest structures against swinging movement and against removal from the legs, the upper pintle on each footrest structure being longer

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than the lower pintle thereon so as to be partially receivable in its gudgeon in advance of the entry of the lower pintle into its gudgeon.

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