

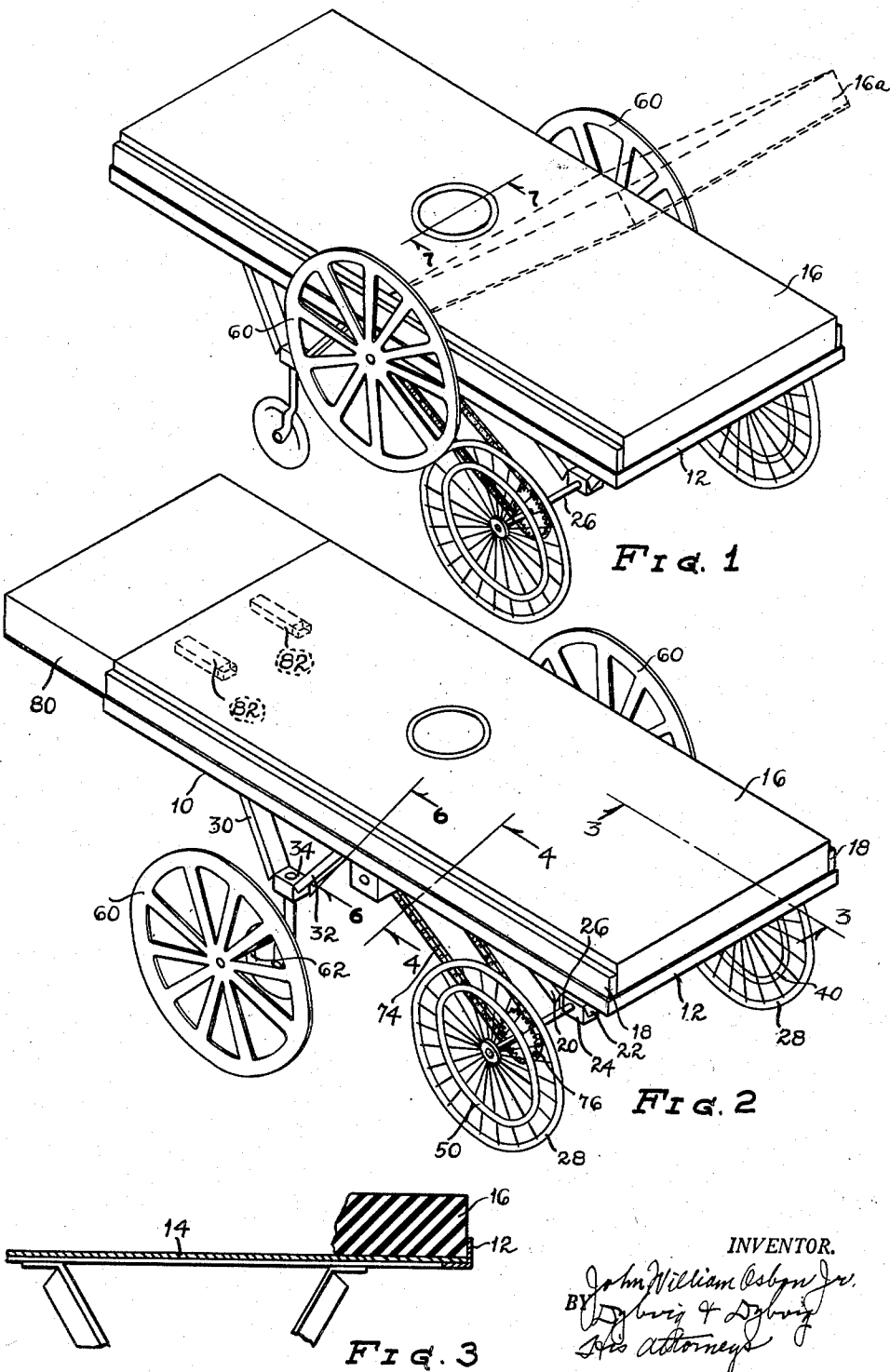
April 21, 1953

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INVALID BED

2,635,899

Filed March 23, 1948

2 SHEETS—SHEET 1



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2 SHEETS—SHEET 2

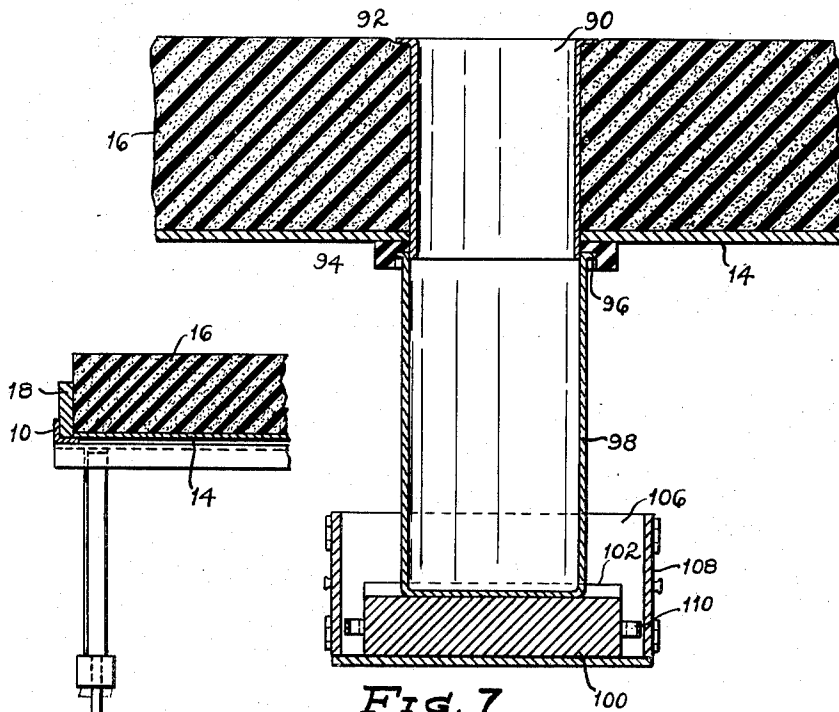


Fig. 7

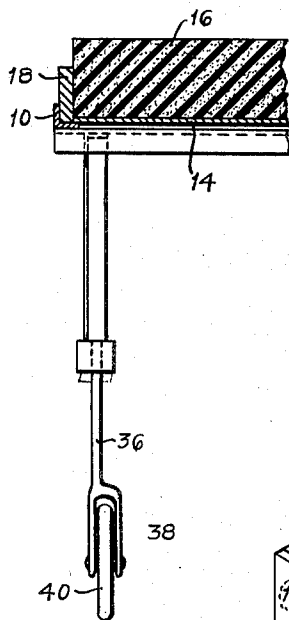


Fig. 6

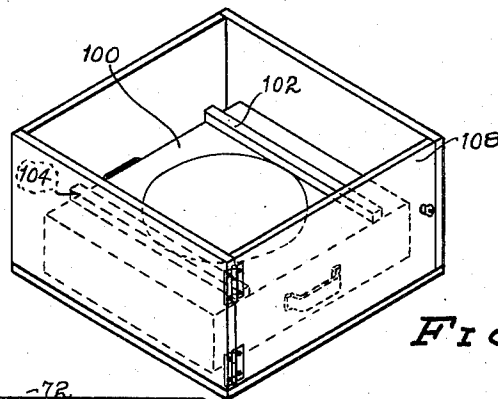


Fig. 8

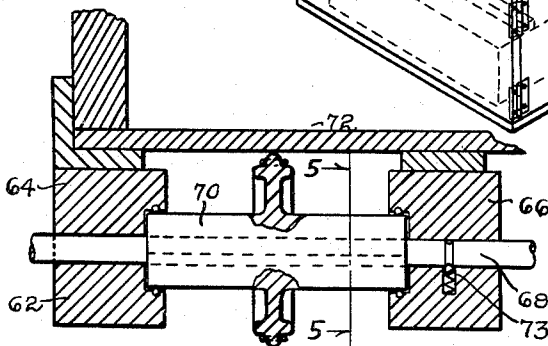


Fig. 4

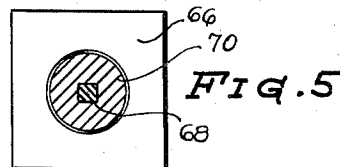


Fig. 5

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UNITED STATES PATENT OFFICE

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INVALID BED

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1 Claim. (Cl. 280-211)

1

This invention relates to a vehicle for an invalid and more particularly to an invalid bed or reclining support that is mobile, although not necessarily so limited.

Numerous devices have been manufactured for use by invalids including beds and wheel chairs. However, the use of a bed and a wheel chair is objectionable in that the invalid has difficulty in moving from one to the other, oftentimes necessitating assistance in so doing.

An object of this invention is to provide a bed and inclined support that has the characteristics of the usual invalid bed and wheel chair, the bed being so arranged that the invalid may move the bed, whether lying flat or being in an inclined position, in that actuating means have been provided that are within easy reach of the invalid irrespective of his position in bed, and in addition thereto it has the added feature of eliminating the necessity of the use of a bed pan, so that the invalid may be self-sufficient.

Another object of this invention is to provide a rest support for an invalid that is economically produced, that is efficient, that is easily manipulated by the invalid or his attendant and at the same time to provide a rest that is comfortable and convenient.

Other objects and advantages reside in the construction of parts, the combination thereof and the mode of operation, as will become more apparent from the following description.

In the drawings:

Figure 1 is a perspective view of the invalid bed or support;

Figure 2 is another view similar to Figure 1, showing the side hand manipulating wheel removed from its support;

Figure 3 is a fragmentary, cross sectional view, taken substantially on the line 3-3 of Figure 2;

Figure 4 is a fragmentary, cross sectional view taken substantially on the line 4-4 of Figure 2;

Figure 5 is a cross sectional view taken substantially on the line 5-5 of Figure 4;

Figure 6 is a fragmentary, cross sectional view taken substantially on the line 6-6 of Figure 2;

Figure 7 is a fragmentary, cross sectional view taken substantially on the line 7-7 of Figure 1; and

Figure 8 is a perspective view of a removable support.

Referring to the drawings, the reference character 10 designates the side rail members and 12 the end rail members. For the purpose of illustration, these have been shown as angle bars with one flange of each directed inwardly and one flange of each directed upwardly. The side rail members 10 and the end rail members 12 cooperate to form a rectangular support for a bottom bed member 14 used in supporting a mattress 16, which bottom member may be made

2

from plywood or a suitable composition material, a number of different types of which may now be purchased on the open market.

In order to hold the mattress 16 in place so that it will not work off the side over the angle bar, a pair of side boards 18 are positioned within the side rails 10. As clearly indicated in Figures 3, 6 and 7, the mattress 16 is preferably made from sponge rubber, which provides adequate resiliency without the use of a bed spring and without the use of inner springs. Furthermore, a sponge rubber mattress is desirable for an invalid, in that it is more sanitary and more easily kept clean than the conventional fabric covered mattress.

As shown in dotted position in Figure 1, suitable mechanism may be provided for adjusting a portion of the mattress into the inclined position 16a, so as to provide an inclined back rest for the invalid. In some cases, the angle of inclination may approach a vertical position.

The bed is mounted in spaced relation from the floor by a frame and wheel mechanism, which will now be described. Two pairs of diagonally disposed angle iron braces 20 and 22, only one pair of which has been shown, are fixedly attached to the under side of the bed and fixedly support the bearings 24, only one of which has been shown. A shaft 26, functioning as an axle, is mounted in the bearings 24. A pair of wheels 28 are rotatably mounted on the ends of the shaft 26, so as to provide a support adjacent the head of the bed.

Two pairs of diagonally disposed brackets 30 and 32 are secured to the under side of the bed towards the foot of the bed. Only one of these pairs of brackets has been shown. Members 30 and 32 support the vertically disposed bearings 34, only one of which has been shown, used in rotatably supporting a shaft 36 terminating in a bifurcated or forked end portion 38 rotatably supporting a caster wheel 40, there being one of these wheels on each side of the bed.

The wheels 28 are each provided with a hand grip rim 50 that may be used by the invalid when resting in a prone position to rotate or actuate the wheel 28, to thereby propel the bed. The bed may be easily turned, due to the swivel arrangement of the caster wheels 40. Instead of using a pair of caster wheels, one caster wheel could be mounted under the center of the bed near the foot thereof. This, however, would result in a less stable bed, in that it would constitute a tripod support that is easily upset.

When the invalid lies on his back, it is practically impossible for him to reach and manipulate the hand wheels 50, as may be clearly seen. In order to permit the invalid to move the bed with ease when he lies on his back or is raised into an inclined position, a pair of auxiliary hand

wheels 60 are used. Each of these hand wheels 60 is mounted upon a stubshaft 62 mounted for rotation in bearings 64 and 66. One end 68 of the stubshaft 62 is square and passes through the hub 70 of a sprocket wheel 72. The ends of the hub 70 are also journaled in the bearings 64 and 66, as clearly shown in Figure 4, so that as the hand wheels 60 and the stubshaft 62 are pulled outwardly, the hand wheels may be removed without removing the sprocket wheel 72. A suitable yieldable lock 73 is used to prevent accidental removal of the stubshafts. The sprocket wheel 72 drives a chain 74 passing over a sprocket wheel 76 keyed to the axle 26. There is one of these auxiliary hand wheels on either side of the bed, so that the invalid can easily move the bed around the room or from room to room while lying on his back or while sitting in an inclined position. The auxiliary hand wheels 60 have been removably mounted so that these hand wheels will not provide an obstruction while making the bed, will not be in the way when the invalid gets out of bed or is put to bed. Furthermore, the auxiliary hand wheels 60 may be removed permanently in the event the invalid is unable to handle the bed or for any other reason it is found desirable to remove the hand wheels.

It is desirable that the bed should be comparatively short. It may be less than six feet long. Thus, when a short person or a child is using the bed, it can be moved around more easily, requiring less space to turn the bed and obviously it is much lighter than if the bed were adequately long to meet the requirements of all heights of individuals.

In the event the bed is too short for an individual, it may be provided with an extension 80 connected by a pair of supporting bars 82, shown in dotted lines in Figure 2, and seated in suitable sockets provided therefor in the foot of the bed. Any suitable mechanism may be used for locking this extension in position. Various sizes of extensions may be provided. For example, one extension may be six inches long, another twelve inches, et cetera, so as to meet the requirements of the particular invalid or patient. A substitute extension for the requirements of the individual may be selected from a group of various lengths.

The use of a bed pan by an invalid presents a problem, especially when the invalid is left alone over a long period of time. This problem has been solved in my disclosure by providing a tubular member 90, extending through an aperture located in a suitable position in the mattress 16, the tubular member 90 being provided with an outwardly directed flange 92 resting upon the margin of the mattress surrounding the opening therein. Tubular member 90 extends downwardly through the bottom 14 of the bed. A rubber collar or sealing gasket 94 substantially L-shaped in cross sectional area, is snugly seated upon the lower end of the tubular member 90 and is duo-functional, in that it prevents the tubular member 90 from working upwardly through the mattress and it also provides a seal engaging an outwardly directed flange 96 of a urinal can 98 removably mounted. The can 98 is mounted upon a block 100 provided with a pair of parallel guides 102 and 104. This block 100 is removably mounted in a box 106 provided with a door 108 for opening one end of the box. The block 100 may be provided with suitable handles 110, so that as the door 108 is opened, the block

100 may be pulled out of the box so as to remove the support for the bottom of the can 98, permitting the can to be lowered to permit its removal for emptying, et cetera. The can may be reinserted by placing it in position and then sliding the block 100 back into the box 106, so as to provide a support for the can.

Although the preferred embodiment of the device has been described, it will be understood that within the purview of this invention various changes may be made in the form, details, proportion and arrangement of parts, the combination thereof and mode of operation, which generally stated consist in a device capable of carrying out the objects set forth, as disclosed and defined in the appended claim.

Having thus described my invention, I claim:

An invalid bed having a frame, means for supporting a mattress upon said frame, said invalid bed including an axle, a pair of supporting wheels rotatably mounted upon the ends of the axle, said supporting wheels being rotatably mounted upon the axle so that one wheel may be driven independently of the other, hand grip wheels attached to the sides of the supporting wheels for use by the occupant of the bed, means for supporting the axle under the head of the bed, caster wheel means for supporting the other end of the bed, two pairs of sprocket wheels, a chain interconnecting each pair of the sprocket wheels, one of the sprocket wheels of each pair being attached to the wheels mounted upon the ends of the axle, the other sprocket wheel of each pair being mounted in bearings so as to be permanently positioned under the bed, each of said other sprocket wheels having a centrally disposed square aperture, a pair of auxiliary hand grip wheels, a pair of shafts having square portions, each of the auxiliary hand grip wheels being fixedly attached to one of the shafts extending axially in one direction therefrom, the shafts being removably mounted in the square apertures in the sprocket wheels so that the auxiliary hand grip wheels may be removed by axially sliding the shafts out of the square apertures in the sprocket wheels, the auxiliary hand grip wheels when the square shafts are mounted in the apertures of the sprocket wheels having a portion located above the level of the mattress to permit the occupant of the bed to move the bed while on his back by manipulating the auxiliary hand grip wheels, the auxiliary hand grip wheels upon being removed leaving the sides of the bed unobstructed, the occupant of the bed may then move the bed by manipulating the hand grip wheels attached to the supporting wheels.

JOHN WILLIAM OSBON, JR.

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