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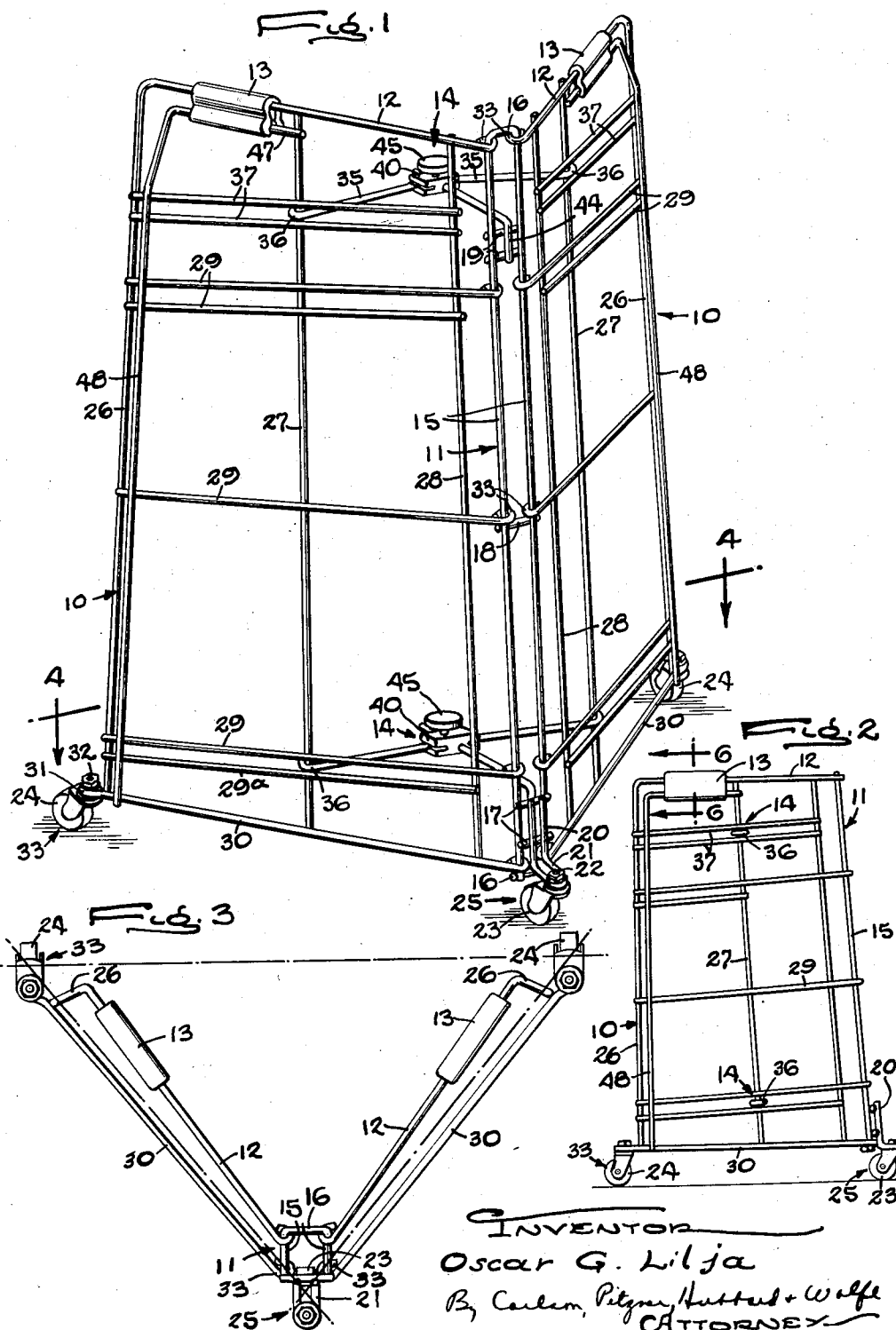
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WALKER

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2 Sheets-Sheet 1



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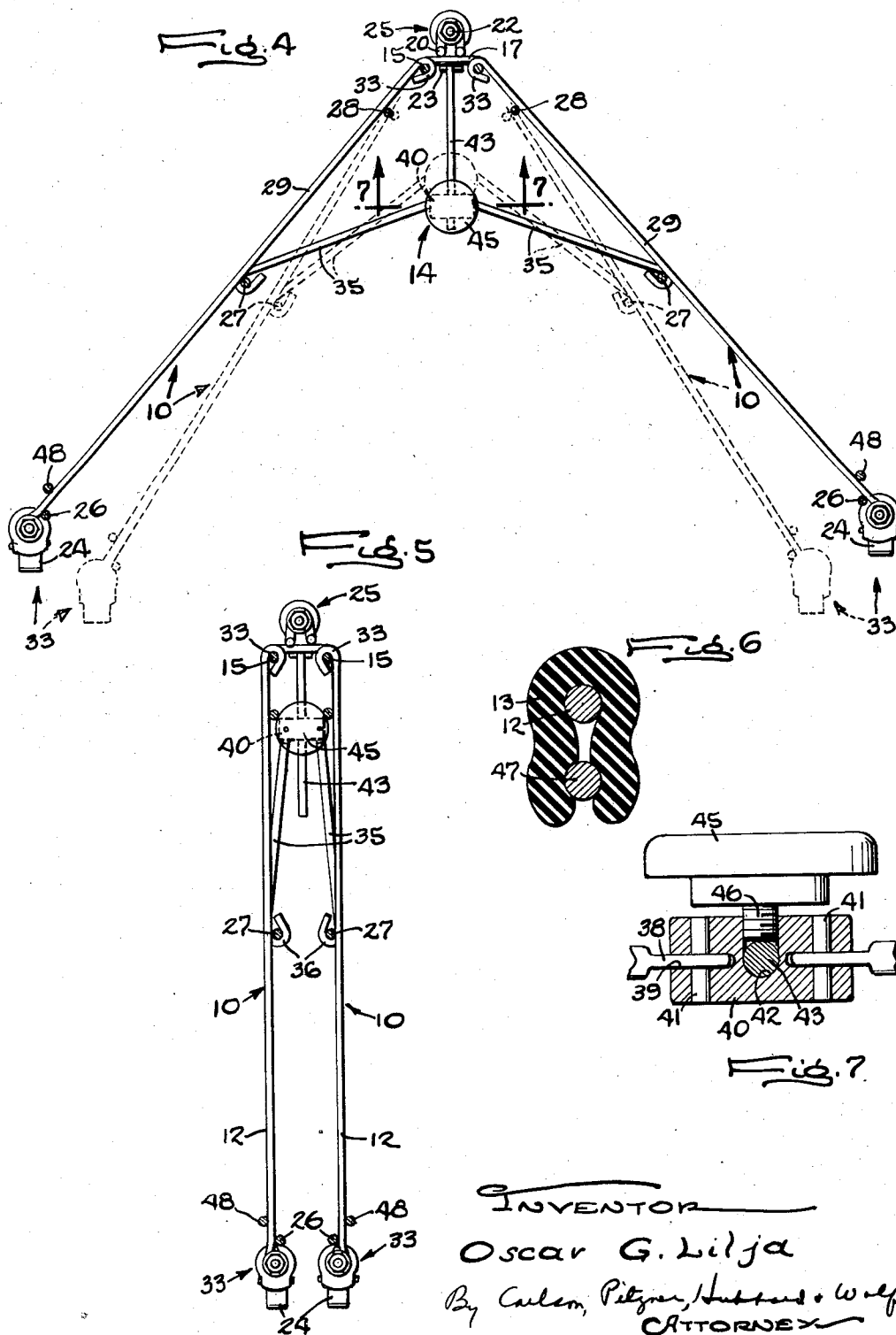
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WALKER

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11 Claims. (Cl. 155—22)

This invention relates to a wheeled enclosure or so-called walker for supporting part of a person's weight to assist the latter in moving from place to place.

The general object is to provide a walker which is simple and inexpensive to construct, which is adjustable in width during use and readily collapsible for storage, and which is light in weight and yet extremely sturdy and safe in service use.

Another object is to join two side panels to opposite edges of an upright center post and form a truss structure of generally triangular cross section and adapted to be collapsed by swinging the panels toward each other.

A further object is to locate the hand rails relative to the three supporting wheels in a novel manner which prevents forward tipping of the walker during normal use.

Another object is to provide a novel adjustable linkage for maintaining a selected degree of expansion of the triangle structure.

The invention also resides in the novel manner of hinging the side panels on the center post, in the novel construction which permits the formation of the center post and side panels from wire, and the simple manner of adapting the structure as a whole for convenient use by persons of different heights.

Other objects and advantages of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings, in which

Figure 1 is a perspective view of a walker embodying the novel features of the present invention.

Fig. 2 is a side elevational view with the walker collapsed.

Fig. 3 is a plan view of the principal parts.

Fig. 4 is a plan section taken along the line 4—4 of Fig. 1.

Fig. 5 is a plan section similar to Fig. 4 with the walker collapsed.

Fig. 6 is a section taken along the line 6—6 of Fig. 2.

Fig. 7 is a fragmentary section taken along the line 7—7 of Fig. 4.

Generally stated, the improved walker comprises two upright side panels 10 hinged at their forward edges to a center post 11 to define a rearwardly opening triangular frame in which the user may stand while resting his hands or arms on rails 12 or handles 13 and pushing the walker forwardly as permitted by wheels 23 and 24 which support the post and the panels. At points spaced behind the post, the panels are joined by an adjustable linkage 14 which permits the panels to be swung toward and away from each other and held rigidly in any selected position. Preferably all of the parts of the frame are fabricated from wire to achieve lightness in weight as well as the desired overall rigidity of the frame.

The post 11 constitutes the front of the walker and is preferably formed by bending a piece of heavy wire into an elongated rectangle having parallel side bars 15 rigidly joined by end pieces 16 and spaced intermediate cross pieces 17, 18 and 19. The pieces 17 are welded to the

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outer face of the side bars 15 and also to an L-shaped bracket 20 having a forwardly projecting leg 21 secured by a bolt 22 to the top member of a caster 25 having the wheel 23 mounted thereon to swivel about an upright axis. In the present instance the post is 2 inches wide and 34 inches long. By shaping the bracket 20, the post is tilted rearwardly and away from the vertical so as to be inclined at about 5 degrees relative to the horizontal when the panels are swung apart (Fig. 1).

In the present instance, each of the side panels 10 is an open wire framework comprising three laterally spaced bars 26, 27 and 28 rigidly joined as by welding to the inner sides of the horizontal top rail 12 and intermediate and bottom rails 29 and 30. The top and bottom cross rails and the rear upright bar 26 may be bent from a single piece of wire which at the lower rear corner of the panel is formed with a rearwardly projecting eye 31 for receiving the bolt 32 of a caster 33 carrying one of the rear wheels 24.

At their forward ends, each of the rails 12, 29 and 30 projects beyond the bar 28 and is bent inwardly and around one of the side bars 15 of the post 11 and then rearwardly to form a closed eye 33. Two of the eyes are disposed above and abut against the lower cross pieces 16 and 18 so as to lock the panel against downward sliding along the post. Upward sliding of the panel is prevented by locating the upper eye immediately beneath the upper cross piece 16 of the post.

The hinge connections thus formed permit true horizontal swinging of the panels 10 relative to the post 11 and about substantially vertical axes. Thus, in spite of the backward tilting of the post, the hand rails 12 remain substantially horizontal in all degrees of the expansion of the triangle. Complete collapse of the frame as shown in Fig. 2 may be accompanied by a slight decrease in the angle of tilt of the center post 11.

While the adjustable linkage 14 may take various forms, the construction shown is preferred in view of its simplicity and its location in an out of the way part or apex of the enclosing triangle. The linkage includes two straight links 35 hinged at their rear ends to the intermediate upright bars 27 of the panels 10 and converging forwardly at a substantially included angle when the frame is expanded as shown in full in Fig. 4 and disposed substantially parallel when the frame is collapsed (Fig. 5). To form the hinges, the end portions of the links are looped around the bars 27 to form eyes 36 which are held between closely spaced bars 37 disposed a short distance beyond the top rail 12.

The other ends of the links are flattened as indicated at 38 and project into horizontal slots 39 in opposite sides of a slide 40 carrying pins 41 by which the link ends are pivoted on the slide. A hole 42 extending through the slide 40 between the slots snugly receives a horizontal guide rod 43 rigid with and projecting rearwardly from the post 11 and bisecting the apex of the frame triangle. Herein, the guide comprises one end of an L-shaped bar having a depending leg 44 (Fig. 1) spanning and welded to the cross bars 19 of the post 11.

The lengths of the links are such that when the slide 40 is disposed close to the post 11 and near the apex of the triangle as shown in Fig. 5, the links will be disposed substantially parallel and the side panels will parallel each other. The frame is thus held collapsed into a then compact package for convenient storage. The position of the slide 40 along the guide rod 43 may be fixed by tightening a knob 45 to turn a screw 46 thereon into a hole in the top of the slide and thus clamp the slide firmly to the rod.

After loosening the screw, the slide may be moved rearwardly along the rod thereby spreading the panels 10 apart first to an intermediate position shown in

phantom in Fig. 4 and then to a fully open position shown in full as the rearward movement of the slide is continued.

If desired, a linkage of similar construction may be provided near the lower end of the triangular frame to further increase the rigidity thereof when its knob 45 is turned to tighten the clamping screw. The guide rod 43 of this unit may be welded to the lower pair of cross-bars 17 on the post. In this instance, the loops 36 on the links 35 are disposed between the lower cross bar 29 and a bar 29a spanning the upright bars of the panel.

The top rails 12 of the panels may be used conveniently as a handle for a person to grasp with his hands or to rest his forearms thereon while using the walker. In addition it is preferred to provide additional and somewhat thicker handles 13 disposed near the rear ends of the top rail 12. To render such handles removable, they may be of inverted U-shaped cross section as shown in Fig. 6 and adapted to fit snugly down over the rail 12 and across bar 47 spaced a short distance below this rail. In this instance, the bar 47 constitutes one end portion of an L-shaped piece 48 of wire welded to the outer sides of the rails 29 and 37 and disposed adjacent the rear upright 26 of each side panel. By employing moldings of rubber or the like, the handles may be adapted to fit closely around the rail 12 and also around the bar 47 thus locating the handle rigidly on the panel while permitting the same to be removed easily by bodily lifting.

To adapt the walker for convenient use by persons of different heights, the cross bars 29 and 37 may be arranged in pairs adapted to fit in the handles 13 and vertically spaced apart along the panels 10. The pairs of rails thus form hand rails which may be grasped selectively by the user. If desired, the handles 13 may be shifted from one pair of bars to another to enable a firmer grasp of the hand rails to be obtained.

With the construction above described, it will be apparent that the wheels 23 and 24 provide three widely spaced points of support for the frame when the panels thereof are spread apart for normal use as shown in Fig. 1. Thus, these wheels constitute the corner of a supporting triangle shown in dot-dash outline in Fig. 3. Owing to the backward tilting of the center post 11 and the resulting inward canting of the side panels 10 when connected thereto as above described, the handle bars 12 form with the upper end of the post a smaller upper triangle disposed wholly within the lower supporting triangle. As a result, the downward forces applied to the handles 13 on the bars 12 by resting the user's hands or arms thereon will produce a resultant force which is directed downwardly and always falling within the area of the larger triangle even when the user applies a forwardly directed force component in order to roll the walker ahead. The forces thus directed serve to hold all three of the wheels solidly against the floor and eliminate any danger of forward tipping of the frame.

Frequently, it may be desirable for the user to narrow the frame in order to negotiate a narrow passageway. This may be accomplished by leaving the lower knob 45 in a somewhat loosened condition and regulating the clamping force by adjusting the upper knob alone. With the knob 45 properly set, the width of the walker may be increased and decreased as desired as it is being pushed forwardly.

I claim as my invention:

1. A walker comprising an upright post, a caster secured to the lower end of the post to support the latter, two upright side panels respectively hinged along their front edges to said post for swinging toward and away from each other, casters secured to the lower ends of said panels and supporting the latter at points spaced rearwardly from the post, said casters defining the corners of a supporting triangle, and handles rigid with said panels at the upper ends thereof and spaced rear-

wardly from said post, said handles and the upper end of said post defining a second triangle disposed within said first triangle so that the resultant of the downward pressures exerted on said handles by a user during forward pushing of the walker will be directed along a line falling within said first triangle.

2. A walker as defined by claim 1 in which said post is inclined upwardly and rearwardly from said first caster so as to space the apex of said second triangle behind the apex of the first triangle and also dispose the second triangle wholly within the first triangle.

3. A walker as defined by claim 1 in which said post comprises a rigid open rectangular frame substantially narrower than said panels and inclined upwardly and rearwardly from said first caster.

4. A walker as defined by claim 1 in which said post includes laterally spaced side bars each pivotally connected to one of said panels at points spaced along the upright edge of the latter.

5. A walker as defined by claim 3 in which said side panels include bars projecting from the forward edges of the panel and bent around one side bar of said post to form a loop and hinge the panel onto the post.

6. A walker as defined by claim 5 in which said post includes a cross member underlying one of said loops to support the forward edge of the panel.

7. A walker comprising an upright post, a caster secured to the lower end of the post to support the latter, two upright side panels respectively hinged along their front edges to said post for swinging toward and away from each other, casters secured to the lower ends of said panels and supporting the latter at points spaced rearwardly from the post, said casters defining the corners of a supporting triangle, handles rigid with said panels at the upper ends thereof and spaced rearwardly from said post, and an extensible and contractible linkage joining said panels including links pivotally connected at their rear ends to said panels intermediate the upright edges thereof and converging toward said post.

8. A walker comprising an upstanding post, side panels respectively hinged at one edge to opposite side edges of said post to form a collapsible frame of triangular horizontal cross section, casters supporting the lower ends of said post and said panels, a guide rigid with said post and projecting rearwardly therefrom, a member slidable on said guide, and two links pivotally connected at opposite ends to said member and the respective side panels, and means for fastening said member to said guide at selected points along the latter.

9. A walker as defined by claim 8 in which said fastening means is a screw threaded into said member for abutment with said guide.

10. A walker comprising an upright post, a caster secured to the lower end of the post to support the latter, two upright side panels respectively hinged along their front edges to said post for swinging toward and away from each other, casters secured to the lower ends of said panels and supporting the latter at points spaced rearwardly from the post, said casters defining the corners of a supporting triangle, said panels having horizontal rails at the upper ends thereof, handles detachably secured to said rails spaced rearwardly from said post, and other rails rigid with panels below said first rails and adapted for interengagement with said handles.

11. A walker comprising an upright post, a caster secured to the lower end of the post to support the latter, two upright side panels respectively hinged along their front edges to said post for swinging toward and away from each other, casters secured to the lower ends of said panels and supporting the latter at points spaced rearwardly from the post, said casters defining the corners of a supporting triangle, said panels each having a pair of vertically spaced horizontal rails at the upper end thereof, a second pair of similar rails spaced below said first rails, and handles of U-shaped cross section

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adapted to fit down over the rails of either of said pairs
and interlock rigidly with such rails.

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