Aug. 29, 1967 H. FRANK 3,338,627

WHEELCHAIR APPARATUS

Filed May 13, 1966

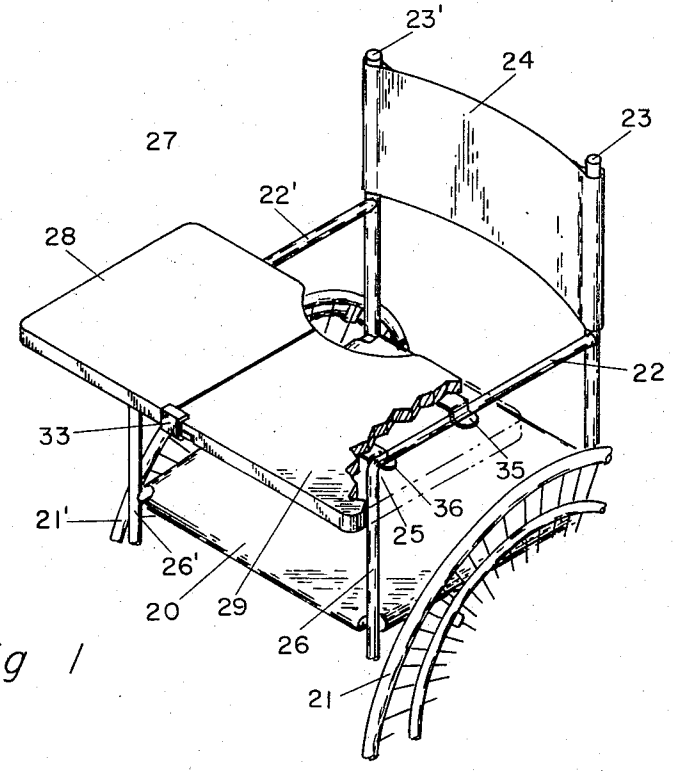

Fig 1

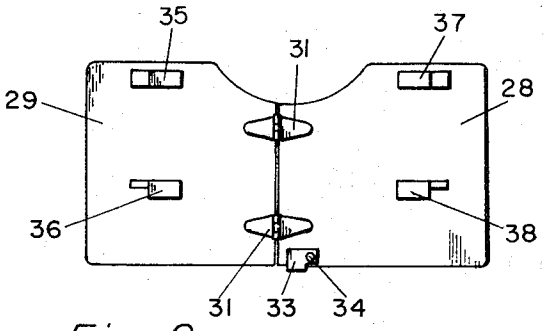

Fig 2

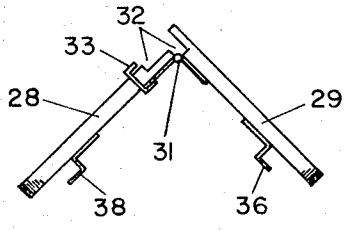

Fig 3

INVENTOR

Herman Frank

BY Jacob Frank

ATTORNEY

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WHEELCHAIR APPARATUS

Herman Frank, % The Memorial Hospital,
Albany, N.Y. 12204

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ABSTRACT OF THE DISCLOSURE

Foldable tray appartus for use in a wheelchair to bear items, the tray being attachable to the wheelchair by two pairs of lugs, one pair of lugs secured to the side arms of the wheelchair and the second pair of lugs shaped to engage front vertical supports of the wheelchair. The tray is collapsible by being provided with two leaves pivotally joined together, the leaves being designed to be engaged in overlapping fashion forming a single planar upper surface capable of being firmly locked in place when attached to the wheelchair.

The present invention relates to wheelchairs and the like, and more particularly, to an improved detachable tray for mounting on the arms of such a vehicle. Those people who deemed it necessary or desirable to utilize a wheelchair, have found that it would be convenient to have a collapsible tray that could be firmly attached to the wheelchair for carrying or bearing any one of a number of items. It is the purpose of the present invention to provide such a collapsible tray where a firm single planar upper surface is provided, and the tray for all practical purposes, is locked into position relative to the wheelchair. To attain this, the present invention contemplates a pair of leaves defining the tray, the leaves being pivotally secured together and adapted to mate in overlapping fashion to form a tray having a single planar upper surface. Where the leaves are joined, the tray is provided with a locking mechanism to prevent an accidental pivotable action. The tray is secured to the wheelchair by two pairs of lugs, one pair of which engage the side arms of the wheelchair. The second pair of lugs is so shaped to engage the front support legs of the wheelchair to firmly secure the tray thereto and simultaneously prevent further outward movement of the tray.

An object of the present invention is to provide a tray of the type indicated, which is constructed and arranged so it may be readily attached to virtually any type of wheelchair or similar item having arm rests.

Another object of the present invention is to provide a tray for attachment to and detachment from a wheelchair and the like, which tray is foldable, and compact in nature.

A further object of the present invention is to provide a tray for attachment to a wheelchair and the like, which tray may be positively mounted relative thereto, yet readily detachable therefrom.

Yet another object of the present invention is an improved tray for wheelchairs and the like which tray is simple in construction, economical to manufacture, and efficient in operation.

Other objects, advantages and capabilities or the present invention will become apparent from the following detail description, taken in conjunction with the accompanying drawings illustrating a preferred embodiment of the invention.

In the drawings:

FIGURE 1 shows a perspective view of the preferred form of the present invention as it is used with a wheelchair.

FIGURE 2 is a plan view of the underside of the present invention.

FIGURE 3 illustrates a side elevation of the present invention as it is half folded.

Referring to the drawings and more particularly to FIGURE 1, there is shown a conventional wheelchair having a seat **20**, wheels **21** and horizontal armrests or side rails **22** and **22'**, the latter being secured to a pair of rear upstanding frame members **23** supporting a back member **24**. The horizontal armrests **22** and **22'** are curved at the front in elbow like fashion at **25**, and then extended downwardly respectively forming a pair of front vertical frame members **26** and **26'**.

The present invention resides in the provision of a foldable tray **27** made from wood, metal, plastic or other suitable material, which may be detachably mounted on horizontal arms **22** and **22'** of the wheelchair disclosed herein or a similar article. The tray, better shown in FIGURES 2 and 3, is made of two leaves **28**, **29** which are joined at one of their ends by a pair of strap hinges **31** thus allowing each of the leaves to be pivotable, as shown in FIGURE 3, and thereby folded side by side with each other to form a compact package. Where the two leaves are joined by the strap hinges, each is cutaway to form one of a pair of L shaped complementary recessed portions **32**, which portions, when the leaves are pivoted about strap hinges **31**, mate with each other in overlapping fashion, forming a flat planar surface defining tray **27**.

Fastened at the bottom, toward each of the unjoined sides of leaves **28** and **29**, are two pairs of angular ears or lugs **35**, **36** and **37**, **38**, respectively. The tray is secured to the wheelchair by first holding it in the position shown in FIGURE 3, then positioning lugs **35**, **36** to receive armrest **22** and positioning lugs **37**, **38** to receive armrest **22'**, and simultaneously flattening the two leaves **28**, **29** to form a level tray **27**. It is observed that the forward surfaces of lugs **36** and **38**, respectively engaging armrests **22** and **22'**, are cut-away in such a manner, as shown in FIGURES 1 and 2, that as the tray is pushed forward, lugs **36** and **38** will frictionally interlock to form a tight fit with the curved elbow like joints where the armrests meet the vertical frame members.

To prevent the two leaves from readily being separated by upward forces inducing pivotal motion about strap hinges **31**, a brace **33** is pivotably mounted about a point **34** an inner edge of one of the leaves so that it may be rotated thereabout to firmly lock together the overlapping pieces of leaves **28** and **29** as shown in FIGURES 1 and 2.

Attention is drawn to the fact that when the tray is placed in a position such as that illustrated in FIGURE 1, a slight force will be introduced perpendicular to and horizontal with armrests **22** and **22'** from lug pairs **35**, **36** and **37**, **38**, respectively, so that the tray may be snugly secured thereto. If desired, the lugs may be slightly adjustable and/or spring biased lengthwise of the tray to accommodate the tray for use with wheelchairs of different widths.

It should be understood, of course, that the foregoing disclosure relates to only a preferred embodiment of the invention and that numerous modifications or alterations may be made therein without departing from the spirit and the scope of the invention, it is desired, therefore, that only such limitations be placed on the invention as are imposed by the prior art and as set forth in the appended claims.

It is claimed:

1. Attachable tray means for wheelchairs and the like and employed with side rails forming a part of the wheelchair at either side of the seat support the combination including a pair of leaves, means for pivotably joining the two leaves, means for locking the two leaves together to form a tray transversely spanning the distance between

the side rails, support means attached to each one of said leaves for engaging each of the side rails to secure the tray thereto, and means for mating said leaves with each other in overlapping fashion to provide the tray with a single level upper surface.

2. Attachable tray means according to claim 1 wherein said locking means comprises a brace pivotably secured to one of said leaves and adapted to embrace an area where the leaves are joined together in overlapping fashion.

3. Attachable tray means according to claim 2 wherein said support means comprises a pair of lugs.

4. Attachable tray means according to claim 1 wherein the side rails are curved at a front end of the wheelchair in elbow like fashion, including means comprising a pair of lugs each partially cut-away for engaging said side rails at their curved portions and prevent further movement of the tray toward the front end of the wheelchair.

5. Attachable tray means according to claim 1 wherein said mating means comprises a pair of L-shaped complementary recessed portions provided where said leaves are joined together.

6. Attachable tray means for wheelchairs and the like employed with side rails forming a part of the wheelchair at either side of the seat support the combination including a pair of leaves, means for pivotably joining the two leaves, means for locking the two leaves together to form a tray transversely spanning the distance between the side rails, support means attached to each one of said leaves for engaging each of the side rails to secure the tray thereto, said side rails being curved at a front end of the wheelchair in elbow like fashion, and means comprising a first pair of lugs each adapted to have a configuration for engaging one of said side rails at its curved portion to prevent further movement of the tray toward the front end of the wheelchair.

7. Attachable tray means according to claim 6 wherein said support means comprises a second pair of lugs.

8. Attachable tray means according to claim 6, including means for mating said leaves with each other in overlapping fashion to provide the tray with a single level upper surface.

9. Attachable tray means according to claim 8, wherein said mating means comprises a pair of L-shaped complementary recessed portions provided where said leaves are joined together.

10. Attachable tray means according to claim 9, wherein said locking means comprises a brace pivotably secured to one of said leaves and adapted to embrace an area where the leaves are joined together in overlapping fashion.

11. Attachable tray means according to claim 6 wherein the configuration for each of said lugs is L-shaped to engage one of said side rails comprising a rounded bar.

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DAVID J. WILLIAMOWSKY, *Primary Examiner.*

JAMES T. McCALL, *Examiner.*