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(54) **REMOVABLE TRAY**

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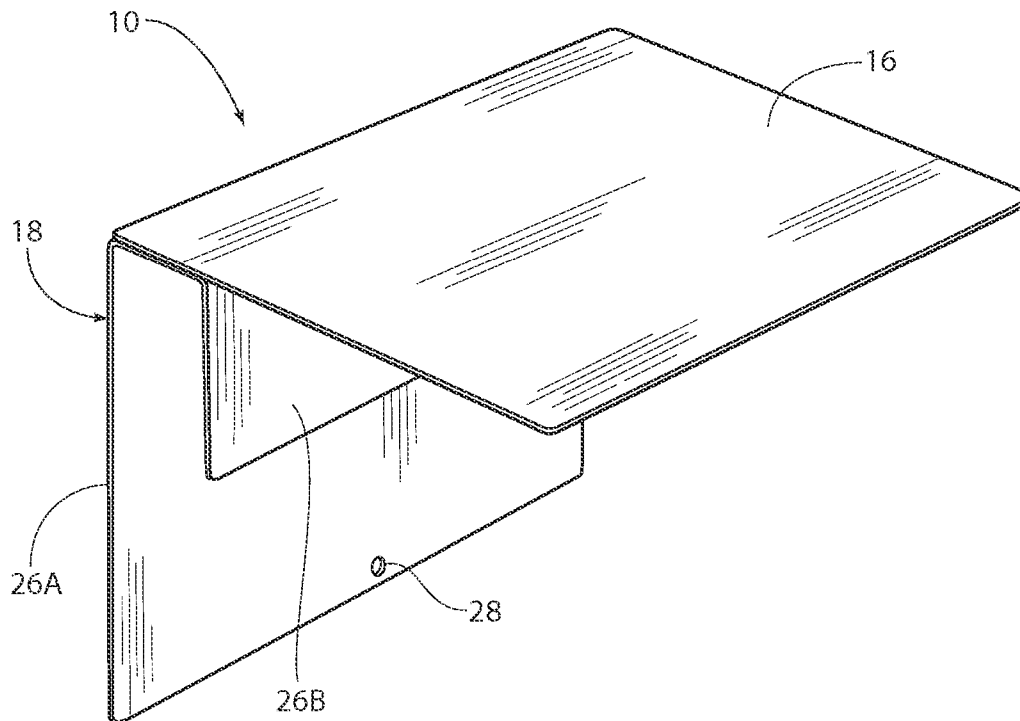
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(57) **ABSTRACT**

A portable tray for use with a chair and removably mountable on a chair arm. The tray includes a support member and a bracket member, the bracket member includes a mounting channel having opposed, coplanar side walls and is adapted to sit astride an arm of a selected chair.



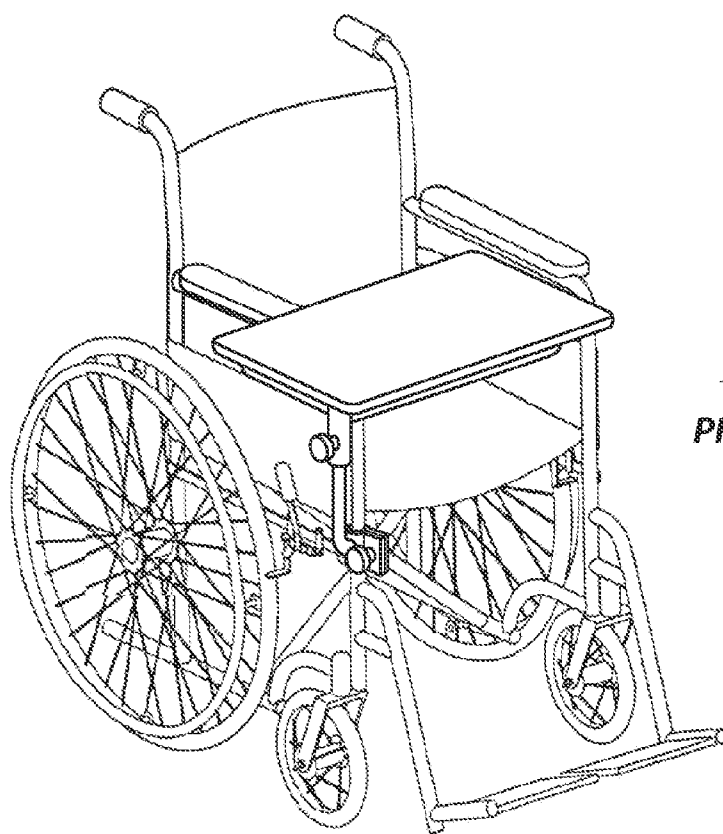


Fig. 1
PRIOR ART

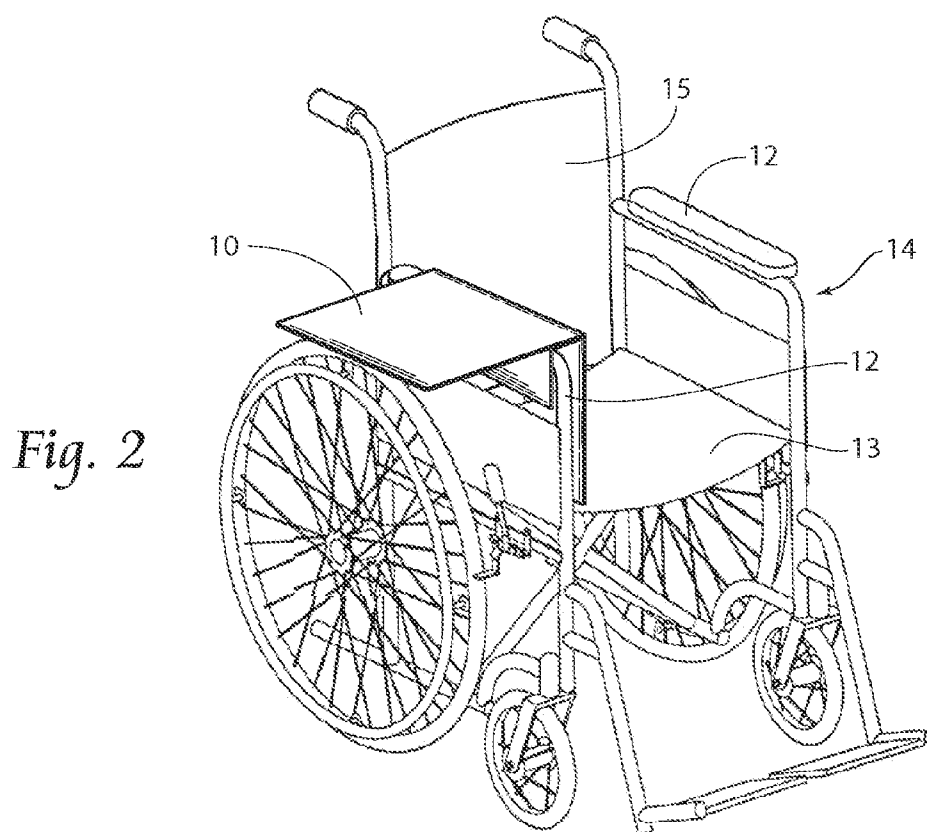


Fig. 2

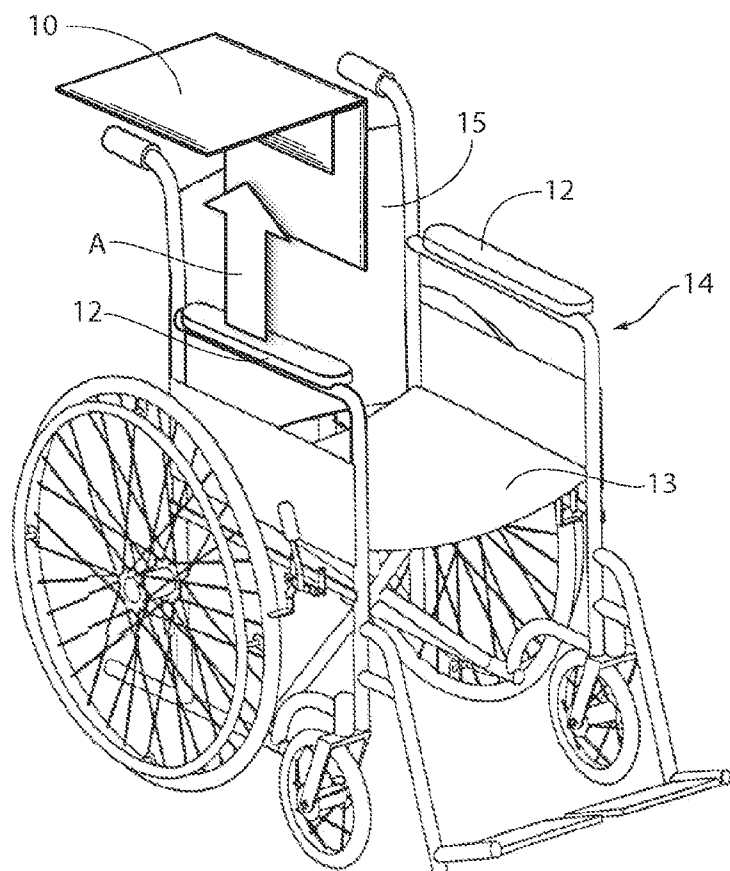


Fig. 3

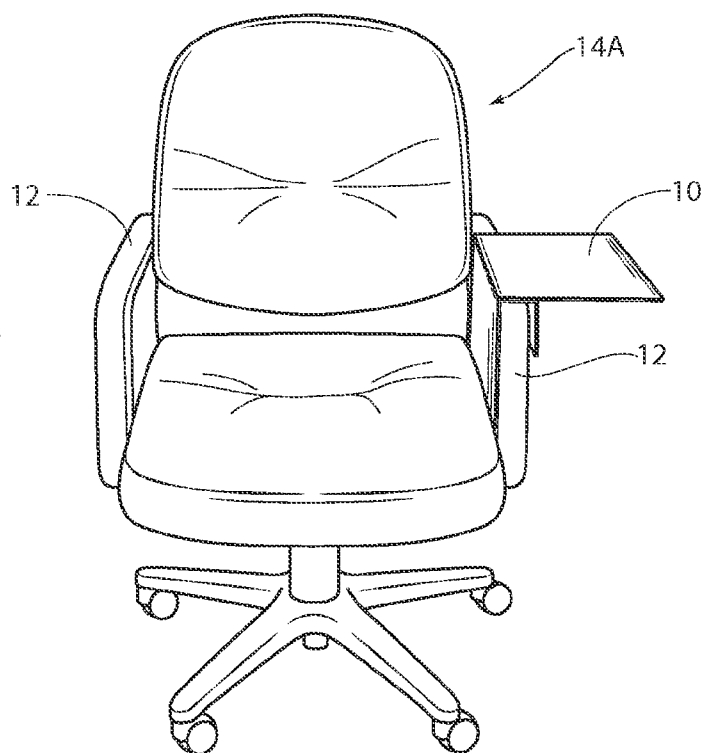
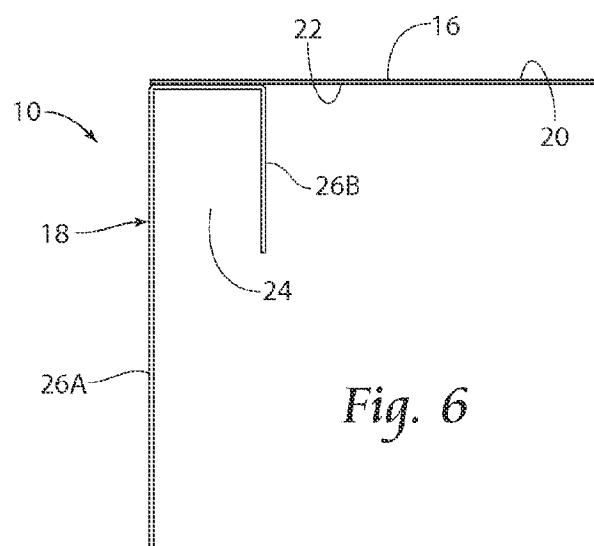
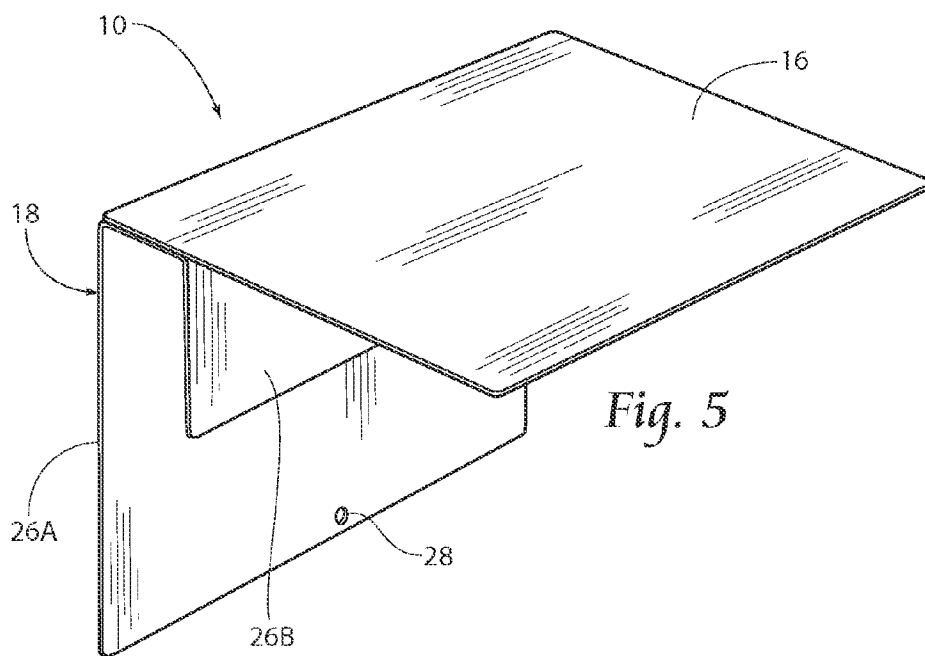
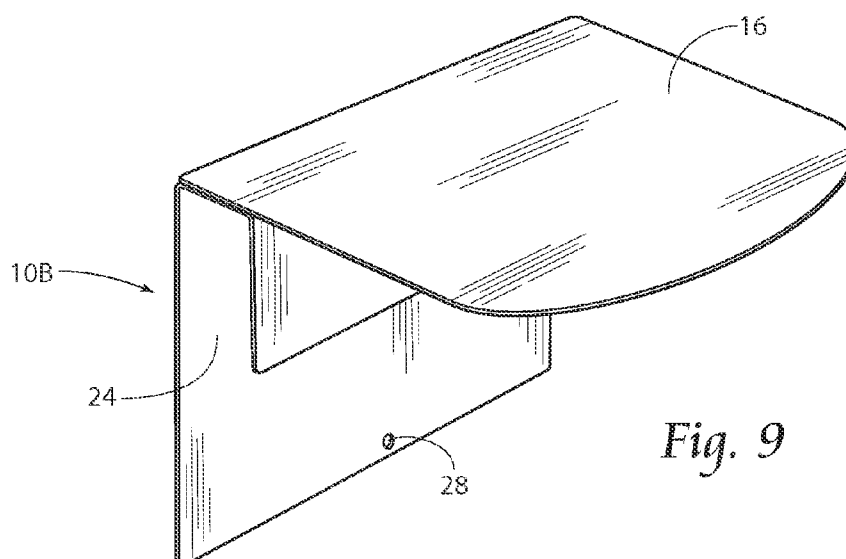
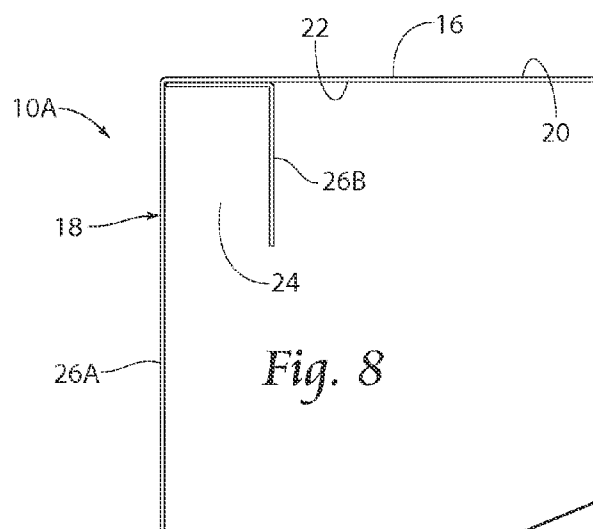
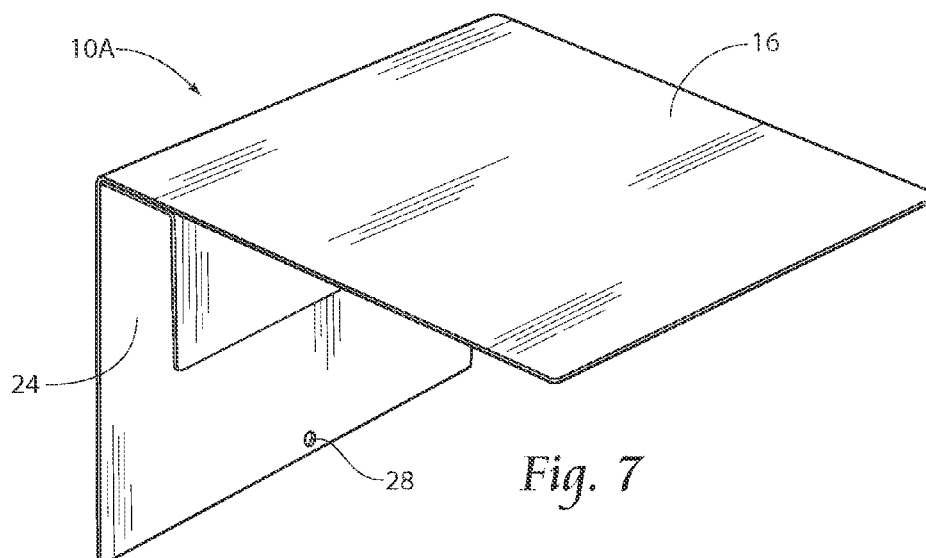


Fig. 4





REMOVABLE TRAY

BACKGROUND OF THE INVENTION

[0001] Trays are commonly used to hold or support objects for transport or for easy access while a user is seated. Such devices include freestanding trays and portable trays that may be temporarily attached to a secondary support, such as a chair or table. Trays intended for temporary attachment fall into several categories by function. For example, swivel trays, flip arm half trays, and lap trays.

[0002] Swivel trays attach to a chair, such as a wheelchair, at its base and may include a pole that extends up one side of the chair. Typically these trays are able to rotate between positions in front of the wheelchair occupant, off to one side and away from the occupant, or any place in between these positions. An example of such a tray is disclosed in U.S. Pat. No. 5,026,114. While trays of this sort may have certain usefulness, they can be bulky and unwieldy to use, and add unneeded width to the chair which may result in difficulties while maneuvering the chair.

[0003] Another type of tray, the flip arm tray, is commonly fixed to one arm of a chair or wheelchair and is able to be flipped upward when the occupant desires to move into and out of the chair. Trays such as these do not typically cover the entire lap area, but may cover an area partly to one side to provide comfortable access to items on the tray. Trays of this sort include that disclosed in U.S. Pat. No. 5,333,929. Flip arm trays may have a reduced bulk as compared to the previously described swivel trays however, since they typically pivot across the front of the chair, they may cause a trapped feeling on the part of the occupant, particularly those occupants having reduced mobility or reduced upper body strength.

[0004] Yet another commonly used tray for seated use is the lap tray. Lap trays are not attached to the chair or table but instead rest on a user's lap. Lap trays may include means to fasten around a user's waist to maintain a stable position. Trays such as these are versatile since they are comfortable to use and allow for easy maneuvering, but can be difficult to manipulate and keep level by users of limited strength or mobility.

[0005] It is therefore desirable to provide a simply constructed and easily manipulated tray which may be selectively supported by a chair. In accordance with the present invention, the foregoing limitations and shortcomings of the prior art are effectively overcome by providing a tray that is stable when in use, allows ingress and egress of the chair while the tray is in place, and is easily removed without adding to the overall bulk of the chair.

SUMMARY OF THE INVENTION

[0006] The present invention is directed to a tray, particularly a tray that may be removably attached to a chair arm, such as that of a wheelchair or the like. In use the tray extends outwardly and away from the chair occupant thereby allowing facile ingress and egress from the selected chair, unlike, known trays which are placed in front of the chair occupant. Further, when compared to known trays that extend across the lap of the user, the present tray alleviates a trapped or undignified feeling on the part of the user. The present invention is a side mounted, easily removable tray for attachment to a selected chair arm.

[0007] The present tray may be used in a variety of settings including at home for dining, games, reading, or as a convenient, temporary surface for other activities, such as crafting or drawing.

[0008] A tray according to the present invention is a portable tray supportable by a chair arm and for use therewith. The tray comprises a support member having a top surface and a bottom surface and a bracket member having a channel. The channel includes opposed side walls, wherein the side walls extend laterally from the bottom surface of the support member. The opposed side walls include a first side wall having a first length and a second side wall having a second length, wherein the first length is greater than the second length. Alternatively, the side wall lengths may be substantially the same. The top surface of the portable tray may have a generally rectangular shape, or may be curved. The portable tray may be fabricated of a metal or of a polymer.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is a perspective view of a wheelchair and showing a prior art tray.

[0010] FIG. 2 is a perspective view, similar to that of FIG. 1, but showing a tray according to the present invention.

[0011] FIG. 3 is a view similar to that of FIG. 2, but showing the tray being disengaged from the wheelchair arm.

[0012] FIG. 4 is a view of a chair and showing a tray according to the present invention in place on the chair arm.

[0013] FIG. 5 is a perspective view of a tray according to the present invention.

[0014] FIG. 6 is a front view of the tray illustrated in FIG. 5.

[0015] FIG. 7 is a perspective view of an alternative tray according to the present invention.

[0016] FIG. 8 is a front view of the tray illustrated in FIG. 7.

[0017] FIG. 9 is a perspective view of an alternative tray according to the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0018] Although the disclosure hereof is detailed and exact to enable those skilled in the art to practice the invention, the physical embodiments herein disclosed merely exemplify the invention which may be embodied in other specific structures. While the preferred embodiment has been described, the details may be changed without departing from the invention, which is defined by the claims.

[0019] FIG. 1 illustrates a prior art tray attached to a wheelchair. As shown, the tray is attached to the chair by way of a swivel arm. The tray extends across the seat portion of the chair and may be removed only by loosening the clamping device. This is difficult for users having reduced mobility and may lead to a trapped feeling when quick egress from the chair is desired.

[0020] Referring now to FIG. 2, there is illustrated a tray 10 according to the present invention mounted on an arm 12 of a wheelchair 14. The wheelchair 14 is of a conventional construction and includes a seat 13 and a back 15. The tray 10 is seen mounted on the right hand side and in the outboard position away from the seat 13, although the tray 10 may be utilized on either side. The outboard position of the tray 10 provides the user with both proximity to any items placed on the tray 10, and facile ingress and egress to the chair 14. As is seen in FIG. 3, the tray 10 is easily removed from the arm 12, by lifting it in the direction of arrow A. It is to be understood

that the tray **10** described herein may be used in conjunction with any suitable supporting structure, including the chair **14A** viewed in FIG. 4.

[0021] With attention now to FIGS. 5-9, details of the tray **10** may be viewed. As seen, the tray **10** preferably includes a substantially horizontal support member **16** and a laterally extending bracket member **18**. The support member **16** includes a top surface **20** and a bottom surface **22**, with the top surface **20** adapted to support items placed there by the user, such as food, books, crafts and the like (not shown), and to provide the user facile access thereto. The bracket member **18** includes a mounting channel **24** having opposed, coplanar side walls **26A**, **26B** extending from the bottom surface **22** of the support member **16**. The mounting channel **24** is adapted to sit astride an arm **12** of a selected chair **14**, **14A**.

[0022] Construction of the tray **10** may be seen particularly in the views of FIGS. 5 and 6. As shown, the bracket member **18** may be formed from a single piece of material, with the support member **16** affixed thereto in a conventional manner, such as by welding, glue or the like. Alternatively, and as seen in FIGS. 7 and 8, the bracket member **18** may be formed from two pieces of material, with the support member **16** being integrally formed with a side wall **26A** and a second piece of material forming the second side wall **26B**, as is seen in FIGS. 7 and 8.

[0023] With further attention to the side walls **26A**, **26B**, and as seen in FIGS. 5-9, a first side wall **26A** may have a length slightly greater than a second side wall **26B**. The comparative lengths of the side walls **26A**, **26B** allow the tray **10** to be easily affixed to a variety of chair arms **12** including wheelchair arms **12** of different styles. While the side walls **26A**, **26B** illustrated in these views have different lengths, it is to be understood that present invention may be made with side walls **26A**, **26B** having any comparative length, including equal length.

[0024] While one embodiment of the present invention has been described in the foregoing, it is contemplated that the tray **10** may have a support member **16** of various shapes, such as the tray **10B** having a rounded configuration seen in FIG. 9. Further, while not specifically shown in the Figures, it is to be understood the support member **16** may be of an curved oval, circular, or any other practicable shape without departing from the spirit of the invention.

[0025] The tray **10**, **10A**, **10B** of the present invention has a very simple design that allows it to be mounted on nearly every commercially available wheelchair and numerous chair styles. It is easily put in place and removed without the need to manipulate mounting mechanisms. Further, when the tray

10, **10A**, **10B** is in place it does not interfere with the ingress and egress of the chair occupant. The tray **10**, **10A**, **10B** may be manufactured from any material that is lightweight yet sturdy and rigid enough to accommodate items on the support member **16**, such as a polymer or metal. If a magnetic material metal is used, the tray **10**, **10A**, **10B** gains the capability to magnetically retain paper, or other objects on the top surface **20** of the support member **16** for facile access by the user. A side wall **26A**, **26B** may also be provided with a peg aperture **28** for use to hang the tray **10**, **10A**, **10B** for storage when not in use.

[0026] The foregoing is considered as illustrative only of the principles of the invention. Furthermore, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described. While the preferred embodiment has been described, the details may be changed without departing from the invention, which is defined by the claims.

I/we claim:

1. A portable tray supportable by a chair arm and for use therewith, comprising:

a support member, said support member having a top surface and a bottom surface; and

a bracket member, said bracket member having a channel including opposed side walls, said side walls extending laterally from said bottom surface of said support member.

2. The portable tray of claim 1 wherein said top surface has a generally rectangular shape.

3. The portable tray of claim 1 wherein said top surface has a curved shape.

4. The portable tray of claim 1 wherein said opposed side walls include a first side wall having a first length and a second side wall having a second length, wherein said first length is greater than said second length.

5. The portable tray of claim 1 wherein said opposed side walls include a first side wall having a first length and a second side wall having a second length, wherein said first length is equal to said second length.

6. The portable tray of claim 1 wherein said tray is fabricated of a metal.

7. The portable tray of claim 1 wherein said tray is fabricated of a polymer.

8. The portable tray of claim 1 wherein one of said opposed side walls includes an aperture therein.

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