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CHAIR

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fig. 1

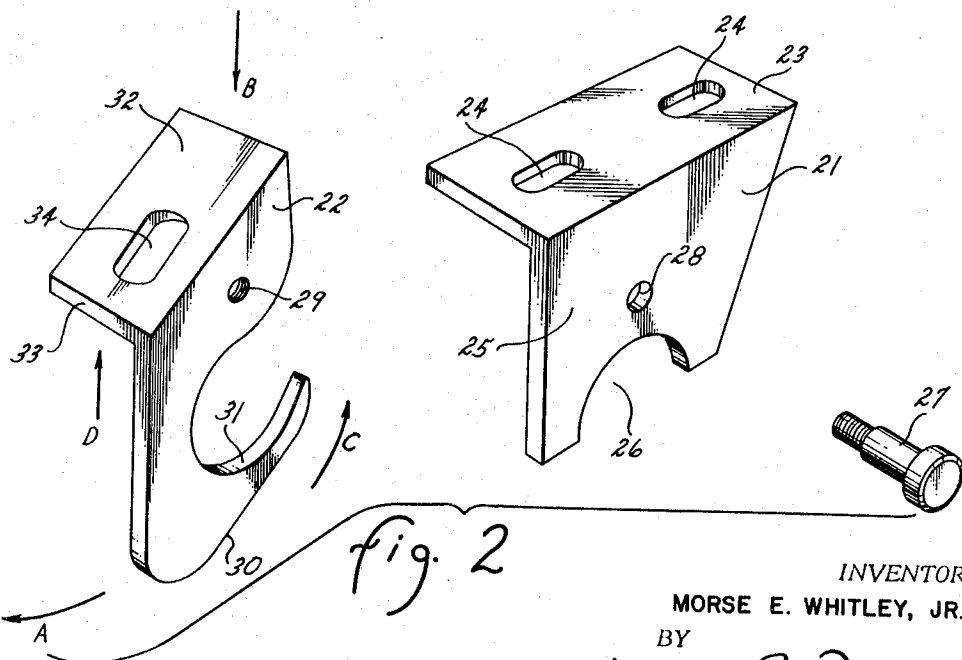
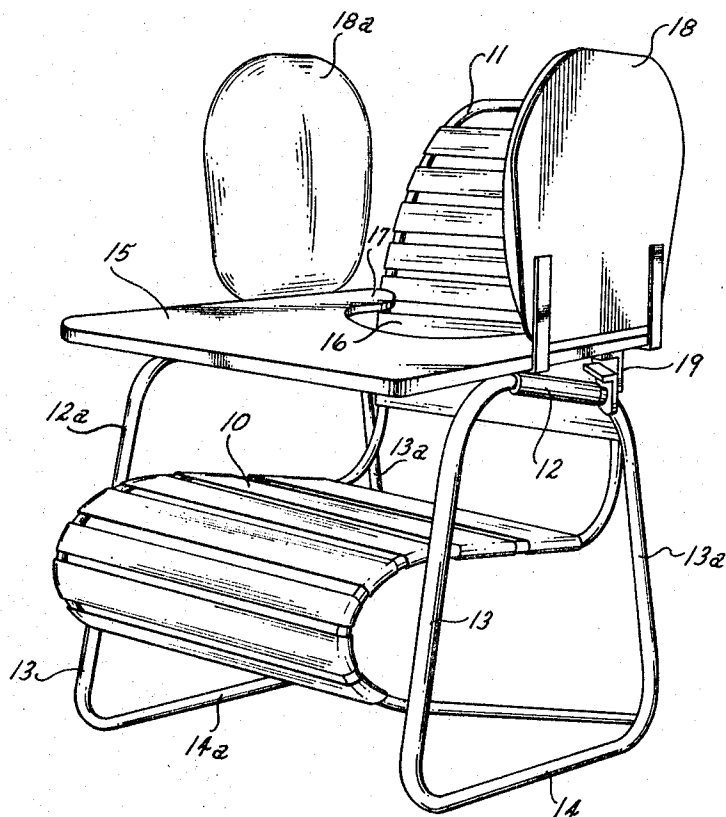


fig. 2

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This invention relates to improvements in chairs. More particularly, the invention concerns improved chairs especially adapted for use by persons such as geriatric patients and the like requiring torso support or for use in situations where the patient's arms and hands must be confined away from portions of the body below the waist.

In a further aspect, the invention relates to such improved chairs which are provided with means for supporting the patient's torso which are affixed to the chair in operative position by means of a novel releaseable latch device which is positioned in a location remote from any area to which the patient may have access.

Geriatric patients and other persons suffering from a variety of orthopedic and muscular defects are frequently unable to use conventional chairs because they fail to provide support for the patient's torso in a direction forward from the back of the chair and laterally to either side. In the past, it has been common to confine such patients to substantially fully reclining chairs or even to hospital beds and the like in order to prevent injury to the patient as a result of failure to support the torso. Consequently, it would be highly advantageous to provide an improved chair which is especially adapted to provide the proper support for such patients, particularly geriatric patients, in order that the patient can gain the therapeutic and psychological advantages of sitting in a more or less upright position as afforded by common chairs. It would also be highly advantageous to provide improvements in chairs for use in situations where the patient's arms and hands must be confined away from portions of his body below the waist.

It is therefore a principal object of the present invention to provide a chair especially adapted for use by geriatric patients and other persons requiring torso support.

Another object of the invention is to provide such an improved chair which permits the patient to sit in a substantially upright position while providing lateral and forward support for the torso in addition to the rearward support furnished by the back of a common chair.

Still another object of the invention is the provision of an improved chair of the character described above in which the supporting structure for the patient's torso is secured to the chair in operative position by fastening means which are located in an area remote from the patient's grasp.

A still further object of the invention is the provision of an assembly which can be quickly and conveniently attached to common side armchairs, particularly of the so-called deck or patio type employing tubular metal frame elements.

Yet another object of the invention is the provision of an improved latch assembly which is advantageously employed to attach the support elements to such conventional chairs, and which may have utility in other applications such as in the attachment of simple feeding trays and the like to a wide variety of chairs such as infants' feeding chairs and the like.

These and other, further, and more specific objects and advantages of the present invention will become apparent to those skilled in the art from the following detailed description of the invention taken in conjunction with the drawings in which a presently preferred embodiment chosen for purposes of illustration is shown and described.

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FIG. 1 is a perspective view of a typical deck chair incorporating improvements embodying the present invention and generally illustrating the location and operative relationship of the various elements.

FIG. 2 is an exploded perspective detailed view of a latch assembly embodying features of the present invention.

Briefly, the invention contemplates improvements in common side-arm chairs which include a seat, a back, a pair of chair-arms and means (for example, legs or other suitable pedestal) for supporting the chair seat.

The improvements which adapt the common side-arm chair for use by patients requiring torso support or confinement of the patient's hands above the waist comprise a substantially horizontal tray which extends forwardly from the back of the chair at approximately the chair-arm level, the rear edge of the tray being recessed and shaped to accommodate the torso of the patient, thereby to limit the forward movement of the patient's torso away from the back of the chair and providing support for the patient's forearms; a pair of spaced side panels or "wings" affixed to and extending upwardly from the tray and forwardly from the rear edge of the tray, thereby limiting lateral movement of the patient's torso and shoulders; and means for releasably attaching the tray to the chair-arms.

In a presently preferred embodiment, the means for releasably attaching the tray to the chair-arms include at least two fastener or latch assemblies, each of the assemblies comprising an angle bracket transversely affixed to the underside of the tray and having a vertical flange extending downwardly, the lower edge of the flange being provided with a recessed portion shaped to engage the upper surface of the chair-arm, and a hook-shaped closure member pivotally attached to the flange of the angle bracket, the hook-shaped closure member having an upwardly curved lower cam edge adapted to bear against the upper surface of the chair-arm and pivot the hook upwardly outwardly in response to downward pressure upon the horizontal tray, and adapted to swing downwardly inwardly to engage the hook under the chair-arm after the arm is seated in the recessed portion of the flange of the angle bracket.

Turning now to the drawings in which the presently preferred embodiment of the invention is depicted, the improved chair comprises a typical side-arm deck chair including a seat 10, a back 11, a pair of side arms 12 and 12a, and means for supporting the seat, in the embodiment illustrated a pair of vertical tubular supports 13 and 13a formed integrally with the chair-arms 12 and 12a and connected at their respective lower ends by means of a pair of longitudinal tubular members 14 and 14a. The typical chair is improved by the incorporation in combination therewith of the horizontal tray 15 provided with a recessed portion, generally indicated by reference character 16, in the rear edge of the tray. The recess is shaped to accommodate the patient's torso, a portion of the tray 17 extending rearwardly to the chair back 11 to provide support for the patient's forearms when the patient is seated in the chair. A pair of spaced side panels 18 and 18a are provided which extend upwardly from the tray 15 and forwardly of the rear edge thereof a distance sufficient to provide lateral support for the patient's shoulders and torso. Latch means, generally indicated by reference character 19, are provided for releasably attaching the tray to the chair-arms. In FIG. 1, the latch means are provided adjacent to the rear edge of the tray 15, the remaining support for the tray being provided by resting the underside of the tray upon the forward ends of the chair-arms 12 and 12a. If desired, four such latch assemblies could be provided—two on each

side, one at the rear of the tray as shown, and another at the forward end of the chair-arm.

FIG. 2 illustrates in greater detail the operation and construction of the latch means for releasably attaching the tray to the chair-arms. The latch means comprise an angle bracket element 21 and a hook-shaped closure member 22.

The angle bracket member comprises a plate 23 which is provided with screw holes 24 and which can be affixed by means of such screws to the underside of the horizontal tray. The screw holes are oblong in the preferred embodiment, thereby providing a modicum of adjustability in positioning the bracket. The angle bracket further includes a downwardly depending vertical flange 25 provided with recessed portion 26 in the lower edge thereof, the recessed portion 26 being shaped to accommodate and engage the upper surface of the chair-arm. In the embodiments chosen for purposes of illustration, the chair-arms have a circular cross section, but the recessed portion 26 could, for example, be square shaped to accommodate a chair-arm having a square cross section.

The hook-shaped closure member 22 is pivotally attached to the downwardly depending flange of the angle bracket 21 by means of a shoulder screw 27 which passes through a pivot hole 28 in the angle bracket and is threadedly received in the hole 29 in the closure member. The lower edge 30 of the closure member is formed in the shape of an upwardly curved cam which is adapted to bear against the upper surface of the chair-arm, thereby pivoting the hook upwardly outwardly in the direction of the arrow "A" in response to downward pressure upon the horizontal tray (transmitted by means of the angle bracket 21) in the direction of the arrow "B." As the hook-shaped closure member 22 is cammed upwardly outwardly as above described, the recessed portion 26 of the angle bracket 21 engages the upper surface of the chair-arm. At this point the hook-shaped closure member swings downwardly inwardly in the direction of the arrow "C" to engage the lower portion 31 of the hook under the chair-arm. This locks the tray and wing assembly into place upon the chair. The patient's arms and hands are thus confined above the waist and the patient cannot release the latch since movement of the patient's arms is limited by the side panels and tray as shown in FIG. 1. The hook-shaped closure member 22 is provided with an inwardly extending perpendicular flange 32. By applying finger pressure in the direction of the arrow "D" on the outward edge 33 of the flange 32, the attendant may quickly and conveniently remove the tray and wing assembly.

For ease of installation, the inwardly directed flange 32 is provided with a slot 34 through which a screwdriver may be inserted in order to tighten the screws which pass through the elongated holes 24 of the angle bracket 21 to fasten it to the tray.

Various changes in the devices chosen for purposes of illustration in the drawings will readily occur to persons skilled in the art having regard for the disclosure hereof. To the extent that such modifications and variations do not depart from the spirit of the invention, they

are intended to be included within the scope thereof which is not limited to the devices specifically illustrated in the drawings but, rather, only by a just interpretation of the following claim.

Having fully described the invention in such manner as to enable those skilled in the art to understand and practice the same, the invention claimed is:

In a chair including a seat, a back, a pair of chair-arms and means for supporting said seat, the improvements whereby said chair is adapted for use by patients requiring torso support and requiring confinement of the patient's hands above the waist comprising:

- (a) a substantially horizontal tray extending forwardly of said back at chair-arm level and having
  - (1) a forward edge,
  - (2) side edges, and
  - (3) a recessed rear edge, shaped to accommodate the torso of the patient, said tray thereby limiting the forward movement of the patient's torso away from said chair back and providing support for the patient's forearms;
- (b) a pair of spaced side panels affixed to and extending upwardly from said tray and forwardly of the rear edge thereof, thereby limiting lateral movement of the patient's torso and shoulders; and
- (c) means for releasably attaching said tray to the chair-arms comprising at least two fastener assemblies, each said assembly comprising:
  - (1) an angle bracket transversely affixed to the underside of the horizontal tray and having a vertical flange extending downwardly, the lower edge of said flange being provided with a recessed portion shaped to engage the upper surface of the chair-arm; and
  - (2) a hook-shaped closure member pivotally attached to said flange, having an upwardly curved lower cam edge adapted to bear against the upper surface of the chair-arm and pivot the hook upwardly outwardly in response to downward pressure upon the horizontal tray, and adapted to swing downwardly inwardly to engage the hook under the chair-arm after the arm is seated in the recessed portion of the flange of said angle bracket.

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