

March 5, 1968

J. W. N. JORDAN ET AL

3,371,956

CHAIR-TABLET ARM CONSTRUCTION

Filed Oct. 28, 1966

2 Sheets-Sheet 1

FIG. 2.

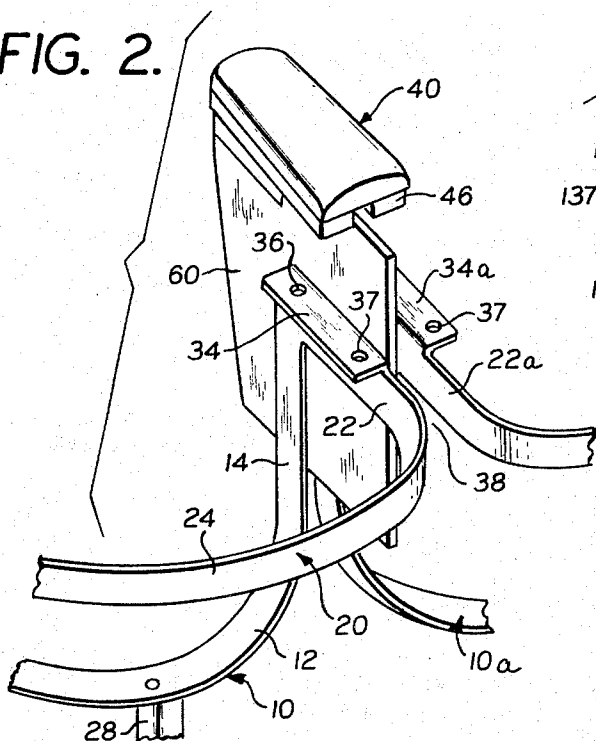


FIG. 8.

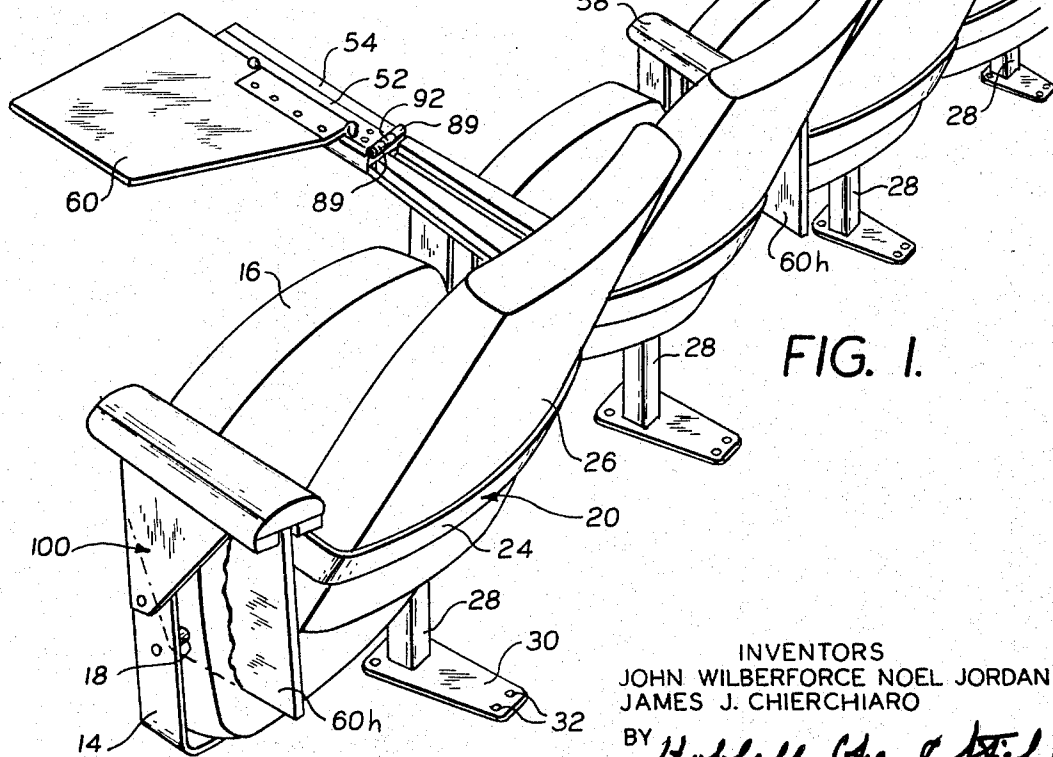
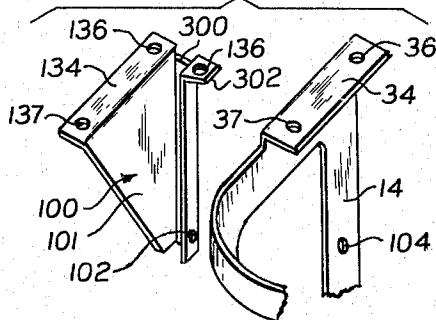


FIG. 1.

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2 Sheets-Sheet 2

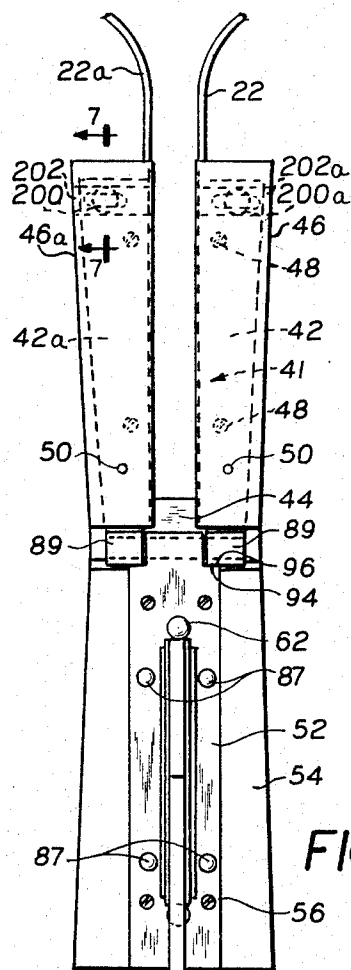


FIG. 3.

FIG. 7.

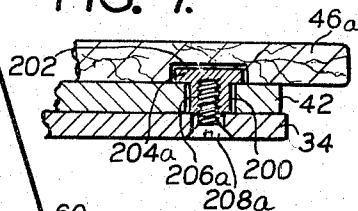


FIG. 4.

FIG. 5.

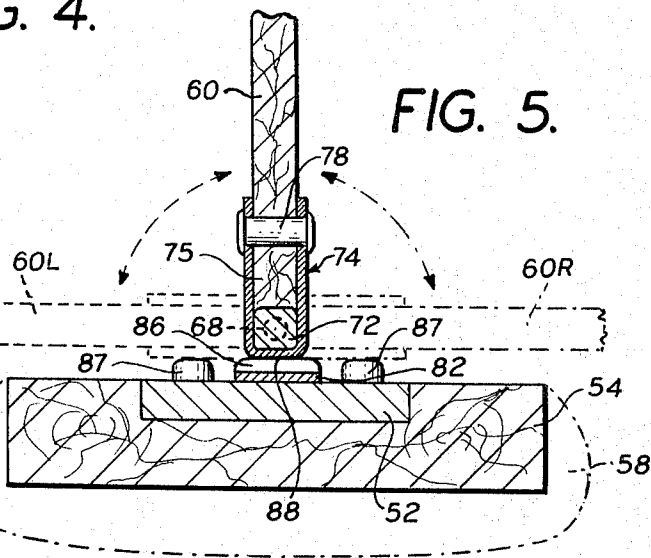
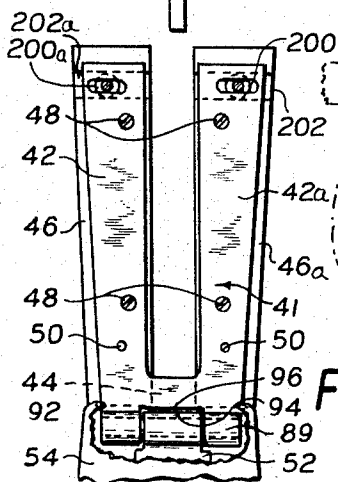


FIG. 6.



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CHAIR-TABLET ARM CONSTRUCTION

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11 Claims. (Cl. 297-162)

ABSTRACT OF THE DISCLOSURE

An arm rest and writing tablet assembly for disposition between the frames of two adjacent chairs, the assembly comprising means for securing it to at least one of the chairs, hinge means for pivotally mounting a movable arm rest or cover about a transverse axis, and hinge means on the bottom of the cover and extending longitudinally thereof for pivotally mounting a writing tablet on the bottom of the cover in a position to move in between the two chair frames when the cover is in covering relation therewith.

BACKGROUND OF THE INVENTION

Field of the invention

This invention relates to a chair-tablet arm construction especially of the type wherein the tablet arm is out of sight when in non-use.

Description of the prior art

Chairs equipped with tablet arms are known in the art. Thus, it is known to provide a chair with a side tablet arm which may be withdrawn and placed across the lap of the occupant of the chair. Generally this construction requires a brace for the tablet arm at its free end so as to provide a rigid writing support for the occupant. Other constructions have utilized chairs having a cavity in the arm support, with the tablet arm slidable in the cavity.

SUMMARY

The present invention provides for a disappearing tablet arm which is disposed between adjacent arm supports on the frames of two adjacent chairs when the tablet arm is in concealed condition. In concealed condition the arm supports of the two adjacent chair frames are overlaid and concealed by a cover or arm rest. The bottom of the arm rest is secured to the concealed tablet arm. Specifically, the arm rest or cover is mounted for pivotal movement about an axis that extends transversely of the arm supports and the cover to and from a position in which the cover overlies the arm supports and from and to a position in which the cover is extended 180° therefrom. In the second position the tablet arm will be vertically oriented and visible. The tablet arm is pivotally mounted along the longitudinal axis of the bottom of the cover so that it may be swung from its vertical position into a horizontal position for use. Preferably, the writing tablet may be swung into two horizontal positions so that it is usable with occupants of either chair.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view showing chairs equipped with disappearing tablet arms in accordance with our invention;

FIG. 2 is an exploded view of a pair of spaced chair frames with the tablet arm assembly vertically spaced thereabove and with the tablet arm disposed therebetween;

FIG. 3 is a profile view showing the tablet arm in vertical position with respect to its cover;

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FIG. 4 is a plan view looking down on a portion of the tablet arm as shown in FIG. 3;

FIG. 5 is an enlarged sectional view taken along the line 5-5 of FIG. 3;

FIG. 6 is a bottom plan view, in partial section, of a portion of the tablet arm shown in FIG. 4;

FIG. 7 is a sectional view taken along the line 7-7 of FIG. 4; and

FIG. 8 shows another embodiment of the invention and is an exploded view showing a panel member alongside an outer arm support so as to permit the tablet arm to be disposed in the space therebetween.

Description of the preferred embodiments

Referring now to the drawings, FIG. 1 shows a plurality of chairs with disappearing tablet arms disposed between adjacent chairs. Each chair comprises a frame generally designated by the reference numeral 10 (FIG. 2). The frame 10 includes a U-shaped member 12, the sides 14 of which are disposed vertically for pivotally supporting a seat 16, as by means of collars 18 mounted to the inner sides of each side 14. To each side of the seat 16 is mounted a pin which is adapted to be rotatably disposed within collar 18, thereby permitting the seat 16 to pivot about the pins.

Frame 10 is also provided with a second U-shaped member 20 positioned horizontally and substantially perpendicular to sides 14. The sides 22 of U-shaped member 20 are rigidly connected to the ends of sides 14. The rear portion 24 of U-shaped member 20 serves to support a back rest 26.

Each frame 10 is supported by a column 28, the lower end of which is connected to a base plate 30. The base plate is provided with a plurality of holes 32 so as to permit it to be fixedly mounted to a floor or other support surface, as by screws or the like.

In order to provide a base on which a suitable arm rest may be mounted, rectangular plates 34 and 34a are secured to each side 22 and 22a, respectively, at the upper edge thereof, as by welding, to form arm supports for said frames. Holes 36, 37 are provided in plates 34 to permit the securing to the plate of the arm rest.

As will be recognized, all of the foregoing construction is known to the art and does not constitute a part of the present invention.

In accordance with one aspect of the present invention, a pair of chair frames 10, 10a are so disposed that one side 22 of a frame 10 is disposed alongside a side 22a of the second frame (FIG. 2), sides 22 and 22a being in confronting relationship and having a space or recess 38 therebetween, which space serves to accommodate a tablet arm when it is disposed in its "hidden" position.

A tablet arm assembly generally designated by the reference numeral 40 (FIG. 2) is provided for mounting on rectangular plates 34, 34a. This assembly 40 comprises U-shaped plate or member 41 having a pair of mounting plates 42, 42a (FIGS. 4 and 6) parallel to one another but having a space therebetween. These plates are maintained in coplanar relationship by means of an integral bridge member 44. Desirably frame members 46, 46a are secured, as by screws 48, to each of plates 42, 42a, these frame members being made of wood or the like. Additionally, holes 50 are provided in mounting plates 42, 42a, these holes being so disposed as to match holes 36 in rectangular plates 34, 34a, thereby enabling the tablet arm assembly to be easily mounted upon plates 34, 34a.

It will be recognized that when a row of chairs is arranged, as in an auditorium, the row may be substantially straight or may be curved. Where the row of chairs is curved the radius of curvature will of course vary, de-

pending upon the particular installation desired. By virtue of one aspect of the present invention, means are provided for securing our tablet arm assembly to effect a rigid joining between adjacent chairs, yet whereby a row of chairs may be rigidly connected in either a straight line or in a curve wherein the radius of curvature may be varied to conform to the desired installation.

The foregoing is accomplished by utilizing a slideable threaded T-shaped nut which is moveable within a slot to a desired position. The T-nut is merely moved to the requisite position in conformity with the desired lay-out of the row of chairs, whether such row be straight or curved, and thereafter mounting screws are secured thereto. Thus, referring to FIGS. 4, 6 and 7, it will be noted that each of plates 42 and 42a are provided with elongated apertures 200, 200a. Additionally, each of frame members 46 and 46a is provided with a transverse channel 202, 202a. Before securing frame members 46 and 46a to their respective mounting plates 42 and 42a, T-shaped nuts (204a in FIG. 7) are inserted in the respective channels 202 and 202a such that their stems (206a in FIG. 7) ride within the periphery of apertures 200 and 200a. Thus, each such T-nut is confined or "trapped" between plate 42 or 42a and its associated frame member 46 or 46a, but each is transversely slideable within aperture 200 or 200a and channel 202 or 202a. As shown in FIG. 7, each T-nut is internally threaded so as to accommodate a screw (208a in FIG. 7). Of course, the distance between the T-nut and aperture 50 corresponds to the distance between holes 36 and 37 in plates 34 and 34a, so as to provide for ready mounting of the tablet arm assembly to these plates. Accordingly, each tablet arm assembly can be used to rigidly connect adjacent chairs in a row, and this is so whether the row is straight or curved.

The tablet arm assembly 40 additionally comprises a support plate 52. Support plate 52 is desirably embedded in a frame member 54 of wood or the like. To that end, holes 56 are provided in support plate 52 whereby plate 52 may be screwed to frame member 54. Frame member 54 is desirably surrounded by appropriate upholstery 58.

A tablet arm 60 is pivotally mounted to support plate 52. Thus, a pair of arm-mounting studs 62 are screwed into threaded holes 64. Each stud has an internal bore 66 to accommodate the ends 68 of a pivot pin 70. The central portion 72 of the pivot pin has a square cross-section (FIG. 5). A U-shaped mounting bracket 74 is disposed about the central portion 72 of the pivot pin between the studs 62. The lower edge 75 of tablet arm 60 is thus sandwiched between the sides of the U-shaped mounting bracket 74. Holes 76 are provided in the sides of the mounting bracket 74 whereby the tablet arm 60 may be rigidly fixed to the mounting bracket, as by a pin 78 riveted at either end.

In order to releasably reference the tablet arm 60 in either a vertical or parallel position with respect to support plate 52, there is provided a leaf spring 80. The leaf spring is disposed between the studs 62 and secured at its central portion 82 to support plate 52, as by screws 84. As shown in FIG. 3, the end portions 86 of the leaf spring 80 extend upwardly from the central portion, such that when the tablet arm 60 is in a vertical position (FIGS. 3-5), each end portion 86 of the leaf spring 80 presses against the bottom 88 of the U-shaped mounting bracket 74, thereby referencing the tablet arm in the vertical position.

Feet 87 of rubber or the like are mounted on plate 52. The height of the feet 87 is such as to contact the edge of bracket 74 when the arm 60 is swung parallel to plate 52, thereby stopping and supporting the arm in a substantially horizontal position.

Support plate 52 is hinged to mounting plates 42, 42a. Thus, one end of each mounting plate 42 terminates in a cylindrical housing 89 to accommodate a hinge pin 90. Similarly, one end of support plate 52 terminates in a

cylindrical housing 92 which also is to accommodate hinge pin 90. The width of cylindrical housing 92 is such that it may fit freely between cylindrical housings 89, thereby enabling support plate 52 to be hingedly mounted to mounting plates 42, 42a by merely inserting hinge pin 90 through housings 89 and 92.

It will be noted (FIGS. 3 and 6) that when support plate 52 is swung outwardly about hinge pin 90 such that it makes an angle of about 180 degrees with respect to mounting plate 42, its edge 94 abuts against edge 96 of U-shaped plate 41, thereby providing a stop so as to prevent any further downward motion of support plate 52.

FIG. 8 is an exploded view of another embodiment of our invention wherein the tablet arm assembly 40 (FIG. 2) may be utilized in connection with an outer arm support. In the description of this embodiment, like numerals refer to like parts as described previously.

According to this embodiment there is provided a panel member 100 adapted to be disposed alongside side 14 and rectangular plate 34. Panel 100 includes a side 101 and a horizontally mounted rectangular plate 134 having holes 136, 137 spaced similarly to the spacing of holes 36, 37 on plate 34. Panel member 100 further includes, desirably integral therewith, vertical section 300 (which is L-shaped in cross-section) and which carries flange 302, which flange contains aperture 136. Thus, panel 100 may readily be secured to plate 34, by laying flange 302 thereover such that holes 136 and 36 are in registry, and then bolting the two together. If desired, a firmer mounting can be achieved, as by inserting a bolt between holes 102 and 104. It will be noted that this construction provides a space between panel side 101 and side 14, the space serving to accommodate the tablet arm when it is in retracted position. Tablet arm assembly 40 may readily be mounted upon rectangular plates 34 and 134 by securing mounting plate 41 thereto, as by screws.

The operation of our disappearing tablet arm will now be described. Referring to FIG. 1, it will be noted that the leftmost chair shows a tablet arm 60 in extended position and pivoted over to the left in position to serve as a writing support for the occupant of the leftmost chair. The tablet arm is readily retracted and moved into a "hidden" position by first swinging tablet arm 60 to a vertical position with respect to support plate 52. (See FIGS. 3-5.) It will be noted that the end portions 86 of leaf spring 80 serve to reference and releasably maintain tablet arm 60 in such vertical position by virtue of their biasing against the bottom surface 88 of U-shaped mounting bracket 74. This automatic referencing feature is of particular value in that heretofore prior devices have not provided for a referencing, so that frequently the arm will fall over, disturbing the occupant of the adjacent chair, blocking an aisle, or the like. After the arm is in such referenced vertical position, frame member 54 and its associated parts (support plate 52 and tablet arm 60) are rotated about hinge pin 90 an angle of approximately 180 degrees, so as to dispose tablet arm 60 in the space or recess 38 between adjacent chairs such that the tablet arm is essentially in a hidden position. (A second tablet arm is shown in such hidden position, 60H, in FIG. 1.) It will be noted that in such hidden position, upholstered frame member 54 (FIG. 5) serves as a cover to hide the tablet arm 60 and recess 38 and also serves as an arm rest for the occupant.

Each tablet arm is, of course, pivotable through an angle of approximately 180 degrees. That is, the tablet arm may be swung from a vertical position 60V (FIG. 1) approximately 90 degrees to the left (60L) so as to accommodate a person sitting to its left or approximately 90 degrees to the right (60R) so as to accommodate a person sitting to its right.

Considering the embodiment of our invention illustrated in FIG. 8 (and also in FIG. 1), it will be apparent that the operation of the tablet arm assembly 40

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remains the same as described previously. In this embodiment, however, panel side 101 serves to partially hide the tablet arm from view when it is in retracted position 60H.

It will be apparent that our invention provides a simple yet attractive tablet arm construction whereby the arm may easily be removed from hidden position and into extended position to serve as a support surface for the occupant. A single tablet arm may be extended either to the left or to the right for the convenience of the occupant. Moreover, the tablet arm may be readily moved from extended to retracted position by the occupant, with the vertical referencing feature serving to prevent inadvertent swinging of the arm to an undesired position. In the retracted position the tablet arm tends to be hidden within the profile of the chair, and the support for the tablet arm serves both as a cover so as to hide the tablet arm and recess and as an arm rest for the occupant. Additionally, the provision of a slideable and adjustable fastener, e.g., the T-nut assembly, permits our tablet arm assembly to be used in rigidly connecting a series of adjacent chairs so as to provide a straight or curved row, as desired.

Variations can of course be made without departing from the spirit and scope of our invention.

Having thus described our invention, what we desire to secure and claim by Letters Patent is:

1. In combination

- (a) at least one pair of chair frames,
- (b) an arm support on each of said frames, said arm supports being in confronting relationship and having a space therebetween to accommodate a tablet arm,
- (c) a cover for said supports,
- (d) means for pivotally connecting said cover to one of said supports for movement between a first position in overlying relation with said supports and a second position at an angle of substantially 180 degrees to said supports,
- (e) stop means for preventing said cover from movement beyond said second position,
- (f) a tablet arm,
- (g) means for pivotally mounting said tablet arm to the underside of said cover for movement about an axis between said arm supports substantially perpendicular to the pivotal axis for said cover between a first position in which said tablet arm is substantially perpendicular to said cover and a second position wherein said tablet arm is substantially parallel to said cover, and
- (h) stop means for preventing said tablet arm from movement beyond said second position,

whereby said tablet arm may be pivoted from said second position parallel to said cover to said first position perpendicular to said cover and said cover may then be pivoted from said second position at an angle of substantially 180 degrees to said supports to said first position wherein said cover is in overlying relation to said supports to thereby dispose said tablet arm in the space between said supports.

2. The combination as defined in claim 1 wherein said means for pivotally mounting said tablet arm to the underside of said cover is adapted to permit movement of said tablet arm to a third position in which said tablet arm is substantially parallel to said cover and at an angle of substantially 180 degrees with respect to said second position, said combination additionally comprising stop means for preventing said tablet arm from movement beyond said third position.

3. The combination as defined in claim 2 additionally comprising biasing means for releasably holding said tablet arm in said first position.

4. The combination as defined in claim 1 wherein said means for pivotally connecting said cover to said supports includes

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(i) a U-shaped member pivotally secured to said cover and

(j) means for securing said U-shaped member to said supports.

5. The combination as defined in claim 4 wherein said means for securing said U-shaped member to said supports includes fastening means movable with respect to said U-shaped member.

6. The combination as defined in claim 5 wherein said fastening means comprise a pair of T-shaped nuts, each of said nuts being slideably mounted in the sides of said U-shaped member for lateral movement with respect thereto.

7. The combination as defined in claim 1 additionally comprising

(i) a second arm support on one of said chair frames,

(j) a support member alongside said second arm support and spaced therefrom for accommodating a second tablet arm in the space therebetween,

(k) means for maintaining said support member in said spaced position,

(l) a cover for said second arm support and said support member,

(m) means for pivotally connecting said cover to said second arm support for movement between a first position in overlying relation with said second support and said member and a second position at an angle of substantially 180 degrees to said second support,

(n) stop means for preventing said cover from movement beyond said second position,

(o) a tablet arm,

(p) means for pivotally mounting said tablet arm to the underside of said cover for movement about an axis substantially perpendicular to the pivotal axis of said cover between a first position wherein said tablet arm is substantially perpendicular to said cover and a second position wherein said tablet arm is substantially parallel to said cover, and

(q) stop means for preventing said tablet arm from movement beyond said second position.

8. The combination as defined in claim 7 additionally comprising a panel depending from said support member for hiding said tablet arm when it is disposed in said space between said second arm support and said support member.

9. A tablet arm assembly for securing to a pair of arm supports on two chair frames, the arm supports being in confronting relationship and having a space therebetween so as to accommodate a tablet arm, said tablet arm assembly comprising:

(a) a U-shaped member,

(b) means for securing the sides of said U-shaped member to said arm supports,

(c) a cover for said U-shaped member,

(d) means for pivotally connecting said cover to said U-shaped member for movement between a first position in overlying relation with said U-shaped member and a second position at an angle of substantially 180 degrees to said U-shaped member,

(e) stop means for preventing said cover from movement beyond said second position,

(f) a tablet arm,

(g) means for pivotally mounting said tablet arm to the underside of said cover for movement about an axis substantially perpendicular to the pivotal axis for said cover between a first position in which said tablet arm is substantially perpendicular to said cover and a second position wherein said tablet arm is substantially parallel to said cover, said pivotal axis of said tablet arm being disposed between said sides of said U-shaped member, and

(h) stop means for preventing said tablet arm from movement beyond said second position,

75 whereby said tablet arm may be pivoted from said sec-

ond position parallel to said cover to said first position perpendicular to said cover and said cover may then be pivoted from said second position at an angle of substantially 180 degrees to said U-shaped member to said first position wherein said cover is in overlying relation to said U-shaped member, to thereby dispose said tablet arm in the space between the sides of said U-shaped member.

10. The tablet arm assembly as defined in claim 9 wherein said means for pivotally mounting said tablet arm to the underside of said cover is adapted to permit movement of said tablet arm to a third position in which said tablet arm is substantially parallel to said cover and at an angle of substantially 180 degrees with respect to said second position, said combination additionally comprising stop means for preventing said tablet arm from movement beyond said third position.

11. The combination as defined in claim 10 addition-

ally comprising biasing means for releasably holding said tablet arm in said first position.

References Cited

UNITED STATES PATENTS

3,297,359	1/1967	Douglas	297—162
1,648,717	11/1927	Blitz et al.	297—162
2,617,473	11/1952	Krimstock et al.	297—160 X
2,776,177	1/1957	Vance	297—252 X
2,845,113	7/1958	Keel	297—194
3,140,894	7/1964	Hicke	297—162
3,298,735	1/1967	Berman	297—145

FOREIGN PATENTS

443,145	2/1936	Great Britain.
609,684	9/1960	Italy.

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