Feb. 6, 1968 A. F. KRUEGER 3,367,713

SELF-LOCKING ADJUSTABLE TABLET ARM

Filed Sept. 14, 1966 2 Sheets-Sheet 1

Fig. 1

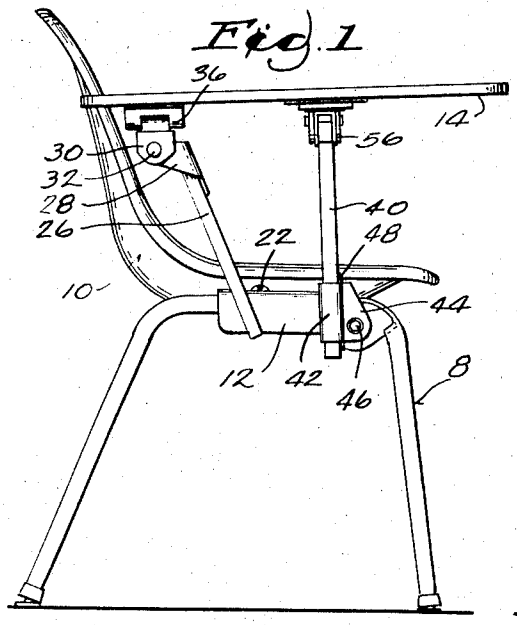
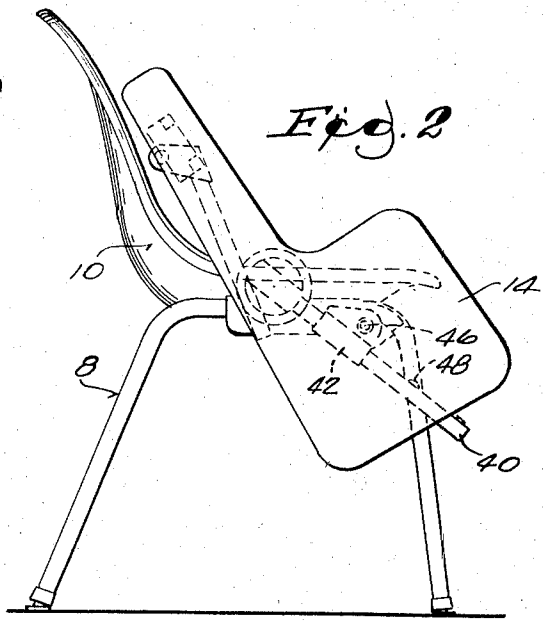


Fig. 2



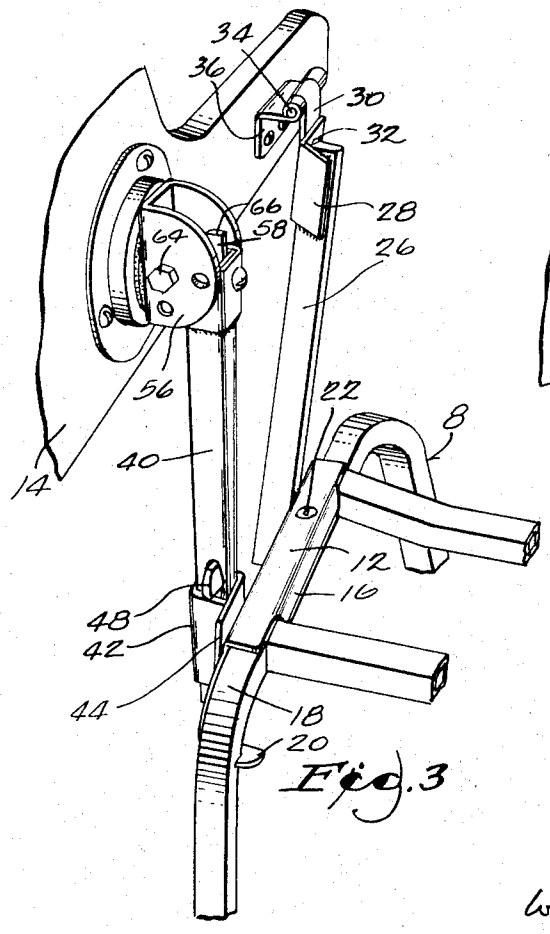


Fig. 3

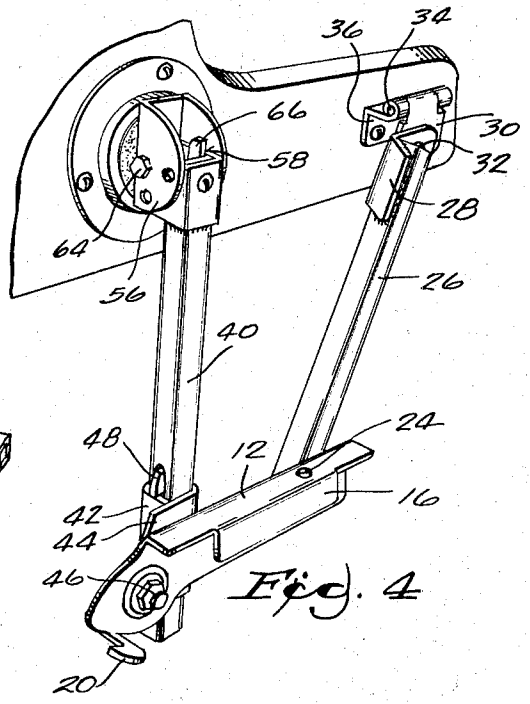


Fig. 4

INVENTOR
ALLISON F. KRUEGER

Wheeler, Wheeler, House & Clemency
ATTORNEYS

Feb. 6, 1968 A. F. KRUEGER 3,367,713

SELF-LOCKING ADJUSTABLE TABLET ARM

Filed Sept. 14, 1966 2 Sheets-Sheet 2

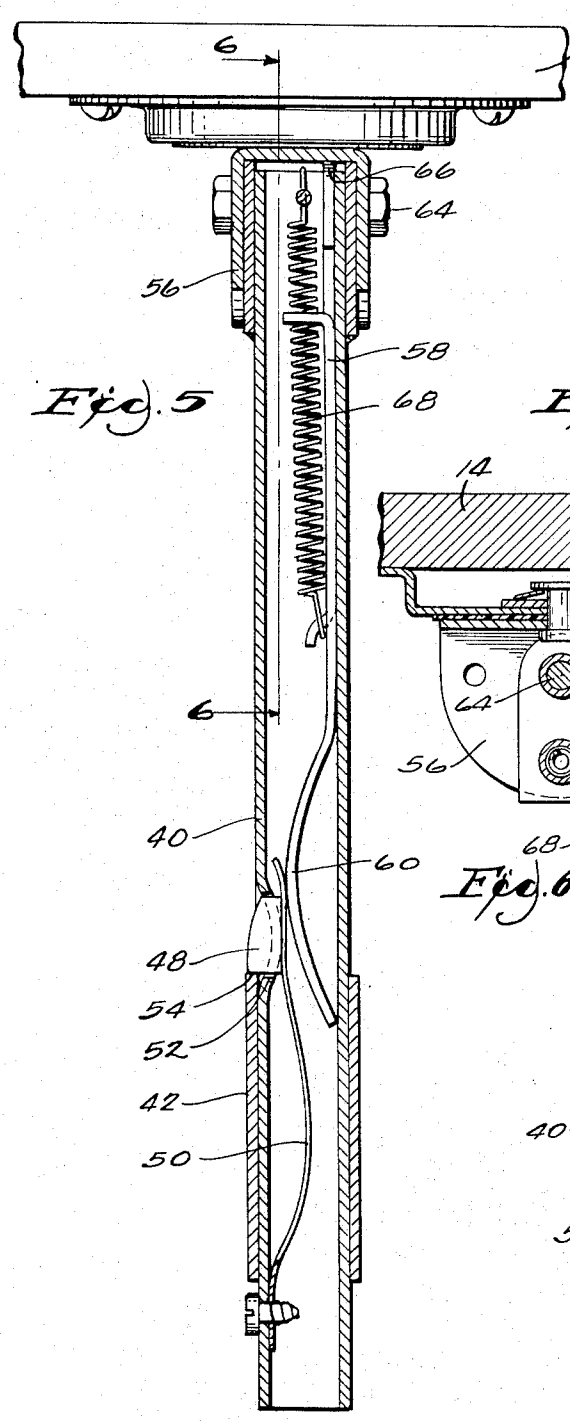


Fig. 5

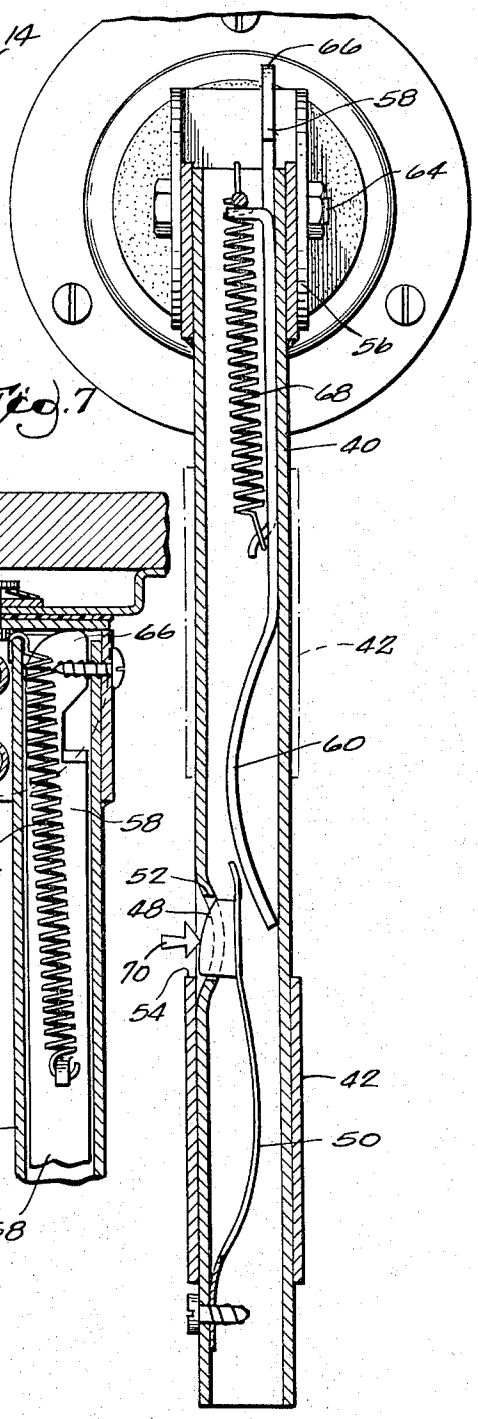


Fig. 7

Fig. 6

INVENTOR
ALLISON F. KRUEGER

Wheeler, Wheeler, House & Clemency
ATTORNEYS

United States Patent Office 3,367,713 Patented Feb. 6, 1968

3,367,713

SELF-LOCKING ADJUSTABLE TABLET ARM

Allison F. Krueger, 226 Miramar Drive,
Green Bay, Wis. 54301

Filed Sept. 14, 1966, Ser. No. 579,353
6 Claims. (Cl. 297—162)

ABSTRACT OF THE DISCLOSURE

In a tablet arm chair having a collapsible forward post provided with a manually releasable latch and an automatically operable lock, a lock-engaging push rod is so positioned that when the tablet arm is moved to a position of use the lock is engaged to secure the forward post from collapse.

Tablet arms of the type here involved are used in conjunction with standard or modular types of chairs for movement between a generally horizontal position of use and a storage position in which the arm is in a vertical plane and depressed below seat level. In order to achieve the compound pivotal movement required, multiple hinges must be provided to accommodate the tilting of the tablet arm from its position of use laterally and upwardly to a vertical plane in which the tablet arm must then hinge downwardly for storage.

A bracket attached to a chair for the support of the tablet arm has a rear post with respect to which the rear end of the tablet arm pivots on a generally horizontal front-to-rear axis and a generally transverse axis. The forward post likewise accommodates pivotal movement upon two axes and it further accommodates a bodily downward sliding movement with regard to a bearing member pivoted to the mounting bracket. When the tablet arm is raised from storage toward its position of use, a manually releasable latch automatically engages to support the forward post from its bearing member. When the arm is then pivoted from its vertical plane to its horizontal position of use, means is provided for locking that latch to secure it against accidental displacement. The locking means is automatically released when the tablet arm is raised in the first of its two hinged movements toward storage.

The latch is a simple button which projects through the side wall of the forward sliding post to engage the top of the bearing member. It may readily be manually displaced against the pressure of its supporting spring provided the tablet arm is not in the position of use. When the tablet arm is in its position of use, it rests on a push rod that actuates a lock member lying behind the latch to prevent manual displacement thereof in a releasing direction. When the tablet arm is raised laterally from its position of use, it becomes disengaged from the push rod and the latter is automatically spring actuated to release the latch.

Background of the invention

Portions of the apparatus herein disclosed are described and illustrated in my companion application, Ser. No. 459,621, filed May 28, 1965, now U.S. Patent No. 3,292,972 entitled: Chair With a Folding Tablet Arm, and to a Tablet Arm Unit of Novel Structure.

Description of the invention

In the drawings:

FIG. 1 is a view in side elevation of a generally conventional chair equipped with a tablet arm embodying the present invention, the tablet arm being shown in a position of use.

FIG. 2 is a view similar to FIG. 1 showing the tablet arm in its storage position.

FIG. 3 is an enlarged detail view in perspective fragmentarily illustrating the chair base, a portion of the tablet arm being shown in its intermediate position in which the push rod has been released but the latch has not, the slidable forward post still being in its elevated position.

FIG. 4 is a view similar to FIG. 3 showing the tablet arm and its support as they appear when sold as a separate article of manufacture.

FIG. 5 is a greatly enlarged detail view taken in vertical transverse section through the forward tablet arm post and the bearing member therefor, the latch being shown engaged and the tablet arm being fragmentarily illustrated.

FIG. 6 is a fragmentary detail view taken in section on the line 6—6 of FIG. 5.

FIG. 7 is a view similar to FIG. 5 showing the tablet arm mounting device in a position in which the push rod has been released so that the latch member can be manually displaced to accommodate relative movement between the forward post and the bearing member toward a position of tablet arm storage.

Shown for purposes of illustrating the use of the invention is a chair base 8, which may be of any appropriate type. On it is mounted a generally conventional seat shell 10.

The bracket 12 is designed to fit any chair base which is to be equipped with the tablet arm 14. As shown the bracket has a channeled portion 16 that fits over the side frame member 18 of the chair base and is connected thereto, in the instant device, by hook 20 and a single screw 22 inserted into a hole 24 with which the bracket is provided as shown in FIG. 4.

The rear tablet arm support post 26 is fixed to the bracket. Pivoted thereto by means of fitting 28 is the hinge leaf 30, which moves about pintle 32 in a generally vertical plane extending front to rear beside the chair. The hinge leaf 30 is conventionally connected by a fore-and-aft pintle 34 with hinge leaf 36, which is screwed to the underside of the tablet arm 14. The two pintles 34 and 32 at right angles to each other provide for compound pivotal movement of the tablet arm with respect to the rear post 28.

A forward post 40 is not rigidly connected with bracket 12 but is slidable in a bearing member 42 which has a flange 44 connected by pintle 46 with the bracket so that the bearing member 42 can pivot between the generally upright position shown in FIG. 1 and the rearwardly inclined position shown in dotted lines in FIG. 2.

The forward post 40 is reciprocable vertically through the bearing member 42 and also tilts therewith about the pintle 46. Within the post 40 is a latch button 48 mounted on a latch spring 50 which normally projects the button through an opening 52 in the side wall of the hollow post 40. As best shown in FIG. 5, the button 48, when thus projected outwardly through aperture 52, engages above the upper margin 54 of the bearing member 42 to support the post 40 in its elevated position.

From this position the post 40 may readily be displaced downwardly if the button 48 is first released by manually pushing it inwardly against the bias of its supporting spring 50 for a distance sufficient so that it clears the top margin 54 of the bearing member 42 (FIG. 7).

However, when the tablet arm is in a position for use, the bracket 56 which hinges it to the top of post 40 will be in a position in which it will bear on the upper end of a thrust rod 58 and the rod will thereby be displaced downwardly to engage its lock portion 60 behind the spring 50 and button 48 in the positions of the parts

shown in FIG. 5. In this position, the button 48 is supported against inward displacement and therefore the latch cannot be released.

When the tablet arm is swung to a vertical plane, its bracket 56 pivots about the pintle 64, thereby releasing the pressure on the upper end portion 66 of the thrust member 58. This allows the thrust member to be urged upwardly by the bias of its tension spring 68 so that the lock portion 69 is withdrawn from behind the button 48. This allows the button to be displaced inwardly as indicated by the arrow 70 in FIG. 7. The button now being clear of the top margin 54 of bearing member 42, a light pressure downwardly on the tablet arm will force the button into the bearing member 42. As the post 40 slides downwardly through the bearing, the bearing is simultaneously tilted toward the position shown in dotted lines in FIG. 2. This leaves the tablet arm in the storage position illustrated in FIG. 2.

Merely raising the tablet arm from storage position to the position of FIG. 3 will permit the latch or detent button 48 to snap over the margin 54 of the bearing member. However, the button may still be released manually until the tablet arm is hinged from a vertical plane to a horizontal plane for use. In the latter position, the fitting 56 attached to the tablet arm engages the top 66 of thrust member 58 to displace thrust member downwardly to the position shown in FIGS. 5 and 6, thereby making the tablet arm secure against accidental downward movement of its forward support 40.

I claim:

1. In combination, a chair, a tablet arm in hinged connection with the chair, a forward tablet arm support including a downwardly yieldable member, means with respect to which said member is reciprocable to and from arm supporting position, a manually releasable latch for fixing said member in arm supporting position, and retractable lock means for securing said latch against release and means for transmitting motion from the tablet arm to the said lock means for the actuation thereof.

2. In combination, a chair, a tablet arm in hinged connection with the chair, a forward tablet arm support including a downwardly yieldable member, retractable lock means for holding said support against downward yielding movement and means for transmitting motion from the tablet arm to said lock means for the actuation thereof.

3. A combination according to claim 2 in which a first hinge means connecting the tablet arm with the chair accommodates movement of the tablet arm to and from a horizontal position of use and an upright intermediate position, and a second hinge means accommodates movement of the upright tablet arm downwardly from said intermediate position, the said member being hollow, the retractable lock means comprising a slide mounted in said member and provided with a biasing spring urging it to a position in which it projects from said member and is engageable by the tablet arm as the tablet arm moves from its intermediate upright position to its horizontal position of use, such engagement displacing the lock slide downwardly with respect to said member.

4. A combination according to claim 3 in which a manually releasable latch provides support for said member, the slide having a cam portion which in the spring biased projecting position of the said slide is free from engagement with the latch and in the downwardly displaced position of said slide is engaged with the latch to support it against release.

5. A combination according to claim 3 in which a manually operable latch normally secures said member against collapse, the first said means comprising a bearing through which the said member is reciprocable, and said latch comprises a manually operable button having a supporting lever within the member, the member having a wall provided with an aperture through which said button projects and through which it is manually displaceable into the interior of said member, said button being engaged above a portion of said bearing when it projects through the aperture of said member, said lock including a slide within said member having a cam portion movable to and from a latch supporting position which precludes the manual displacement of said button into the interior of said member, a spring biasing said slide upwardly, said slide having a portion normally spring biased to project from the upper end of said member, the tablet arm having hinged connection with said member and having a portion engageable with the projecting portion of the slide to thrust the slide downwardly into latch supporting position when the tablet arm is moved from its upright intermediate position to its horizontal position of use.

6. In combination, a chair, a tablet arm, a rear support for the tablet arm including hinge means connecting the tablet arm with the rear support for movement upon transverse and longitudinal axes, a forward support for the tablet arm including a bearing pivoted to the chair for movement on a transverse axis and also including a hollow member reciprocable through said bearing and means providing a hinged connection between the upper end of the hollow member and the tablet arm for accommodating tablet arm movement respecting said member about a longitudinal axis, the tablet arm being movable upon its hinged connections with the rearward support and with said member between a normally horizontal position of use and an upright intermediate position and an upright depressed position of storage in which latter position said member is depressed in said bearing and pivotally moved therewith, a spring within said member, a latch button movable under spring bias through an aperture with which said member is provided, and so positioned that said button engages the upper end of said bearing to support said member when the button projects through the aperture, the button being displaceable into the interior of said member to become disengaged from said bearing, a slide longitudinally reciprocable in the hollow member and including a lock portion for backing said button against displacement into the interior of the member, whereby the button is secured in a position in which it engages the upper end of said bearing, a spring biasing the slide upwardly to a retracted position free of said button and in which a portion of the slide projects from the upper end of said member into the path of movement of a part of the tablet arm as the latter moves from its intermediate position to its horizontal position of use, said button normally being freely movable manually to disengage said bearing for accommodating movement of said member downwardly through the bearing and corresponding movement of the tablet arm to its storage position, movement of the tablet arm to its horizontal position of use displacing the slide to engage its lock portion behind the button to preclude manual release of said button from said bearing, whereby the tablet arm is supported in use.

References Cited

UNITED STATES PATENTS

3,191,992	6/1965	McMasters	297—160
3,197,253	7/1965	Brown	297—162 X
3,233,939	2/1966	Chapman	297—162
3,292,972	12/1966	Krueger	297—162

CASMIR A. NUNBERG, *Primary Examiner.*