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3,479,084

CHAIR AND FOLDING TABLET ARM STRUCTURE

Filed Jan. 12, 1968

3 Sheets-Sheet 1

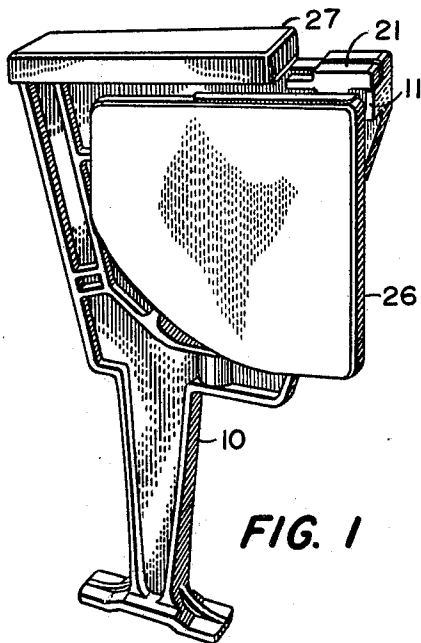


FIG. 1

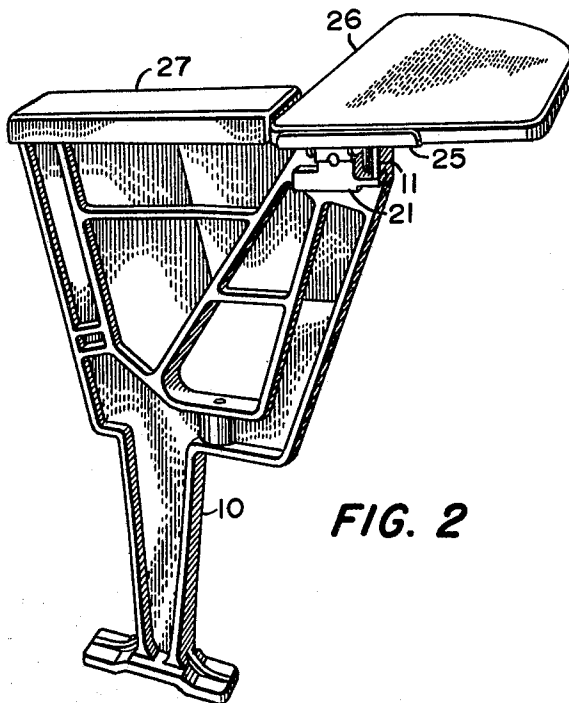


FIG. 2

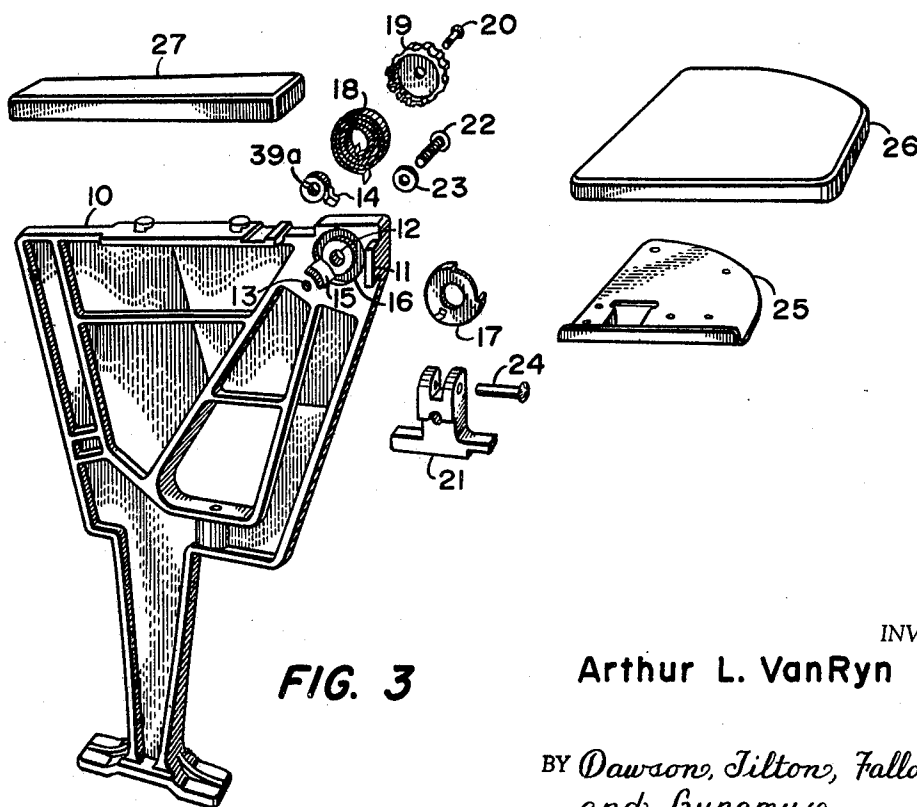


FIG. 3

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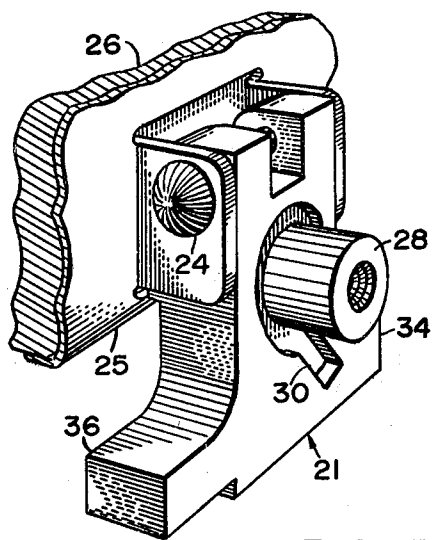
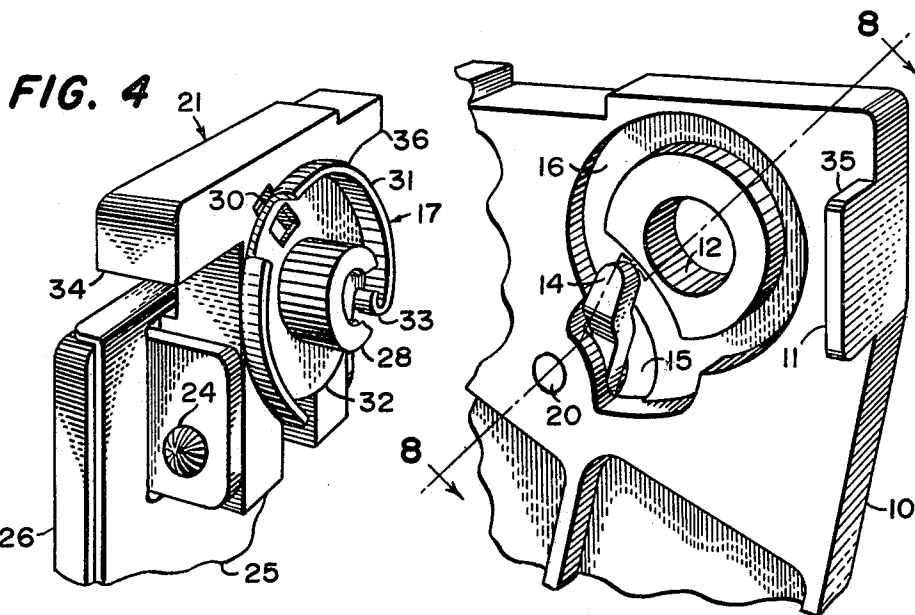
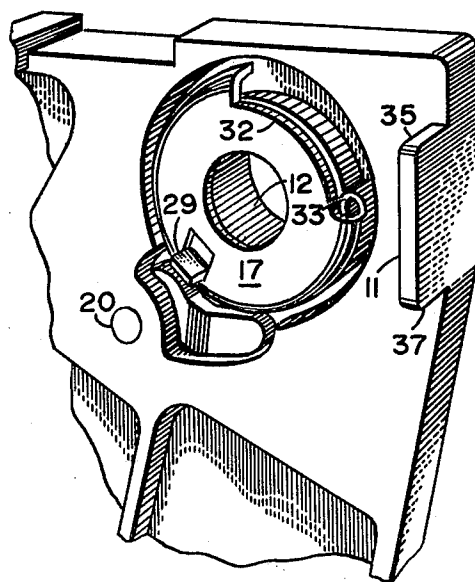


FIG. 5



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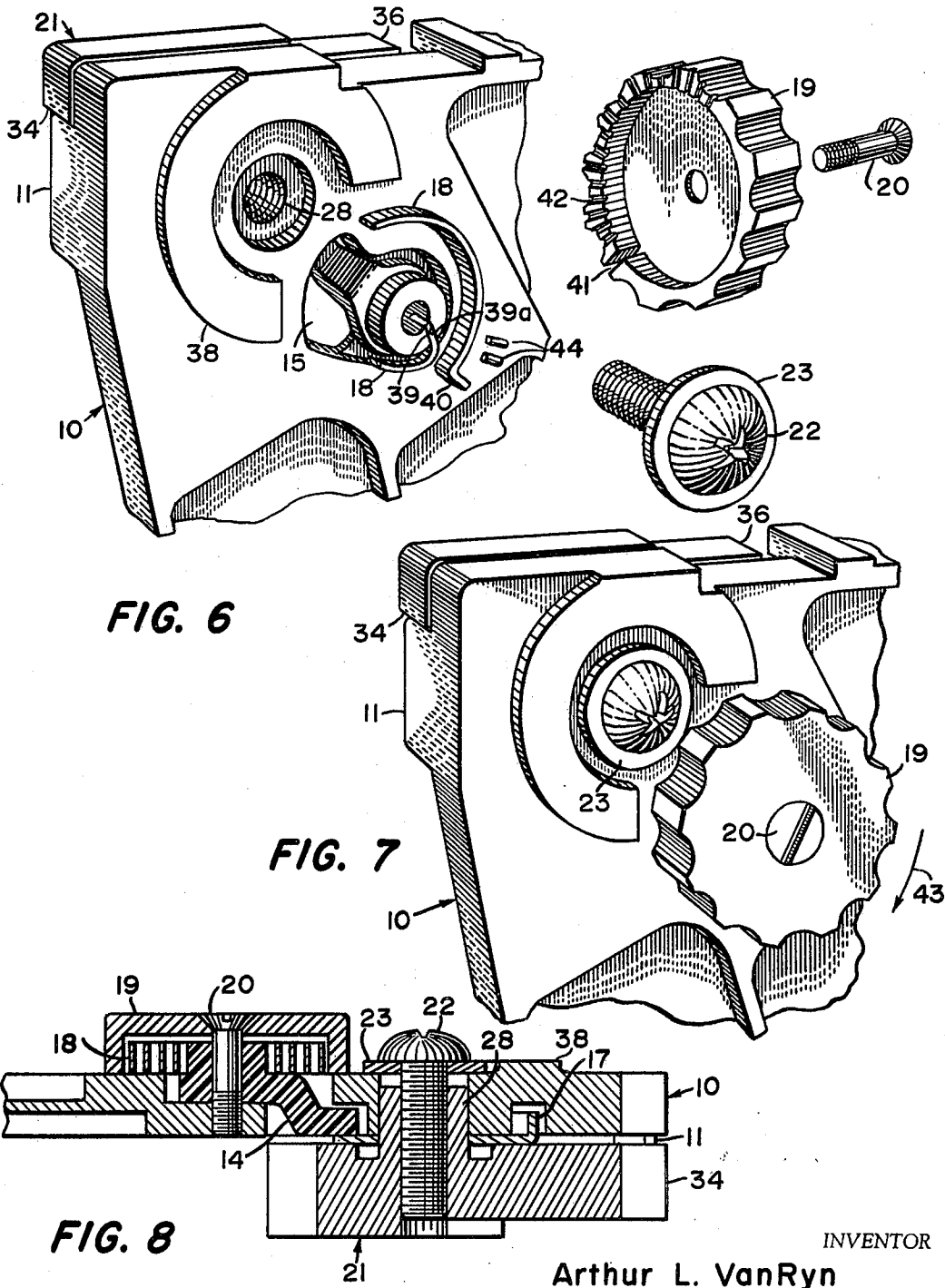
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CHAIR AND FOLDING TABLET ARM STRUCTURE

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3,479,084 CHAIR AND FOLDING TABLET ARM STRUCTURE

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6 Claims

ABSTRACT OF THE DISCLOSURE

In a chair and folding tablet arm assembly, a standard pivotally carries a tablet arm support for movement to upper and lower positions, and a cross pivot maintains the table arm upon the arm support for movement to and from a horizontal position over the standard. A spring-urged finger, preferably formed of nylon, is energized when the support is initially moved upward, but a cam inactivates the spring finger when the tablet arm is in the raised position, the cam, however, being shaped to release the finger when the arm support is lowered, thus permitting the energized finger to push the tablet arm positively into stored and unobstructing position.

BACKGROUND AND SUMMARY

In the use of theater chairs, schoolroom chairs, and the like which are equipped with folding tablet arms, it is found that the tablet arms are often carelessly allowed to fall to a position where they extend forwardly forming an obstruction in the aisles between seats. Even when spring-urged detents or the like are employed, it is common for the detents not to be fully engaged, and further wear upon such parts soon renders such parts ineffective for positively pushing the tablet arm into stored and unobstructing position.

I have discovered that a spring-urged finger may be employed in combination with a cam whereby the spring is energized by the initial raising movement of the tablet arm structure, but the finger is inactivated by the cam as the tablet arm moves to the raised and use position. However, the cam is so shaped that when the tablet arm structure is being lowered and reaches a predetermined lower level, the finger is released so that it can positively push the tablet arm structure into stored and unobstructing position.

DRAWINGS

In the accompanying drawings, FIG. 1 is a perspective view of a chair standard with the tablet arm in the folded or stored position; FIG. 2, a perspective view with the tablet arm in the raised and horizontal use positions; FIG. 3, an exploded perspective view of the standard and folded tablet arm with the parts in spaced relation FIG. 4, a fragmentary broken perspective view of the standard and cooperating parts of the tablet arm support structure, the standard being partly assembled and the remainder of the folding mechanism assembled on the left in the stored position; FIG. 5, a view similar to FIG. 4 but with the tablet arm support shown in a vertical position ready to be moved into the horizontal position over the top of the standard; FIG. 6, a broken perspective view of the inner side of the standard adjacent the chair seat and with the adjustment knob removed to show the parts, the tablet arm being in lowered or folded position; FIG. 7, a view similar to FIG. 6 but showing the parts fully assembled; and FIG. 8, a diagonal sectional view, the section being taken through FIG. 4 but with the parts of FIG. 4 fully assembled.

DETAILED DESCRIPTION

The structure consists generally of a seat standard upon which a tablet arm support is pivotally mounted for movement to upper and lower positions, the tablet arm support being provided with a transverse or cross pivot on which is hinged a tablet arm so that when the support is swung to upper position, the tablet arm can be moved over the standard into a horizontal position for writing. To this structure has been added spring-urged mechanism which is effective in pushing the tablet arm structure positively into closed position even though the chair occupant carelessly allows the tablet arm to drop. However, cam means are provided for inactivating the spring as the tablet arm is raised and folded to use position, and the spring-urged finger for moving the tablet arm to stored position is ineffective until the tablet arm moves downwardly a predetermined distance, at which point the finger is released from the cam and pushes the tablet arm into the desired stored position.

The parts can be seen best from an examination of FIG. 3 in which there is a standard 10 and protruding stop 11, a pivot hole 12, an attachment hole 13 for the cam finger 14, a window or slot 15 through which the finger 14 extends, and a recess 16 on one side for the cam disk 17. A spring 18 activates the cam finger 14 and a cover 19 fits over the spring and is held in place by screw 20. The tablet arm support 21 is mounted upon the standard by a pivot bolt 22 and a flat washer 23. A long rivet 24 attaches the tablet arm support 21 to the tablet arm plate 25 which is attached to the tablet arm panel 26. I prefer to equip the standard at its top with an arm rest 27.

As seen best in FIGS. 4 and 5, the cam disk 17 receives or fits over the cylindrical extension 28 and rotates with it since a small projecting finger 29 fits into a slot 30. Part of the rim 31 is cut away at 32 to allow the cam finger 14 to slip into it, as shown best in FIG. 4. The spring-urged finger 14 pushes against the curled end 33 of the rim 31 to hold the tablet arm 26 in the folded position.

When the tablet arm is folded, the large end 34 of the tablet arm support 21 rests on the top edge 35 of the stop 11, as shown in FIG. 4. When the tablet arm is turned around into the use position, as shown in FIG. 5, the small end 36 of the tablet arm support rests against the bottom edge 37 of the stop 11.

In the operation of the structure, as the tablet arm is initially raised toward the use position, the rolled edge 33 of the cam disk 17 also turns, forcing the cam finger 14 downwardly and energizing the spring, and then the rim 31 holds it down, as shown best in FIG. 5. Thus, the rim inactivates the spring-urged finger as the tablet arm structure is moved to its upper positions, permitting the tablet arm to be swung over the standard into a horizontal position. However, when the tablet arm is again moved into vertical position and the support structure is moved downwardly the cut-away portion of the rim allows the finger 14 to slip into it and the finger pushes against the curled end 33 of the rim 31 to push the tablet arm 26 into the folded position.

In FIGS. 6 and 7, it will be noted that the occupant's side of the standard 10 is provided with a reinforcing arcuate block of metal 38 to strengthen the standard adjacent to the recess and also serving as a shield to prevent clothing from being pinched beneath the washer 23.

The spring 18 has its inner end 39 received within a slot 39a of the cam finger 14, and the outside end 40 of the spring is received within a slot 41 of the cover 19. The cover 19 has a series of notches or teeth 42 for the adjustment of tension of the spring 18. As the cover 19 is turned in a clockwise direction 43, the tension of the spring is increased, as shown in FIG. 7. Two projections

44 on the side of the standard serve as teeth engaging the members 42 to keep the cover from turning before the screw 20 is tightened. By the addition of the teeth, the screw does not have to be very tight and may actually be somewhat loose, without the tension of the spring being lessened.

While I have shown the folding mechanism in conjunction with a theater-type seat, it will be understood that the mechanism may be employed with school chairs and other forms of public seating and may also be employed as portable seating tablet arm assembly.

While in the foregoing specification, I have set out a specific structure in considerable detail for the purpose of illustrating an embodiment of the invention, it will be understood that such details may be varied widely by those skilled in the art without departing from the spirit of my invention.

I claim:

1. A chair and folding tablet arm structure, comprising a standard, a tablet arm support carried upon said standard by a horizontal pivot for movement to upper and lower positions, a tablet arm mounted upon said support by a cross pivot pin for movement to a horizontal position over said standard, a spring-urged finger mounted for rotation in a plane parallel with said standard normally urging said tablet arm and support to stored position, said spring being tensioned by the initial raising movement of said tablet arm support, and a cam member for inactivating said spring finger as said support is moved to said upper position, said cam releasing said finger after said tablet arm support is lowered to a predetermined point whereby the stored energy in said spring causes said finger to thrust said tablet arm into lowered and fully-stored position.

2. The structure of claim 1 in which said spring and finger are mounted on the inner side of said standard and said finger extends through a slot in said standard for operative engagement with said tablet arm support.

3. The structure of claim 1 in which said cam is carried

by said tablet arm support and is broken away at one point for the release of said spring finger.

4. In a chair and folding tablet arm structure in which a standard pivotally carries a tablet arm support for movement to an upper use position and to a lower stored position, and in which a tablet arm is pivotally carried by said support for movement to a horizontal position over said standard, the improvement which comprises a spring-urged finger rotatably mounted upon said standard for rotation in a plane parallel with said standard and engaging said tablet arm structure whereby upon initial raising movement of said tablet arm support said spring is energized, and a cam mounted upon said tablet arm support and engaging said spring for inactivating said finger when said tablet arm support is moved to said upper use portion, said cam being cut away to release said finger when said tablet arm support is lowered to permit said energized spring-urged finger to move said tablet arm into stored position.

5. The structure of claim 4 in which said cam is provided with a rim which engages said finger and rotates against said finger as the tablet arm support is moved through its upper ranges of movement, said rim being cut away to permit release of said finger when said tablet arm support is lowered to a predetermined point.

6. The structure of claim 1 in which handle means are provided on the inner side of the standard for tensioning the rotatable finger spring.

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JAMES T. McCALL, Primary Examiner

U.S. Cl. X.R.

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