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SCHOOL FURNITURE.

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Patented Feb. 16, 1909.

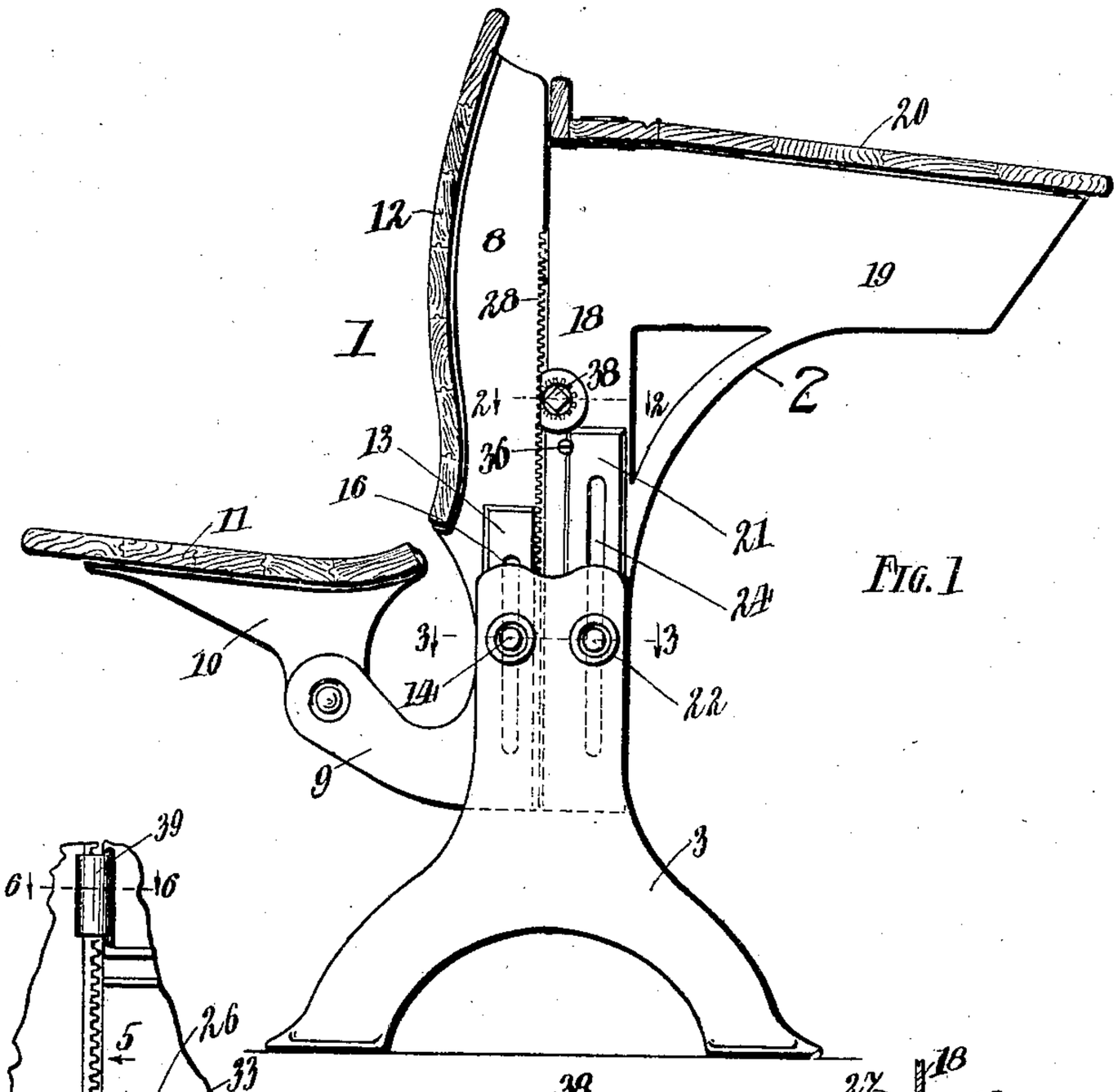

FIG. 1

FIG. 5

FIG. 4

FIG. 2

FIG. 3

FIG. 6

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SCHOOL FURNITURE.

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To all whom it may concern:

Be it known that I, WILLIAM REDMOND, a citizen of the United States, residing at Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in School Furniture, of which the following is a specification.

This invention relates to furniture for school and other purposes, and one of its objects is the provision of improved means for making an article of furniture, such as a seat or a desk, readily adjustable in height.

Another object of the invention is the production of an improved combined seat and desk in which the seat part and the desk part are independently adjustable.

Another object is the provision of an improved combined seat and desk in which the seat portion and the desk portion may be each adjusted by the operation of a single adjusting mechanism.

A further object is the production of improved means for guiding the parts of an adjustable seat and desk in their adjusting movements.

The invention also relates to a seat and seat back of improved conformation.

In Figure 1 of the accompanying drawings I have shown my invention as applied to a combined school desk and seat, the view being a side elevation. Fig. 2 is a horizontal sectional view through said desk and seat, taken on the plane of dotted line 2 2 of Fig. 1. Fig. 3 is a horizontal section on dotted line 3 3 of Fig. 1. Fig. 4 is a view of the inner face of the side members comprised in said combined desk and seat. Fig. 5 is a sectional detail view on dotted line 5 5 of Fig. 4. Fig. 6 is a section on dotted line 6 6 of Fig. 4. Figs. 3 to 6 are on a scale somewhat larger than that of Figs. 1 and 2.

The embodiment herein shown of my invention comprises a seat frame 1 and a desk frame 2, each adjustable in height independently of the other, and both supported upon a pair of standards 3 adapted to rest upon and be secured to the floor. Each standard 3 has formed integral therewith, upon its inner side, two vertical parallel guide ribs 4 and 5, and at the edges of its upper portion are formed two vertical parallel guide flanges 6 and 7, for a purpose to appear hereinafter.

The seat frame 1 comprises two side members 8 having seat brackets 9 formed integral therewith at their lower ends. To the outer ends of the seat brackets 9 are pivoted seat arms 10 for supporting the seat 11, proper. The side members 8 are rigidly secured together by means of said seat 11 and by the seat back 12. The seat 11 and the seat back 12, as is customary, are of wood, and are attached to the seat arms 10 and the side members 8, respectively, by a tongue-and-groove connection or in any other suitable way. By reference to Fig. 1 it will be noted that the seat back 12 is formed upon an ogee curve, the upper or convex portion of which is an arc of a circle of larger diameter than the circle of which the lower or concave portion of the seat back is an arc. It will be further noted that the seat back 12 is almost upright, being only slightly inclined to the rear. The main portion of the seat 11 is substantially flat, but the rear end of the seat is curved upward slightly to meet the lower end of the seat back 12. Such a construction and conformation of the seat and seat back are calculated to enforce a correct sitting posture upon the occupant of the seat.

The rigid frame 1 formed by the members 8, 11 and 12 is adjustably supported upon the standards 3, being guided in its vertical adjusting movements by a guide member on the side members 8 adapted to coöperate with the guide rib 4 and the guide flange 6. In this instance, said guide member is in the form of a raised rectangular surface or panel 13, the edges of which are adapted to slide in contact with said guide rib and guide flange. The seat frame 1 is locked in position by means of a bolt 14 extending through an opening 15 in each standard 3 and through an elongated slot 16 in the adjacent side member 8, said bolt being provided with a nut 17.

The desk frame 2 comprises two side members 18, the upper portions of which form the sides of a box 19 for receiving books, papers and other articles. The box 19 is provided with a hinged cover 20 which constitutes the writing desk proper. The side members 18 and the parts of the box 19 are secured together in any suitable way to form the rigid desk frame 2. Said desk frame is adjustably supported upon the standards 3 in a manner substantially similar to the way in which the seat frame 1 is supported. Upon the outer faces of the side

members 18 are formed raised rectangular panels 21 adapted to lie between the guide rib 5 and the guide flange 7 for guiding the desk frame 2 in its vertical adjusting movements. The means for locking the desk frame in position, also, is similar to that used for the seat frame, said means consisting of bolts 22 extending through openings 23 in the standards 3 and through elongated openings 24 in the side members 18, said bolts having nuts 25 turned on their inner ends.

The means for raising and lowering the seat frame 1 and the desk frame 2 comprises a shaft 26 carried by the desk frame and having mounted thereon two pinions 27 each adapted to mesh with a rack 28 formed in the rear edge of one of the side members 8 of the seat frame, the racks 28 being of increased thickness and outstanding from the inner sides of the members 8. In this instance the shaft 26 is square in cross-section, its ends lying within square sockets 29 in the pinions 27. Each of said pinions has a hub 30 at its outer side rotatably mounted in a bearing opening 31 in the side member 18, and at its inner side each pinion is provided with a hub 32. (See Figs. 2 and 5.) The last mentioned hub is encircled by a ring 33 provided with a securing lug 34, said lug being adapted to fit within a seat 35 formed for it upon the inner side of the side member 18, and being secured in position by a screw 36 and nut 37. The pinion 27 is held from lateral movement in one direction by the adjacent side member 18 and in the other direction by the ring 33. At the outer end of the hub 30 is a square portion 38 to which a wrench (not shown) may be applied for rotating the shaft 26 to move either of the frames 1 and 2 with relation to the standards 3. A guide lug 39 (Figs. 4 and 6) formed integral with each side member 18 upon the inner face thereof extends to and lies in contact with the rear side of the rack 28 upon the adjacent side member 8, said lugs assisting to hold the upper portions of the frames 1 and 2 firmly together.

In use, if it be desirable to adjust the position of the seat frame 1, both of the nuts 17 are loosened, a wrench placed upon the squared portion 38 of either of the pinion-hubs 30, and the shaft 26 rotated. The desk frame 2 which carries the shaft 26 being locked in position by the bolts 22 and nuts 25, the rotation of the shaft 26 and its pinions 27 causes a vertical movement of the seat frame 1 in a direction dependent upon the direction of rotation of said shaft. When the seat frame has been moved to the desired point, the nuts 17 are again tightened up. The desk frame 2 is adjusted in height in a similar manner, the nuts 25 being slackened, the shaft 26 rotated to bring the desk frame into the desired position, and said nuts tightened to hold the desk in such position.

While I have herein illustrated my invention as applied to a combined school desk and seat, it is obvious that certain features of the invention are applicable to separate seats, such as opera chairs, and to various classes of adjustable furniture. It is also apparent that many changes may be made in the construction and arrangement of the parts making up the present embodiment, without departing from the spirit and scope of my invention as defined in the appended claims; wherefore I desire not to limit myself to the precise details herein set forth.

I claim as my invention:

1. In a device of the character described, the combination with a pair of spaced standards, each having two guide channels formed upon its inner face, of a seat portion comprising a pair of side members, elongated outstanding slotted guide panels carried by said side members and adapted to enter the guide channels of the standards, a desk portion, elongated, vertical and outstanding slotted guide panels carried by the desk portion, adapted to enter the guide channels, binding bolts passing through the standards and the slots of the desk and seat portion, adapted to bind said portions against movement with relation to the standards, vertical racks formed upon the rear faces of the side members of the seat portion, there being alined openings formed in the side members of the desk portion, an angular shaft, a pair of pinions each comprising a central toothed portion, an annular portion upon each side of the toothed portion and an angular head, said angular heads of the pinions lying outside of the side members of the desk portion, one of said annular portions of each pinion being journaled in one of the said openings of the desk portion, members secured to the inner faces of the desk portion and engaging the other annular portions of the pinions, said racks projecting beyond the inner face of the seat portion to form outstanding ribs, and guide members carried by the desk portion and engaging said rib.

2. In a device of the character described the combination with a pair of spaced standards having vertical guide channels formed upon their inner faces, of a seat portion comprising a pair of side members, elongated outstanding guide panels carried by said side members adapted to enter the guide channels of the standards, a desk portion, elongated vertical and outstanding guide panels carried by the desk portion adapted to coact with the guide channels of the standards, means for binding both the desk portion and the seat portion against movement with relation to the standards, vertical racks formed upon the rear faces of the side

members of the seat portion, there being alined openings formed in the side members of the desk portion, pinions meshing with said racks and journaled in said openings, an angular shaft upon which said pinions are mounted, said pinions having angular portions, adapted to be engaged by a wrench, which lie upon the outer sides of the side members of the desk portion, annular portions integral with the pinions upon the inner sides thereof, rings encircling said annular portions and means for securing said rings to the inner faces of the side members of the desk portion, said racks projecting beyond the inner faces of the seat portion to form an outstanding rib, and a guide lug carried by the upper part of the desk portion and engaging behind said rib.

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