R. N. GAGE.

ADJUSTABLE CHAIR.

APPLICATION FILED NOV. 26, 1915.

1,271,561.

Patented July 9, 1918.

2 SHEETS—SHEET 1.

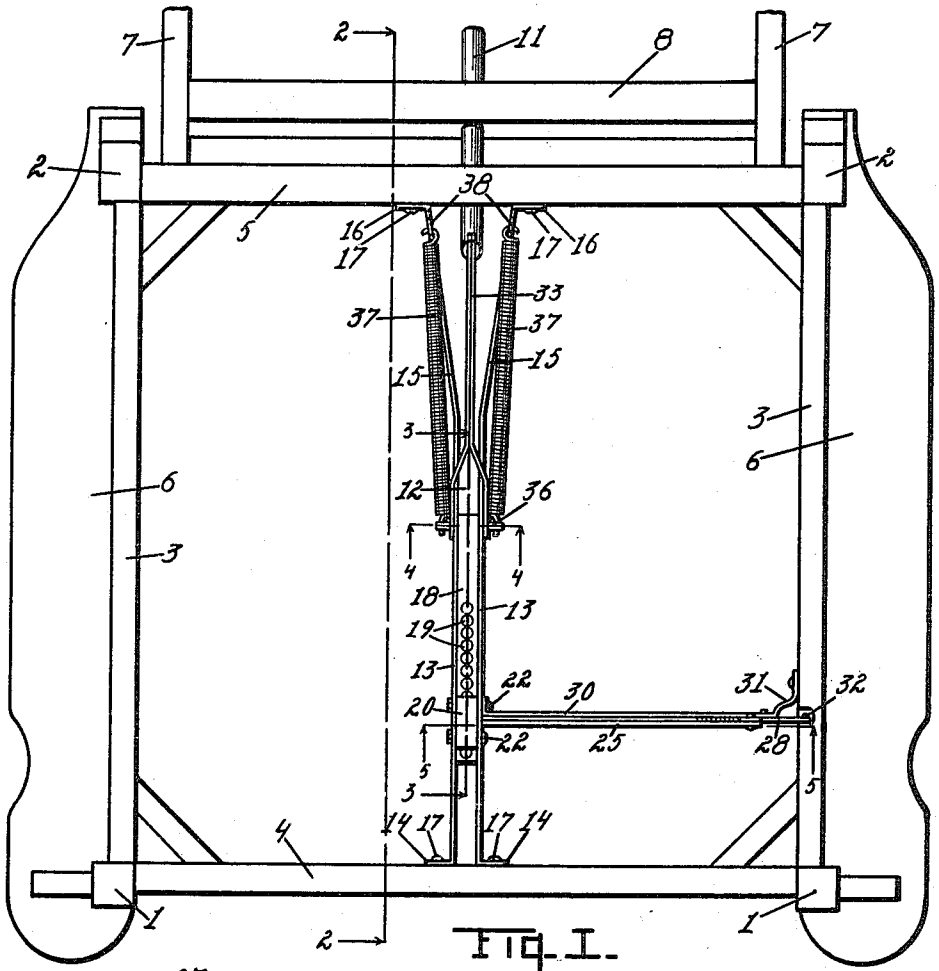


FIG. I.

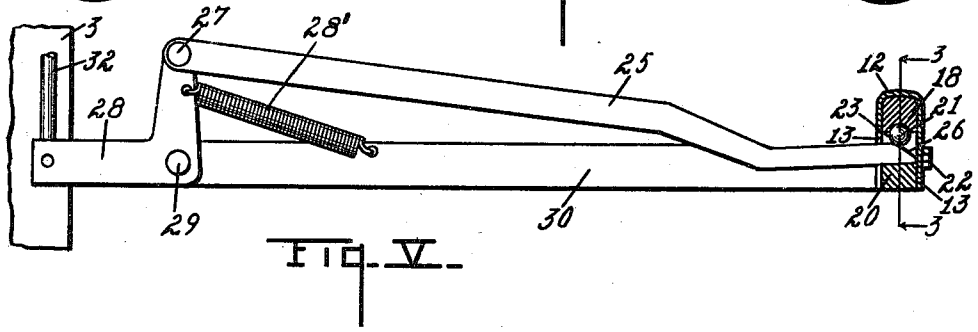


FIG. V.

WITNESSES:

L. C. Blake.

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2 SHEETS—SHEET 2.

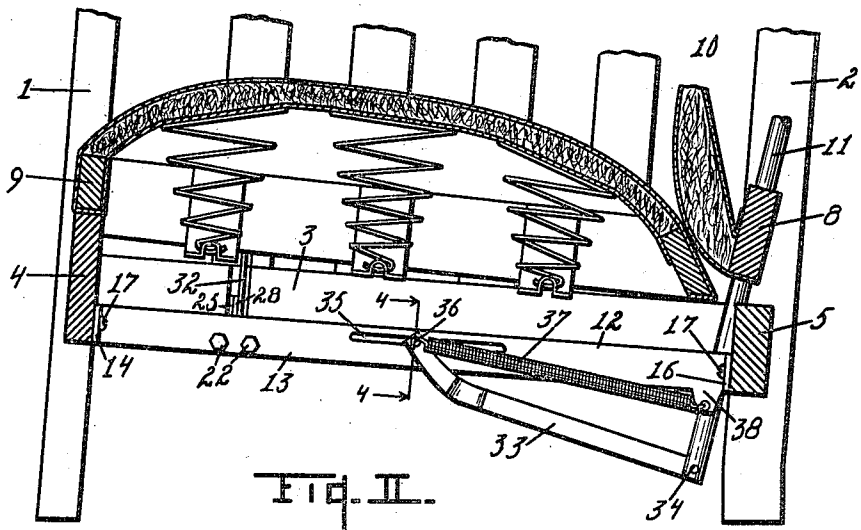


FIG. II.

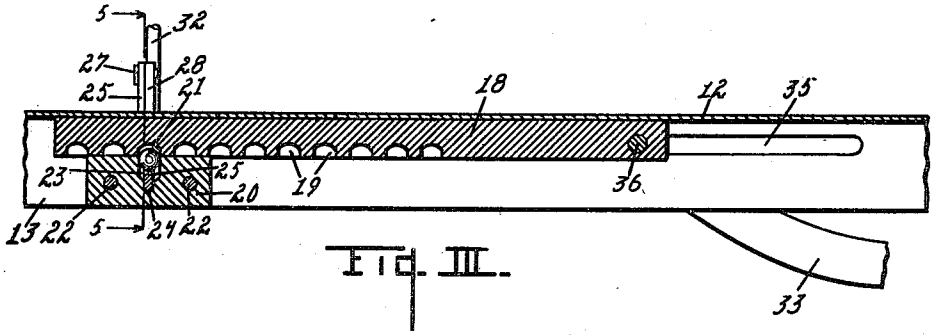


FIG. III.

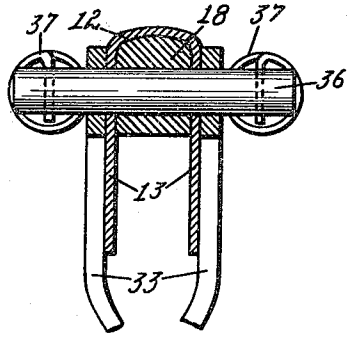


FIG. IV.

WITNESSES:

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UNITED STATES PATENT OFFICE.

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ADJUSTABLE CHAIR.

1,271,561. Specification of Letters Patent. Patented July 9, 1918.

Application filed November 26, 1915. Serial No. 63,514.

To all whom it may concern:

Be it known that I, ROY N. GAGE, a citizen of the United States, residing at Sturgis, Michigan, have invented certain new and useful Improvements in Adjustable Chairs, of which the following is a specification.

This invention relates to improvements in adjustable chairs.

My improvements relate particularly to adjustable chairs of the type shown in the patent to Borgart No. 1,087,526, dated Feb. 17, 1914, and is in some respects an embodiment of and an improvement upon certain features of the structure there illustrated.

The main object of this invention is to provide in a chair having an adjustable back a metallic fixture extending between and adapted to be mounted as a unit on the front and rear rails of the chair frame, said fixture also constituting a brace for the chair frame.

Further objects, and objects relating to details and economies of construction and operation will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure constituting a preferred embodiment of my invention is illustrated in the accompanying drawing forming a part of this specification, in which:

Figure I is an inverted view of a chair embodying the features of my invention, the seat and back cushions being omitted and a portion of the back broken away.

Fig. II is a detail vertical section of the structure shown in Fig. I on a line corresponding to the line 2—2 of Fig. I.

Fig. III is an enlarged detail view partially in vertical section on a line corresponding to line 3—3 of Fig. I.

Fig. IV is an enlarged detail view showing further details of the back supporting mechanism partially in section on a line corresponding to line 4—4 of Figs. I and II.

Fig. V is a detail of the actuating mechanism partially in section on a line corresponding to line 5—5 of Figs. I and III.

In the drawing similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing 1, 1 represents the front posts and 2, 2 the rear posts which are extended to form the front and rear legs of the chair. The posts are connected by the side rails 3, front rail 4 and rear rail 5, thus forming the main frame of the chair. On the upper ends of the posts are arms 6 which are in effect part of the main frame.

The back comprises side rails 7 and connecting cross bars 8. This back is pivotally mounted on the frame, the back pivots not being shown as suitable pivots are well known in the art.

The seat, designated generally by the numeral 9, is of a suitable structure adapted to rest on the main frame. The back is in practice provided with a suitable cushion 10. The back is provided with an arm 11 projecting downwardly within the frame in front of the rear rail 5. The back adjusting and supporting means comprises a casing and supporting member 12 which is preferably formed of sheet metal and channel-shaped in cross section to provide spaced side members 13, as best shown in Fig. IV.

The casing member 12 is provided with laterally turned attaching ears 14 at its front end and with diverging arms 15 at its rear end terminating in laterally turned attaching ears 16. The casing member is arranged between the front and rear rails of the frame and is secured thereto by screws 17 through its said attaching ears. The casing member being formed of metal and shaped as stated, constitutes an effective supporting bar and brace for the frame. Supported within and guided by the casing member is a slide 18 having a plurality of ball seats 19 in its under side. The slide has preferably a sliding fit within the top of the casing member as illustrated.

A retaining member 20 for the clutch or pawl ball 21 is arranged between and secured to the side members of the casing member by means of the bolts 22. The retaining member is preferably arranged so as to constitue a support for the slide. See Fig. III. The retaining member has a chamber 23 for the ball opening at the top and a transverse slot or way 24 below the chamber and opening into the same so that the actuating member 25 may be actuated in

the slot to raise the ball into engagement with the slide as shown in Figs. III and V.

The actuating member 25 is provided with a cam or beveled end 26, see Fig. V, so that when it is retracted, the ball drops into its chamber out of engagement with the slide and when it is actuated the ball is readily lifted into engagement with the slide. The actuating member is in the form of a bar, its outer end being pivoted at 27 to one arm of the bell crank lever 28, which is pivotally mounted at 29 on the cross bar 30. An actuating spring 28′ is connected to the upwardly projecting arm of the bell crank lever 28. The inner end of this cross bar is secured to the casing member by one of the bolts 22. Its outer end is secured to the side rail, it being provided with a laterally extending attaching portion 31. The bell crank 28 is actuated by the push rod 32 which may be extended through one arm of the chair as shown in the Borgart patent referred to.

The slide is connected to the arm 11 by means of the link 33, one end of which is pivotally connected to the arm at 34 and the other is bifurcated to embrace the slide, as shown in Figs. II and IV. The arm 11 swings between the arms 15 of the casing members. The casing member has longitudinal slots 35 in its sides to receive a pin 36 arranged through the slide and through the arms of the link, thereby pivotally connecting the link to the slide.

To assist in returning the back to its forward position, I provide coiled springs 37, the front ends of which are connected to the pin 36 and the rear ends to downwardly projecting ears 38 on the arms 15 of the casing member. The connecting of the springs to the casing member is of advantage in that it permits the casing member and its adjusting mechanism being substantially assembled as a unit before the same is applied to the chair frame. The springs may, however, if desired, be attached to the chair frame as shown in the Borgart patent.

With the parts thus arranged, the back is effectively supported for adjustment. The casing member may be readily formed as a sheet metal stamping and as stated extends between the front and rear rails, being secured at its ends to these rails and serves to brace and strengthen the frame work of the chair as well as constituting a casing and supporting member for the adjusting mechanism.

I have illustrated and described my improvements in a simple and practical embodiment. I have not attempted to illustrate or describe various modifications which I contemplate as I believe the disclosure will enable those skilled in the art to which my invention relates to embody or adapt the same as conditions or taste may dictate. I desire to be understood as claiming my improvements specifically in the form illustrated as well as broadly within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a chair the combination of a frame comprising front and rear rails, an adjustable back, a channel-shaped sheet metal casing member having diverging arms at its rear end, said member being disposed between and secured to said front and rear rails facing downwardly, a downwardly projecting arm on said back disposed to swing between said arms of said casing member, a slide supported and guided within said casing member and having ball seats in its under side, a link pivotally connected to said arm on said back and to said slide, a ball retaining member mounted within said casing below said slide and constituting a support therefor, a clutch ball disposed in said ball retaining member to coact with said slide, an actuating member disposed through one side of said casing member to coact with said ball, an actuating spring for said actuating member, and means for retracting said actuating member.

2. In a chair, the combination of a frame comprising front and rear rails, an adjustable back, a channel-shaped casing member extending between and secured at its ends to said front and rear rails facing downwardly, a slide member operatively connected to said back and slidably supported within said casing member, a clutch mechanism comprising a clutch ball adapted to coact with said slide member, a retaining member for said ball mounted below said slide member and constituting a support therefor, and a ball actuating member projecting into said ball retaining member to lift said ball in engagement with said slide.

3. In a chair the combination of a frame comprising front and rear rails, an adjustable back, a sheet metal casing member having diverging arms at its rear end, said member being disposed between and secured to said front and rear rails facing downwardly, a downwardly projecting arm on said back disposed to swing between said arms of said casing member, a slide supported and guided within said casing member, and means mounted on said casing member to coact with said slide for adjustably supporting said back.

4. In a chair the combination of a frame comprising front and rear rails, an adjustable back, a metal casing member extending between and connected at its ends to said front and rear rails, a slide member operatively connected to said back and slidably supported within said casing member, and

means carried by said casing member and coacting with said slide member for holding said back in its adjusted positions.

5. In a chair the combination of a frame, an adjustable back, a casing member extending between and secured to the front and rear members of said frame, a slide member supported within said casing member and operatively connected to said back, and means carried by said casing for adjustably securing said slide member to said casing member.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

ROY N. GAGE. [L. S.]

Witnesses:
E. K. FORREST,
F. T. SMITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."