Dec. 16, 1924. 1,519,216

R. E. MURPHY

CHAIR

Filed March 26, 1924

Fig. 1.

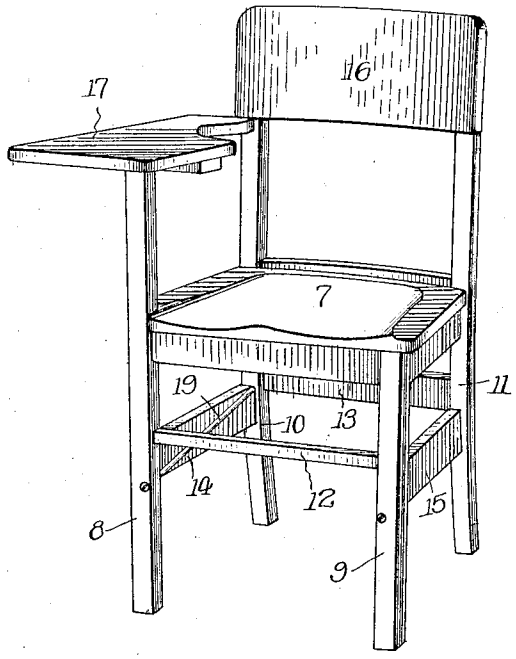


Fig. 3.

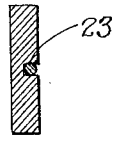


Fig. 2.

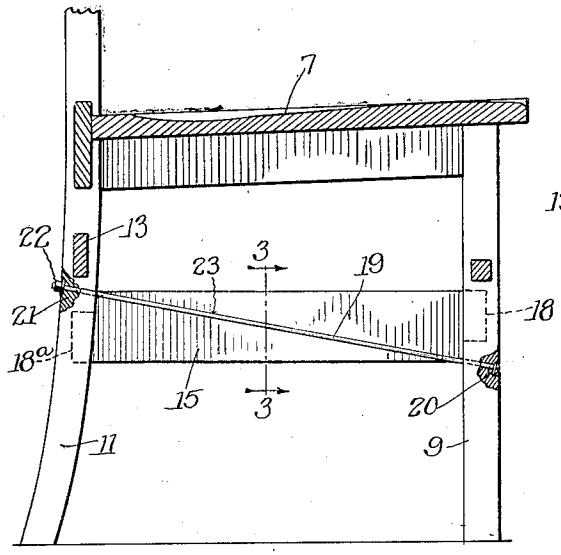
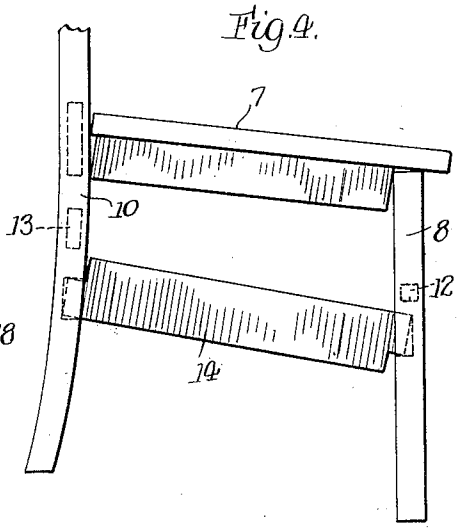


Fig. 4.



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Patented Dec. 16, 1924. 1,519,216

UNITED STATES PATENT OFFICE.

RALPH E. MURPHY, OF TOPEKA, KANSAS.

CHAIR.

Application filed March 26, 1924. Serial No. 701,890.

To all whom it may concern:

Be it known that I, RALPH E. MURPHY, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented a certain new and useful Chair, of which the following is a specification.

The object of this invention, generally stated, is to provide a chair of improved construction adapted more effectually to connect the front and rear legs whereby to resist distortional strains.

In the accompanying drawings I have shown for purposes of illustration, my invention as applied to a student's chair of a well known character.

Figure 1 is a perspective view of such a chair.

Fig. 2 is a fragmentary vertical sectional view through the lower or main portion of the chair.

Fig. 3 is a vertical section taken in the plane of line 3—3 of Fig. 2.

Fig. 4 is a fragmentary side view of the chair showing the parts in the distorted relation which they tend to assume under the strain of use.

The chair shown comprises a seat 7 supported upon front legs 8 and 9 and rear legs 10 and 11 with suitable connecting bars or rails 12, 13, 14 and 15 between the several legs, all in the usual manner. The rear legs 10 and 11 are extended upwardly above the seat, also in accordance with usual practice, to form the chair back which includes a cross member 16. The right front leg 8 is also extended upwardly above the seat to form a support for a side arm rest or desk 17, the rear end of which is fastened to the back.

The side rails 14 and 15 have their opposite ends mortised into the front and rear legs substantially in accordance with the ordinary construction, the tongues or tenons being indicated at 18 and 18a. Usually these joints are glued and sometimes additional fastening means, such for example as bolts, are employed in order to strengthen the construction.

In Fig. 4 I have illustrated the relation which the parts of the chair tend to assume when subjected to the ordinary strain between the back and the main body or seat portion. Thus it will be noted that pressure upon the back in a direction away from the seat tends to distort the body of the chair from an approximately rectangular parallelogram into a rhomboid. To reinforce the chair I employ tie rods between the front and rear legs, and in order to resist the distortional tendency above pointed out most effectually, I arrange the tie rods in such a way as directly to oppose the distorting force. Thus instead of arranging the tie rods in a perpendicular relation, I incline them upwardly and rearwardly from the front legs to the rear legs, thus more directly opposing the tendency of the back when under pressure to pull away from the seat as indicated in Fig. 4, with a coincident loosening of the other joints.

The tie rods thus disposed are indicated at 19, the front headed ends thereof being entered through the front legs as at 20 and the rear ends being entered through the rear legs as at 21 and provided with tightening nuts 22. As shown in Figs. 1 and 3, I provide grooves 23 in the inner faces of the side rails 14 and 15 to receive the rods 19 and preferably each such rail is made of a width such that its diagonal shall substantially coincide with the rod entered in the groove 23 and thus completely conceal the rod from an outside view-point of the chair. As shown clearly in Fig. 2, the tongues 18—18a are preferably cut away adjacent the point of the passage of the rod into the respective legs.

It will be seen that I have provided a construction which is especially adapted for use in chairs which are subjected in use to severe strains, such for example as chairs of the student type, and it will also be apparent that the improved construction may be employed without adding perceptibly to the cost of manufacture while adding greatly to the life of the chair.

I claim as my invention:

1. A chair having, in combination with front and rear legs, side rails connecting said legs on each side of the chair, said rails having upwardly and rearwardly extending

grooves in their inner sides, and tie rods having their opposite ends anchored in the front and rear legs of the chair and lying in said grooves.

2. A chair having, in combination, front and rear legs, a side rail connecting said legs and made of substantial width, and a tie rod having its opposite ends anchored in the front and rear legs at the lower and upper edges of the rail respectively.

In testimony whereof, I hereunto affixed my signature.

RALPH E. MURPHY.