Oct. 23, 1956 J. KRIGER ET AL 2,767,778

ADJUSTABLE DUAL-PURPOSE CHAIR

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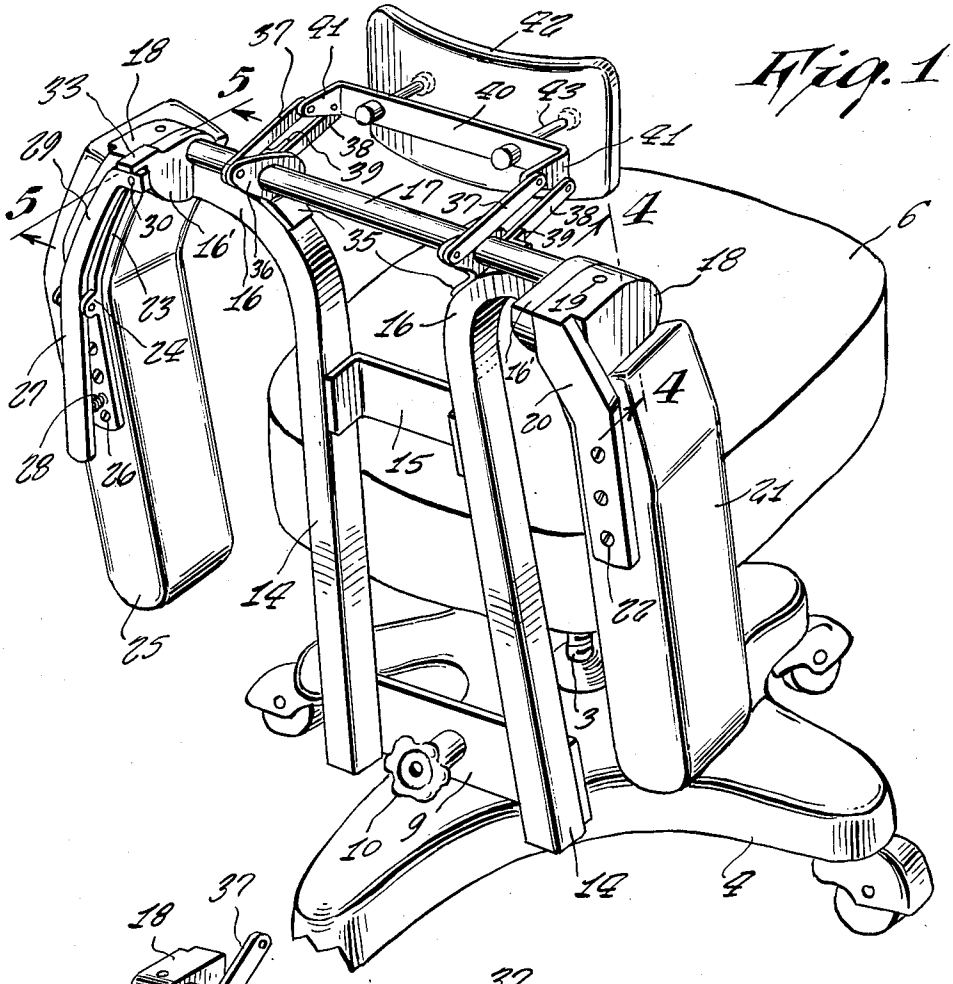


Fig. 1

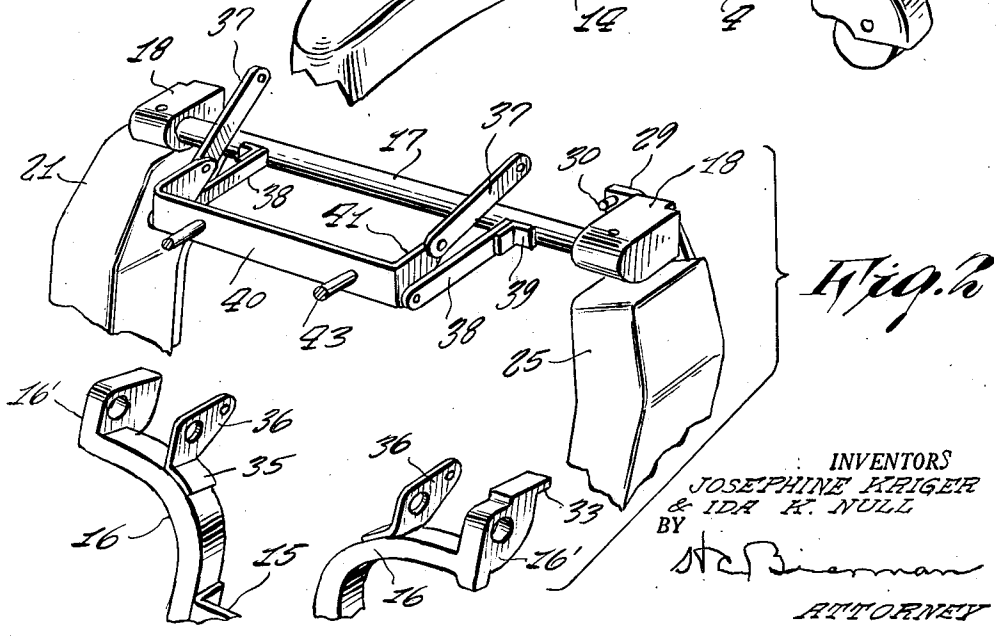


Fig. 2

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Fig. 3

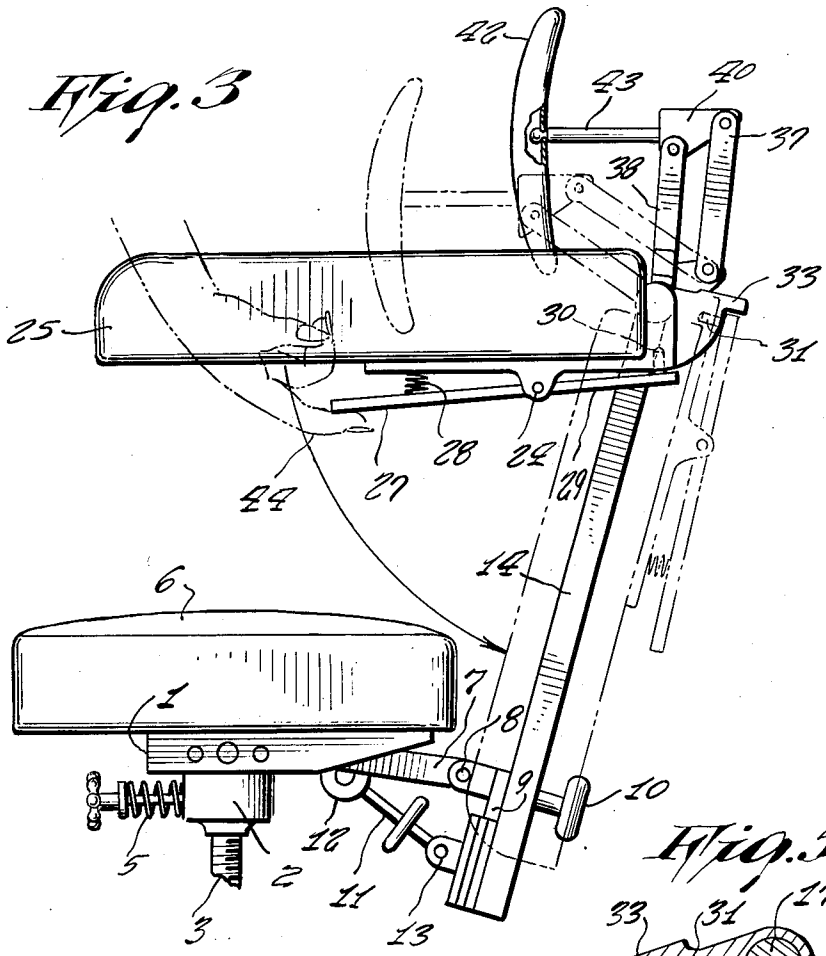


Fig. 5

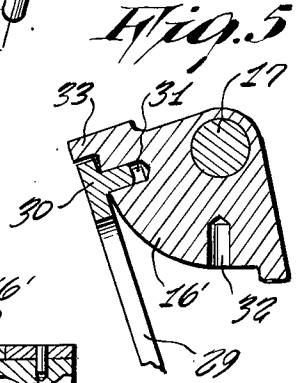
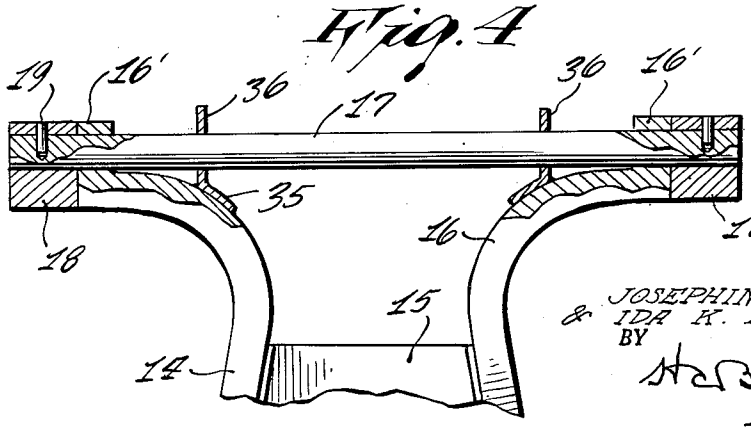


Fig. 4



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ADJUSTABLE DUAL-PURPOSE CHAIR

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Application June 6, 1955, Serial No. 513,548

11 Claims. (Cl. 155—158)

The present invention is directed to a structure of a chair which will permit it to be used for a plurality of purposes and which include arms which may be raised and lowered. The present application is a modification of that described in our co-pending application Serial No. 445,844, filed July 26, 1954.

Previously it has been suggested that chairs might be made adjustable, and various constructions of this type have been on the market. Most of them have to do with reclining features so that the chair could be used in an upright position for normal purposes and then could be adjusted so that it formed a lounge or the like. However, such constructions do not lend themselves for the present purposes.

Another type of chair in the prior art is a so-called deck or beach chair. Such a chair has arms pivoted to the back and the latter is adjustable into several positions. However, the arms remain substantially horizontal and cannot be removed out of the way for use as a straight chair.

There have also been proposed chairs having adjustable backs relative to the seat thereof. In one such construction the backrest was capable of being tilted on a horizontal axis. However in various positions of the back-rest it was uncomfortable for the user. Such a chair had no fixed support for the shoulders, and therefore it became tiring to sit in such a chair for any length of time. Such constructions had a sliding frame or back so that it could be adjusted forwardly or rearwarly, but in some positions there was an unbalance introduced into the chair.

The present invention is intended and adapted to overcome the difficulties and disadvantages inherent in prior chairs of the type described, it being among the objects of the present invention to provide a chair which is adjustable in such a manner as to fit into the back of the user to give complete and relaxing support.

It is also among the objects of the present invention to provide a chair having a combination of an arm-rest and the adjustable feature thereof so that the comfort of the user shall be increased.

It is further among the objects of the present invention to provide a structure wherein there is a cooperative relation between the back-rest and the arms so that when the user desires to place the arms out of operative position, there is simultaneus movement of the back-rest.

In practicing the present invention there is provided a chair having legs and a seat together with a back secured thereto, the construction thereof being any of those already known and in use. The improvement of the present invention resides in the use of a horizontal shaft which is so mounted on the back of the chair as to be capable of oscillation. A pair of arms are fastened to the shaft and there is provided a back support which is linked to the shaft and arms. The linkage is such that when the arms are in the horizontal or operative position, the back support is retracted. Conversely, when the arms are out of the way, the back support is in a forward position where it provides adequate support to the user when the user is sitting in an upright position.

In the accompanying drawing constituting a part hereof and in which like reference characters indicate like parts,

Fig. 1 is a perspective view of a chair made in accordance with the present invention, the arms being shown in the out of the way position;

Fig. 2 is a fragmentary exploded view of the mounting of the arms showing details of construction thereof;

Fig. 3 is a side elevational view of the chair with the arms in the horizontal position.

Fig. 4 is a fragmentary vertical cross-sectional view showing the mounting of the shaft, some parts being shown in elevation, and

Fig. 5 is a vertical cross-sectional view taken along line 5—5 of Fig. 1.

The chair consists of a base **1** having a bracket **2** secured thereto holding a depending screw **3** which operates in bottom **4** of the chair for adjusting the height of the seat **6**. A bar **7** extending from base **1** is linked at **8** to the back **9**, having a screw **10** for adjustment purposes. Pivoted at **12** and **13** between base **1** and back **9** is a link **11**. Such a construction is well-known in the art.

Extending upwardly from back **9** is a pair of bars **14** which are joined together by plate **15** in order to impart rigidity thereto. The upper ends of bars **14** are flared as shown at **16**. The ends **16'** thereof constitute bearings in which shaft **17** is journalled. Blocks **18** have openings to receive the ends of shaft **17** which is held rigidly by pins **19**. A plate **20** integral with one of blocks **18**, as shown in Fig. 1, has an arm **21** secured thereto by screws **22**. A bracket **23** is secured to the other block **18** and has ears **24** formed thereon. Arm **26** is secured to said bracket by screws **26**. A lever **27** pivoted at **24** is biased upwardly by spring **28**. The other end of lever **29** carries a latch **30** which is adapted to be held in openings **31** or **32** in member **16'**. A stop **33** is formed at opposite points in member **16'** to prevent lever **29** from moving beyond openings **31** and **32**.

Welded to extensions **16** at **35** are plates **36** having openings therein. Links **37** are pivoted on plates **36** and links **38** have one end **39** welded to shaft **17**. U-shaped bracket **40** has wings **41** to which links **37** and **38** are pivoted. A back support **42** is held on member **40** by bolts **43** which permit adjustment of the position of support **42**.

In the operation, assuming that the chair is in the position shown in Fig. 3, the user may sit in the chair in a relaxed position, resting his arms on arms **21** and **25**. Back support **42** is in such a position as to support the back of the user. When it is desired to place the arms out of position, lever **27** is pressed by finger **44**, releasing latch **30** from the opening **32** and the action of gravity will cause the arms to move downwardly, as shown by the arrow in Fig. 3, until latch **30** engages opening **31**. Simultaneously back support **42** is moved forward into the position shown in dotted lines on Fig. 3, and now supports the user in an upright or working position.

We claim:

1. In a chair having legs, a seat held thereon, a back secured to said seat, and arms attached to said back, the improvement which includes a substantially horizontal shaft mounted for oscillation on said back, said arms being fastened to said shaft, a back support, at least one link pivoted to said support and fixed onto said shaft, at least one additional link pivoted to said support and to said back in parallel relation with said first link, whereby when said arms are in horizontal position said support is elevated and in retracted position and when said arms are in downward position said support is lowered and in forwardly extended position.

2. In a chair having legs, a seat held thereon, a back secured to said seat, and arms attached to said back, the improvement which includes a substantially horizontal

shaft mounted for oscillation on said back, said arms being fastened to said shaft, a back support, at least one link pivoted to said support and fixed onto said shaft, at least one additional link pivoted to said support and to said back in parallel relation with said first link, whereby when said arms are in horizontal position said support is elevated and in retracted position and when said arms are in downward position said support is lowered and in forwardly extended position, a latch mounted on one of said arms and means thereon cooperating with said back to lock said arms and shaft in adjusted positions.

3. In a chair having legs, a seat held thereon, a back secured to said seat, and arms attached to said back, the improvement which includes a substantially horizontal shaft mounted for oscillation on said back, said arms being fastened to said shaft, a back support, at least one link pivoted to said support and fixed onto said shaft, at least one additional link pivoted to said support and to said back in parallel relation with said first link, whereby when said arms are in horizontal position said support is elevated and in retracted position and when said arms are in downward position said support is lowered and in forwardly extended position, a lever mounted on one of said arms, a pin on one end of said lever, and a plurality of openings on said back for receiving said pin.

4. In a chair having legs, a seat held thereon, a back secured to said seat, and arms attached to said back, the improvement which includes a substantially horizontal shaft mounted for oscillation on said back, said arms being fastened to said shaft, a back support, at least one link pivoted to said support and fixed onto said shaft, at least one additional link pivoted to said support and to said back in parallel relation with said first link, whereby when said arms are in horizontal position said support is elevated and in retracted position and when said arms are in downward position said support is lowered and in forwardly extended position, said back having spaced bearings at the upper part thereof, said shaft being journalled in said bearings.

5. In a chair having legs, a seat held thereon, a back secured to said seat, and arms attached to said back, the improvement which includes a substantially horizontal shaft mounted for oscillation on said back, said arms being fastened to said shaft, a back support, at least one link pivoted to said support and fixed onto said shaft, at least one additional link pivoted to said support and to said back in parallel relation with said first link, whereby when said arms are in horizontal position said support is elevated and in retracted position and when said arms are in downward position said support is lowered and in forwardly extended position, a pair of spaced plates on said back, said shaft extending through said plates, said second links being pivoted to said plates.

6. In a chair having legs, a seat held thereon, a back secured to said seat, and arms attached to said back, the improvement which includes a substantially horizontal shaft mounted for oscillation on said back, said arms being fastened to said shaft, a back support, at least one link pivoted to said support and fixed onto said shaft, at least one additional link pivoted to said support and to said back in parallel relation with said first link, whereby when said arms are in horizontal position said support is elevated and in retracted position and when said arms are in downward position said support is lowered and in forwardly extended position, a plate on which said support is mounted, extensions on said plate, said links being pivoted to said extensions.

7. In a chair having legs, a seat held thereon, a back secured to said seat, and arms attached to said back, the improvement which includes a substantially horizontal shaft mounted for oscillation on said back, said arms being fastened to said shaft, a back support, at least one link pivoted to said support and fixed onto said shaft, at least one additional link pivoted to said support and to said back in parallel relation with said first link, whereby when said arms are in horizontal position said support is elevated and in retracted position and when said arms are in downward position said support is lowered and in forwardly extended position, a latch mounted on one of said arms and means thereon cooperating with said back to lock said arms and shaft in adjusted positions, said latch being attached to the under side of said arm.

8. In a chair having legs, a seat held thereon, a back secured to said seat, and arms attached to said back, the improvement which includes a substantially horizontal shaft mounted for oscillation on said back, said arms being fastened to said shaft, a back support, at least one link pivoted to said support and fixed onto said shaft, at least one additional link pivoted to said support and to said back in parallel relation with said first link, whereby when said arms are in horizontal position said support is elevated and in retracted position and when said arms are in downward position said support is lowered and in forwardly extended position, blocks to which said shaft is fixed, said arms being fixed to said blocks.

9. In a chair having legs, a seat held thereon, a back secured to said seat, and arms attached to said back, the improvement which includes a substantially horizontal shaft mounted for oscillation on said back, said arms being fastened to said shaft, a back support, at least one link pivoted to said support and fixed onto said shaft, at least one additional link pivoted to said support and to said back in parallel relation with said first link, whereby when said arms are in horizontal position said support is elevated and in retracted position and when said arms are in downward position said support is lowered and in forwardly extended, position, a lever mounted on one of said arms, a pin on one end of said lever, and a plurality of openings on said back for receiving said pin, and a stop on said back to limit the movement of said lever and arms.

10. In a chair having legs, a seat held thereon, a back secured to said seat, and arms pivoted on said back, the improvement which includes a back support operatively connected to said arms, means for latching said arms in substantially horizontal and downward positions, said support being forward when said arms are downward and being retracted when said arms are horizontal.

11. In a chair having legs, a seat held thereon, a back secured to said seat, and arms pivoted on said back, the improvement which includes a back support operatively connected to said arms, means for latching said arms in substantially horizontal and downward positions, links joining said support and arms, said support being forward when said arms are downward and being retracted when said arms are horizontal.

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