Jan. 20, 1959 P. POULIN 2,869,623

CHAIR WITH LIFTABLE ARM RESTS

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Fig. 1

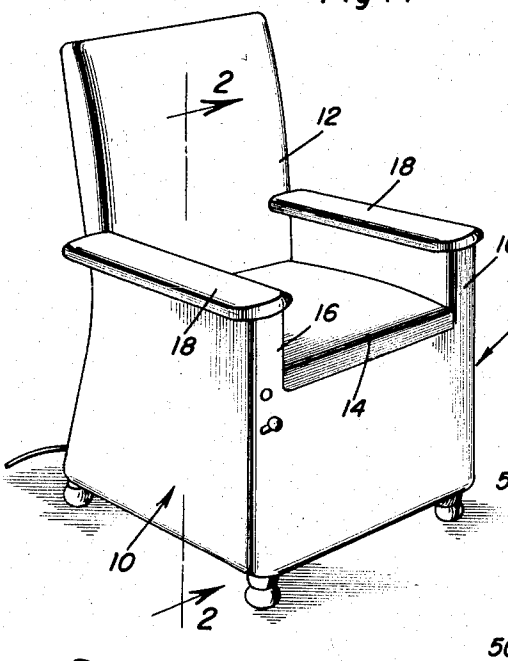
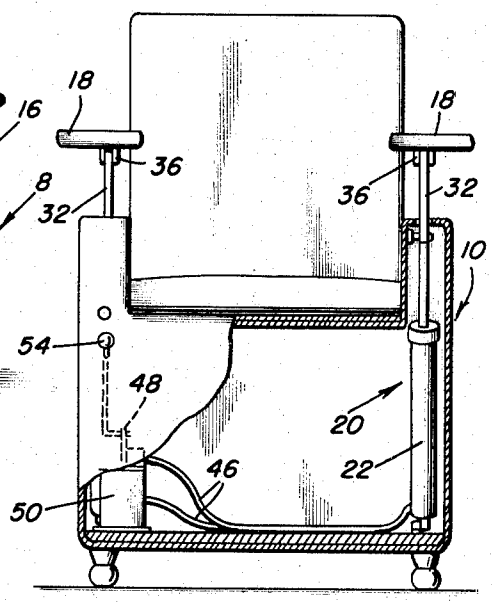


Fig. 3



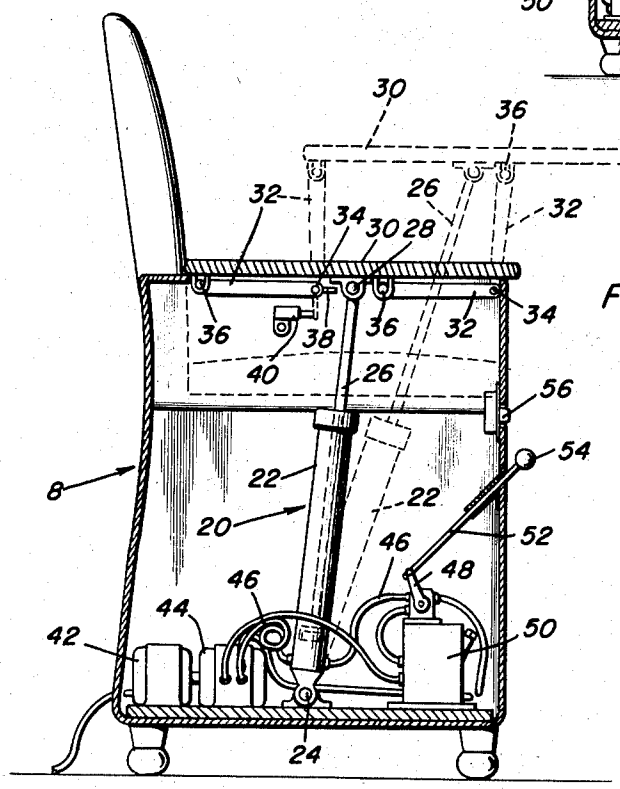


Fig. 2

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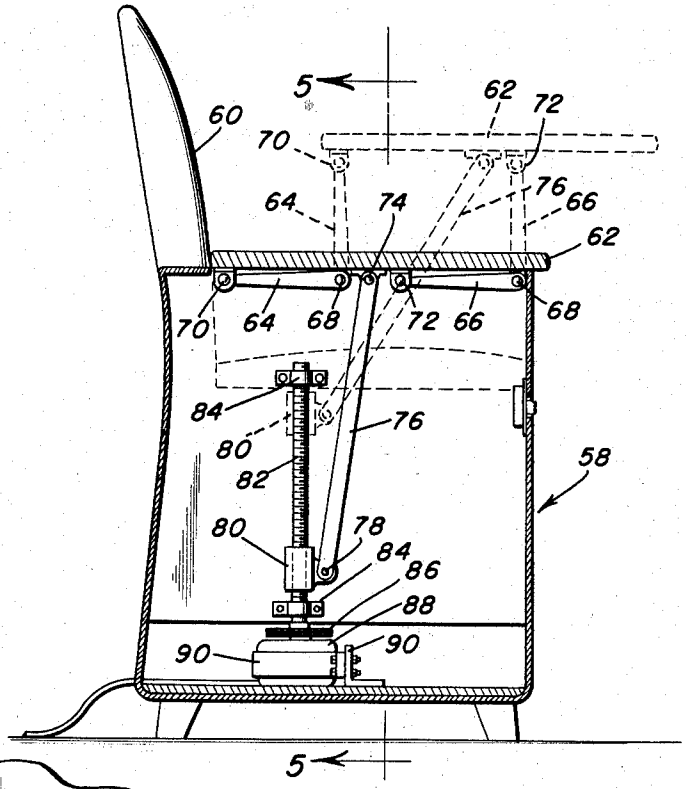
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Fig. 4



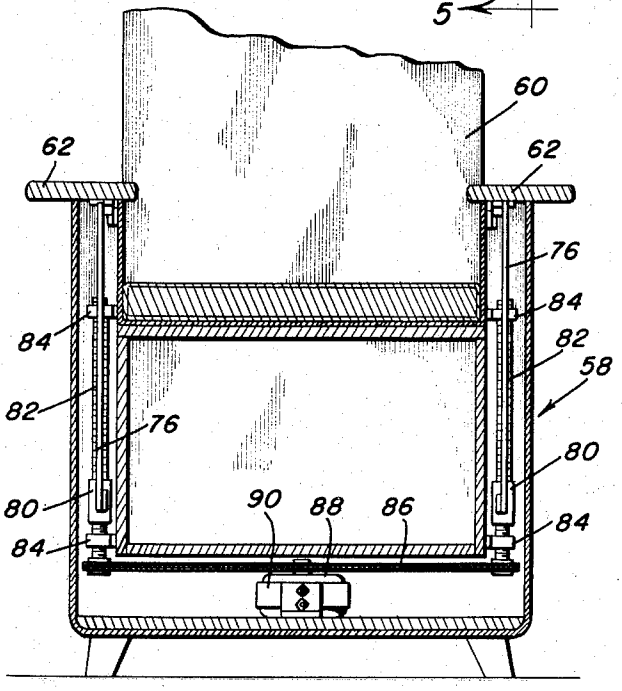


Fig. 5

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CHAIR WITH LIFTABLE ARM RESTS

Peter Poulin, Los Angeles, Calif.

Application June 3, 1957, Serial No. 663,100

4 Claims. (Cl. 155—198)

The present invention relates to certain new and useful improvements in so-called armchairs, that is, any chair, usually of the upholstered type, which is provided with arms and which, in keeping with the adaptations herein involved have liftable and lowerable arm rests.

More specifically the concept has to do with a pair of mechanically raisable and lowerable arm rests which may be caused to elevate themselves a limited distance and then move forwardly and away from the back rest to, in this manner, assist an aged person, or an invalid to more easily rise from a sitting position in a chair to a standing position in readiness for walking.

In carrying out the invention the arm rests atop the respective arms of the given chair are linked in one manner or another to accomplish the forwardly and upwardly moving position and to further assist, in a reverse manner, in moving the arm rests toward the back rest and causing the same to recede to their normal sitting-height positions.

Stated somewhat more explicitly jacks are installed in each arm construction and the jacks simply raise and lower the arm rests in a practical and reliable manner. In one embodiment hydraulic jacks may be and are preferably used. In another embodiment the jacks are purely mechanical, being of the so-called screw type.

Other objects, features and advantages will become more readily apparent from the following description and the accompanying drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the views:

Fig. 1 is a perspective view of a chair in which the improved arm rests are installed;

Fig. 2 is a view in section and elevation detailing the jack and also lifting and lowering means for one of the arm rests, this figure being taken on the plane of the line 2—2 of Fig. 1;

Fig. 3 is a front view with portions broken away and shown in section and with the arm rests in their fully elevated occupant lifting positions;

Fig. 4 is a side view with the portions shown in section and elevation and similar to Fig. 2 and showing a modified form of the invention; and

Fig. 5 is a section on the vertical line 5—5 of Fig. 4, looking in the direction of the arrows.

Generically it will be seen that each arm rest is vertically liftable and lowerable, is linked in its down position and is raised and lowered by a jack which is connected thereto and interposed therebetween and the bottom structure of the chair.

In the form of the invention seen for example in Fig. 1 the chair is denoted generally by the numeral 8 and includes a suitable base structure 10, a back rest 12, a seat or cushion 14 and arms 16. The arms are of hollow construction to accommodate the means shown in the drawings. The important thing, however, is that each arm has a horizontal board or equivalent rigid arm rest 18. As shown in Fig. 2 (and it is sufficient to speak of a single arm rest) the jack is denoted at 20 and is a

hydraulic jack and includes a cylinder 22 hinged at its lower end on the base as at 24. The rod 26 of the piston is hingedly bracketed as at 28 to the central bottom side of the liftable and lowerable arm rest 30. Cooperating with the jack are companion suitably aligned and arranged links 32 and these cooperate in proper paired relationship and have their forward ends hingedly mounted in place as at 34. Their other hinged ends 36 are connected with the intermediate and rear end portions, respectively, of the arm rest so that the links operate in the proper paired relationship to assist in not only stabilizing and lifting the arm rest up but moving it forwardly as the occupant is aided in rising from the chair and subsequently moved rearwardly to allow the arm rest to recede to an out-of-the-way position. One link may be provided if desired with a trip finger 38 to engage a plunger in asafety cut-off switch 40 which is included in the wiring system which controls the electric motor 42. The motor is appropriately based in position as shown and serves to operate a fluid pump 44 which is connected by appropriate hose lines or conduits 46 with the valve means 48 atop the fluid containing reservoir 50. A push-pull rod 52 with a suitably located handle 54 serves to enable the user to open and close the valve and consequently operate the reservoir. The numeral 56 is a starting switch for the motor.

If instead of using the hydraulic jack construction one prefers to employ a purely mechanical jack construction this can be done as is seen in the modification depicted in Figs. 4 and 5. Here the base of the chair is denoted at 58, the back rest at 60 and the arm rests 62. Referring to a single arm rest as seen in Fig. 4, the links 64 and 66 are hingedly mounted in place at 68 and are in turn hingedly connected at 70 and 72 to the intermediate and inner end portions, respectively, of the liftable and lowerable arm rest 62. The bracket and hinge means 74 serve to connect the upper end of a lifting and lowering arm 76 to the arm rest. The opposite or lower end of this arm is hingedly connected at 78 to a sleeve 80 operating on a feed screw 82. The feed screw is mounted in supporting brackets 84 and there is a sprocket wheel on the lower portion of the feed screw which is driven by a sprocket chain 86. The sprocket chain in turn is operably driven from an electric motor 88 mounted in a bracket 90.

It will be evident that when the jacks in either case are brought into play for purposes of elevating the arm rests, said arm rests go up a limited distance and then ride forwardly and away from the back rest. The reverse is true when the jacks are lowered as is obvious. In the first instance if the occupant of the chair needs assistance to rise and step out from the chair to assume a standing position the starting switch is pressed and the motor is brought into play and the jacks function by way of the linkage means to bring the arm rests into play. By supporting himself on the arm rests as they ride up the chair occupant is greatly aided in lifting himself, as it were, out of a chair, particularly a low chair such as is often unhandy for the oldster to cope with.

It is believed that the reader upon considering the specification in conjunction with the views of the official drawings, will be able to understand the purpose of the invention, how the construction is organized and used and how the features and advantages naturally come about in practical use. In these circumstances a more extended description is believed to be unnecessary.

Minor changes in shape, size, materials, and rearrangement of parts may be resorted to in actual practice without departing from the spirit of the invention or the scope of the claims.

What is claimed as new is as follows:

1. In an armchair construction, a base, a back rest,

seat means and a hollow arm construction, said arm construction being provided on its upper portion with a horizontal arm rest, a motor driven jack mounted in the hollow portion of said arm, an operating connection between the jack and the central underneath portion of the arm rest, a first link on one side of said operating connection, said link being hinged at its forward end to said base and having its rearward end hingedly attached to the intermediate underneath portion of said arm rest adjacent the central portion of the arm rest, and a second link having its forward end portion hingedly connected to said base and its rearward end portion hingedly connected to the rearward end portion of said arm rest.

2. An armchair including a base with a back rest and seat means and at least one arm construction, said arm construction being provided on its upper portion with a horizontal arm rest, a lifting and lowering jack, one portion of said jack being connected to said base and the other portion being operably connected to an intermediate portion of the arm rest so that the arm rest may be raised and lowered, and link means, there being two links for said arm rest, one link being hingedly mounted on the base at its forward end and hingedly connected at its rearward end to an intermediate portion of the arm rest, the other link being hingedly mounted on the base at its forward end and hingedly connected at its rearward end to the rear end of the arm rest.

3. In an arm chair construction, a base, a backrest, seat means and arm means, said arm means comprising a pair of vertically disposed cooperable arms, each arm

being of hollow construction and provided on an upper portion thereof with a horizontal arm rest, said arm rests collectively considered being adapted to be elevated simultaneously a limited distance and then moved forwardly and away from the back rest, a motor driven jack mounted in the hollow portion of each arm, and an operating connection between each jack and the central underneath portion of the arm rest with which it is cooperable.

4. The structure defined in claim 3 and in combination, linkage means, said means in each instance comprising two links for each arm rest, one link being hingedly mounted on the chair base at its forward end and hingedly connected at its rearward end to an intermediate portion of the arm rest, the other link being hingedly mounted on the base at its forward end and hingedly connected at its rearward end to the rear end of the arm rest so that when the arm rest is lifted it not only assists in elevating the arm of the user but helps the user to move forwardly relative to the chair.

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