

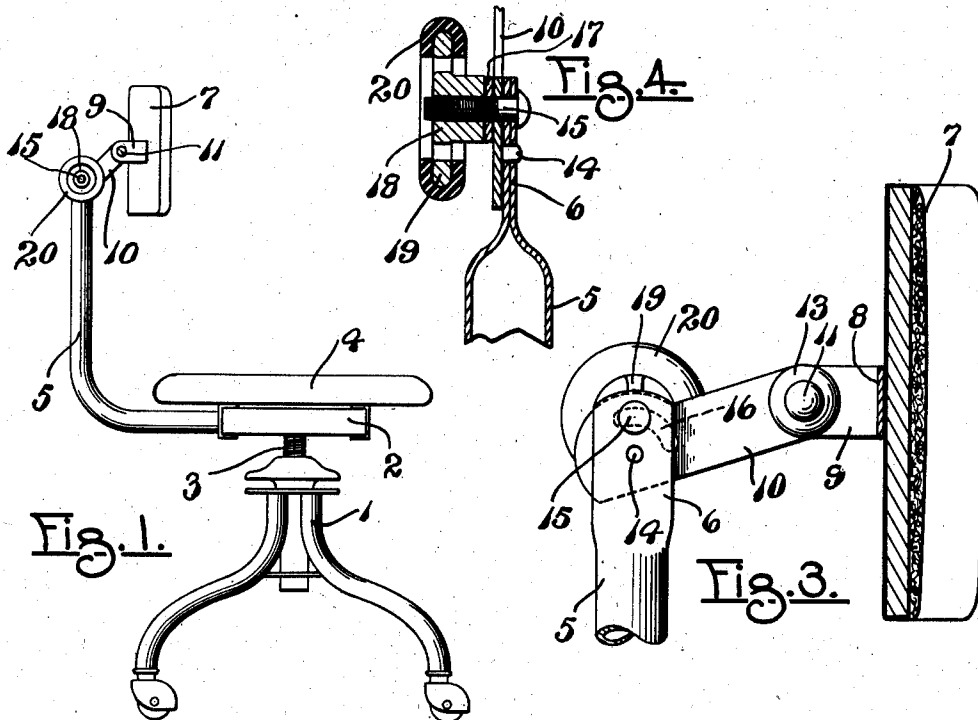
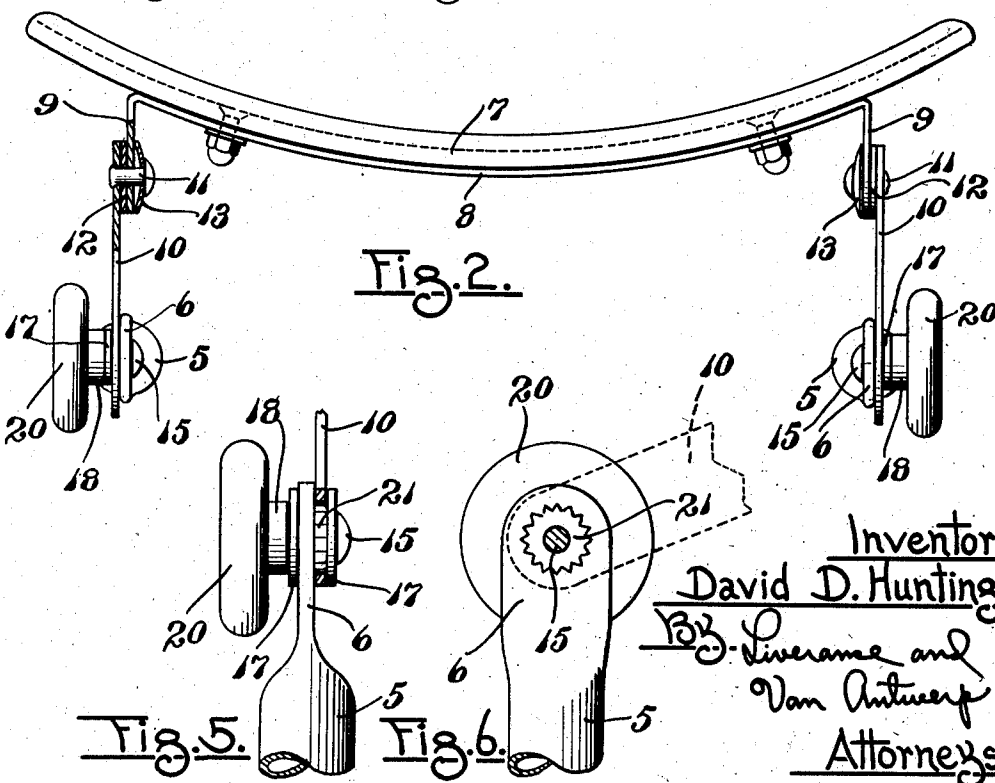
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CHAIR BACK

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CHAIR BACK

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This invention relates to exceedingly simple, practical and effective improvements in adjustable chair backs, especially adapted to office chairs. It is a primary object and purpose of the present invention to provide a back for office chairs which can be readily and quickly adjusted to the person who is to occupy the chair, and in a manner to substantially automatically obtain the best and most perfect adjustment of the back for the one who is to use the chair. A further object of the invention is to provide a construction which is practical, simple and durable, which is of an attractive appearance and which is provided with safeguards against the chair marring walls or furniture should it in movements imparted thereto bring the chair into position where it strikes against such walls or furniture. Many other features of the invention, both as to simplicity of construction and effectiveness in altering the adjustment will be apparent upon an understanding of the invention from the following description, taken in connection with the accompanying drawing, in which:

Fig. 1 is a side elevation of the chair equipped with my invention.

Fig. 2 is an enlarged plan view of the chair back and its adjustable mounting.

Fig. 3 is a fragmentary side elevation and vertical section through the chair back.

Fig. 4 is a vertical section through the connection of one of the adjustable arms by means of which the adjustable back is mounted upon its supporting standards.

Fig. 5 is a fragmentary enlarged rear elevation partly in section of a construction of a different form but equivalent to that shown in Fig. 4, and

Fig. 6 is a partial side elevation and section of the construction shown in Fig. 5.

Like reference characters refer to like parts in the different figures of the drawing.

In Fig. 1 an office chair construction is indicated having a floor engaging support 1 above which is the under framework 2 of a seat mounted for vertical adjustment upon the under support by a screw 3, the details of which need not be entered into as they form no part of the invention. The seat 4 is permanently secured to and carried upon and above the under framework 2.

From such framework 2 two supporting standards 5 extend rearwardly in a horizontal direction for a short distance back of the rear edge of the seat 4, and are then bent to extend upwardly in a substantially vertical direction, as shown. These standards are of hollow tubular form, preferably, and at the upper ends the

tubes are crushed or stamped to make terminal flat portions 6 with two thicknesses of metal against each other. It is on the two terminal portions 6 that the adjustable back is mounted.

The back includes a curved member 7 against which the back of the person using the chair rests. At the rear side of the member 7 a flat bar 8 is securely connected and at each end the bar 8 is provided with a rearwardly turned arm 9. The two arms 9 extend in the general direction of the upper end portions 6 of the supporting rods 5 and are located nearly in the same vertical planes therewith. To each arm 9 a link 10 of flat metal is pivotally connected. A headed pivot pin 11 passes through an arm 9 and the end portion of its associated link 10, and also through a flat washer 12 disposed between said arm 9 and link 10 and a resilient washer 13 of suitable spring material of a dished form as shown in Fig. 2. The shank of the pin 11 is headed over after passing through the link 10, the spring washer 13 being placed under tension whereby the connected parts are held yieldingly against movement but will move about the pivotal axis of the pivot pins 11 upon the application of sufficient force.

The rear ends of the links 10 are each provided with a stud pin 14 (Fig. 4) which passes through and has a pivotal mounting in an opening made through both thicknesses of metal of the flattened portions 6 of the standard 5 on which the link is mounted, one link being mounted upon each of the standards 5. A headed pin 15, the shank of which is screw threaded is fitted into the upper end of each standard 5 and is passed through an arc shaped slot 16 cut in each of the links 10, which links at their rear portions are somewhat increased in width (Fig. 3) in order that the slot 16 may be provided therein. A flat washer 17 is placed over the threaded shank of the pin 15 against the link 10 and the hub 18 of a clamping hand wheel is screwed onto the threaded pin. The hub 18 and the rim 19 of the hand wheel are of metal, preferably, and over the rim a rubber covering 20 is placed. It will be noted in Fig. 1 that the rear portions of this rubber covering are located back of the rear sides of the supporting standards 5. Upon the chair being moved to the rear if it comes to the wall or an article of furniture the first parts which will come thereto are the rubber coverings 20 of the clamping hand wheels 19 insuring that the metal parts of the chair will not strike against and mar the wall or furniture.

With this construction the one who is to use

the chair may readily adjust the back to the most natural and comfortable position. It is done by seating oneself in the chair with the back against the member 7, loosening the clamping hand wheels 19 and then pressing against the back section 7 until it has been adjusted to the most comfortable position, thereupon tightening the clamping hand wheels. The back member 7 is vertically adjusted by the turning of the links 10 about the axis of the stud pins 14, and is adjusted as to inclination to the vertical by turning about the axis of the pivots 11. The links 10, by reason of the slot 16, may be moved between the limits of said slot, in this case being between horizontal and vertical positions.

In Figs. 5 and 6 a slightly modified form of pivotally adjustable connection of the links 10 to the standards 5 is shown. A disk 21 having serrated edges is punched from a link 10 with an opening therethrough to pass the threaded shank of the pin 15. Such disk is welded or otherwise equivalently secured to a side of the upper flattened portion 6 of a standard 5. The headed pin 15 is passed through such disk and the part 6 of the standard and also through two flat washers 17 one bearing against the side of the link 10 and the other against the outer side of the part 6 of the standard, the clamping hand wheel being threaded upon the pin 15 the same as before. In stamping the serrated disk the ends of the serrations are rounded at one side and it is this side that is adapted to enter the complementary serrated opening in the link 10. On loosening the hand wheels the tendency of the standards 5 is to spring outwardly away from the links 10 so that upon a sufficient release of the hand wheels the disks 21 are withdrawn from the openings in the links 10, whereupon the back may be adjusted to the person and then the hand wheels turned to holding position. This relieves the pivotal structure from the duty of holding the links 10 and the upper end portion of the rods 5 entirely by friction, and obviates the necessity of tightening the clamping hand wheels to the degree that is required where the holding engagement is solely by friction. However, both forms of construction are very practical and serviceable and one is the substantial equivalent of the other.

The construction is very practical, effective and useful. The rubber coverings 20 to the clamping hand wheels in addition to their bumper functions also serve as a particularly efficient material for gripping in operating the hand wheels to either clamping or unclamping position.

The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

1. In a chair having a seat with an under frame for the seat upon which the seat is secured, two spaced tubular standards connected to said under frame and extending rearwardly of the seat for a distance and then bent to extend in an upward direction, the upper end portions of said tubular standards being flattened, a link of flat metal having one end portion lying against a side of each of the flattened upper ends of said standards, said links being adjustably mounted upon said standards, a headed pin having a threaded shank passing through each of said standards and links, a hand wheel having an interiorly threaded hub screwed onto each of said pins, a covering of relatively soft material over the rim of each of said hand wheels, said links extending

generally to a position forward of said standards, and the rear portions of said hand wheels being located in a plane back of said standards, a back member located substantially horizontally between and in front of the links, two arms connected at the rear side of said back member and extending to and at one side of said links, pivot pins headed at both ends passing through adjacent arms and links, and a compressible resilient washer for each of said pins and through which the pins pass, said washers operating to hold the arms and links frictionally in any position to which adjusted with respect to each other.

2. In a chair having a seat, two spaced standards operably connected with the seat and extending upwardly substantially in a vertical direction a distance back of the seat, said standards at their upper ends having flattened portions, flat links one for each standard, pivotally connected thereto, said links extending generally in a forward direction ahead of said standards and each of said links having an arcuate slot therein concentric with its pivotal mounting on its standard, a headed pin having a threaded shank passing through each standard and through said slot in the associated link, a hand wheel having an interiorly threaded hub screwed onto said shank to releasably clamp each of said links to its standard in positions to which adjusted, said slots being of a length to permit adjustment of the links between substantially vertical and horizontal positions, a back member located in front of the upper end portions of said standards, a bar of flat metal permanently secured to the rear side of said back member and at each end having a rearwardly projecting arm, said arms being located substantially alongside the other end portions of said links, means for pivotally connecting said arms to said links, and friction means associated with said pivotal means for yieldingly holding said arms and links against pivotal movement with respect to each other.

3. In a chair having a seat, two spaced apart standards operably connected to said seat and extending generally in a vertical direction a distance above and back of said seat, a back member extending horizontally between and located in front of the upper end portions of said standards, spaced arms connected to and extending rearwardly from the back member, a link pivotally connected at one end to each of said arms, means associated with said pivotal connections of the arms and links for yieldingly holding said arms and links against movement with respect to each other, each of said links at its opposite end having a disk with notched edges cut therefrom to provide openings through the links and said disks being permanently secured to a side of each standard whereby the arms at the openings therein may pass over said disks, a headed pin having a screw threaded shank passing through each of said disks and standard, a washer through which the headed pin passes located against each of said links, said washer being disposed between the head of the pin and said disk and a manually operable hand wheel having an interiorly threaded hub screwed onto each of the threaded shanks of said pins, as specified.

4. A construction containing the elements in combination defined in claim 3, said hand wheels being of metal and having the rims thereof covered by a rubber-like material, the diameter of the hand wheels being such that the rear por-

tions of the hand wheels extend back of the rear sides of said standards.

5. In a chair having a seat, two spaced standards operably connected with said seat and extending in an upward direction back of said seat, links adjustably connected for a pivotal movement to the upper ends of said standards, one link to each standard, said links being adapted to be moved between a substantially vertical position in alinement with the standards and a horizontal position in front of said standards, a back member extending substantially horizontally between said links and adjustably connected thereto, and clamps including manually operable hand wheels for securing the links in any position to which adjusted with respect to said standards, said hand wheels having rubber-like coverings,

the rear portions of which are located back of the standards, for the purposes specified.

6. In a chair having a seat, two spaced standards operably connected with said seat and extending in an upward direction back of said seat, links adjustably connected for a pivotal movement to the upper ends of said standards, one link to each standard, a back member extending substantially horizontally between said links and adjustably connected thereto, and clamps including manually operable hand wheels for securing the links in any position to which adjusted with respect to said standards, the rear portions of said hand wheels being located back of the standards, for the purposes specified.

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