Feb. 8, 1955 A. T. HASCHAM ET AL 2,701,606

RETRACTABLE HEADREST

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Fig. 1.

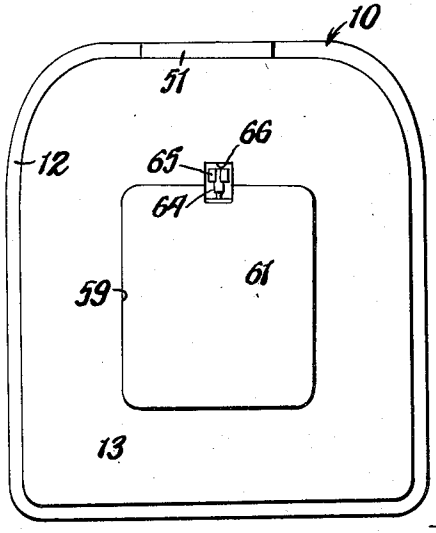


Fig. 3.

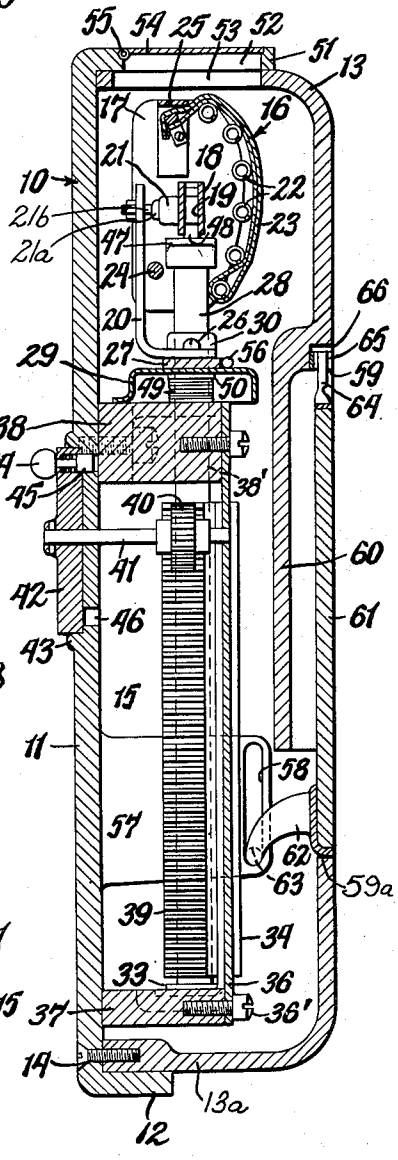


Fig. 4.

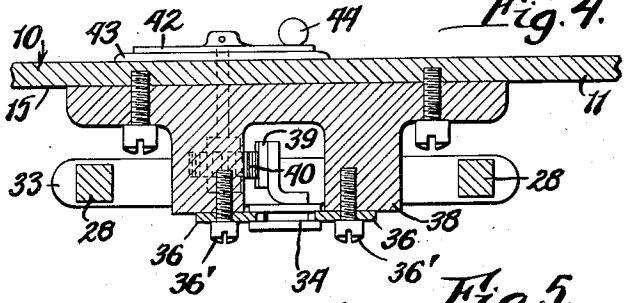
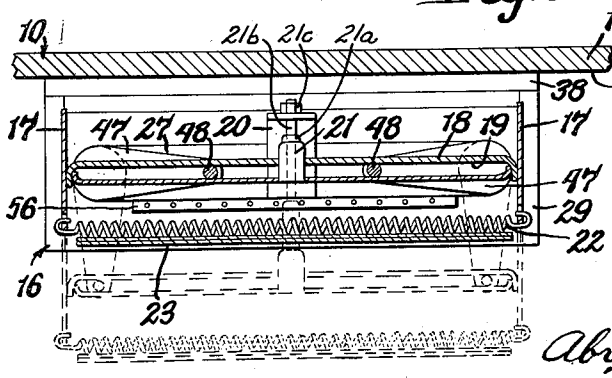


Fig. 5.



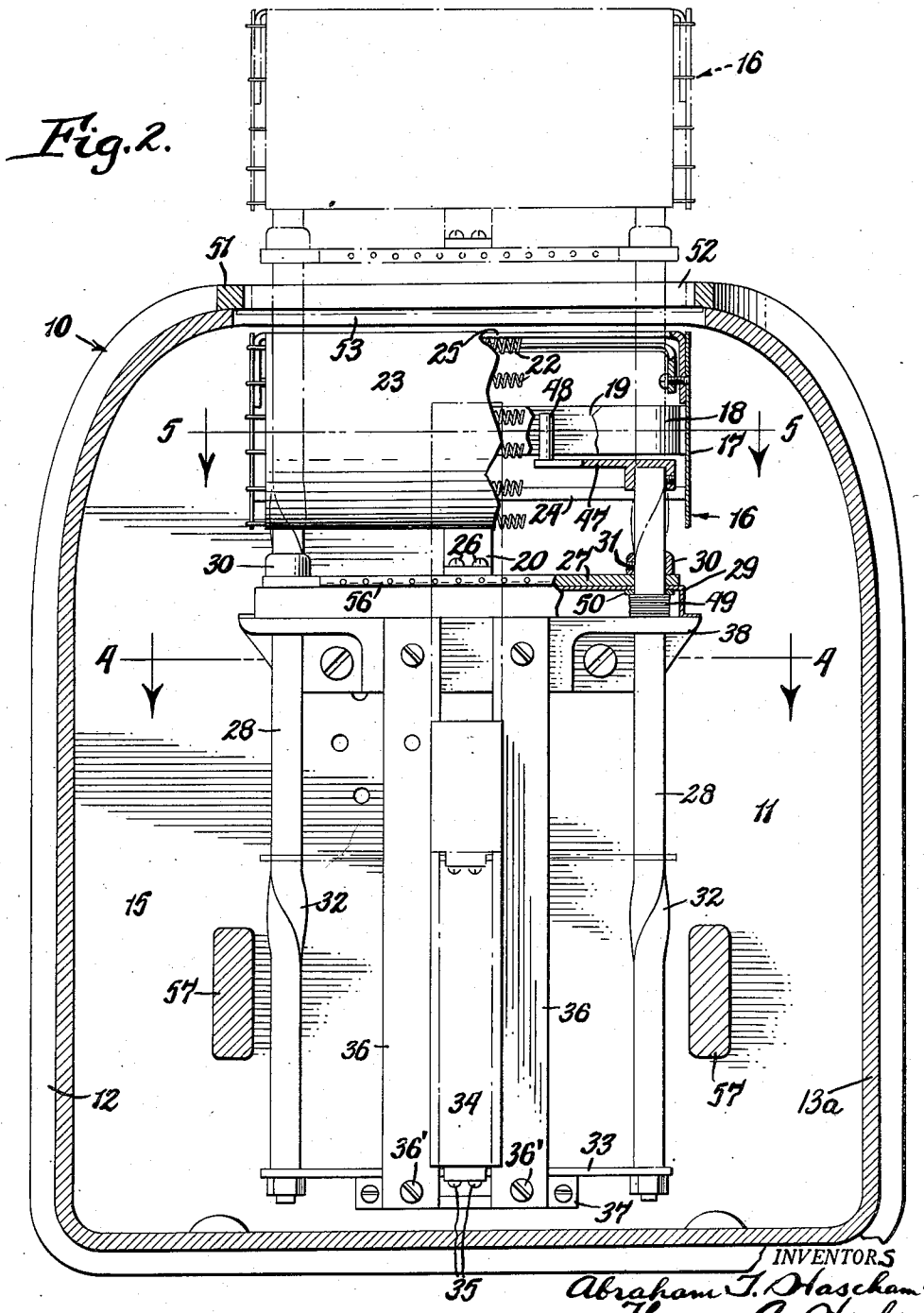
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Fig. 2.



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RETRACTABLE HEADREST

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Application August 19, 1949, Serial No. 111,198

6 Claims. (Cl. 155—177)

The present invention relates to backs for chairs of the type used in barber shops, dentist offices, and beauty parlors although such chairs can also be used in trains, buses and the like as well as in the home. It is an object of the invention to provide such a chair back having contained therein a retractable headrest which may be easily extended into position for use or retracted. A further object of the invention is to provide operating means for the retractable headrest which is simple to operate, positive in operation and so ararnged as to be convenient yet inconspicuous. Still other objects of the invention are to provide a chair back which may be substituted for the ordinary backs in use without structural modification of the chairs and to provide a chair back having conveniently arranged therein a portion which may serve as a seat for children.

Other objects of the invention will be apparent from the following description of the invention taken in conjunction with the drawings.

In the drawings:

Fig. 1 is a front elevational view of a chair back in accordance with the present invention.

Fig. 2 is an enlarged view similar to Fig. 1, with the front of the chair back cut away and portions of the retractable headrest and its supports broken away to better show the construction.

Fig. 3 is a vertical fore and aft sectional view.

Fig. 4 is a sectional view on line 4—4, Fig. 2 illustrating the operating means for the retractable headrest.

Fig. 5 is a sectional view on line 5—5, Fig. 2 which shows the mechanism for forward extension of the headrest into position for use.

The invention in this application is an improvement on the invention disclosed and claimed in my prior Patent No. 2,158,183, issued May 16, 1939.

Although the chair back of the present invention may be constructed in various shapes, it has been illustrated in the drawings, by the numeral **10**, as generally rectangular with rounded corners. It comprises, as shown best in Fig. 3, a back plate **11** having a peripheral outwardly extending flange **12**, and a front cover or shell **13** which has a rim portion **13***a* fitting within the flange **12** and secured to the back plate **11** by suitable means such as screws **14**. The space or recess **15** enclosed by back plate **11** and the main portion of the front shell **13** provides room for a retractable headrest **16** and the actuating mechanism therefor.

Headrest **16** comprises end plates **17** which are attached to the ends of support **18** and are attached at their tops to bracing member **25**. Support **18**, which may conveniently be formed of two interfitting plates, is provided with a longitudinally extending slot **19** and is carried by an arm **20** to which it is attached by a telescoping connection comprising a cylinder **21** attached to the support **18** and a piston-like member **21***a* slidable in the cylinder **21**. The outer end of the member **21***a* is provided with a threaded stud **21***b* which with a nut **21***c* secures the member to the upper end of the arm **20**.

Extending between and connected to end plates **17** a series of tensioned coil springs **22** is provided, these springs furnishing the support for headrest cover **23** of fabric, leather, or other suitable material which is stretched over the springs and fastened in any suitable manner.

Also extending between end plates **17** is rod **24** which is adapted to support a roll of paper so that a web of paper may be pulled around over cover **23** and under top bracing member **25** thus providing a sanitary, changeable outer cover for headrest **16**.

The actuating means by which headrest **16** is caused to be extended from or retracted into the recess **15** in chair back **10** will be best understood from Fig. 2. In this figure, headrest **16** is shown in full lines in retracted position and in broken lines in extended position. As will be seen in the drawings, arm **20** is attached by any suitable means such as screws **26** to plate **27**. Plate **27** is slidably mounted on actuating rods **28** between a closure plate **29** and collars **30**, the latter being fastened to rods **28** as by set screws **31**.

Actuating rods **28** are polygonal and preferably square in cross section and each is twisted through 90 degrees at one point in its length, as shown by the numeral **32**, and below the middle thereof, to provide a portion adapted to have a cam-like action. Rods **28** are rotatably attached at their lower ends to a plate **33** which is carried by slide member **34**, being attached thereto, as by screws **35**.

Slide member **34** is slidably engaged and guided by plates **36** which are removably attached at their lower ends, as by screws **36'**, to support **37** and at their upper ends to support **38**. Attached to slide member **34** is a rack **39** (best shown in Figs. 3 and 4) adapted for vertical movement and engaged with pinion **40** which is carried by shaft **41** and operatively connected thereby for rotation with rotary disc **42**. Disc **42** is preferably mounted in a recessed boss **43** in back plate **11** and is provided with a handle **44** having a spring pressed plunger **45** adapted to be received in any one of a plurality of angularly spaced holes **46** in back plate **11**, thereby holding disc **42** in fixed position.

Actuating rods **28** pass through and are guided through support **38** by polygonal holes **38'** of the same shape as the rods. At the upper ends of rods **28** are affixed horizontally extending arms **47** having at their outer ends pins **48** which extend vertically upwardly and are received within slot **19** of supporting member **18**.

Surrounding rods **28** and interposed between the upper surface of support **38** and closure plate **29** are springs **49** and washers **50**, the springs being adapted to cause closure plate **29** to follow upward movement of plate **27**. There is preferably attached to plate **27** a perforated tube **56** which is adapted to contain a disinfectant.

Above retractable headrest **16** flange **12** of back plate **11** is widened as shown by the numeral **51** and has an opening **52** therethrough which registers with a corresponding opening **53** in the rim **13***a* of front cover or shell **13**. Opening **52** is closed by a cover **54** which may be pivotally mounted as by hinge **55**. A spring (not shown) may be provided to resiliently maintain cover **54** in closed position when headrest **16** is retracted into back **10**.

The numerals **57** are applied to supporting members which extend forwardly from back plate **11** and are provided with vertical slots **58**. Front cover **13** of chair back **10** has a cut away portion or opening **59** therein and spaced inwardly therefrom a depending portion **60** which partially covers the opening **59**. Received within the cut away portion **59** is a seat **61** having attached to the lower corners thereof hanger arms **62** each of which has at its outer end a horizontally extending pin **63** slidably and rotatably mounted in one of slots **58** in supports **57**. At its upper end seat **61** is provided with a prong **64** which is adapted to be removably held in spring clip **65** mounted in a recess **66** at the top of cut away portion **59**.

The provision of a headrest on a barber's chair is a necessity since the head of a customer who desires to be shaved must be supported. At the same time the headrest is of no use and, indeed obstructs the barber when he is engaged in cutting the hair of customers seated in the chair. By means of the construction of the present invention the back of the chair is provided with a recess **15** in which the headrest is mounted and into which it may be retracted during such periods. When its use is again necessary the headrest may by a very simple operation be raised from within the chair back and moved forward into proper position.

The mechanism by which the headrest is moved into position or retracted into the chair back functions in the following manner:

Assuming that the headrest is in retracted or lowered

position as shown in Fig. 3 and, in full lines, in Fig. 2, and that it is desired to raise and propel it into proper position for use, the barber will grasp handle 44 on disc 42, pull the handle outwardly to disengage plunger 45 from hole 46 and turn the handle in a clockwise direction. Pinion 40 will thus be caused to turn and actuate rack 39, causing the latter to move upwardly. Since rack 39 is attached through slide 34 to plate 33, which is in turn secured to the bottom ends of actuating rods 28, the upward movement of rack 39 will cause rods 28 to also move upwardly. Headrest 16 will thus be carried upwardly by arms 47 at the tops of actuating rods 28 lifting supporting member 18. Plate 27 will accompany the headrest as it is connected thereto by arm 20 and telescoping connection 21.

As the twisted portions 32 of actuating rods 28 pass through the guiding holes 38' in support 38, the rods will be caused to turn through a 90 degree angle. Arms 47 attached to the upper end of rods 28 will likewise be turned and pins 48 thereon, which are movable in the slot 19 of support 18 of headrest 16, will cause the headrest to be projected forwardly into proper position, the headrest, of course, having been raised sufficiently before its forward movement to be wholly outside the chair back. Variation in the height of the headrest 16 may be obtained depending upon the extent to which support 18 and actuating rods 28 are raised after the headrest is projected forwardly into position for use. The desired vertical position of the headrest will be retained by permitting plunger 45 on handle 44 to be received in one of the holes 46, thus locking the headrest in position. Springs 49 which loosely surround actuating rods 28 cause closure plate 29 to follow the upward movement of the headrest and to partially enter into and close the openings 52 and 53 at the top of the chair back. Cover 54 is opened automatically by the upward movement of headrest 16 and closes when the headrest is retracted.

Retraction of the headrest involves merely the reversal of the operations described in the foregoing description of the raising of the headrest into position. Handle 44 of disc 42 is pulled out to disengage the locking plunger 45 and disc 42 is then turned in the opposite direction (counterclockwise when facing disc 42). This rotation causes lowering of rack 39 with actuating rods 28, plate 27, and headrest 16. As the actuating rods pass through the guide holes 38' in support 38, they are turned through a 90 degree angle which causes headrest 16 to be pulled rearwardly from its advanced position and centered over the opening in the top of the chair back 10 through which it can be lowered by continued movement of rack 39.

In the past it has been customary when children occupy a barber's chair for a board or other seat to be placed across the arms of the chair so that the child is raised sufficiently to permit the barber to work efficiently and conveniently. Such temporary expedients are undesirable as, in most cases, time is lost in finding the board to place across the chair arms and the board is not firmly secured so that movement of the child may dislodge it. By another part of the present invention there has been provided a disappearing auxiliary seat which is suitable for children and which is not subject to the foregoing objections. As shown in Figs. 1 and 3 of the drawings the auxiliary seat 61 fits within a cutout portion 59 of the chair back and at its bottom corners is provided with hanger arms 62 having pins 63 slidably and rotatably movable in slots 58 of supporting members 57. When the seat is pulled down to a horizontal position pins 63 ride up in slots 58 and permit the lower edge of seat 61 to rest against members 57 and the outer face of the seat 61 adjacent the lower edge thereof to rest on the bottom edge 59*a* of the cut out portion 59, thereby providing a firm, braced support for seat 61. When seat 61 is no longer needed it may be moved out of the way by merely lifting it and pushing it into position to close cutout portion 59.

The disappearing auxiliary seat above described is strong and conveniently arranged. It has the further advantages that its construction is simple and that no adjustment or regulation is required.

Back plate 11 of chair back 10 is preferably constructed of metal as is the operating mechanism for extending and lowering headrest 16. Front cover or shell 13, although it may be made of other materials, is preferably of wood, thus making it easier to apply the upholstery (not shown) which is ordinarily provided on barber chair backs. The outside of seat 61 may be upholstered in the same way as the rest of shell 13 and if desired the seat may be provided with a pad (not shown), on the top thereof. Such a pad will be received in the space between seat 61 and depending portion 60. For the sake of appearance the small recess 66 at the top of seat 61 may be covered by a tab of upholstery which will conveniently serve as a handle for seat 61.

The many advantages of the improved barber chair back of the present invention will have been perceived from a reading of the foregoing description of its construction and operation. There is provided by the present invention a chair back which can be constructed in an external form suitable for use with any standard barber chair. Such a chair back provides a sanitary retractable headrest which when not in use is stored in a dust-tight compartment, its sanitary condition being assured by the use of perforated tube 56 to cause the release of disinfecting vapors within the storage compartment or recess. The retractable headrest when needed is readily accessible and may be easily raised and placed in proper position for use. Along with the retractable headrest there is also provided a conveniently mounted disappearing children's seat. It may be harmonized with the upholstery of the chair back and is available for use at all times. It will be understood that the chair back of the present invention may also be applied when desired to dentist chairs and chairs for other purposes.

While in the foregoing specification there has been described a specific embodiment of the present invention, it will be appreciated that it is not intended that in practice the construction will be limited to such specific details as have been herein set forth. Various modifications of the embodiment described which are comprehended within the spirit of the invention will be apparent, and it is not intended that the invention should be limited except by the scope of the appended claims.

We claim:

1. In a chair back of the character described having a back plate, a front cover attached to said back plate and including a portion spaced therefrom to provide a recess and a headrest mounted within said recess, the combination of operating means mounted on the outside of said chair back, and actuating means for said headrest in said recess and connected to said operating means, said actuating means comprising a plurality of polygonal rods movable longitudinally to raise said headrest from within said recess, each of said rods having a portion thereof twisted through an angle of 90 degrees and being slidably received within a co-operating polygonal guide, said rods having means thereon operatively connected to said headrest to move the same laterally during rotation of said rods as the twisted portions thereof pass through said guides.

2. In a chair back of the character described having a back plate, a front cover attached to said back plate and including a portion spaced therefrom to provide a recess, and a headrest mounted within said recess, the combination of operating means mounted on the outside of said chair back and actuating means for said headrest in said recess and connected to said operating means, said actuating means comprising a plurality of rectangular rods movable longitudinally to raise said headrest from within said recess, each of said rods having a portion thereof below its middle twisted through an angle of 90 degrees and being slidably received within a co-operating rectangular guide, said rods having means thereon operatively connected to said headrest to elevate said headrest and, during rotation of said rods as the twisted portions theerof pass through said guides, to move the same laterally.

3. In a chair back of the character described having a back plate, a front cover attached to said back plate and including a portion spaced therefrom to provide a recess, and a headrest mounted within said recess, the combination of operating means mounted on the outside of said chair back and actuating means for said headrest in said recess and connected to said operating means, said actuating means comprising a plurality of square rods movable longitudinally to raise said headrest from within said recess, each of said rods having a portion thereof below its middle twisted through an angle of 90 degrees

and being slidably received within a co-operating square guide, said rods having means thereon operatively connected to said headrest to elevate said headrest and, during rotation of said rods as the twisted portions thereof pass through said guides, to move the same laterally.

4. In a chair back of the character described having a back plate, a front cover attached to said back plate and including a portion spaced therefrom to provide a recess, and a headrest mounted within said recess, the combination of operating means mounted on the outside of said chair back, actuating means for said headrest in said recess and connected to said operating means, said actuating means comprising a plurality of vertical rods, said rods being movable longitudinally to raise said headrest from within said recess and being rotatable to move said headrest laterally, and a plate slidably and resiliently mounted on said rods and supporting means connected to and guiding said headrest during lateral movement thereof.

5. In a chair back of the character described having a back plate, a front cover attached to said back plate and including a portion spaced therefrom to provide a recess, and a headrest mounted within said recess, the combination of operating means mounted on the outside of said chair back, actuating means for said headrest in said recess and connected to said operating means, said actuating means being supported on said back plate and comprising a plurality of vertical rods, said rods being movable longitudinally to raise said headrest from within said recess and being rotatable to move said headrest laterally, and a plate slidably and resiliently mounted on said rods and supporting means connected to and guiding said headrest during lateral movement thereof.

6. In a chair back of the character described having a back plate, a front cover attached to said back plate and including a portion spaced therefrom to provide a recess, and a headrest mounted within said recess, the combination of operating means mounted on the outside of said chair back, actuating means for said headrest in said recess and connected to said operating means, said back plate and cover having registering openings to permit said headrest to be moved outwardly from said recess, said actuating means comprising a plurality of longitudinally movable, vertical rods adapted to raise said headrest from within said recess through said openings and means resiliently and slidably mounted on said rods adapted to close said openings when said headrest has been raised from within said recess.

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