No. 893,016.

PATENTED JULY 14, 1908.

F. RITTER.

HEAD REST FOR CHAIRS.

APPLICATION FILED MAY 6, 1904.

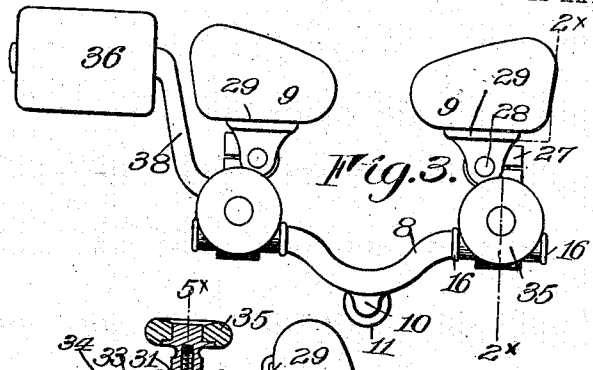


Fig. 3.

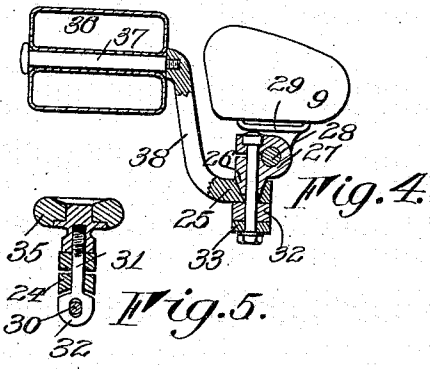


Fig. 4.

Fig. 5.

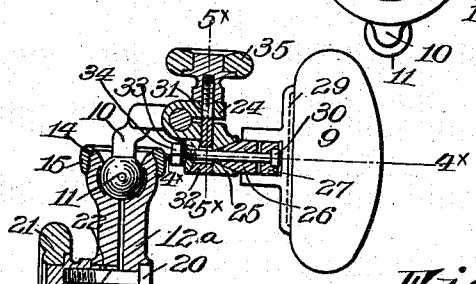
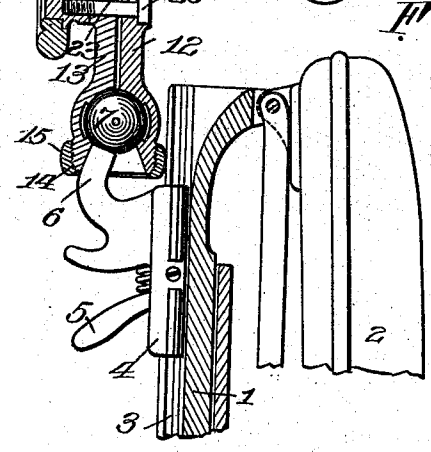


Fig. 2.



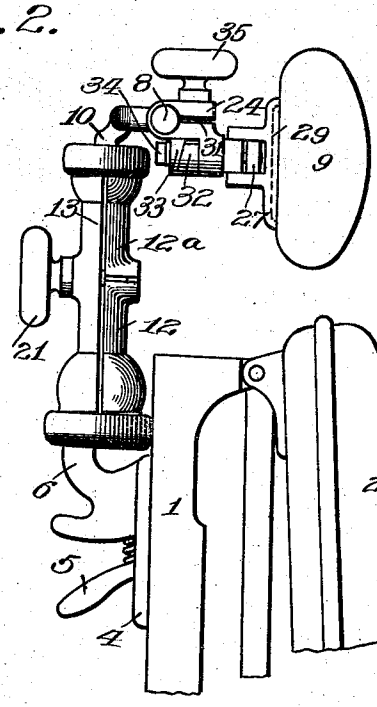


Fig. 1.

Witnesses.

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HEAD-REST FOR CHAIRS.

No. 893,016. Specification of Letters Patent. Patented July 14, 1908.

Application filed May 5, 1904. Serial No. 206,459.

To all whom it may concern:

Be it known that I, FRANK RITTER, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Head-Rests for Chairs; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference numerals marked thereon.

My present invention has for its object to provide a universally adjustable head rest section adapted particularly to be used upon dental or surgical chairs embodying means for securing it to the chair, whereby it may be quickly and easily adjusted at any desired angle, and my invention has for its further object to provide an improved mechanism for securing the head rest pads and an operator's arm rest whereby these parts may be moved relatively independently of other portions of the head rest section and readily clamped in operative position.

To these and other ends the invention consists in certain improvements and combinations of parts all as will be hereinafter more fully described the novel features being pointed out in the claims at the end of the specification.

In the drawings: Figure 1 is a side elevation of the upper portion of the back of a dental or surgical chair illustrating the application thereto of a head rest section constructed in accordance with my invention. Fig. 2 is a similar view showing a vertical section of the head rest taken on the line $2^{\times}$ $2^{\times}$ of Fig. 3. Fig. 3 is a top plan view. Fig. 4 is a horizontal sectional view taken on the line $4^{\times}$ $4^{\times}$ of Fig. 2, and Fig. 5 is a detail sectional view taken on the line $5^{\times}$ $5^{\times}$ of Fig. 2.

Similar reference numerals in the several figures indicate similar parts.

Head rest sections embodying my invention are adapted to be applied to dental or surgical chairs, and in the illustrations I have shown a portion of the back of such a chair embodying the back frame 1 and the back rest 2. The back frame is provided with ways or guides 3 in which is mounted the usual vertically movable block 4 adapted to be secured in position by any preferred form of clamping devices operated by a releasing handle 5 whereby the block may be adjusted longitudinally on the back frame to position the head rest relatively to the back rest. Extending upwardly from the block 4 is an arm 6 provided with a ball 7. The upper portion of the head rest embodies a cross arm or support 8 at the ends of which are mounted the head rest pads 9, as will be more fully described hereinafter, and this arm is provided with a centrally downwardly extending projection 10 provided with a ball or head 11, and the latter and the ball or head 7 are connected by an intermediate section consisting of separable arms 12 and 13 provided with recessed or cup shaped ends embracing said balls. These arms are provided at their outer ends with conically shaped bearing surfaces 14 and screw threads with which engage nuts or rings 15, provided with internal conical surfaces adapted to engage the surfaces 14, whereby the ends of the arms may be moved relatively to each other to permit their engagement with the heads or balls 7 and 11 to be regulated to a nicety.

The means for clamping the head rest in adjusted position consists of a bolt 20 extending through one of the arms, preferably arranged intermediate the nuts 15, with which coöperates a hand wheel 21 that may be rotated to draw the arms 12 and 13 together. In order to facilitate the relative movement of the arms when operated by the clamping device, I form one of them in separate sections as indicated by 12 and 12^{a} by dividing it transversely as shown particularly in Fig. 1. These sections are held in operative position relatively to the ends of the other arm 13 and are prevented from displacement by the nuts 15, and also by the head of the bolt 20, the rotary movement of the latter being prevented by means of a pin or key 22 located in the slot 23, as shown in Fig. 2. This is an advantageous arrangement of the parts, as the nuts being located on the arms at the outer side of the heads, they provide fulcrums for the ends of the arm 13 and the ends of the separate sections 12 and 12^{a}, and these arms become in effect levers which are operated into engagement with the heads by an intermediate clamping device, thus permitting the head rest to be moved universally and secured at any desired position of angular adjustment by the movement of a single operating device. The nuts 15 at opposite ends

of the arms may be adjusted independently to cause the arms when operated to engage one of the heads before clamping the other, so that if desired, the cross arm or support 8 may be loosened and rotated or tilted without necessarily loosening the intermediate section on its block 4.

Separate connections are employed for attaching the pads 9 on the ends of the cross arm or support 8 whereby they may be adjusted laterally to increase or decrease the distance between them and permit them to be revolved to move their upper or lower ends inwardly or outwardly, relatively to each other, and also rotated on the cross arm to pitch them in different planes, and to this end I employ a duplex clamping device which may be adjusted by a single actuating member. This clamping device embodies a main split clamping head 24, journaled on the end of the arm 8 between small collars or rims 16 and having at its lower side a perforated ear or offset 25, provided with the conical shaped recess in which is inserted the end 26 of a supplemental split clamping head 27 carrying a journal pin 28 rigidly attached to the supporting frame 29 on which the pad 9 is mounted. Extending through the supplemental head 27 and the support or ear on the main clamping head is a bolt or operating member 30, the outer end of which projects through an elongated aperture in the main clamping bolt or operating member 31. The latter extends through the end portions of the main clamping head 24 with its outer end resting against the rear side of the ear or offset 25 and arranged between the operating members 30 and 31 are coöperating cam surfaces formed by an angular or inclined face provided on the side of the enlarged head 32 of the bolt 31 and by a similar face on a wedge block 33 mounted on the bolt 30 and adjustable relatively to the head 32 by a nut 34, as shown particularly in Fig. 2. Coöperating with the end of the main clamping bolt or operating member is an actuating device in the form of a hand wheel 35, having a threaded hub, as shown, and it will be seen that when the main operating member or bolt 31 is released the tension on the ends of the split head 24 will be relieved, permitting the latter to be revolved about the arm 8 to tilt the pad 9 or shifted to move the pad laterally. The loosening of the bolt 31 will also permit it to move slightly relatively to the wedge block 32 subsequently releasing the tension on the ends of the split head 27, allowing the pad 9 to be revolved on its journal pin 28. This relaxing of the tension on the bolt 30 also loosens the joint between the main and supplemental clamping heads whereby the pad may be further adjusted if it is desired to rotate it to move either its upper or lower end relatively toward or from the adjacent pad.

At one side of the device is located a rest adapted to support the operator's hand or arm in proximity to the head rest pads, and it embodies a pad 36 revolubly supported upon a pin 37 at the end of an arm extending laterally and forwardly from one of the main clamping heads 24. From this arrangement of the parts it will be seen that as the arm 38 is connected to the clamping head, it will be moved with the head whatever the adjustment of the latter may be and that the arm rest will always be supported in proximity to the adjacent head rest pad without interfering with any of the various adjustments thereof.

A head rest embodying an intermediate supporting section such as I have shown and described may be adjusted into its initial position and secured by the operation of a single clamping device and the means I employ for securing the head rest pads permits them to be adjusted universally to afford a comfortable support for a patient's head in any position required by the operator. The arrangement of the clamping devices for the head rest pads enables the actuating devices or hand wheels to be located above the plane of the cross arm when access may be conveniently had to them and where they will not interfere with the rotary or tilting movement of the pads by engagement with the supporting section.

I claim as my invention:

1. The combination with a head rest and a support, both of said parts having a clamping head thereon, of an intermediate section embodying separable parts engaging the heads at opposite sides, means connecting the ends of said parts forming fulcrums located at the outer sides of the heads and a clamping device arranged between the latter.

2. The combination with a head rest and a support, both of said parts having a ball thereon, of an intermediate section embodying separable parts provided with sockets engaging the balls, of connections between the ends of the parts of the intermediate section forming fulcrums located at the outer sides of the head, and a device for moving said parts relatively to each other.

3. The combination with a head rest and a support each having a clamping head, of an intermediate section connecting said heads comprising separable parts engaging opposite sides of the heads, means mounted on and connecting the proximate ends of the sections and adjustable thereon to move said ends relatively to each other to vary their frictional engagement with the clamping heads and a clamping device operating upon the parts of the intermediate section between their connected ends.

4. The combination with a head rest and a support each provided with a clamping head, of an intermediate section comprised of sep-

arable parts extending over the heads and having inclined surfaces thereon, adjusting devices connecting said parts and movable into engagement with the inclined surfaces to move said parts relatively and a separate clamping device for operating the parts of the intermediate section into engagement with the clamping heads.

5. The combination with a head rest and a support, each provided with a ball, and arms extending over the latter having inclined surfaces and provided with screw threads, of nuts adjustable on said screw threads and adapted to engage the inclined surfaces and means for clamping the arms together.

6. The combination with a head rest and a support, each having clamping heads thereon, of levers extending over the heads and having fulcrums arranged beyond the latter, of a device located between the fulcrums for moving the levers relatively.

7. The combination with a plurality of levers fulcrumed at their ends and clamping heads located between said ends, of a support attached to one of the heads, a head rest secured to the other and a clamping screw arranged between the heads for moving said levers relatively.

8. An intermediate supporting section for head rests embodying a plurality of arms, provided with inclined surfaces and a screw thread, said arms being adapted to embrace a clamping head, a nut coöperating with said thread and provided with a shoulder engaging said surfaces to move the arms relatively.

9. The combination with a head rest and a support, each of said parts having a clamping head thereon, of an intermediate section embodying arms engaging the clamping heads, one of said arms being composed of a plurality of sections, means for connecting the arms together in proximity to the heads and a clamping device for moving them relatively into engagement with said heads.

10. The combination with a head rest and a support, each of said parts having a clamping head, of an intermediate section comprising arms engaging said heads and connected together in proximity thereto, one of said arms being composed of separate sections, and a clamping device engaging said sections and coöperating with the other arm to move them relatively thereto.

11. The combination with a head rest and a support, each of said parts having a clamping head, of an intermediate section comprising arms engaging said heads and connected together in proximity thereto, one of said arms being divided transversely into separate sections, a bolt extending through the arms and arranged between said sections and a clamping member coöperating with the bolt.

12. In a head rest the combination with a support, main clamping heads journaled thereon and supplemental clamping heads journaled on said main heads, of head rest pads journaled on the supplemental heads and clamping mechanisms for securing the supplemental and main clamping heads together and for securing the latter to the support.

13. In a head rest, the combination with a support, a main clamping head thereon and a supplemental clamping head journaled on the main head, of a head rest pad movably supported on the supplemental head, an operating member extending through the latter and a similar member coöperating therewith and extending through the main head and means for actuating the latter member to rigidly clamp the parts together.

14. In a head rest, the combination with a support, a main clamping head thereon and a supplemental clamping head thereon, of a head rest pad movably supported on the last mentioned head, a bolt extending through the latter and a similar bolt extending through the main head, coöperating cam surfaces between said bolts and an operating member for actuating both of said bolts to close their respective clamping heads.

15. In a head rest, the combination with a support, a main clamping head journaled thereon and a supplemental clamping head supported on the main head, of a head rest pad supported on the last mentioned head, an operating member for the latter and a similar member for the main clamping head, cooperating cam surfaces between said members and means for actuating said members to close their respective clamping heads.

16. In a head rest, the combination with a support, a main clamping head journaled thereon having an offset and a supplemental clamping head mounted at one side of the offset, of a head rest pad journaled on the last mentioned head, a bolt extending through the main head at the other side of the offset and provided with an inclined surface and a second bolt extending through the supplemental head, a wedge block on said bolt engaging the surface on the other bolt and an operating device for moving the first mentioned bolt longitudinally.

17. In a head rest, the combination with a support, a main clamping head journaled thereon having a perforated offset and a supplemental clamping head journaled thereon, of a head rest pad journaled in the last mentioned head, a bolt extending through the latter and the offset and a second bolt extending through the main head, coöperating cam surfaces between the two bolts and means for operating one of said bolts to operate both clamping heads and secure them together.

18. In a head rest, the combination with a support and clamping heads journaled thereon, of head rest pads journaled on said heads,

clamping devices for securing the latter and the pads and an operator's arm rest supported on one of the clamping heads.

19. In a head rest the combination with a support, main clamping heads journaled thereon and supplemental clamping heads journaled on said main heads, of head rest pads journaled on the supplemental heads, of clamping devices for securing said heads together and to the support and an operator's arm rest connected to one of the main clamping heads.

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Witnesses:
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