No. 631,880. Patented Aug. 29, 1899.

C. J. ROSS.

HELMET.

(Application filed Dec. 23, 1898.)

(No Model.)

Fig. 1.

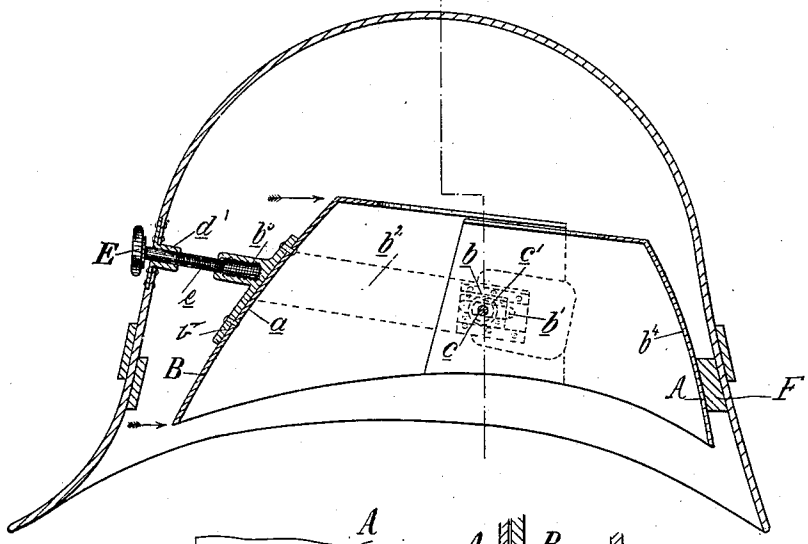
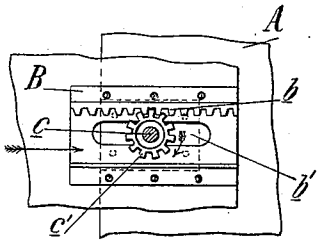


Fig. 3



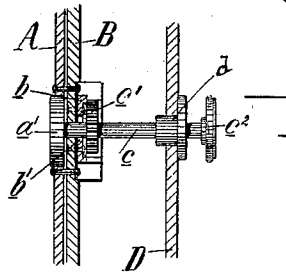
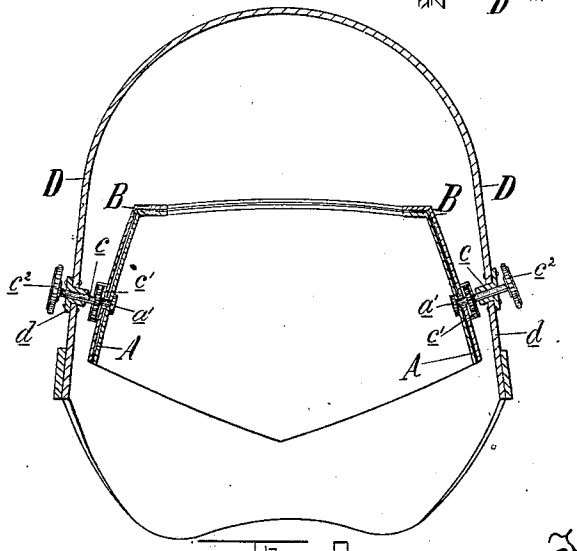


Fig. 4.

Fig. 2.



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HELMET.

SPECIFICATION forming part of Letters Patent No. 631,880, dated August 29, 1899.

Application filed December 23, 1898. Serial No. 700,109. (No model.)

To all whom it may concern:

Be it known that I, CHARLES JOSIAH ROSS, outfitter, a subject of the Queen of England, and a resident of 227 High street, Exeter, England, have invented certain new and useful Improvements in Hats, Helmets, and the Like Head-Coverings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide hats, helmets, and the like head-coverings with head-bands which can be adjusted by the wearer so as to fit the head perfectly and which can be also adjusted to fit heads of different sizes. For this purpose the head-band is made in sections, one or all of which is or are made movable and provided with means for adjusting it or them in position and with means for securing it or them in the adjusted position. By this means the head-band can be expanded or contracted in size, as desired. To the outer side of the sections of the head-band or to the interior of the helmet or like head-covering strips F of corrugated felt or like material may be fixed to provide additional rigidity and necessary ventilation, as shown in Fig. 1.

In the accompanying drawings I have illustrated my invention as applied to a helmet, in connection with which it will now be fully described; but I would here state that the description is equally applicable to hats and the like head-coverings.

Figure 1 is a longitudinal section, and Fig. 2 a transverse section, of a helmet fitted with an adjustable head-band in accordance with my invention; and Figs. 3 and 4 are enlarged detached views of details of the adjusting mechanism.

The same letters of reference where they occur are used to denote the same or corresponding parts in all the figures.

The form of head-band best suited for a helmet is one that shall fit closely to the head and distribute the weight it has to carry evenly over every portion of the human cranium. To meet these requirements, the band must be shaped to the head.

It is essential for a helmet that there should be an air-space between the band and the helmet to allow a current of air to pass freely over the head. At the same time it is of the highest importance that a helmet should fit so snugly and comfortably (not pressing in one particular part, or, as in the case of the present helmets, merely a tight band around the head) that the wearer should be enabled to take any exercise or place his head in any position or place without being aware that he has a helmet on. To effect this it is necessary that there should be a certain degree of adjustment, and in this invention the head-band is divided. In the form which I prefer to adopt and which is shown in the drawings the head-band is divided transversely into two approximately equal parts A and B, the front section A being fixed to the interior of the helmet, while the rear section B is movable thereover, its overlapping ends being located between the ends of the section A and the inside of the helmet, as is clearly shown by Fig. 2.

The movement of the section B is effected by the following arrangement: In corresponding positions on each side of the helmet D, I fix a metal eyelet or tubular boss d, through which I pass a shaft c, having on its exterior end a milled head c^2 or other suitable means for rotating it and a pinion-wheel c' fast near its interior end. The interior extremity of this shaft c is journaled in a plate a', fixed to the front section A of the head-band. (See Fig. 4.) The rear section B of the head-band is provided with a longitudinal slot b', through which passes the shaft c, and is also provided with a toothed rack-plate b, which is firmly secured to the said rear section B and with which gears the pinion-wheel c' on the shaft c, as shown in Figs. 3 and 4. It will now be understood that as the shafts c, one on each side, are journaled to the fixed front section A of the head-band when the pinions are rotated together toward the front of the helmet the rear section will be drawn toward the front and the size of the head-band will be thus contracted, and that when rotated in the opposite direction the size of the head-band will be expanded.

The securing of the movable section B in the adjusted position is effected by the following means: Secured to the rear movable section B is a plate b^2, made and shaped to

partly encircle the rear section B and carrying a female-threaded socket b^3. A metal eyelet or tubular boss d' is secured in a corresponding position in the back of the helmet D, and through the central aperture therein is passed a screw-threaded rod e, secured to the thumb-piece E. If desired, the male thread may be carried by the movable section B of the head-band and the female screw by the helmet-body D; but the action will be the same in either case.

To contract the head-band, it will be necessary to first slack back or partially unscrew the rod e from the socket b^3 and then to effect the adjustment by rotating the milled heads c^2 at the sides of the helmet and when this is effected to tightly screw up the rod e into the socket b^3, and to expand the head-band the side adjustment is first effected and the rod e then screwed tightly in the socket b^3.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A hat, helmet or the like head-covering having a head-band made in two sections, one of which is adjustable over the other, means at the side of the hat for acting on the said movable section to vary this adjustment and an additional adjustable supporting device connected to the body of the hat and engaging with the outer end of the said movable section, substantially as set forth.

2. A hat, helmet or the like head-covering having a head-band made in sections curved to fit tightly to the head, said sections being adjustably connected together by toothed racks secured to one section with which gear pinions the shanks of which rotate in journals in the other section which said shanks pass through eyelets or the like in the side of the hat, helmet or like covering-body and are operated from the exterior thereof with an additional adjustable support at the front or rear also operated from outside the hat, helmet or like covering-body substantially as described.

3. In a hat, helmet or the like head-covering having a head-band made in sections, means such as herein described for varying the size of the head-band and for supporting the body of the hat, helmet or like head-covering on the head-band, comprising toothed racks on the head-band sections, pinions gearing with said racks and passing through eyelets in the hat, helmet or like covering-body, and additional adjustment-supports on the said body engaging screwed attachments on the head-band sections, substantially as described.

4. In combination with the body D of a helmet or like head-covering the two overlapping inner sections A and B adapted to fit the wearer's head, the latter being provided with a plate b^2 and screw-threaded socket b^3, a screw E passing through the body D and engaging the socket b^3 to serve as a support, a rack attached to one of the said sections which is movable, and a screw at the side of the helmet engaging the said rack to operate the said section, substantially as set forth.

5. In combination with the hat-body D, the two overlapping inner sections A and B adapted to fit the wearer's head, means for adjusting said sections over each other, additional adjustable means of support for the section B and a band F interposed between the said sections and the body, substantially as set forth.

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