

E. R. CROSSLEY.
 APPARATUS FOR USE IN SURGICAL OPERATIONS ON THE EYE.
 APPLICATION FILED APR. 2, 1917.

1,375,445.

Patented Apr. 19, 1921.

2 SHEETS—SHEET 1.

Fig. 2

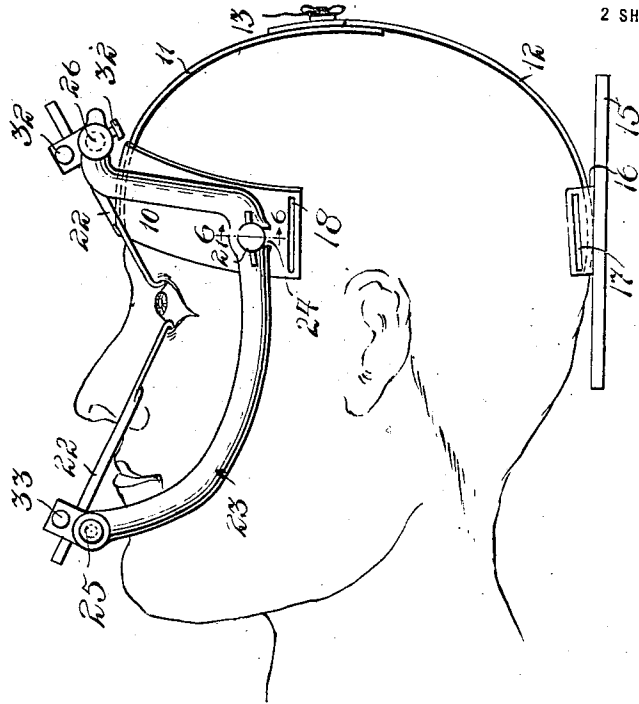
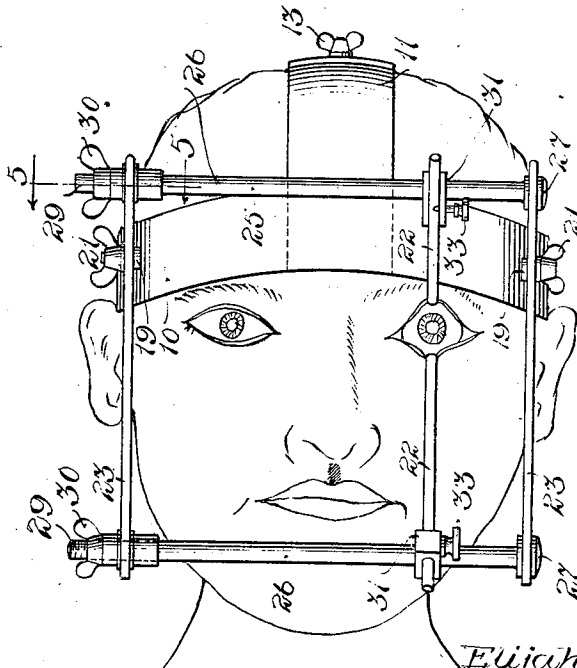


Fig. 1



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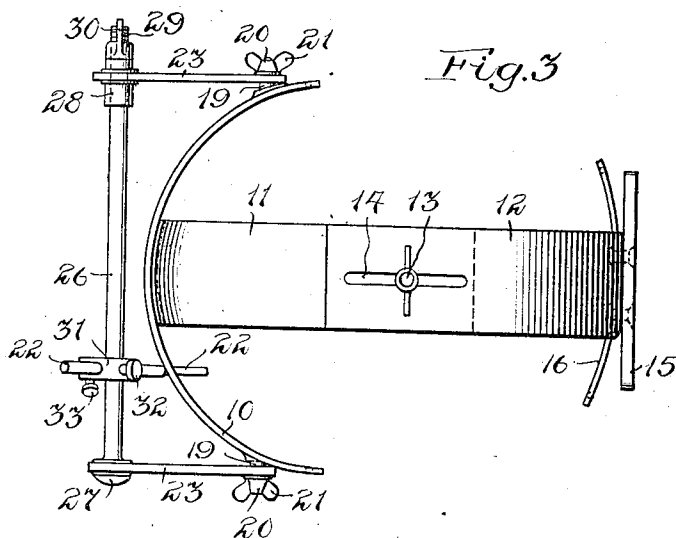


Fig. 3

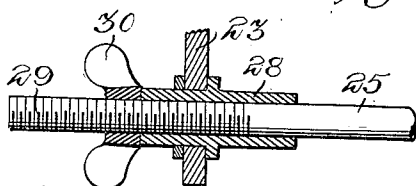


Fig. 5

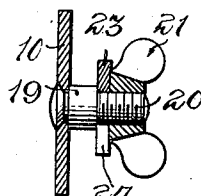


Fig. 6

Fig. 7

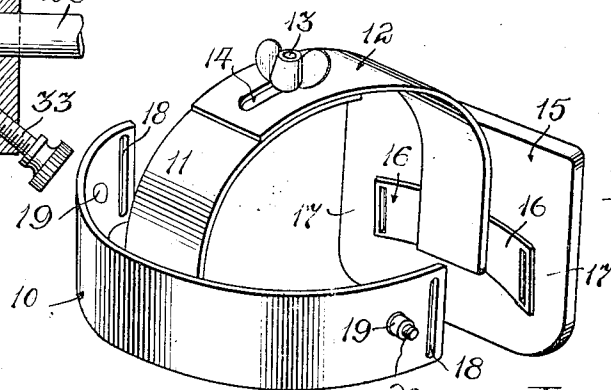
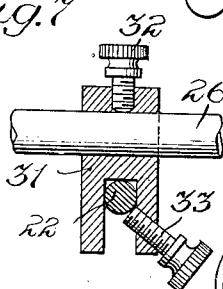


Fig. 4

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UNITED STATES PATENT OFFICE.

ELIJAH R. CROSSLEY, OF CHICAGO, ILLINOIS.

APPARATUS FOR USE IN SURGICAL OPERATIONS ON THE EYE.

1,375,445.

Specification of Letters Patent.

Patented Apr. 19, 1921.

Application filed April 2, 1917. Serial No. 159,122.

To all whom it may concern:

Be it known that I, ELIJAH R. CROSSLEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Apparatus for Use in Surgical Operations on the Eye; and one of the objects of the invention is to provide an improved device of this character which is adapted to be attached to the head of the patient and by means of which the eyelid may be retracted and held out of contact with the eye ball, thereby permitting an unobstructed access to the eye.

A further object is to provide an improved device of this character which will be simple, durable, cheap, compact and comparatively light in construction, and efficient and effective in operation and in which the parts will be out of the way of the operator.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts, hereinafter more fully described and claimed and shown in the accompanying drawings, illustrating the invention and in which:

Figure 1 is a top plan view of an improved device of this character constructed in accordance with the principles of this invention and showing the same applied to the head of a patient.

Fig. 2 is a side elevation of the parts shown in Fig. 1.

Fig. 3 is an end elevation of the parts shown in Fig. 2.

Fig. 4 is a perspective view of the head engaging portion or support of the apparatus.

Fig. 5 is an enlarged detail sectional view as taken on line 5—5, Fig. 1.

Fig. 6 is an enlarged detail sectional view as taken on line 6—6, Fig. 2.

Fig. 7 is a view showing in detail section the retractor support shown in Fig. 3.

Referring more particularly to the drawings, the numeral 10 designates a suitable support, which may be constructed of any desired or suitable material and is adapted to engage the head of the patient and to extend across the forehead thereof. This support may be held in position in any desired or suitable manner, such for instance

as by means of an adjustable element comprising the sections 11 and 12, adjustably secured by means of a screw and slot connection 13, 14, and to encompass the head of the patient. These elements 11 and 12 are connected with a base 15. The base may be constructed of any suitable material and is adapted to rest upon a flat support so that the head of the patient will rest upon the base. If desired, the element 12 may be provided with laterally projecting portions 16, preferably curved in contour to conform to the contour of the back of the head. This mechanism is adapted to be secured to the head, by resting the support 10 upon the forehead and with the laterally projecting portions 16 engaging the back of the head and by adjusting the elements 11, 12 with respect to each other, a suitable clamping effect may be obtained. If desired, the portions 16 may be provided with slots 17, and the support 10 may be provided with slots 18 so that suitable fastening bands may engage these slotted portions for securing the parts together.

Projecting from the support 10, are suitable posts 19, each having a threaded extremity 20 adapted to receive a nut 21 preferably in the form of a thumb nut.

A supporting frame for supporting the retractors 22 is provided and this frame may be of any desired or suitable structure, preferably comprising spaced side members 23 constructed of any suitable material and of any desired shape and configuration. These side members 23 are provided with open slots 24, adapted to receive the posts 19 and to be secured to these posts by adjusting the thumb nuts 21. The slots 24 are open so as to permit the side members 23 to be readily attached and detached from the support 10.

The side members 23 are preferably of a shape that the body portion will be depressed and stand adjacent the side of the head of the patient and for a considerable distance below the eye, while the extremities of the side members are so arranged that one of the extremities will stand adjacent the support 10 while the other extremity stands adjacent the chin of the patient. Extending across the space between the side members 23 and across the face of the patient are connecting bars 25, 26, and the end of each of these bars is preferably secured as at 27 with one of the side mem-

bers 23, while the free extremity of the bars 25, 26 pass loosely through the other side member so as to permit the side members of the supporting frame to be adjusted toward and away from each other to accommodate the size of head of the different patients. In order that an extended bearing may be formed for the bars 25, 26, where they pass loosely through the side member 23, a sleeve 28 may be provided and the extremities of these bars 25, 26 are respectively threaded as at 29 to receive nuts 30, preferably in the form of thumb nuts, so as to hold the parts assembled.

It will thus be manifest that when it is desired to adjust the width of the frame formed by the side members and the cross bars, all that is necessary is to loosen the thumb nuts 30 when the side members may be adjusted.

The bars 25, 26 also form supports and guides for the retractors 22 and to that end, there may be provided upon each of the bars, a clamp 31 which is loosely mounted upon the respective bars, so as to slide lengthwise of the bars and to be also adapted for a rocking or pivotal adjustment with respect to the bars. A fastening device 32 in the form of a screw may be provided for holding the clamp 31 in its adjusted position and in order that the retractor 22 may be adjusted with respect to the bars and to the clamp, the retractors are adjustably mounted upon the clamp and a fastening device 33 is also provided for securing the retractor in its adjusted position with respect to the clamp.

With this improved construction it will be manifest that the entire apparatus may be secured directly to the head of the patient and when the parts are in position, the retractors 22 may be positioned to engage the eyelids of the patient and then adjusted to not only retract the eyelid, but will also hold the eyelid out of engagement with the eye of the patient, while at the same time, the retractors and the supporting structure therefor will be out of the way of the operator, and ready access may be had to the eye.

Obviously many different forms of support and means for securing the same to the head of the patient may be provided, and the parts may be of any desired size and configuration without departing from the spirit of this invention, and therefore it is desired that the drawings herewith submitted shall be considered as being merely diagrammatic as illustrative of the invention.

What is claimed as new is:

1. A device of the character described embodying adjustable means adapted to be secured to the head of the patient, said means embodying an element resting upon and extending across the forehead, spaced supports connected with the element and means mounted upon the support and ad-

justable across the space between the supports for retracting and holding the eyelid out of contact with the eyeball.

2. A device of the character described embodying a forehead engaging element, means for securing the device to the head of the patient, spaced supports mounted upon said element, spaced guides extending across the spaces between the supports, and means adjustably supported by the said guides for retracting and holding the eyelid out of contact with the eyeball.

3. A device of the character described embodying a forehead engaging element, means for securing the device to the head of the patient, spaced supports mounted upon said element, spaced guides extending across the spaces between the supports, and an eyelid retractor connected with the first said guides and adjustable in two different directions with respect thereto, said retractor being also adapted to hold the eyelid out of contact with the eyeball.

4. A device of the character described embodying a forehead engaging element, means for securing the device to the patient's head, a guide adjustably mounted upon the said element and extending in a direction transversely of the face, and an eyelid retractor connected with the said guide for adjustment in two different directions with respect to the support and along the said support.

5. A device of the character described, embodying a head engaging element, means for securing the element to the head of the patient, spaced supports connected with the element, a guide connected with the supports and extending across the space therebetween, and an eyelid retractor adjustably mounted to move upon the said guide.

6. A device of the character described, embodying a head engaging element, means for securing the element to the head of the patient, spaced supports connected with the element, a guide connected with the supports and extending across the space therebetween, and an eyelid retractor mounted to move upon said guide, and adapted for adjustment in two different directions.

7. A device of the character described, embodying a head engaging element, means for securing the element to the head of the patient, spaced supports detachably connected with the element, a guide extending across the space between the supports, said guide and supports being connected for relative adjustment to vary the space between the supports, and an eyelid retractor adjustably mounted upon the said guide.

8. A device of the character described embodying a supporting structure adapted to be secured to the patient's head to be supported thereby, means adjustably connected with the said structure for retracting and

holding the eyelid away from the eyeball, and means also connected with said structure and engaging a fixed support for holding the head against movement.

5 9. A device of the character described embodying an adjustable head engaging structure adapted to be secured to the head of the patient, means adjustably connected with the said structure for retracting and
10 holding the eyelid away from the eyeball, and a support connected with the said struc-

ture and upon which support the head of the patient rests.

In testimony whereof I have signed my name to this specification, in the presence of 15 two subscribing witnesses, on this 31st day of March, A. D. 1917.

ELIJAH R. CROSSLEY.

Witnesses:

IRMA M. BARING,
J. H. JOCHUM, Jr.