My invention relates to diagnostic reflectors worn on the head by opticians, physicians and the like for use in the illumination of the eyes, throat, etc.

In the present use of such reflectors, particularly in diagnosing throat affections, it is highly desirable that the wearer of the reflector be protected against the coughing of a patient. It is, therefore, a purpose of my invention to provide an attachment for such reflectors which operates to effectively shield the nose and mouth of the wearer.

It is also a purpose of my invention to provide a mouth and nose shield capable of being associated with a head reflector in a manner to allow of an adjustment thereof with respect to the nose and mouth of the wearer; to permit of its movement to and retention in a non-shielding position when the shield is not in use; and the mounting thereof on the head band of the reflector so as to present a smooth and uninterrupted surface to the inner side of the band or to the head of the wearer.

I will describe only one form of nose and mouth shield embodying my invention and its adaptation to a conventional form of diagnostic reflector and will then point out the novel features thereof in claims.

In the accompanying drawings,

Figure 1 is a view showing in front elevation one form of mouth and nose shield embodying my invention in applied position to a diagnostic reflector;

Figure 2 is a central vertical sectional view of the shield and reflector shown in Figure 1;

Figure 3 is a vertical sectional view taken on the line 3—3 of Figure 2;

Figure 4 is a fragmentary view showing in rear elevation the shield element of my invention and its hinged mounting;

Figure 5 is an enlarged fragmentary sectional view taken on the line 5—5 of Figure 3.

Similar reference characters refer to similar parts in each of the several views.

Referring specifically to the drawings, my invention, in its present embodiment, is shown associated with a conventional form of diagnostic reflector including an adjustable head band 15 made up of two-ply material with a plate 16 secured between the plies at the front portion of the band, as shown in Figure 2, and provided with a shank 17 upon the front end of which latter is a ball head 18. A pair of companion members 19 are connected by a screw 20 and these members are constructed to provide ball sockets, one of which receives the ball head 18 while the other of which receives the ball head 21 formed of a shank 22 secured to the back of a reflecting element 23. The mounting described permits of universal adjustment of the reflecting element 28, as will be understood.

The shield embodying my invention is capable of application to the mounting for the reflector element without in any way modifying the construction of the latter and yet allowing of the necessary adjustment of the shield to effectively protect the nose and mouth of the wearer; and the frictional retention of the shield in an extended position, as indicated in dot and dash lines in Figure 1, when not in use. The shield proper is indicated at 24, and is shown as comprising a sheet of isinglass or other suitable transparent material mounted in a frame 25 hingedly connected to an arm 26 in a manner to allow the desired lateral adjustment of the shield on the arm. The arm 26 is made up of two strands of wire or other suitable material soldered together and bent to form an L-shaped intermediate portion and spaced upstanding extensions 27 slidably in sleeves 28 formed on the vertical edges of a plate 29. The plate 29, as shown in Figure 2, is provided with a central opening through which extends the shank 17 and the head 18 in order that the plate may, in its applied position, lie contiguous to the outer side of the head band 15.

As shown in Figure 2, the sleeves 28 are spaced apart to receive therebetween tongues 30 on the vertical edges of a resilient plate 31, this plate functioning as a spacer and locked against vertical movement through the medium of the tongues 30 engaging the sleeves 28. The plate 31 is likewise provided with an opening through which the shank 17 may be extended and in applied position,
as shown in Figure 2, it is supported in spaced relation to the plate 29. A locking washer 32 is adapted to be interposed between the ball head 18 and the plate 31, as clearly shown in Figure 2, and this washer is provided with a slot in which the shank 17 is received. The washer is designed to occupy the space between the head 18 and the plate 31 and when applied functions to flex the plate inwardly, thus placing the plate under tension and thereby exerting sufficient pressure upon the tongues 30 to cause the latter to bindingly retain the extensions 27 against accidental movement, so that any vertical adjustment of the extensions can be maintained. The tension of the plate 31 created as just described also functions to spread the washer 32 and the plate 29 which sets up sufficient friction between the washer and the head 18 and the plate 29 and the band 15 to releasably retain the entire mounting in any circumferentially adjusted position, to allow rotative movement of the plates on the shank but to frictionally retain the plates in any circumferentially adjusted position. The washer is locked against accidental displacement from the shank through the medium of projections 33 extending into indentations 34 in the plate 31, all as clearly shown in Figure 5. It will be understood that the projections and indentations function to releasably secure the washer against movement on the plate but in a manner to permit the manual removal of the washer when desired to permit dismounting of the shield.

In practice, the shield 24 is adapted to occupy a shielding position with respect to the nose and mouth of the wearer, as clearly illustrated in Figure 1, so that when the wearer is examining a patient with his face in close proximity to the face of the patient, he will be protected against the breath and coughing of the patient. The shield may be adjusted to properly protect the nose and mouth by vertical movement of the extensions 27 in the sleeves 28. When the shield is not in use, it may be swung to the elevated position shown in dot and dash lines in Figure 1, and by virtue of the co-operation of the parts of the shield mounting, as previously described, it will be manifest that the shield is frictionally maintained in such elevated position against the possible dropping of the shield to vertical position.

Although I have herein shown and described only one form of nose and mouth shield embodying my invention, it is to be understood that various changes and modifications may be made therein without departing from the spirit of the invention and the spirit and scope of the appended claims.

I claim as my invention:

1. A shield mounting of the character described comprising a plate having sleeves, a second plate having tongues engaging the first plate between the sleeves, both of said plates being formed with openings through which a headed stud projecting from a head band is adapted to extend, an arm having spaced extensions slidable in the sleeves, and a lock washer slotted to receive the headed stud and adapted to engage between the second plate and the head of said stud for placing the second plate under tension to cause the tongues to bindingly engage and thus retain the extensions against movement in the sleeves and to spread the first plate and washer in the manner and for the purpose described.

2. A shield mounting as embodied in claim 1 wherein the second plate is provided with recessed portions and the lock washer is provided with projections engageable within said recessed portions to lock the washer against accidental displacement.

3. A shield mounting as embodied in claim 1 wherein the arm is provided with a hinged connection to pivotally connect the shield to the arm.

4. In combination with a head band having a stud provided with a head upon which a dianostic reflector is adapted to be mounted, a nose and mouth shield, and means for adjustably mounting the shield on the shank of the stud comprising a plate rotatably mounted on the shank, an arm connected to the shield and having spaced extensions slidably associated with the plate so as to permit radial adjustment of the shield with respect to the stud, a second plate mounted on the shank and engaging the extensions, and means interposed between the head of the stud and the second plate for placing the latter under tension to cause it to bindingly engage the extensions to thus prevent movement of the latter and to simultaneously force the first plate into engagement with the head band so as to frictionally retain the shield against rotational movement about the stud.

5. The combination as embodied in claim 4 wherein the first plate is provided with pairs of spaced sleeves slidably receiving the extensions and the second plate is provided with tongues engaging the extensions between the pairs of sleeves.

6. The combination as embodied in claim 4 wherein the second plate is provided with recesses and the last means comprises a washer slotted to receive the shank of the stud and provided with projections engaging within said recesses to lock the washer against accidental displacement.

7. A shield mounting of the character described comprising a pair of plates arranged in side by side relation and having openings through which a headed stud projecting from a head band is adapted to extend, an arm adapted to be connected to a shield and interposed between the plates for movement.
with respect to the plates, and means adapted to be interposed between the head of said stud and one of said plates for placing the latter under tension and causing it to bindingly engage the other plate, and the latter plate to engage the head band for the purpose described.

8. A shield mounting as embodied in claim 7 wherein said means comprises a washer, and the washer and the first said plate are provided with coacting means for preventing displacement of the washer.

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