April 21, 1931. D. H. ROCHE 1,802,275

NOSE SHIELD

Filed Sept. 22, 1927

Fig. 1.

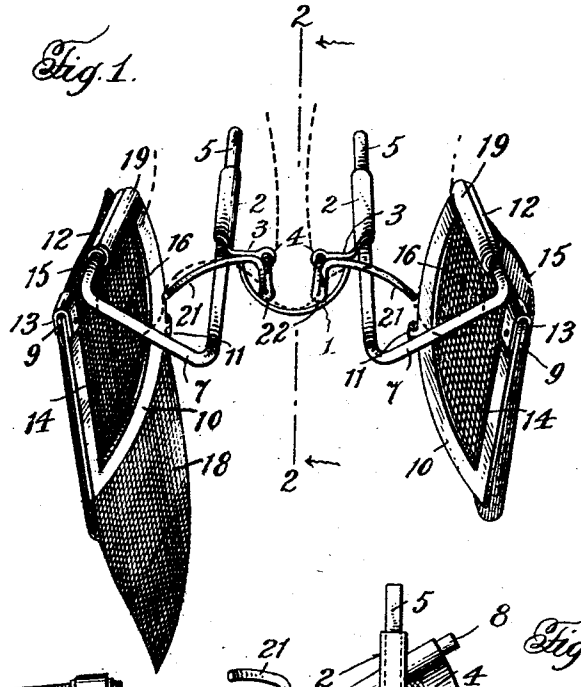


Fig. 2.

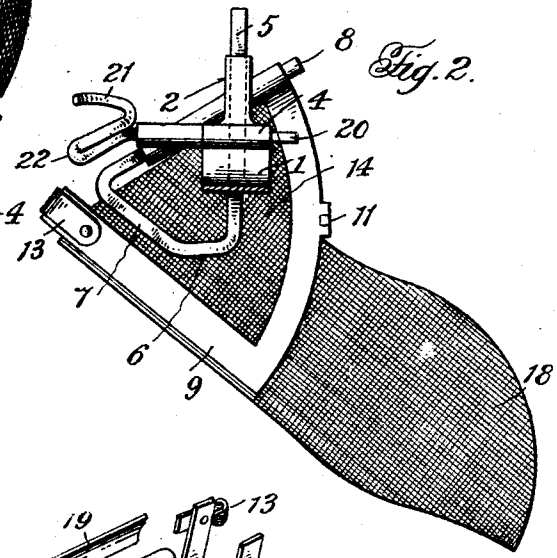


Fig. 3.

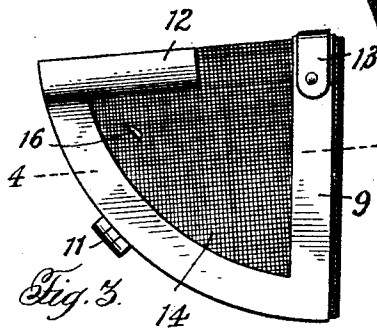
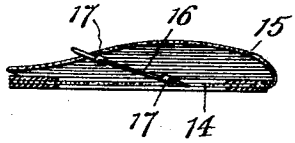


Fig. 4.



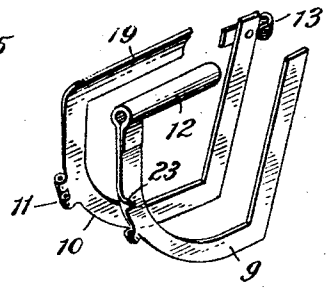


Fig. 5.

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UNITED STATES PATENT OFFICE

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NOSE SHIELD

Application filed September 22, 1927. Serial No. 221,316.

My invention relates to new and useful improvements in a nose shield and respirator and has for its principal object the provision of such a device which may be readily positioned on the nose or removed therefrom, said shield including wings which carry a gauze or other suitable material through which the air drawn into the nostrils may be filtered and such wings being adapted for swinging movement so that they may be properly positioned over the openings of the nose or left spaced from the openings.

Another object of my invention resides in the provision of members which will engage the partition and walls of the nose to hold the shield in proper position, the wall engaging members having extensions which are adapted to engage the upper lip of the wearer and thereby aid in supporting the shield.

A further object consists in forming the wings of hinged sections which may be opened, or separated, for positioning the gauze or other material therein it being appreciated that because of the accumulation of dirt or other matter, or because of being worn, it will be desired to change the said gauze or materials at intervals.

With the above and other objects in view, which will appear as the description proceeds, my invention consists in the novel details of construction, and arrangement of parts, described in the following specification and illustrated in the accompanying drawings, and while I have illustrated and described the preferred embodiments of the invention, as they now appear to me, it will be understood that such changes may be made as will fall within the scope of the appended claims.

In the drawings:—

Fig. 1 is a rear view showing my shield in position to be attached to the nose.

Fig. 2 is a section on the line 2—2 of Fig. 1 looking in the direction of the arrows.

Fig. 3 is a detail perspective of one of the wings.

Fig. 4 is a transverse section on the line 4—4 of Fig. 3; and

Fig. 5 is a perspective of one of the wings showing the sections thereof in separated position.

In the drawings 1 indicates a substantially U-shaped frame preferably formed from a strip of resilient metal which may be bent into the desired shape. The ends of the strip forming the frame are made to provide the substantially vertically extending eye portions 2 and intermediate the top and bottom of the frame the strip is made to form the inwardly extending arms 3 having the substantially horizontally extending eyes 4 formed at the inner ends thereof. As quite clearly illustrated in Fig. 1 of the drawings the inner ends of the arms 3 are spaced a distance apart so as to receive the partition walls of the nose therebetween. The frame being resilient may be sprung sufficiently to allow the partition wall of the nose to pass between the inner ends of the arms and when released the arms will engage on opposite sides of the partition wall. The lower portion of the frame will extend below the lower or outer edge of the nose partition.

Extending through the eyes 2 are the rods 5, said rods being of such a diamter as to snuggly fit the interior of the eyes and adapted to be held therein by friction. The lower ends of the rods are bent in the manner as more particularly illustrated in Fig. 2 of the drawings to form the portions 6 and 7 with the diagonally extending arm 8 formed on the end of the portion 7. The arms 8 of the rods are adapted to receive the wings to be later described. The rods 5 may be adjusted longitudinally in the eyes 2, and as previously stated, held in such adjusted positions by friction.

The wings which are rotatably and slidably mounted upon the arms 8, of the rods

5, comprise the frame portions 9 and 10 which are pivotally connected by means of the hinge 11. The frame 9 is provided with the elongated eye portion 12 through which the arm 8 is adapted to pass and the eye is of such a diameter as to frictionally engage the arm and normally hold the wing against sliding or rotatable movement. It will be understood that the friction may be overcome, when desired, to adjust the wings. The frames 9 and 10 are normally held together, or in closed position, by means of the pivoted latch shown at 13 carried by the frame 10. This latch is adapted to be swung to engage over the ends of the frame as shown more particularly in Figs. 1, 2 and 3 of the drawings. A gauze or other suitable filtering material 14 is clamped between the sections 9 and 10 of the frame and has an extension 15 which is folded to extend over the outer face of the wing as shown more particularly in Fig. 4 of the drawings. The two layers of the gauze or other fabric are held in spaced relation by means of a pin 16, one end of the pin extending through the gauze clamped between the frames of the wing and the other end of the pin extending through the folded extension 15. The manner in which the pin 16 is used is quite clearly illustrated in Fig. 4 of the drawings and adjacent each end of the pin is an enlargement 17 which limits the distance which the ends of the pins may pass through the fabric. The fabric carried by one of the wings is of greater length than that carried by the other wing to provide the extension 18 as shown more particularly in Figs. 1 and 2 of the drawings, and adapted to be used for a purpose and in a manner to be later described. When it is desired to remove or replace the gauze or other filtering material the pivoted catch 13 is swung into the position shown more particularly in Fig. 5 of the drawings and the frame portions of the wing may be swung on the hinge to separate the frame portions and allow the material to be removed and replaced. The frame 10 has the concaved extension 19 which engages the outer face of the sleeve 12.

Extending through the eyes 4 of the arms 3, and frictionally held therein, are the rods 20 having their outer ends bent to form the arms 21 and the extensions 22. The arms, as quite clearly shown in Fig. 1 of the drawings, extend outwardly in opposite directions to engage the inner surfaces of the walls of the nose. The extensions 22 are adapted to engage the upper lip of the wearer to aid in holding the shield in position on the nose.

From the above detailed description it is thought that the construction of my shield will be readily understood and I will now endeavor to more clearly bring out the manner of using. My shield is adapted to be attached to the nose and the wings carrying the gauze or other filtering material are adapted to be swung into position over the nose openings. When applying the shield the rods 20 will be rotated until the arms 21 are directed downwardly. The arms 21 are then grasped and the shield positioned on the nose. The frame will be inserted into the nose until the lower portion of the frame engages the end of the nose partition and the ends of the arms 3 will engage on opposite sides of the nose partition. It will be understood that the upper ends of the rods 5 and the sleeves 2 will be positioned within the nose between the outer walls thereof and the partition. When the frame is in position the rods 20 are again rotated to bring the outer ends of the arms 21 into engagement with the outer walls of the nose with the extensions 22 resting upon the upper lip adjacent the nose. The shield will be thus readily supported upon the nose. When in the position just described it is necessary to swing or adjust the wings so that the filtering material such as gauze will cover the nose openings. It will be seen that the rods 5 are adapted for sliding or rotatable movement in the eyes 2 and that the wings are adapted for both sliding and rotatable movement on the arms 8. Therefore proper adjustment may be secured so that the wings may be swung to cover the nose openings. The extension 18, of the filtering material, carried by one of the wings may be drawn beneath the nose partition and engaged over the end of the pin 23 carried by the opposite wing. By doing this a complete closure of the end of the nose is accomplished and as one breathes the air entering the nose will be filtered or cleansed. It will be noted that each of the wings has a double thickness of the filtering or cleansing material and that the thicknesses are separated by the pins 16. As one breathes the cleansing material will vibrate. The shield may be removed by swinging the wings away from the nose and by grasping the extensions 22 the rods 20 are rotated to remove the extensions 21 from engagement with the walls of the nose. The frame can then be withdrawn from the nose.

A shield such as I have described and illustrated is of advantage in preventing the entrance of impurities into the nose and may be worn by the travelers in trains or motor vehicles, by engineers or firemen, by those who suffer from hay fever or the like to prevent pollens from entering the nose, or in fact by any one who desires to prevent the entrance of dust or other impurities into the nose. By having the several parts adjustable, as has been described, the shield is adapted for use under various conditions and the filtering material may be changed when desired

Having fully described my invention what I claim as new and desire to secure by Letters Patent is:

1. A nose shield comprising a frame adapted to engage the partition of the nose, and

filtering members carried by the frame and adjustable relative thereto for positioning over the nose openings, said filtering members including each a frame and filtering material carried thereby, the filtering material carried by one of the frames having an extension adapted to extend beneath the nose partition and to be engaged with the opposite frame.

2. A nose shield including a resilient frame adapted to be engaged with the partition of the nose, eyes carried by the frame, rods rotatably and slidably mounted in the eyes, filtering members carried by the rods and adapted for swinging movement to be positioned over the nose openings, and members carried by the resilient frame and adjustable relative thereto for engagement with the inner surfaces of the walls of the nose.

3. A nose shield including a frame having a portion adapted to extend beneath the end of the nose partition, arms adjustable relative to the frame and adapted to be engaged with the walls of the nose, rods adjustable relative to the frame, and filtering members carried by the rods for swinging movement relative to the nose.

4. A nose shield including a frame having a portion adapted to extend beneath the end of the nose partition, arms adjustable relative to the frame and adapted to be engaged with the walls of the nose, said arms having portions adapted to engage the lip of the wearer, rods adjustable relative to the frame, and filtering members carried by the rods for swinging movement relative to the nose.

5. A nose shield including a frame having a portion adapted to extend beneath the end of the nose partition and engage the side walls thereof, arms adjustable relative to the frame and adapted to be engaged with the walls of the nose, rods adjustable relative to the frame, and filtering members carried by the rods for swinging movement relative to the nose.

6. A nose shield including a frame having a portion adapted to extend beneath the end of the nose partition and formed with substantially horizontally extending eyes and substantially vertically extending eyes, arms carried by the substantially horizontally extending eyes and adapted to be engaged with the walls of the nose, rods carried by the substantially vertically extending eyes, and filtering members carried by the rods for swinging movement relative to the nose.

7. A nose shield or respirator including a resilient frame having a portion adapted to be engaged with the nose partition and formed with substantially horizontally extending eyes and substantially vertically extending eyes, arms carried by the substantially horizontally extending eyes and adapted to be engaged with the walls of the nose and with the lip of the wearer, said arms being slidably and rotatably mounted in the eyes and frictionally held therein, rods carried by the substantially vertically extending eyes, said rods being slidably and rotatably mounted in the eyes and frictionally held therein, and filtering members carried by the rods, said filtering members being both slidably and rotatably mounted for adjustment relative to the nose.

In testimony whereof I hereunto affix my signature.

DANIEL H. ROCHE.