

June 17, 1941.

C. H. FRANCISCO ET AL

2,245,969

NASAL INHALER

Filed Nov. 27, 1939

*Fig. 1.*

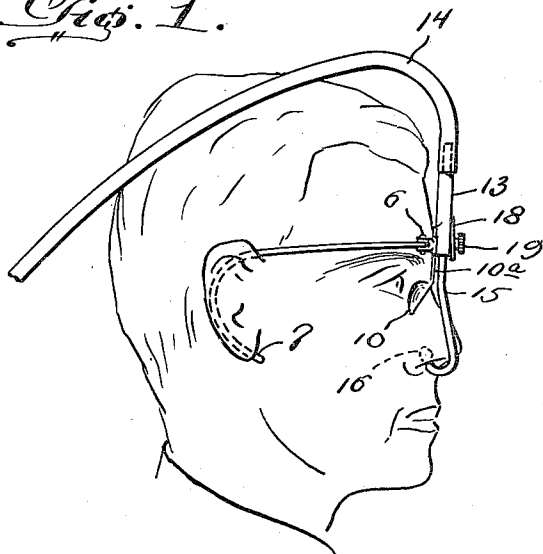


*Fig. 4.*

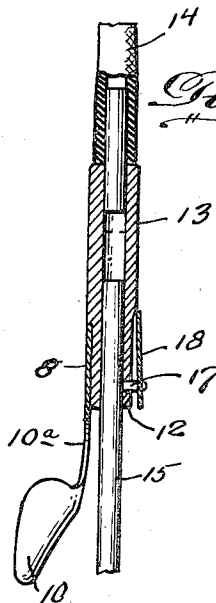


*Fig. 2.*

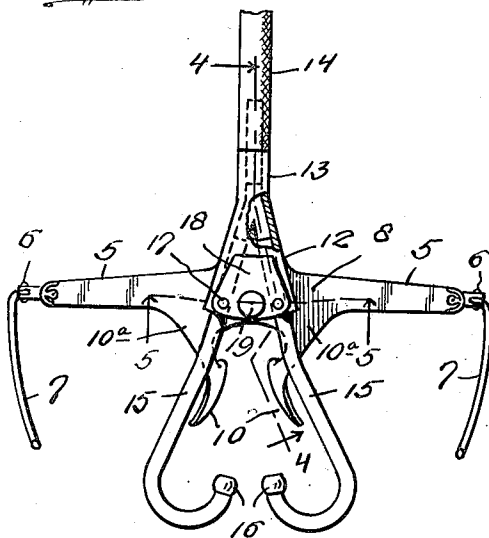
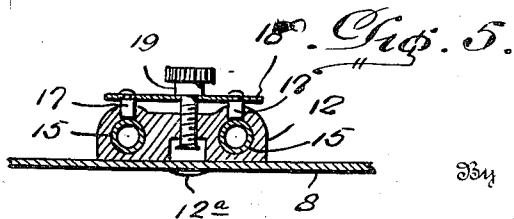
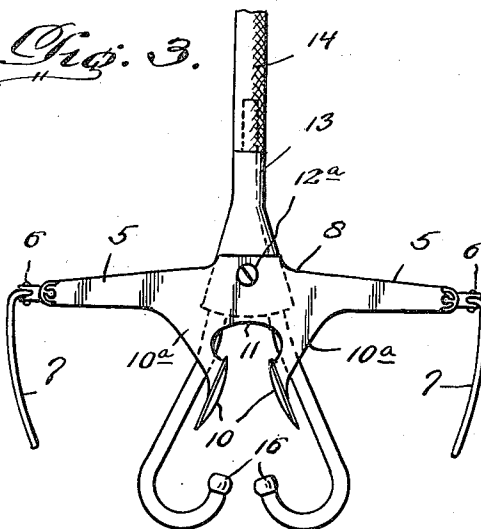


*Fig. 3.*



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## UNITED STATES PATENT OFFICE

2,245,969

## NASAL INHALER

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Application November 27, 1939, Serial No. 306,394

1 Claim. (Cl. 128—206)

This invention relates to inhalers such as are commonly employed for supplying oxygen to patients for breathing purposes when afflicted with pneumonia and other ailments.

The primary object of the present invention is to generally improve upon and simplify the construction of inhaler disclosed in U. S. Patent No. 2,168,705 granted August 8, 1939, to Charles Henry Francisco, et al. More particularly, the present invention aims to provide a nasal inhaler of the above kind including an improved supporting frame, and novel means for permitting adjustment of the nasal tubes so that they may be readily entered in the nostrils of different patients.

Other objects and features of the present invention will become apparent from the following description when considered in connection with the accompanying drawing, in which:

Figure 1 is a side view showing an inhaler embodying the present invention and illustrating the same in use.

Figure 2 is a front elevational view of the inhaler drawn on an enlarged scale and partly broken away and in section.

Figure 3 is a rear elevational view of the inhaler shown in Figure 2.

Figure 4 is an enlarged vertical section on line 4—4 of Figure 2; and

Figure 5 is an enlarged horizontal section on line 5—5 of Figure 2.

Referring in detail to the drawing, the present inhaler consists of a supporting frame somewhat in the nature of the frame of spectacles and consisting of a vertically disposed plate 8 having integral substantially horizontal arms 5 projecting from opposite sides thereof and arranged to occupy a position over the eyes of the patient. The central portion of the frame or plate 8 is upwardly curved at its lower edge as at 11 so that this portion forms a bridge adapted to overlie the bridge of the patient's nose, and depending from the plate 8 at opposite sides of the curved edge portion 11 are integral arms 10a having enlarged lower end portions twisted substantially at right angles and formed in concavo-convex shape to provide nose pieces 10 arranged to engage the nose of the patient at opposite sides of the bridge of the nose. The arms 5 are yieldable so as to prevent undue pressure of the temples 7 against the sides of the patient's face, said temples being pivoted at 6 to the outer ends of the arms 5 and arranged to extend rearwardly at the sides of the face of the patient and to hook at their rear ends around the pa-

tient's ears for retaining the inhaler in place upon the patient. In this way, an extremely simplified and inexpensive but durable construction is had for supporting the nasal tubes of the inhaler as will be presently described.

The inhaler further includes a fitting 12 rigidly secured to the front face of the plate 8 by means of a screw 12a or the like. The fitting 12 is in the form of a block having a flat rear face 10 flatly contacting the front face of the plate 8 as shown more clearly in Figure 5, the plate 8 being countersunk in the front of the fitting 12 as shown in Figure 4. The fitting 12 further consists of a hollow member which is tapered wider in a downward direction, being provided with a central top inlet 13 adapted for connection with the source of oxygen supply by means of a flexible tube 14 or the like. The fitting 12 has downwardly diverging passages leading from the inlet 13 and opening through the bottom of the fitting and in which are slidably positioned the upper ends of nasal tubes 15 that extend downwardly in diverging relation at and below opposite sides of the bridge portion 11 and nose pieces 12. The nasal tubes 15 have their lower end portions curved inwardly and upwardly in position to enter the nostrils of the patient, and by vertically sliding these nasal tubes relative to the fitting 12, they may be properly adjusted to different patients. The vertical adjustment of the nasal tubes 15 may be maintained by suitable means such as pins 17 projecting into the fitting 12 and frictionally engaging the upper ends of the nasal tubes 15 as shown more clearly in Figure 5, said pins being carried by a spring pressure plate 18 through which passes a screw 19 threaded into the fitting 12. By adjusting the screw 19, the spring plate 18 may be tensioned to regulate the frictional engagement of the pins 17 with the nasal tubes 15. In this way, the nasal tubes may be effectively retained in adjusted position relative to the fitting 12, and by loosening the screw 19, the pins 17 may be freed to permit the desired vertical adjustment of said nasal tubes as will be apparent. The terminal 16 of the lower ends of the nasal tubes 15 are of substantially bail shape to properly fit in the nasal passages, as usual.

The oxygen may be supplied directly to the nasal passages by means of the device described, so that no interference is presented to the patient eating freely at any time. In use, the lower ends of the nasal tubes 15 are entered into the nostrils and the inhaler is then lifted so that the bridge portion 11 properly rests upon the

bridge of the nose. The temples 7 are then engaged over the patient's ears, whereupon the oxygen supplied through the tube 14 enters the fitting 12 and passes into and through the nasal tubes 15.

From the foregoing description, it will be seen that the present inhaler is extremely well adapted for successfully carrying out the stated objects of the invention, and minor changes in details of construction illustrated and described are contemplated within the spirit and scope of the invention as claimed.

What we claim as new is:

A nasal inhaler comprising a supporting frame in the general form of the frame of spectacles and including a vertical plate having integral substantially horizontal arms projecting from opposite sides thereof and arranged to occupy a position over the eyes of the patient, the lower edge of the plate being formed to provide a bridge piece arranged to overlie the bridge of the patient's nose, other vertical arms integral with the plate and depending from the latter at opposite sides of said bridge piece, the lower ends of said arms being formed to provide nose pieces, a fitting rigidly secured to the front of said plate to provide an upwardly projecting in-

let for oxygen or the like and downwardly diverging outlets at opposite sides of said bridge piece, nasal tubes connected to said outlet and depending therefrom, said nasal tubes terminating in inwardly and upwardly directed lower ends arranged to enter the nostrils of the patient, templates pivoted to the outer ends of said first-named arms and arranged to hook over the patient's ears to retain the inhaler in position upon the patient, the upper ends of said nasal tubes being slidably arranged in the diverging outlets of said fitting for vertical adjustment to the patient, manually releasable means for retaining the nasal tubes in any desired vertically adjusted position relative to the fitting, said last-named means comprising pins entering the fitting and frictionally engaging the upper ends of the nasal tubes, a resilient plate carrying said pins, and a manually operable screw having threaded engagement with the fitting and associated with said plate for flexing the latter and regulating the frictional engagement of the pins with the nasal tubes.

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