

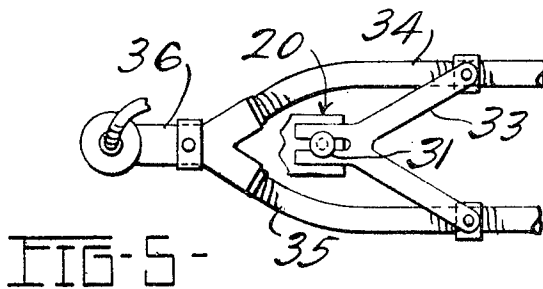
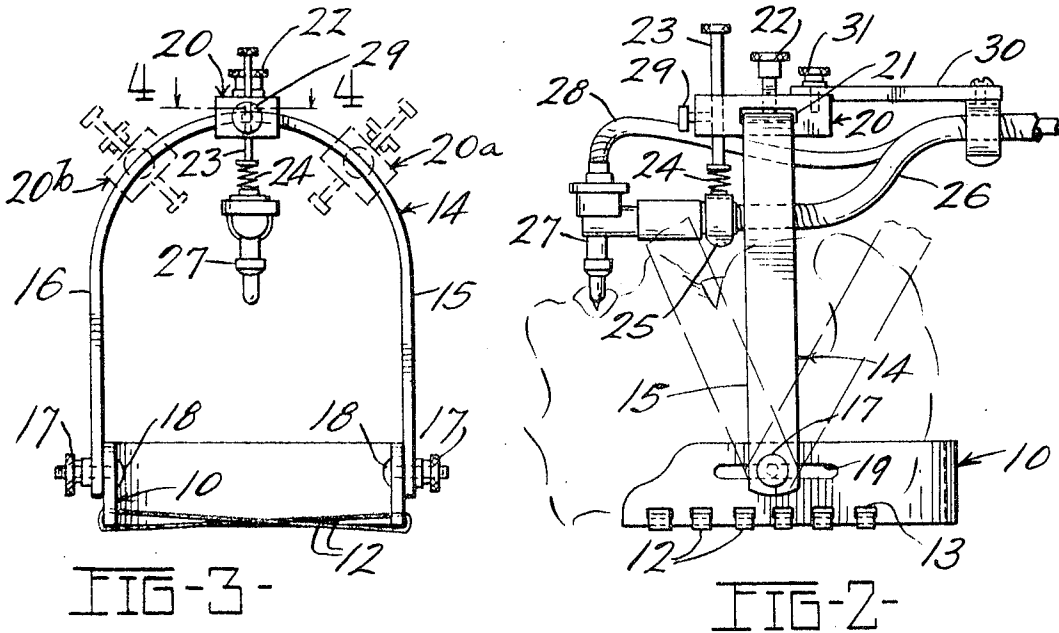
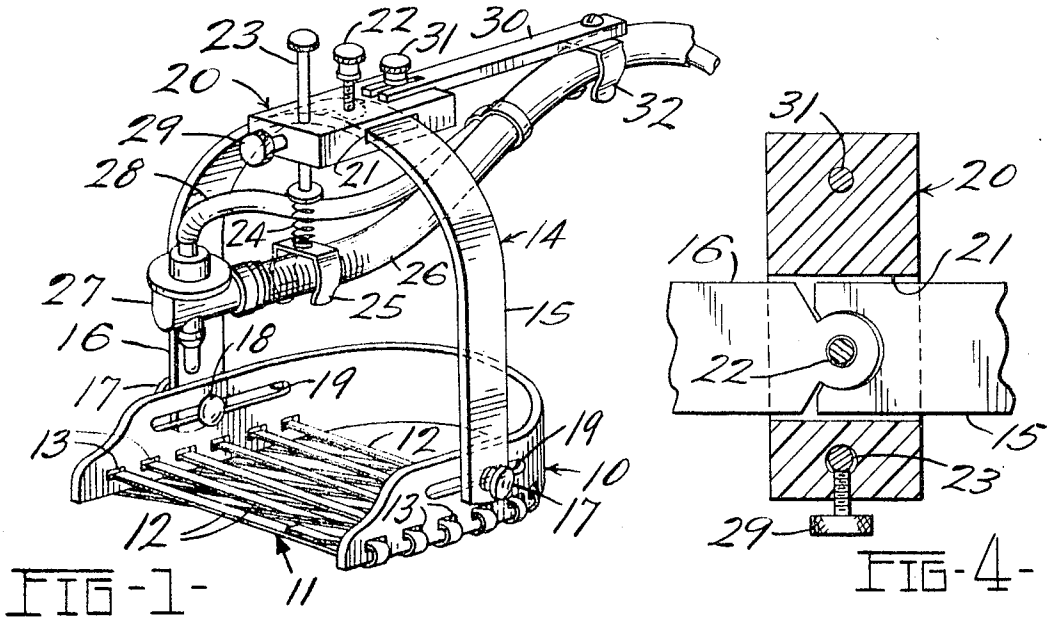
Sept. 2, 1969

A. V. MARTINEZ

3,464,411

RESPIRATOR HOLDER DEVICE

Filed March 22, 1967



INVENTOR:
ANGEL V. MARTINEZ.
BY *[Signature]*

ATT'S.

1

3,464,411

RESPIRATOR HOLDER DEVICE

Angel V. Martinez, 1387 East Blvd.,

Cleveland, Ohio 44106

Filed Mar. 22, 1967, Ser. No. 625,079

Int. Cl. A62b 9/04

U.S. Cl. 128—145.8

8 Claims

ABSTRACT OF THE DISCLOSURE

A device for positioning the mouthpiece of a respirator relative to the mouth of a patient lying in face-up position. The device includes a base to support the head of the patient and a rigid frame extending over the face of the patient when in such face-up position. A suspension member is adjustably positioned over the face of the patient to support a resiliently suspended mouthpiece and associated tubing at the position of the patient's mouth. The resilient suspension means permits movement of the mouthpiece as the head of the patient is turned. Part of the rigid frame can be swung to a remote position to facilitate access to the patient's head without removal of the head from the device.

Background of the invention

This invention relates to respiratory devices, and in particular to supporting devices for respirator mouthpieces and associated inhalator tubes.

Infants and post-operative patients who have had an abdominal or chest surgery sometimes have considerable difficulty breathing. In order to aid the patient's breathing, mechanical respirators are often used. These respirators automatically deliver oxygen to the patient through plastic mouthpieces or nozzles, or through tubes placed in the trachea. The mouthpieces are connected to a source of oxygen by breath or inhalator tubes.

Respirators have been constructed so that the inhalator tubing is suspended in a manner such that a major proportion of the weight of the tubing and associated nozzle rests on the patient's mouth. Such an arrangement is particularly unsatisfactory with infants. In addition most tubing is rigidly fixed to its carrying frame and cannot be moved with ease. The post-operative patient who is restless and thrashes around may lose the nozzle attached to the end of the tubing from his mouth, unless it is taped in place. Taping is, of course, an uncomfortable expedient.

This invention is intended to eliminate the discomfort and possible malfunction associated with respirators, as described above. The invention will be more fully understood by reference to the following description of a preferred embodiment, reference being made to the drawings in which:

FIG. 1 is a perspective view of the apparatus of the invention;

FIG. 2 is a side view in elevation of the apparatus of the invention;

FIG. 3 is a front view in elevation, with parts shown in phantom, of the apparatus of the invention;

FIG. 4 is a view in cross section, taken along line 4—4 of FIG. 3 and shown on an enlarged scale, of the support block and the two halves of the vertical support frame; and

FIG. 5 is a plan view, with parts broken away, of an alternative embodiment of portions of the apparatus.

The apparatus consists of a U-shaped base member 10 having a generally horizontal support means 11 for supporting the head of the patient. The support means 11 consists of a plurality of tapes 12 laced through slots 13 in the side of the base member 10. The interwoven tapes

2

12 provide a comfortable support surface for the head of the patient.

Attached to the U-shaped base member 10 is a rigid frame 14 which extends upwardly in a generally vertical direction over the support means 11, above the head of a patient when the head is positioned face-up on the support surface (see FIG. 2). The frame 14 is composed of two legs 15 and 16 which arch at their ends and join together at the top of the arch formed by the two legs. The legs 15 and 16 are snapped together with a complementarily shaped projection and recess, as seen in FIG. 4.

The legs 15 and 16 are pivotally mounted to the base member 10, one to each side, by means of a nut 17 and bolt 18. Each of the legs 15, 16 is slidable in a horizontal direction at their base, along a slot 19 cut in the base member 10. The two legs 15 and 16 of the frame 14 are held together at the top by a bracket 20 having a slot 21 therein through which the legs 15 and 16 extend. The bracket 20 is fixed at any position by a thumb screw 22.

Depending vertically downward from the bracket 20 is a stem 23 and mounted on the lower end of the stem 23 is a resilient spring 24. The other end of the spring 24 is attached to a clamp 25 which is clamped around an inhalator tube 26 near the junction of the tube and a mouthpiece 27. Leading from the mouthpiece 27 is an exhalation tube 28. In the particular embodiment of the respirator apparatus shown, a valve is located in the mouthpiece which shuts off oxygen coming from the inhalator tube, and opens the exhalation tube when the patient exhales.

The stem 23 is adjustably mounted in the bracket 20 and can be moved up or down. A set screw 29 is used to fix its position.

By suspending the tube 26 from the loose spring 24, the majority of the weight of the mouthpiece 27 and tubes 26 and 28 is taken off the patient. Because of the resilience of the spring 24, the patient can turn his head from side to side without dislodging the mouthpiece 27.

When it is necessary to have access to the patient's head, it may be done without removing the inhalator tube 26 or associated apparatus. The bracket 20 is moved to one side, the legs 15 and 16 are detached from each other at their junction, and one of the legs 15 or 16 is swung down, as illustrated in FIG. 2, to expose the patient's head.

Mounted on the bracket 20 and extending horizontally rearward therefrom is a support brace 30 for the inhalator tube 26 and exhalator tube 28. The brace is slidably mounted on the bracket 20 and is held in position by a set screw 31 which extends through a slot in the support brace 30 and screws into the support block 20. At the opposite end a clamp 32 is attached to maintain the inhalator tube 26 and exhalator tube 28 in the desired positions.

FIG. 5 illustrates another embodiment of a portion of the apparatus of this invention. In this embodiment, a Y-shaped support brace 33 is used to clamp two inhalator tubes 34 and 35 which feed into a nozzle 36. In all other respects the apparatus is the same as has been previously described.

I claim:

1. An apparatus for positioning the mouthpiece and breath tubing of a respirator device relative to the mouth of a patient, comprising, in combination, a base member having a generally horizontal support surface for the head of the patient, a rigid frame extending upwardly from said base member and over said support surface above the face of such patient when the head is positioned face-up upon said support surface, a suspension member secured to said rigid frame above the face of said patient and extending downwardly toward the face of such patient,

3

and resilient means for supporting and suspending a respirator mouthpiece from said suspension member at the position of the mouth of said patient when in said face-up position whereby, when said mouthpiece is held in the mouth of such patient when in said face-up position, said resilient means substantially supports the weight of such mouthpiece and breath tubes and whereby, when the mouth of the patient is moved away from said face-up position, said mouthpiece will remain in the mouth of such patient as said resilient means adjusts its length to accommodate such changes in position.

2. The apparatus of claim 1 wherein said resilient means is a vertically suspended coil spring having a relatively low spring constant with its upper end secured to said suspension member and its lower end having means adapted to be operatively secured to said mouthpiece of said respirator.

3. The apparatus of claim 1 which further includes a means for manually adjusting the vertical position of said suspension member relative to the upper portion of said rigid frame.

4. The apparatus of claim 1 wherein said base member comprises a rigid, generally U-shaped structure adapted to receive the head of a patient between spaced apart side members with a resilient support surface secured between such side members.

5. The apparatus of claim 1 wherein said rigid frame comprises a generally U-shaped member with downwardly extending legs secured to opposed edges of said base member and having an arcuate shaped portion between said legs extending over said support surface above the face of said patient.

6. The apparatus of claim 5 wherein said generally

4

U-shaped member is comprised of a pair of separate rigid members each having a lower leg portion and an upper arcuate end which, when joined together, form said rigid frame and with the leg portion of at least one of said rigid members pivotally secured to said base member whereby said pivoted member may be swung away from its joined position to facilitate access to the head of said patient.

7. The apparatus of claim 5 which further includes a slide block secured to said suspension member and having a slide channel therethrough to receive said U-shaped member whereby said slide block may be moved to various positions along the arcuate shaped portion of said U-shaped member and means for securing said slide block in any position along said U-shaped member.

8. The apparatus of claim 1 which further includes a clamp secured to the lower end of said resilient means and adapted to engage and hold said mouthpiece and its breath tubing.

References Cited

UNITED STATES PATENTS

690,663	1/1902	Pratt	128—147	XR
2,151,458	3/1939	Allen	128—76	XR
2,857,911	10/1958	Bennett	128—147	
2,963,247	12/1960	Collier et al.	248—81	

RICHARD A. GAUDET, Primary Examiner

RONALD L. FRINKS, Assistant Examiner

U.S. Cl. X.R.

128—147, 351; 248—81, 82, 84, 118