April 29, 1947. M. A. URRUTIA 2,419,860

ADJUSTABLE PIPE SUPPORT

Filed March 30, 1943 3 Sheets-Sheet 1

Fig. 1

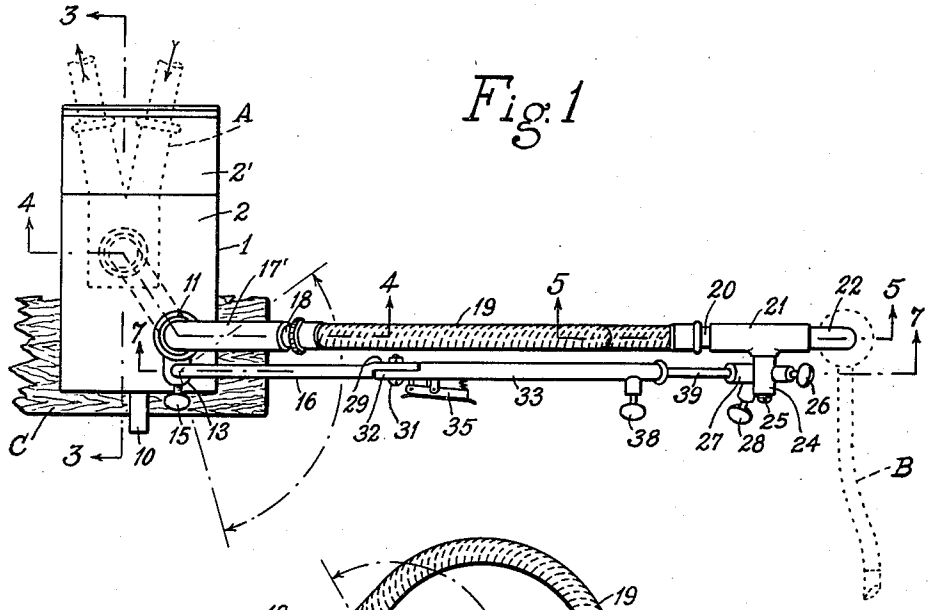
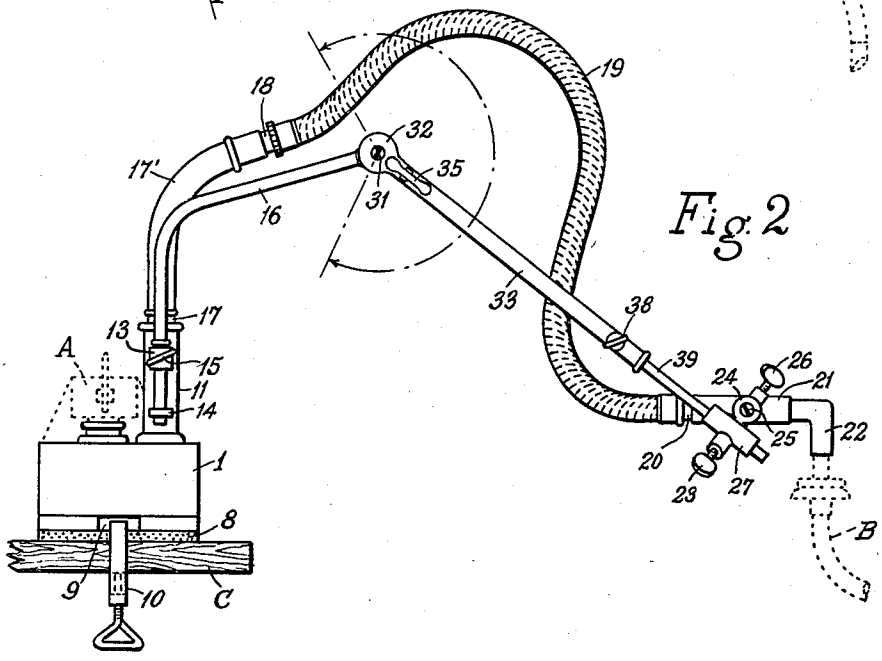


Fig. 2



INVENTOR.
Miguel A. Urrutia
BY.
ATTORNEY.

April 29, 1947. M. A. URRUTIA 2,419,860

ADJUSTABLE PIPE SUPPORT

Filed March 30, 1943 3 Sheets-Sheet 2

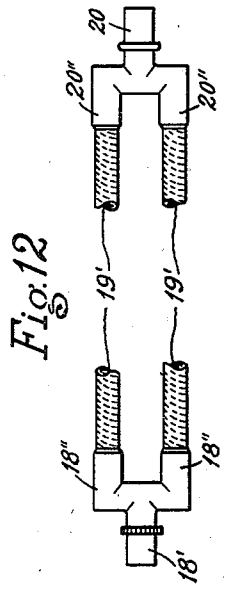


Fig. 12

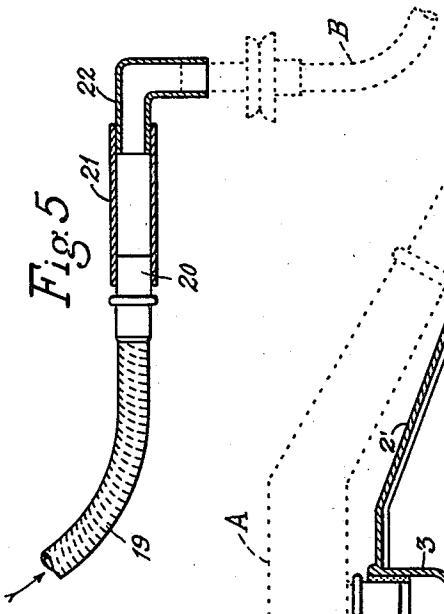


Fig. 5

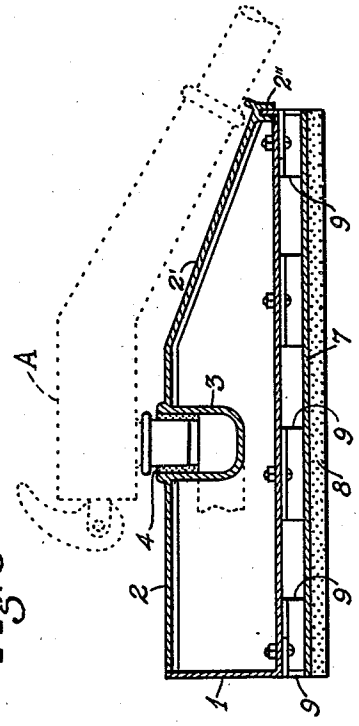


Fig. 3

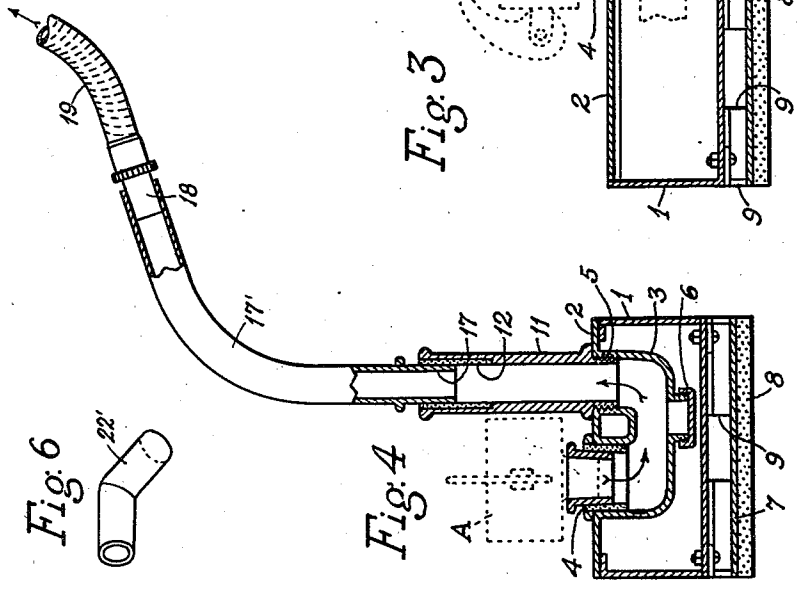


Fig. 4

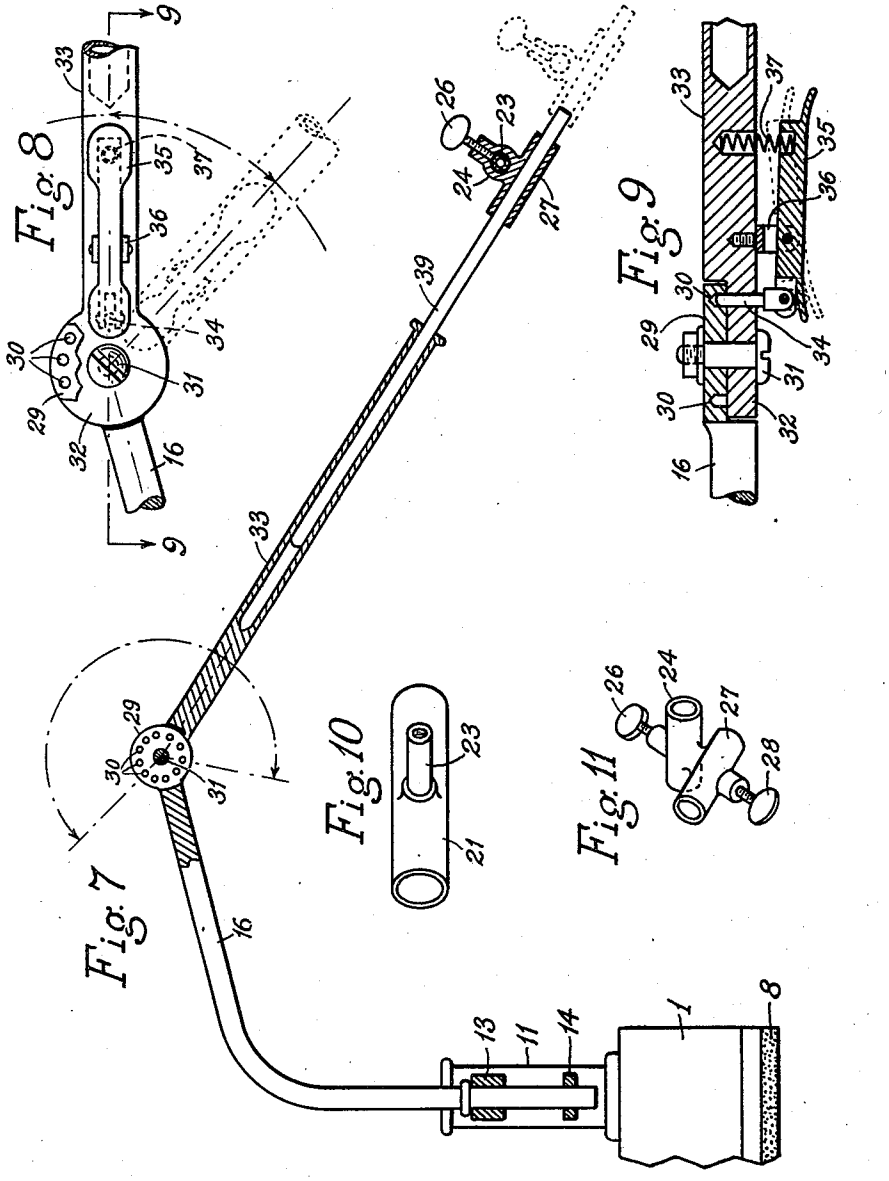
Fig. 6

INVENTOR.
Miguel A. Urrutia
BY.
ATTORNEY.

April 29, 1947. M. A. URRUTIA 2,419,860

ADJUSTABLE PIPE SUPPORT

Filed March 30, 1943 3 Sheets-Sheet 3



INVENTOR.
Miguel A. Urrutia
BY.
ATTORNEY.

Patented Apr. 29, 1947

2,419,860

UNITED STATES PATENT OFFICE

2,419,860

ADJUSTABLE PIPE SUPPORT

Miguel A. Urrutia, Habana, Cuba

Application March 30, 1943, Serial No. 481,138

3 Claims. (Cl. 248—79)

1

This invention is directed to an improvement in apparatus for facilitating the maintenance of endotracheal anesthesis, and is particularly designed with a view to relieve the anesthetist as well as the patient of objectionable, though heretofore necessary, disadvantages in the use of such an apparatus.

As heretofore more or less conventionally practiced, the anesthetist encounters difficulty in maintaining the inhalation valve connected to the tracheal catheter, and usually seeks to avoid this difficulty by holding the inhalation valve with gauze or with tape connected to the operating frame, or by holding the apparatus with the hand over the face of the patient during the period of operation. Either of these methods is uncomfortable, one to the patient who has to sustain a strip of gauze or tape, and the other to the anesthetist, who for the reason of his attention being directed to the holding of the apparatus in the face of the patient finds it virtually impossible to devote his attention to his other and probably more important duties, as for example, in determining the arterial tension, the pulse, and the breathing of the patient.

The primary object of the present invention is the provision of means, whereby, once the surgical degree of anesthesis has been obtained and the apparatus applied to the face of the patient, the necessary parts, provided in themselves for relative adjustment as may be required, are more or less rigidly supported, relieving the anesthetist of his duties in connection with such holding and permitting him to be practically free to devote his attention to his other mentioned and important duties.

The invention is illustrated in the accompanying drawings, in which:

Figure 1 is a view of the improved apparatus shown in plan view.

Figure 2 is an elevation of the same.

Figure 3 is a section on line 3—3 of Figure 1.

Figure 4 is a vertical sectional view on line 4—4 of Figure 1.

Figure 5 is a sectional detail on line 5—5 of Figure 1.

Figure 6 is a perspective view of an elbow connector.

Figure 7 is a vertical sectional view on line 7—7 of Figure 1.

Figure 8 is an enlarged broken bottom plan of the adjusting means for the holding member.

Figure 9 is a sectional view, partly in elevation, the line of section being on line 9—9 of Figure 8.

2

Figure 10 is a perspective view of a member of the articulation tube.

Figure 11 is a perspective showing the connection for one adjustment of the holding member.

Figure 12 is a broken plan view of a slightly modified form of articulation tube.

The improved apparatus includes a hollow base 1, of box-like form, having a top 2 secured in place in a manner to permit its convenient removal. The top 2 carries a U-shaped conduit 3, the respective ends of which open through the top. One of the open ends of the conduit 3 is provided with a flexible gasket 4 to removably receive and seal connection with a nipple 4' depending from the inhalation valve, indicated at A. The upper surface of the top 2 and the corresponding formation of the top of the base is formed to provide a downwardly inclined section 2', terminating at its ends in an upstanding flange by means of a fitting 2'', the upstanding flange providing for supporting the inhalation valve A beyond its connection with the conduit 3.

The inhalation valve, so called, is hollow in Y form, connected at one branch end with the mask and the other branch end with the tubes that extend to the apparatus. The inhalation valve is conventional in apparatus of this type, forms no part of the present invention, and requires no particular showing or description.

The lower portion of the hollow base 1 is formed with spaced walls 7. To the bottom surface of the lowermost of the said walls is secured an elastic sheet 8, as rubber, to rest upon the support C, to which the apparatus is temporarily secured. One of the walls of the hollow base in the plane of the space between the walls 7 is formed with openings 9 to receive an appropriate and conventional securing member 10, by which the base is removably fixed to the support C.

The remaining outlet of the conduit 3 is threaded or otherwise formed to removably receive and support a nipple 11, and the upper end of the nipple is formed on its inner surface with a rubber gasket 12. From the supply tube, carried by and supported by the nipple 11, leads a preferably curved tubular section 17', fitted within and frictionally engaging the gasket 12 of the nipple 11, the opposite end of the section 17' receiving a nipple 18, in turn connected to a flexible hose section 19, preferably externally reinforced against collapse. The opposite end of the flexible hose section 19 is connected to a nipple 20, fitted within one end of a metallic sleeve

21, the opposite end of which receives a metallic elbow section 22, the free end of which elbow section is tapered to receive the appliance B, which in view of the description of the present invention is of course a catheter for endotracheal anesthesia.

To relieve the anesthetist of the objectionable unnecessary duties heretofore referred to, the apparatus includes means by which the supply tube may be adjusted in substantially any desired position and fixed in that adjustment at the desired stage of operation.

The nipple 11, which is of course a rigid member and of sufficient length for the purpose, is provided with vertically aligned bearing lugs 13 and 14, into which is fitted, for convenient free rotary movement and removal when desired, one end of a rod 16, which is preferably curved somewhat in accordance with the curvature of the section 17' of the supply tube. One of the lugs, as 13, for example, is provided with a set screw 15, by which the rod 16 may be held in fixed rigid relation with the nipple 11, the rod being preferably provided with a collar to limit its vertical position relative to the bearing lugs. The end of the rod 16 is formed or provided with a circular disc-like section 29, to which, through the medium of a pivot pin 31, is connected a similar disc-like section 32, carried by one end of a rod 33, the disc members constituting an adjustable rotary connection in one plane of the adjacent ends of the rods 16 and 33. The disc 29, on its face adjacent the disc 32, is formed with a circular series of depressions 30, opening through that face, and the proximate face of the disc 32 is formed with a through opening, with which any one of the depressions 30 may register.

A pin 34 is slidably mounted in the opening in the disc 32, and adapted to be operated to engage with or free a particular depression 30 of the disc 29, it being apparent when the pin engages any one of said depressions, the discs are locked against relative rotary movement, while when the pin is free of a depression, the discs are arranged for free rotary movement. The pin 34 is carried on a finger lever 35, pivotally supported in a bracket 36, depending from the rod 33, a spring 37 being arranged to normally maintain the lever in position to hold the pin in engagement with a selected depression 30.

The end of the rod 33 remote from the disc connection described is formed with a longitudinal bore to slidably receive a rod 39, a set screw 38 carried by the rod 33 serving to fix the rod 39 in any desired longitudinal relation to the rod 33.

A metallic sleeve member 21 is provided with a lateral pivot pin 23, on which is mounted a securing and adjusting element, shown more particularly in Figure 11, for the free end of the rod 39. This element includes a sleeve section 24, rotatable on the pin 23 and fixed with relation thereto at will by a set screw 26. The end of the pin 23 is provided with a removable headed engaging element 25 to prevent longitudinal movement of the sleeve section 24 on the pivot pin 23. A second sleeve section 27 is secured to the section 24 at right angles thereto and receives the free end of the rod 39. A set screw 28 is arranged to fix the rod 29 with respect to the sleeve section 27 at will.

The conduit 3 is preferably provided with an

outlet at its bottom section, normally closed by a removable cap 6. The flexible section 19 of the supply tube may, if desired, be formed as shown in Figure 12, wherein the nipples 18 and 20 are formed respectively of U-shaped ends presenting relatively two connecting sections 18'' on the modified nipple, here indicated at 18', and two inlet sections 20'' on the nipple 20. This provides for two flexible sections, here indicated at 19' for obvious advantages in use and installation.

It will be apparent from the above that the necessary elements of the apparatus are supported from the hollow base 1 and are arranged to permit relative adjustment necessary to provide proper positioning of the parts as may be necessary in the operation, and that when so adjusted and fixed, the anesthetist is relieved from the necessity of holding the mask with tape or by hand on the face of the patient, as the complete necessary holding is automatically carried out by the details described, with such details permitting all and any necessary operations or relative movements that may be from time to time required.

What I claim is:

1. A support for use with a supply pipe of an apparatus for administering an anesthetic, with the supply pipe of the type including rigid end sections and a flexible intermediate section, to be held in adjustable relation relative to the apparatus, said support including a first inflexible end section rotatably mounted on one rigid end section of the supply pipe, a second inflexible section secured to the first inflexible section for any desired angular relation of the inflexible sections, a rod slidable in the second inflexible section, a metallic sleeve on the end of the flexible section of the supply pipe, a nipple slidable on the sliding rod and swingingly mounted on and relative to the metallic sleeve, and means for fixing at will the metallic sleeve and nipple relative to the parts with which they cooperate.

2. A construction as defined in claim 1 wherein the nipples are at right angles to each other and relatively rigid.

3. A construction as defined in claim 1, wherein manually controlled means are provided to fix the respective inflexible sections in any one of a plurality of angular relations.

MIGUEL A. URRUTIA.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,051,730	McCandless	Aug. 18, 1936
2,225,201	Anderson	Dec. 17, 1940
493,719	Henderson	Mar. 21, 1893
2,030,218	Maxwell	Feb. 11, 1936
2,170,557	Guarnaschelli	Aug. 22, 1939
861,108	Goldsmith	July 23, 1907

FOREIGN PATENTS

Number	Country	Date
2,906	British	Feb. 27, 1888
289,752	German	Jan. 15, 1916
90,023	Swiss	July 16, 1921