CURRENT COMMENT AND CASE REPORTS

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PEDIATRIC CIRCLE ABSORBER

Dr. Edward R. Bloomquist, Los Angeles, believes that circle absorber units heretofore devised have failed to provide a simple, compact, versatile, essentially trouble-free unit with a soda lime canister in a position for maximum efficiency and made of a clear material to facilitate use of indicating soda lime. In conjunction with Roy and George Dundas, he has developed the pediatric circle absorber described in the following paragraphs.

This instrument consists of the usual component parts of any circle filter, a canister, directional valves, breathing bag and tubes, standard connections and adapters. It differs from previously available filters because of the presence of a metal base. The base is a 5-inch square, one inch thick unit of anodized aluminum. It provides stability for the canister, yet it is light and easy to handle. Two horizontal parallel channels $\frac{3}{8}$ inch in diameter have been drilled through the metal and completely traverse the block. Two additional vertical openings have been drilled through the surface of the block, each directly communicating with one of the horizontal channels.

The first vertical opening contains a circular mounting, into which any size standard Lucite or metal Foregger canister will seat.

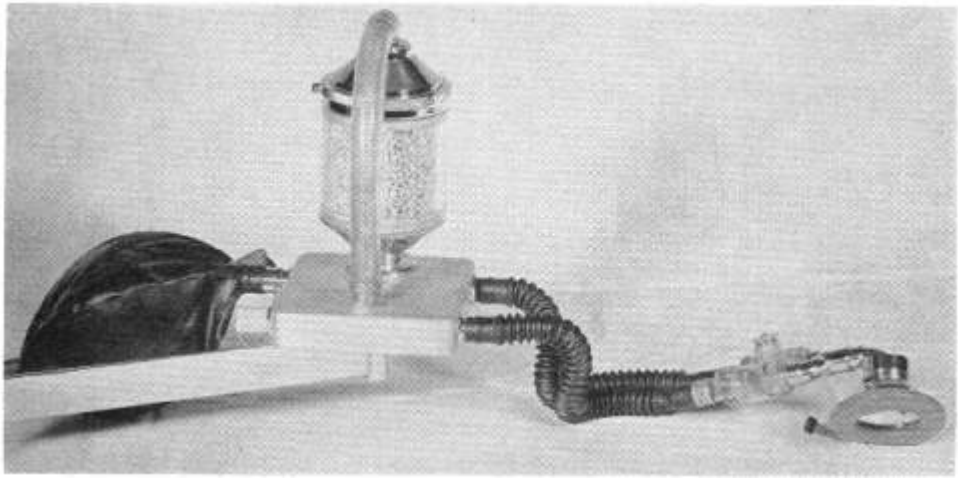
The second opening is topped with a metal nipple with a $\frac{3}{8}$-inch channel. This accommodates the inferior end of a plastic Tygon tube. The tube contains a coiled wire which serves two purposes: (1) it assists in grounding the filter, and (2) prevents the tube from collapsing during the exchange of canisters. The superior end of the tubing connects to the upper end of the canister through an adapter. This closes the circle and directs the gas to or from the canister.

Another hole, this one noncommunicating, $\frac{1}{2}$ inch in diameter, has been drilled through the center of the block. It accommodates the peg of an adjustable extension bar which supports and mobilizes the filter assembly. The use of this bar, incidentally, is not limited to machines which have a receptacle for it. The ether screen clamp on many operating tables is of comparable diameter and thus permits its utilization to good advantage. The supporting section of the bar with filter seated upon it is illustrated.

Off-center to the peg hole, a small chain has been attached to the block. On its free end is a plastic plug which will fit into any one of the 4 openings at the ends of the horizontal parallel channels. Its presence greatly increases the versatility of the filter as will be described later.

The unit is easily assembled for use or taken apart for storage. Its parts, except for the canister, will easily fit into the average anesthesiologist's bag. To assemble it, the free end of the Tygon tubing with its adapter is attached to the canister and the latter is now seated onto its base mounting. The breathing tubes, with metal connectors and directional Y-piece attached, are then inserted into two adjacent holes in the base. Either side of the base may be considered the front depending upon the route the anesthesiologist wishes the gases to take. The choice of directional valves is optional. One may utilize those currently employed on the Digby Leigh filter, the Sierra Y-valve, or a modified Edison Y-valve.

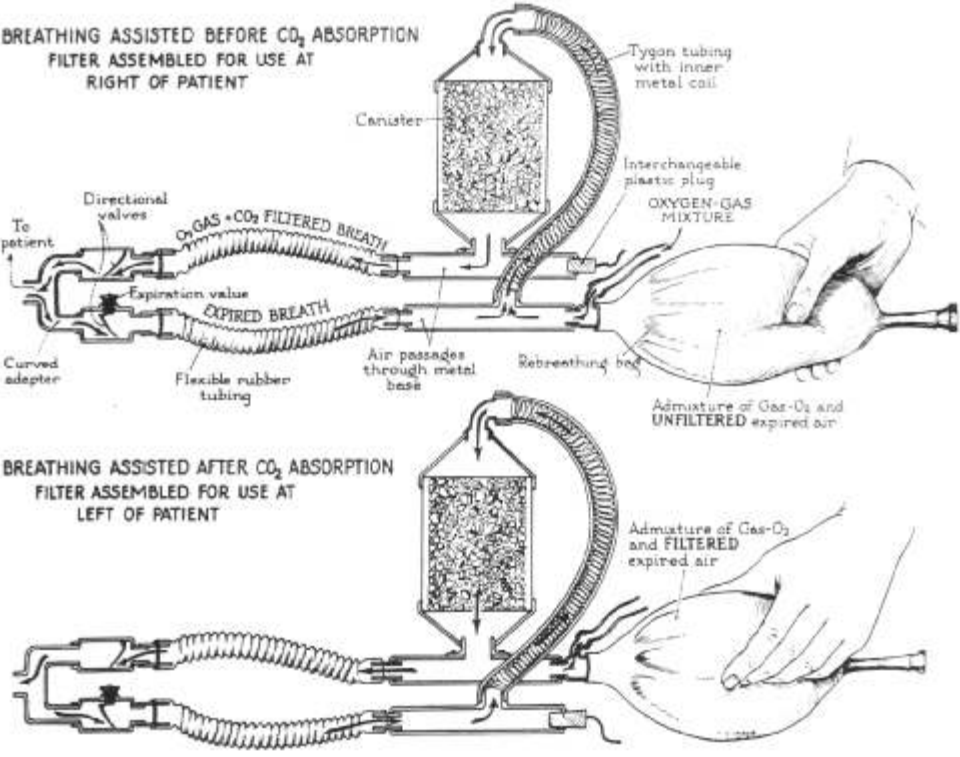
A rebreathing bag with inlet nipple is inserted into one of the remaining holes. The plastic plug fills the other, thus closing the outside apertures of the parallel channels and directing the gas through the canister. By interchanging the positions of the breathing tubes, plastic plug and bag connector, one may alter the direction of flow through the canister at will. This may also be accomplished by interchanging the



Bloomquist pediatric circle filter seated on swing arm of extension bar.

position of the directional valves. Leigh valves may be readily interchanged. Sierra Y-valve or modified Edison Y-valves may be turned upside down.

If the gas is directed so that the canister sits in the path of inspiration the resistance offered by the canister may be overcome by assisting the infant with each inspiration. If the canister is placed in the exhalation side this advantage is lost.



Diagrammatic sketch of pediatric filter showing varieties of assembly which may be employed.

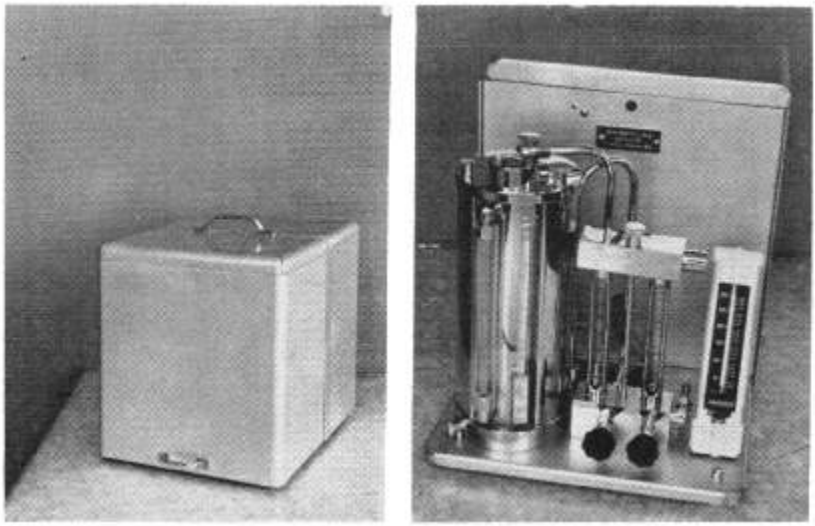
The filter may be arranged so either of these choices can be utilized with the bag assembled for use with either right or left hand. The position of the bag in its relationship to the two posterior openings in the block may also be altered to fit the mechanical convenience of the moment.

Additional flexibility is offered by the adjustable extension bar, in that it may be raised or lowered, or swung either toward or away from the patient. Thus various positions can be obtained for the convenience of the anesthesiologist and safety of the patient. The versatility of this equipment is illustrated.

PORTABLE ANESTHESIA APPARATUS

Dr. Erik Nandrup, Copenhagen, Denmark, with the assistance of Helmuth A. Jensen (who built the apparatus), has designed a portable unit for the administration of ether which eliminates the need for compressed gases.

The air intake of an electrically driven sparkless compressor is connected to a casing around a vaporizer by such an arrangement that an adjustable part of the in-



Portable unit for the administration of ether.

taken air passes through the casing. It is thus possible to keep the temperature of the vaporizer at 15 C., regardless of the amount of ether vaporized within the limits demanded by practical use in analgesia and anesthesia.

The air leaving the compressor is separated into two tubes. The air flows through one, adjustable by a needle valve, is led through the vaporizer constructed in such a way that the air becomes saturated with ether vapor. The amount of this air, saturated with ether vapor at 15 C. is measured by a rotameter especially calibrated to indicate the amount of pure ether vapor, ranging from 25 to 500 cc. per minute at 15 C. and 760 mm. of mercury.

Air flow through the other tube coming from the compressor by-passes the vaporizer. It is adjustable by a needle valve and measured by a rotameter scaled for atmospheric air from 1 to 15 liters per minute at 15 C. and 760 mm. of mercury.

The flows from the two rotameters are combined and are led to a breathing bag via a rubber tube. From this the mixture of ether vapor and air passes through a wide-bore corrugated rubber tube to a nonrebreathing valve.

This construction allows the administration of known ether concentrations from