and forming a uniform wall thickness with a smooth external surface (fig. 2). The catheter is then trimmed with a scalpel to the desired length of taper, slipped off the wire stylet, re-measured, and any excess length removed from the untapered end.

We believe catheters formed by this method are superior to those produced by the previously-mentioned shaving method. They are easily sterilized and with careful handling will withstand repeated usage.

REFERENCES


PRODUCT DESCRIPTION


b. Stainless steel flexible guide wire, 0.036" o.d. —(01-0013) B-D =1538. Becton, Dickinson and Company, Rutherford, New Jersey.
c. 18-gauge Long-dwell catheter placement unit —(01-0050) B-D =6723. Becton, Dickinson and Company, Rutherford, New Jersey.
e. 19-gauge wire 0.0425" o.d.—stylet from a 16-gauge Long-dwell catheter placement unit, B-D =6735, is suitable.

Fail-safe Apneic Control in the Bird Ventilator

ARNOLD SLADEN, M.B., B.S.,* AND CHARLES KELLEY, C.C.P.T.†

Inability to trigger a Bird ventilator and thereby initiate inspiration by a patient whose life is supported by continuous mechanical ventilation, should not be permitted to result in profound changes, either in oxygenation or in ventilation. The Bird ventilator, which is basically a pressure-cycled machine, is provided with a time-cycling mechanism, the expiratory time timing, or "apnea" control. Pressurized during inspiration, the expiratory phase depends on the rate of "gas leak" through a porhole in the expiratory cartridge. Closure of this porhole results in an expiratory phase of infinity. Safe practice dictates that the expiratory time control be set to provide a respiratory frequency slower than the spontaneous frequency of the patient. In the event of a sudden decrease in the patient's respiratory frequency, inspiration will be initiated automatically by the ventilator. In spite of education of physicians, inhalation therapists and nursing staff, closed expiratory timing cartridge controls are found all too often, representing an unnecessary threat to innumerable patients. We have, by a single modification of the ventilator, circumvented, and thus prevented, this possibility. The manufacturer supports the modification proposed.†

MATERIALS AND METHODS

The apnea control is adjusted to provide a minimum respiratory frequency of 6 to 8/min. A 3/8" Allen wrench is used to loosen the Allen screw, permitting the apnea control knob to
be removed. A garden hose washer (o.d. 1 inch, i.d. ¾ inch, thickness ⅛ inch) is placed on the apnea control shaft (fig. 1). The knob is replaced to engage against the washer, and the Allen screw is tightened. The respiratory frequency cannot be reduced below 6 to 8 /min if spontaneous ventilation fails.

**Reference**


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**A Simple Method of Measuring Oxygen Consumption in Man with Controlled Ventilation**

**EUGENE R. LUCIER, M.D.,* AND LEROY D. VANDAM, M.D.†**

Several methods for measuring oxygen consumption in spontaneously-breathing subjects, either directly by spirometry, or indirectly by analysis of expired gases, have been described.1-3 A method for measurement of oxygen consumption with controlled respiration in the presence of anesthetic gases, utilizing the E.N.H. valve and the Engström respirator, has also been reported. Described herein is a simple apparatus for measurement of oxygen consumption of conscious subjects with controlled respiration.

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**Apparatus**

The system consists of a 7-liter Benedict-Roth recording spirometer, a manually operated Etten ventilator, a Frumin nonbreathing valve, and carbon dioxide and water absorbers. The assemblage of the components is shown in figure 1. All valves and connections are easily made leakproof; this can be checked by occluding the patient outlet and applying pressure. With the respirator in the expanded position, the control valve opens, allowing the system to be used for spontaneous breathing. (A sponge-filled Ambu bag of fixed volume may be used in place of the Etten ventilator.) For portability the entire apparatus fits on a small cart. After each use the tubing and valves are washed and sterilized with ethylene oxide, and the carbon dioxide and water absorbers changed.