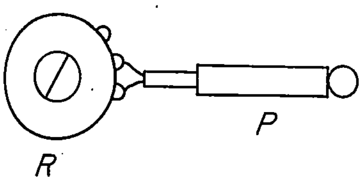

FIG. 1. R = variable resistor. P = probe (phone plug).

at least two temperature indications on the paper (and more if the temperature range is sufficiently large to include the nonlinearity inherent in the probe-bridge arrangement). This can be done by immersing the probe in water at two (or more) different temperatures in the desired range. This method, however, is time consuming, inconvenient, and potentially sloppy.

A rapid, convenient, and inexpensive device for accomplishing this calibration has been in use in our laboratories for several months, with excellent results. As shown in figure 1, it comprises a variable resistor (*e.g.*, a wire-wound potentiometer) wired to a phone plug which fits the *probe* input of the Tele-Thermometer. Varying the resistance mimics the behavior of the probe as the temperature changes (resistance decreases as temperature rises), and the meter can be set to read any temperature desired.

In use, the resistor is adjusted so that the meter indicates the lowest temperature expected, and the base-line of the recorder is set; the resistor is then set to indicate the highest temperature expected, and the sensitivity of the recorder is adjusted to give the desired pen deflection. After a recheck of the base-line, any number of intermediate points may be selected and a mark on the paper produced for each, thus rapidly obtaining a complete calibration curve. During periods of prolonged use, the calibration may be quickly checked for drift in the probe or recorder.

TABLE 1. Resistance of Thermistor Probe at Various Temperatures

Temp., ° C.	R, ohms
40	1,100
35	1,400
30	1,800
25	2,100
20	2,700
15	3,200
10	4,700
5	5,300
0	7,000

The value of the resistor required is dictated by the lowest temperature to be recorded. We have found that a resistance of about 7000 ohms enables us to calibrate at temperatures as low as 0° C. As a guide to the selection of a resistor for any given lower limit, the approximate resistance of a typical (interchangeable) probe at various temperatures is given in table 1.

The cost of this device should not exceed $2, or the parts may even be salvaged from electronic equipment no longer in use. Its construction is obviously simple.

A New Mask

DAVID D. COHEN, M.D.*

Fitting a mask is often a difficult and vexing problem. Fitting the sunken face of the edentulous patient or the patient with an indwelling naso-gastric tube can be particularly difficult. With spontaneous respiration, the anesthetic gases may be greatly diluted by air. With assisted or controlled respiration, adequate positive pressure cannot be developed. These difficulties are frequently encountered during inhalation therapy and can be overcome by using the mask described as an oxygen mask or positive pressure mask.

A disposable, universally well-fitting, trans-

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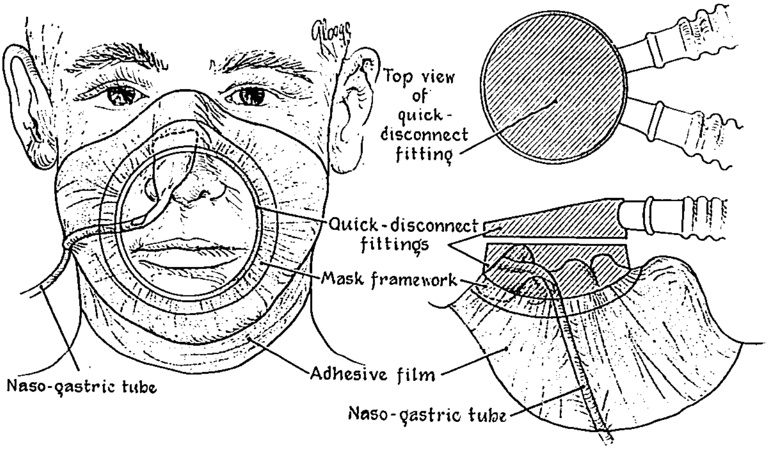

FIGURE 1.

parent mask with little dead space has been devised in which a soft, molded plastic framework is sealed to the face with adhesive film (similar to 3 M Steridrape). A quick-disconnect fitting enables rapid and easy access to the mouth and nose through an aperture large enough to insert an airway, suction device or even a laryngoscope blade.

The mask and adhesive film are disposable. The quick-disconnect fitting is reusable. It connects to standard corrugated breathing tubes and can easily be modified for use in intermittent positive pressure breathing. Conductive strips are incorporated in the plastic for use with flammable agents.

A working model has been tested. On a manikin, positive pressure in excess of 40 cm. of water have been developed without causing the film to peel off. Dead space was less than 75 ml. The model was tested in four patients and was found to function satisfactorily during spontaneous and assisted respiration.

A New Endotracheal-Cuff Air Valve

GORDON M. GREENBLATT, M.D.*

Maintenance of pressure in the cuff of an endotracheal tube has been accomplished in the past by pinching the tubing to the cuff with a hemostat or other form of clamp. In recent years a one-way aluminum valve has been developed which permits and maintains inflation of the cuff until the air pressure is released by rotating the valve's hub. This mechanism is expensive, corrodes easily, and its parts become misplaced.

One-way valves are also presently used to permit serial injections of intravenous medications while preventing multiple punctures of intravenous tubing and retrograde flow of intravenous fluids and blood. The white plastic, one piece valve manufactured by Abbott (Venovalve, 4595) for this purpose can also

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