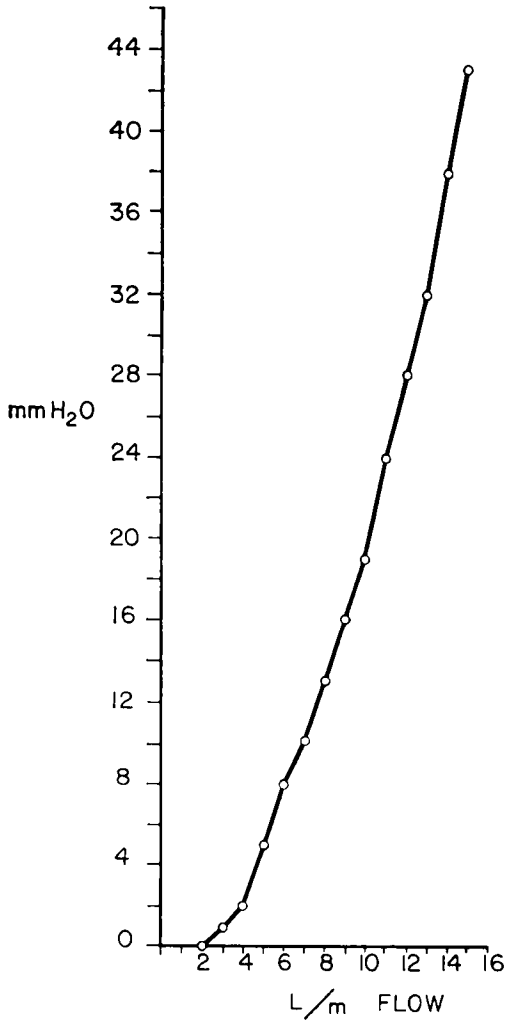
# Current Comment

STUART C. CULLEN, M.D., *Editor*

## GADGETS

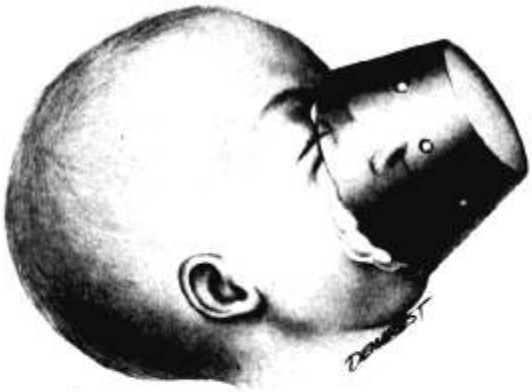
### Infant Mask for Collection of Respiratory Samples

Drs. Mieczyslaw Finster and Stuart J. Leavitt of the Presbyterian Hospital in New York City, in attempts to develop a reliable and reproducible method to collect respiratory gas samples in premature infants, have utilized contour-fitting moulded masks. These masks are very well tolerated, possess minimal dead space (½–1 ml.), and offer airway resistance as depicted on the accompanying graph.




Airway resistance of mask.

This communication describes their construction and utilization. An impression of the infant's nose and mouth is made in dental alginate following a few minutes of ventilation with 100 per cent oxygen (fig. 1). A plaster model is then poured immediately (fig. 2). A thin layer of dental wax is then applied to the plaster mould. This unit is embedded in



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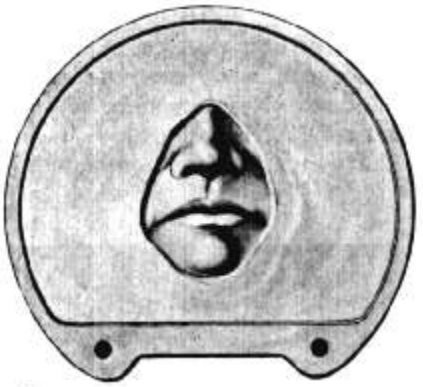

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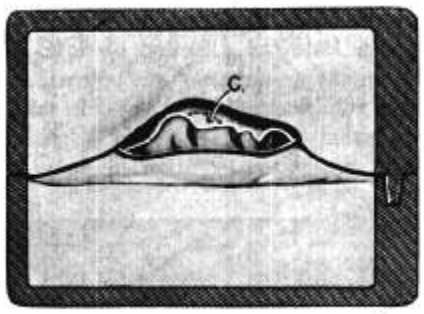


4.

plaster of Paris in the bottom section of a dental ejector flask (fig. 3). The top section of the flask is applied and filled with plaster of Paris (fig. 4).

After the plaster has set, the entire ejector flask is placed in boiling water until the wax has melted away. The flask is removed, the two halves are separated and allowed to dry and cool.

These constitute a mould for a mask which can be made of acrylic or silicone rubber. A small chamber (not more than ½–1 ml. volume) is excavated in the finished mask at the region of the nares (*C* in fig. 4). An orifice 3–4 mm. in diameter which is large enough to accept a nonrebreathing valve described by Golinko and Rudolph (*Pediatrics 27: 645, 1961*) is drilled into that chamber. The entire process takes from one and a half to two hours. These masks can be reused and easily sterilized.

We have found that four sizes of masks are sufficient for infants weighing from 1,000 to 2,500 Gm.

The process can be easily adapted to construct masks suitable for the administration of anesthetics.

## Intermittent-Anesthesia Administration Set

Dr. Seymour Schotz of the Presbyterian Hospital in Philadelphia has devised an apparatus that solves many of the problems dealing with the intermittent administration of anesthetic solutions. In continuous epidural anesthesia for example, he believes that having to disconnect a syringe for purpose of loading it with fresh solution introduces the hazard of contamination.

The obvious answer is a three-way stockcock by means of which the syringe for injection could be connected once and left in place, the second arm of the stockcock going to the source of solution, and the third arm, to the patient. However, stopcocks notoriously leak or stick and in general are a source of mischief.

The illustration (fig. 1) shows an apparatus made of plastic material which is efficient and is inexpensive enough to be disposable. It consists of three tubes and two one-way valves. The valves are small plastic balls that are spring loaded so they stay closed in a positive fashion. Valve *1* is arranged so that solution may be made to flow from the source when suction is made on the "administration" syringe. At the same time, valve *2* closes. When injection from the "administration" syringe is made, valve *2* opens while valve *1* closes. Thus, there is no possibility of contamination of the source solution; and since the entire system is closed, it remains sterile throughout the procedure. To protect the sterility of the "administration" syringe, increments of no