

## A CALIBRATED SYRINGE HOLDER FOR INTRAVENOUS ANESTHESIA

Several simple and efficient syringe holders are available for the administration of intravenous anesthesia. Recently, I noted a model made under the direction of Captain R. B. Hope, M.C., A.U.S. (1). The fact that this model could be constructed easily, and the unavailability of commercial models overseas stimulated an attempt to reproduce it. Several changes were made which seem worthwhile and may be of interest to others. It was possible to calibrate the dosage with exactitude.

## DESCRIPTION OF APPARATUS

The unit consists of the base, the syringe holder, the propulsion screw and a type C clamp. The only materials used were the

clip at either end to grasp the syringe firmly. A slot was fashioned at one end to contain the lip of the syringe. This slot prevents any slipping of the syringe forward or backward. The holder was soldered to the base at a height of  $\frac{3}{8}$  inch from the base.

c. The propulsion screw consists of a shaft  $5\frac{1}{2}$  inches long, plus a winged-shaped handle at one end and a ball socket joint at the other. The shaft has 24 turns to the inch, and a diameter of  $\frac{3}{8}$  inch. A sturdy base for this screw was made by welding two flat nuts in line  $\frac{3}{8}$  inch apart, and then welding this unit in direct line with the syringe holder. The use of two nuts minimizes the amount of play or swing in the shaft of the propulsion screw.

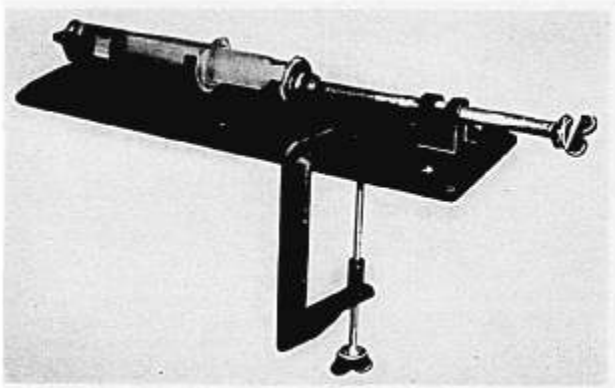


FIG. 1.

discarded pieces of metal that were lying about our machinist's shop.

a. The base is a piece of stainless steel measuring 12 inches by  $3\frac{1}{2}$  inches, and  $\frac{1}{16}$  inch thick. It is mounted on a piece of  $\frac{3}{8}$  inch plywood with a beveled edge.

b. The syringe holder is made to hold a 30 cc. syringe (BD). It is a single piece of stainless steel, so cut that it has a spring

d. A 3 inch, type C clamp was built to anchor the instrument to an armboard or table during use.

## DISCUSSION

The syringe holder holds a 30 cc. syringe (BD) firmly. The slot for the lip of the syringe, if made to fit snugly, eliminates any sliding of the syringe. The addition

of a ball socket joint to the syringe end of the propulsion screw was desirable because it eliminates any rotation of the metal which is pressing against the glass plunger as the screw is being turned, plus an inevitable grinding of such metal into the glass.

The use of a winged-shaped handle on the propulsion screw permits administration of the anesthetic drop by drop. A 90 degree turn, or quarter turn, expels 3 drops of solution from an attached 18 gage needle. A complete turn of the handle of 360 degrees expels 13 drops. A turn of the screw of about 30 degrees expels a single drop. At times the anesthesiologist may wish to flush the end of the

needle, even though the patient is well anesthetized. In such case the ability to flush the needle with 1 or 2 drops of solution, and no more, is desirable. Drop by drop administration is possible with this apparatus; it is almost impossible to administer an overdose by a slip of the thumb.

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#### REFERENCE

1. Hope, R. B.: A Simple Holder for the Administration of Pentothal Sodium, J.A.M.A. 121: 753 (March 6) 1943.