

fällt er bereits bei Temperaturen unter 0° in dimeres Kobaltcarbonyl und Wasserstoff. Auch hier unterscheiden sich unsere Ergebnisse ganz wesentlich von denen WEIBELS, der nur Spuren eines «flüchtigen Kobaltcarbonyls» durch Metallspiegel nachweisen konnte.

Näheres über die Herstellung von Metallcarbonylen und Metallcarbonylwasserstoffen aus den ammoniakalischen Lösungen der entsprechenden Metallsalze mit CO unter Druck sind aus der kürzlich im Springer-Verlag erschienenen Vortragsammlung *Neue Entwicklungen auf dem Gebiet der Chemie des Acetylens und Kohlenoxyds* (Verfasser W. REPPE) ersichtlich.

Weitere eingehendere Veröffentlichungen werden demnächst in «Liebigs Annalen» folgen, wobei auch auf die Dissertation von WEIBEL verwiesen werden wird.

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PRO LABORATORIO

A Precision-Measuring Adapter for Small-Volume Syringes

In 1937 W. STRAUB¹ described a device for syringes of small volume designed to: Enable the injection of precise volumes of material; to avoid loss of substance by displacement of the plunger during the transfer of the syringe to the animal and assure a better protection against breaking the very delicate plungers of small syringes.

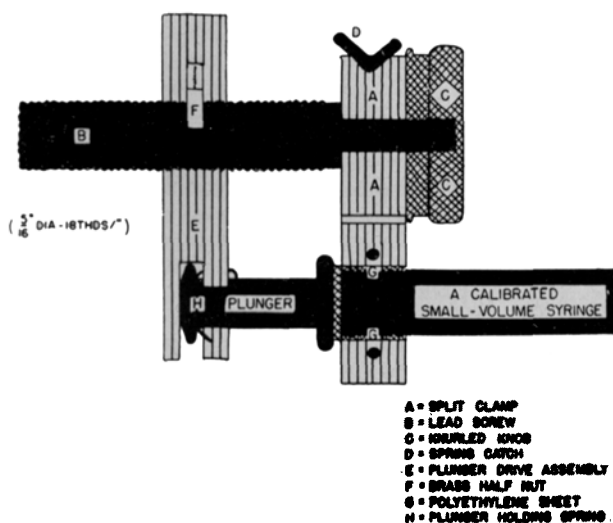


Fig. 1.

Using syringes armed with STRAUB's device and calibrated with analytical accuracy, the distance between two gradations still had to be read by the naked eye which thus became the limiting factor, implying usually some personal error. Therefore, a modified device was designed which eliminates visual reading by means of an automatic stop of the plunger at every 0.01 ml gradation. It was applied to a 0.25 ml tuberculin type glass syringe. Needles of 25 gauge have been used

for the injection and the first few drops were discarded to assure removal of all air from the syringe.

The apparatus (Figs. 1 and 2) consists of a split clamp A, made from a $\frac{3}{16}$ " square duralumin rod, which fastens on the syringe. A semiflexible polyethylene sheet G (or rubber) is placed between the syringe and clamp A, in order to prevent breakage by direct compression of A on the syringe. Clamp A also carries the screw B, with a knurled knob C. A spring catch D falls into the slot in the edge of the knob so that one turn of C allows the plunger to move 0.01 ml. The plunger is activated through E, also made from a $\frac{3}{16}$ " square duralumin rod, with one hole in which the lead screw B fits snugly and another hole which fits the plunger loosely. A spring H, attached to E, snaps over the plunger and holds it tightly against the side of E, which pushes the plunger. Both holes in E have transverse slots cut through them,

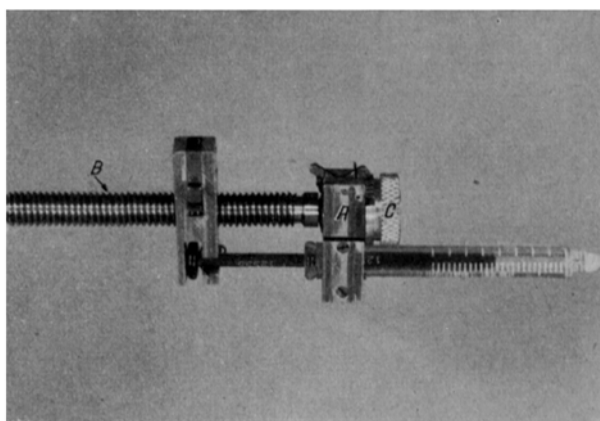


Fig. 2.

and one side of the hole, where the plunger fits, is slotted, allowing E to swing out of the way so as to make cleaning easier. The upper slot carries a brass half-nut F, with springs which hold the nut down on the lead screw B. Pulling on F releases the half-nut from the lead screw and all of the assembly E can be moved quickly in a lateral direction. Letting go of F brings the nut back into mesh with the screw threads again, and the plunger can be moved by turning the knob C.

The device, as described above, has been used for 3 months in work with steroid material and may prove helpful in any work with substances to be injected in small volumes.

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Summary

Es wird eine Spritze beschrieben, die mittels einer automatischen Arretiervorrichtung des Kolbens - ohne visuelle Kontrolle des Injizierenden - die Verabreichung genauer Mengen von der Größenordnung eines hundertstel Kubikzentimeters Flüssigkeit ermöglicht.

¹ W. STRAUB, Arch. exper. Path. Pharm. 186, 456 (1937).