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AN ALCOHOL DRIP APPARATUS FOR THE SLIDING MICROTOME\*

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In wet sectioning of celloidin embedded tissue it is necessary to maintain a layer of alcohol on the knife and on the surface of the block. The alcohol acts as a lubricant and also prevents drying of the block. The application of alcohol may be done by hand or mechanically. To apply the alcohol by hand while operating the microtome slows down the cutting operation, unless the operator is ambidextrous. In addition, stopping and starting the knife to apply alcohol results in an extensive wasting of tissue due to half-sections and sections of uneven thickness. Unless the knife can be kept moving smoothly at a constant rate the result will be sections of non-uniform thickness regardless of the setting on the microtome.

A more efficient arrangement for flooding the block and knife is an automatic dropping device. The apparatus described here is a modification of the one described by Frontera et al (1952). The components are inexpensive stock items.

The apparatus is illustrated in figure 1. A master hosecock (A) between the reservoir and the "Y" tube allows the flow to be turned on or off without disturbing the setting of cocks B and C. The alcohol is delivered automatically to the block by a tapered and bent glass tube, and the operator is not distracted from the cutting operation. The rubber connection of this glass tube allows it to bend away if it is touched by the hand or other moving parts. The alcohol is supplied to

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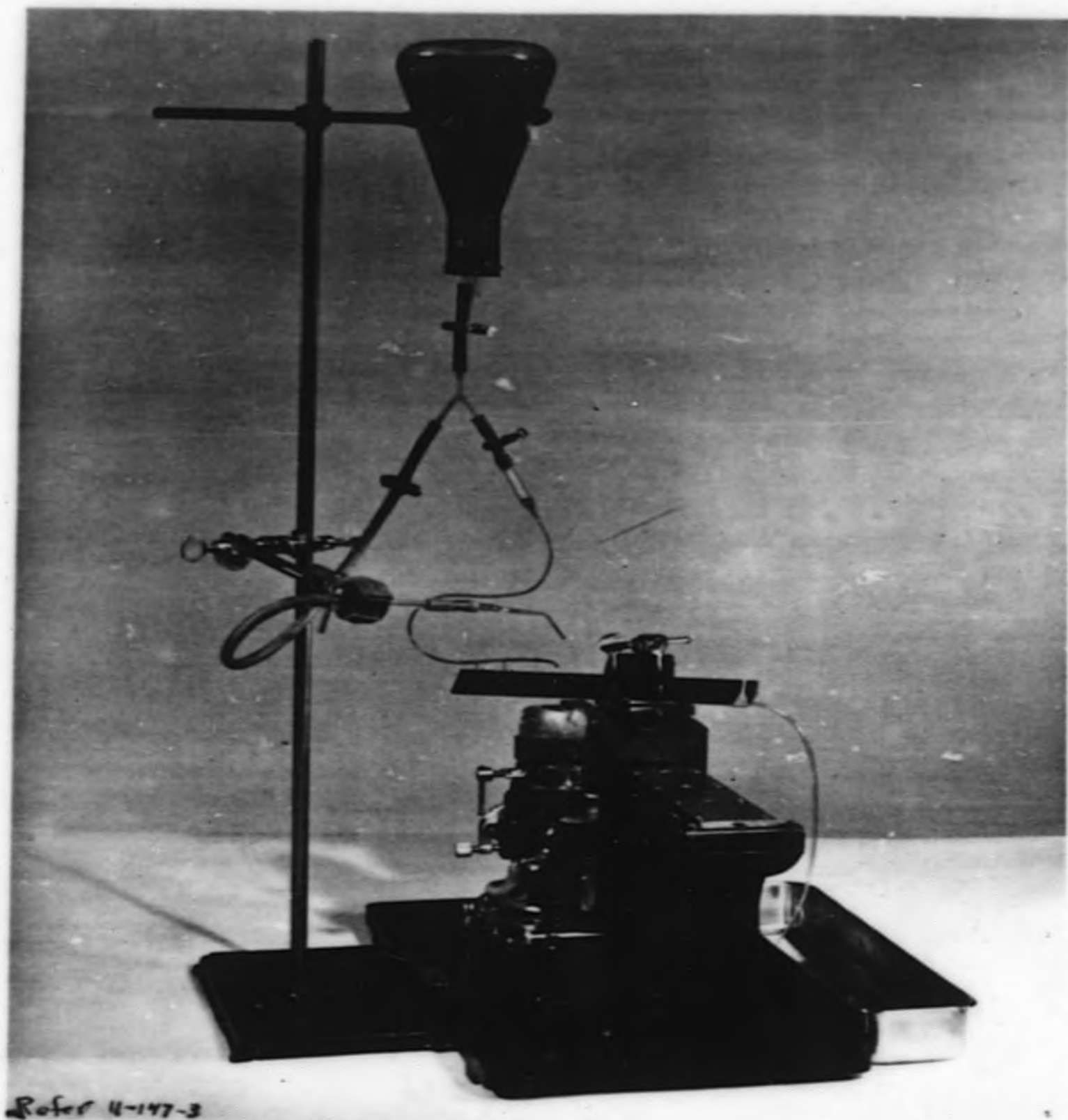
the knife through a plastic tube (transflex #12, size .035" tube diameter), which is raised off the knife so that large sections may be flattened or moved about on the whole of the knife's surface. The clip that holds the tube above the knife is made by bending a piece of steel wire. The tip on the plastic tube is a bit of drawn glass tubing bent into a quarter circle. This bent tip prevents the alcohol from running back along the tube and down the clip wire, which is out of the path of the section being cut. A simple but helpful addition to the knife itself is an alcohol drain. An eight inch length of transflex tubing which is slit at one end is placed over the right edge of the knife and secured with a rubber band. As the alcohol level becomes excessive it enters the tube at the rubber band end by capillarity. It then travels along until it starts downward. At this point the tube acts as a syphon, and the alcohol drops into a pan. This arrangement does not remove all of the alcohol from the knife unless the flow is shut off.

A constant flow of alcohol is obtained, and its rate can be varied to suit the operator by adjusting the hosecocks B and C. It is possible to obtain an alcohol flow as slow as ten milliliters per hour.

REFERENCE

Frontera, J. G., Crespo, R., Colon, V. R. and Leon, J.

A drop-bottle arrangement for colloidin-sectioning and some notes on colloidin technique. Turtor News 30: 11, 194-198, 1952.



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