Instrument for Producing Standardized Skin Abrasions

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Abstract □ An instrument is described which will produce a standardized skin abrasion in the Draize test for skin irritants. The same degree of abrasion without bleeding can be produced on each application.

Keyphrases □ *Skin abrasions—instrument for producing standardized abrasions* □ Abrasions, skin—instrument for producing standardized abrasions

In 1944, Draize *et al.* (1) introduced a method for the study of skin irritation but did not specify an instrument for producing a standard abrasion. Draize (2) indicated that such abrasions should be minor and not produce bleeding. Abrasions have been produced with hypodermic needles, scapels, and other sharp objects, but no standard instrument has been used. This factor was probably involved in the poor correlation between intra- and interlaboratory results of a skin irritation study recently reported (3). To overcome these difficulties, an instrument was designed which produces a standard abrasion for skin irritant studies.

EXPERIMENTAL

The skin abrader and its specifications are illustrated in Fig. 1. The essential features are as follows: the pins must be 0.15 cm (0.06 in.) long and in a straight line; the handle must be flattened for a better hand fit; the angle of the handle must be 72°, and the angle of the handle to the pin base plate must be 10°. The pins can be removed when dull and replaced easily because they are attached with low temperature silver solder. The angle of the handle to the base plate makes certain that the latter lies flat to the skin, thus assuring the same degree of penetration through the stratum corneum as the instrument is pulled across the skin area. Moreover, the length of the pins prevents bleeding while removing the upper skin area when the instrument is drawn firmly but gently over the area to be abraded. The abrasion is produced by three strokes in one direction, followed by three more at a 90° angle to the first ones.

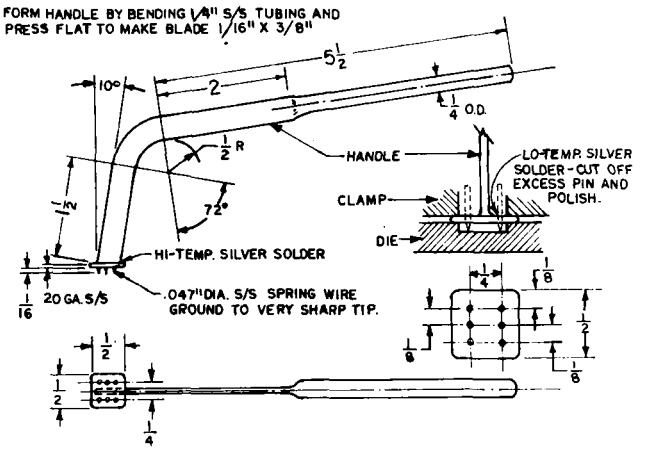

Figure 1—*Specifications for the skin abrader.*

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