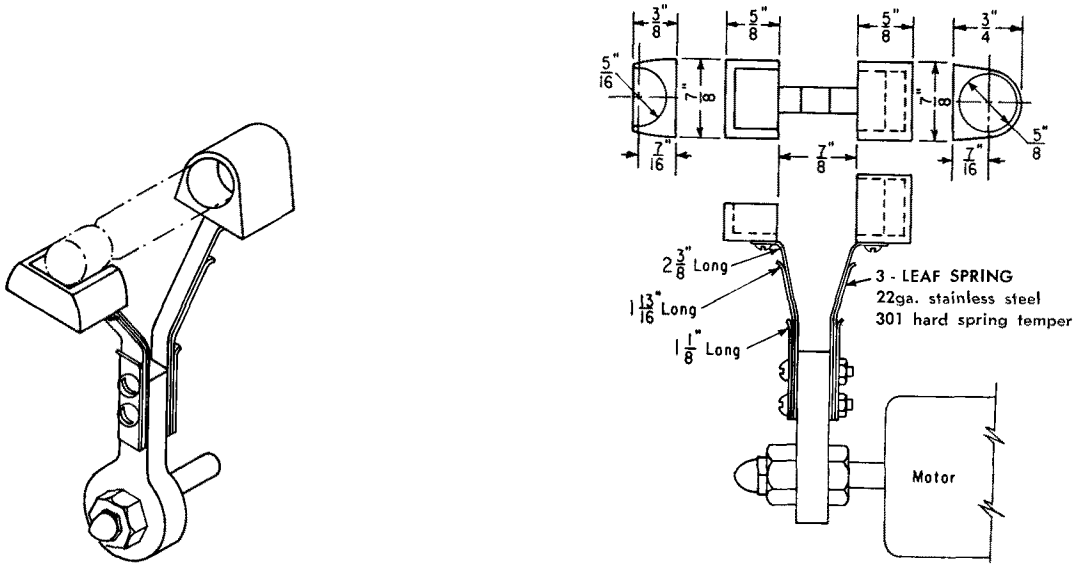

FIG. 1. Power shaker-mixer for preparation of fatty acid methyl esters.

venience of the procedure is due to the selection of this readily available, inexpensive vial which serves as a weighing vial, reaction, mixing and extraction vessel and eventually for storage of the methyl ester solution.

The modification of the Wig-L-Bug is illustrated in Figure 1. The front and rear holder are made of machined aluminum blocks. The upright supports of the holder are type 301, 22 gauge stainless steel (hard spring temper) and are reinforced with two additional leaves. To simplify the design the holder was not equipped with a gate to keep the vial in place during operation. Ordinarily, the spring tension is sufficient to restrain the vial from leaving the holder. An an inexpensive substitute for the gate, a size 33 rubber band is looped over the vial and around the front and rear of the holder and serves as an effective safety device.

In the development of the holder, the modified shaker with fully loaded vial was tested and observed under stroboscopic light to determine the proper stiffness for the holder leaf springs. Excessive flexing was found to yield spring failure in a relatively short time. The use of the stroboscopic test light is highly recommended to evaluate the vial holder leaf springs.

Any additional details on the construction of the holder may be obtained from the authors.

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REFERENCE

1. Luddy, F. E., R. A. Barford, S. F. Herb and P. Magidman, JAOCS *45*, 549 (1968).

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• *Letter to the Editor*

Use of Copper Chlorophyll Complex in Coloring Foodstuffs, Including Hydrogenated Vegetable Oils

Dear Sir: Copper chlorophyll complex is available commercially as a coloring agent for soaps and foodstuffs. It is said to contain about 17% copper phaeophytin, the active coloring constituent (copper content of approximately 10,000 ppm).

Accordingly, if 100 g of copper chlorophyll is dissolved in 10 liters of sesame oil to color about 200 liters of hydrogenated vegetable oil, the colored product will contain about 5 ppm of nonionic copper.

To my knowledge, there is no published information available to show that in the colored product so obtained; (a) 5 ppm or even 10 ppm of nonionc copper present would be toxic and, therefore, nonpermissible in foodstuffs, 30 ppm being, I believe, the permissible limit; (b) this small amount of nonionic copper could possibly promote rancidity.

May I please draw on the experience of the readers of your journal for their comments and any information that they may have in connection with the above points?

R. S. THAKUR
Mandla
Madhya Pradesh, India

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