

## A GRAVIMETER FOR SUGAR ANALYSIS.<sup>1</sup>

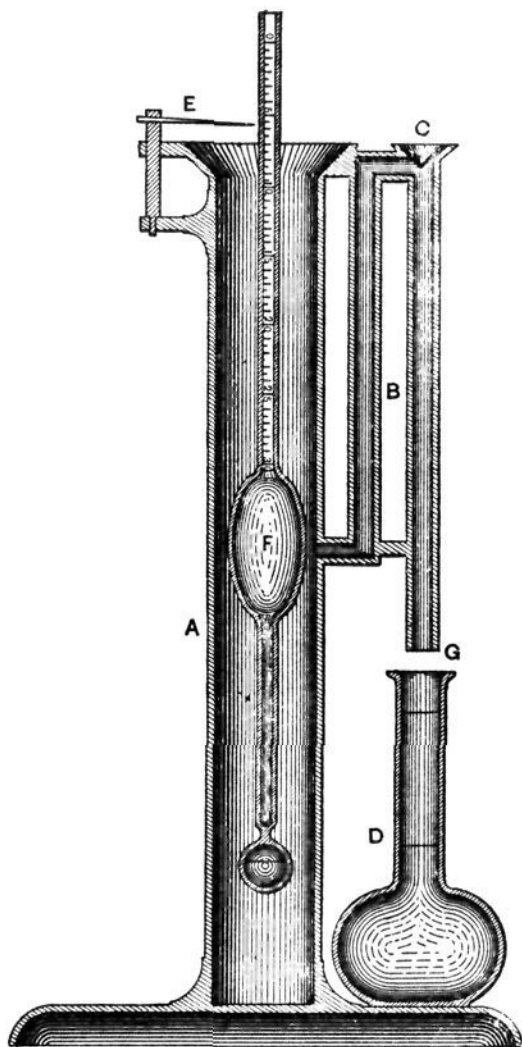
BY W. K. GIRD.

Received June 28, 1894.

FOLLOWING is a description of the construction and operation of this apparatus; the drawing showing the instrument and appurtenances in section:

A represents the main tube to hold the solution under treat-

ment; B, overflow pipe; C, air vent to prevent siphonage, constructed in funnel form to facilitate cleaning; D, the usual graduated flask; E is an index finger pointing to the saccharometer, constructed so as to swing out of the way when necessary, and to stand for convenience of reading, say five graduations above the surface of the fluid; F, hydrometer or saccharometer, weighing exactly 26.048 grams; G, point of discharge into the flask D.



Although the operation is manifest, a few explanatory words may be appropriate.

The operator closes aperture G with his finger, then fills the main tube with the solution until it shows full at C, then strike off foam from the top of the main tube,

remove the finger from G and permit the excess to escape to the last drop which must be removed.

This will leave the tube B moistened with the fluid under analysis, so that the condition will be left precisely the same as it will be after the delivery of the discharge hereafter explained,

<sup>1</sup> Read before the Midwinter Fair Congress of Chemists at San Francisco, June 8, 1894.

so that there can be no loss nor no gain either in quantity or quality. Next, place flask D under the overflow G and insert the saccharometer in the usual manner bring up the mouth of the flask so as to catch the last drop. The fluid in the flask will then be the required quantity. Now, bring the point E to the index on the saccharometer and note the reading for Brix, to which add five, representing the height of the finger above the surface.

This instrument is constructed upon the sole principle of displacement determined by the weight of the saccharometer which displacement is always the same, not being affected by difference of temperature, rendering the use of the thermometer and corresponding tables unnecessary.

In taking the Brix as described above, the precise weight is conveyed into flask D through the overflow, thus dispensing entirely with use of the pipette and weighing as in the old system.

The results are absolute, doing away with all liability to error, inasmuch as no readings are necessary and all the manipulations are regulated and controlled by easily observed limitations.

In making many analyses as for instance in the laboratory at Chino numbering perhaps 200 per day, the advantages derived from the use of this instrument both in rapidity and accuracy can scarcely be estimated.

NOTE.—This instrument has since been improved, notably in the addition of a permanently attached thermometer which, in addition to the usual thermal graduations, has also a table on its face for the corrections due to differences of temperature.

## ON THE QUALITY OF POTASSIUM IODIDE, SOLD IN THE MARKET AS U. S. P.<sup>1</sup>

BY CHAS. O. CURTMAN.

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SIXTEEN samples were procured for examination by purchasing original packages made by twelve different firms. For six of them I am indebted to the courtesy of a friend, who bought them for a similar purpose and divided with me. To these, the tests of purity directed by the U. S. P. were applied seriatim, with the following results:

A. No residue should be left when one gram of the salt is dissolved in two cc. of diluted alcohol of sp. gr. 0.928. To this test fourteen specimens conformed; two left a small residue (Nos. 5 and 9).

<sup>1</sup> No. 5. Report Research Committee B.