AN IMPROVED GAS APPARATUS.

By J. E. Babb.

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The drawing and photograph represent some new features of the Orsat apparatus; in general design it is quite similar to the usual form.

For purposes of making a greater number of determinations and with a greater variety of gases six absorption tubes are em-

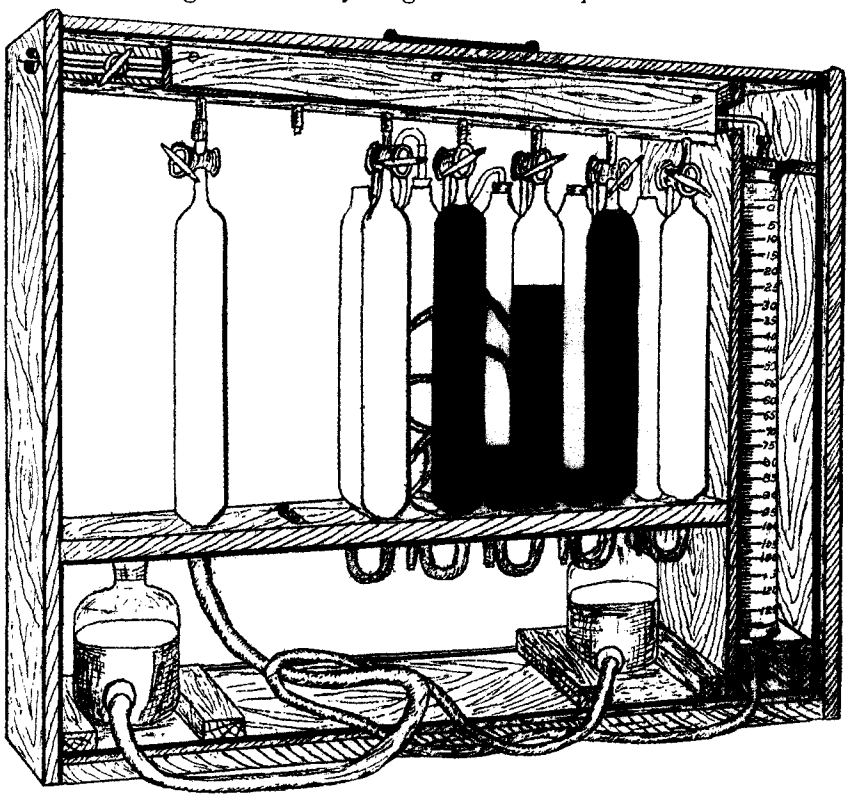


Fig. 1.

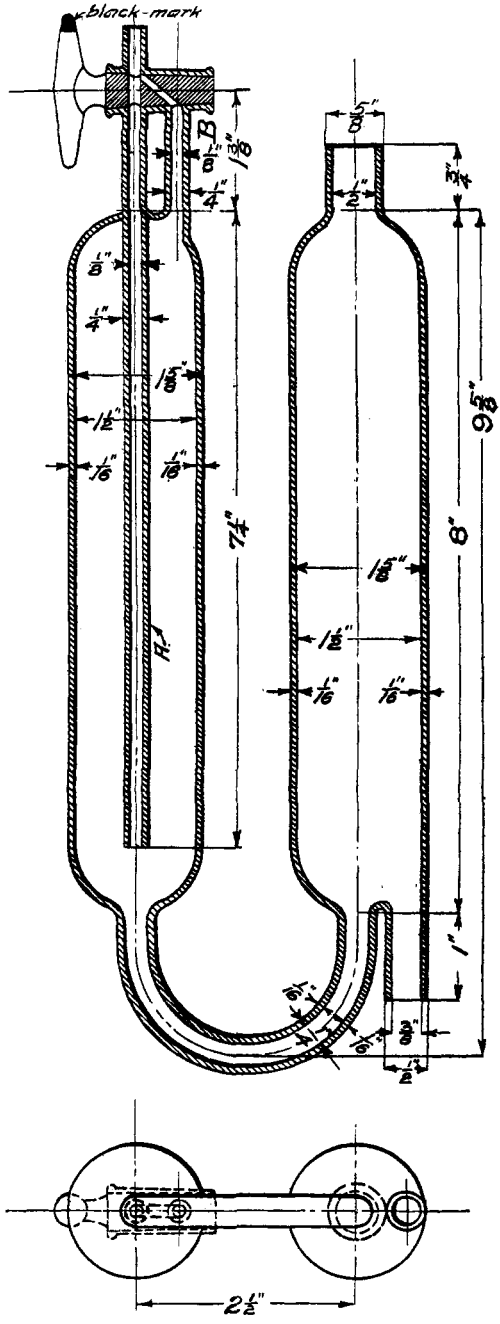
ployed, these being large enough to accommodate 250 cc. of absorbent solution in each tube, and an explosion tube is included.

The box is made to contain, besides the tubes,two dry cell batteries, one induction coil, an oxygen tank, and two leveling bottles—one for water to confine gases, and one for mercury to confine

gases for explosion. This necessarily makes the apparatus large, but at this it is only the size of an ordinary dress suit case.

The principal feature of the apparatus is the bubble tube shown in Fig. 2. It consists of two large tubes, back and front. The front tube consists of a capillary tube, *A*, placed inside of the large tube and connected with a three-way cock and at the top of the large tube.

In use, the three-way cock is engaged only with the capillary tube *A*. The gases then bubble through the absorbent solution. To return the gases to the measuring burette the three-way cock is engaged with both the capillary tube *A* and the exit tube *B*. The gas passes out through *B*, the solution rising up in the large tube and capillary tube *A* at the same level, the analysis being otherwise conducted as in the Orsat. By bub-



bling the gas through the absorbent solutions in this manner a more rapid and complete absorption of gases is obtained, and this is superior to absorptions by contact and shaking, one passage of the gases being sufficient for complete absorption.

A rapid analysis for gases for gas engine control can thus be made in twelve to fifteen minutes, including analysis for carbon dioxide, oxygen, carbon monoxide, hydrogen and methane, and ethylene.

The idea of bubbling the gas through the solutions has been suggested by many, and has been applied, but not in so convenient a manner.

WESTINGHOUSE MACHINE CO.,
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REVIEW.

SOME PRESENT PROBLEMS IN INDUSTRIAL CHEMISTRY.[1]

BY EDWARD HART.
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IT has often seemed to me that we spend too much time in telling about what we have done and what we expect to do. Progress consists, after all, in doing things and not in talking about doing them. It is, therefore, somewhat out of harmony with my own wishes to appear here to-day in a general discussion of the problems of industrial chemistry. Those of us who are engaged in industrial work must often choose between glittering generalities and silence. The conditions are happily expressed in a reply received from a well-known technical chemist in answer to my request that he write a paper for this meeting. "It is not necessary for me to say" he replied "that my relations to most manufacturers are of a confidential nature, and so I cannot divulge the information imparted to me. I regret that we are so hidebound here for there is much that would be of general interest. I am ashamed to say, however, that there are many manufacturers who distrust the consulting chemist who talks or writes much."

To the manufacturing chemist sulphur is of prime importance. Heretofore we have, on the Atlantic seaboard, depended largely upon Sicilian sulphur and upon pyrite, only a part of which was of domestic production.

To these sources have been added in recent years the gases obtained in the roasting of zinc blende from which sulphuric acid is now made in quantity. Quite recently it is announced that suc-

[1] Read at the Philadelphia meeting of the American Chemical Society.