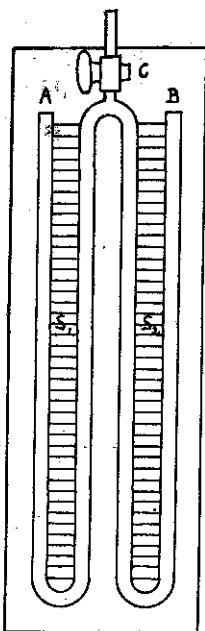


SPECIFIC GRAVITY OF LIQUIDS.

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The determination of the specific gravity of liquids by Hare's method and by the balancing column method is quite universal. The standard forms of apparatus commonly used for these experiments are open to several objections.

In Hare's method the liquids are too exposed to dust and evaporation, while the lower end of measuring scale is soon apt to become corroded. In the balancing column apparatus it is necessary to add different amounts of liquid to obtain a series of readings.

A convenient form of apparatus which combines both methods is illustrated in the accompanying diagram. The tubes A and B, each some 50 cm. long and 1 cm. in diameter, have a stop cock, c, attached to the top of the central bend. Scales S_1 and S_2 , made from meter sticks, just fit

between the outer tubes. The entire apparatus is mounted on a convenient board and fastened to the wall of the laboratory. The left hand tubes are half filled with water and the others with the liquid whose specific gravity is desired.

By means of a short rubber tube the air below the stop cock can be either compressed or rarified and the liquids raised to their limit in either the outer or the central tubes. The specific gravity is the ratio of the water column to the liquid column. By adjusting the stop cock the heights of these columns can be altered easily and a series of determinations of specific gravity made with a minimum loss of time or danger of spilling the liquids over the laboratory table.

NUMBER OF PLANTS.

In 1909 there were 103 Portland cement plants in operation, an increase of 5 over the number working in 1908. Of these plants 21 were in Pennsylvania, 12 in Michigan, 10 in Kansas, 8 in Ohio, 7 in New York, 6 in Indiana, 5 in Illinois, and 5 in California.