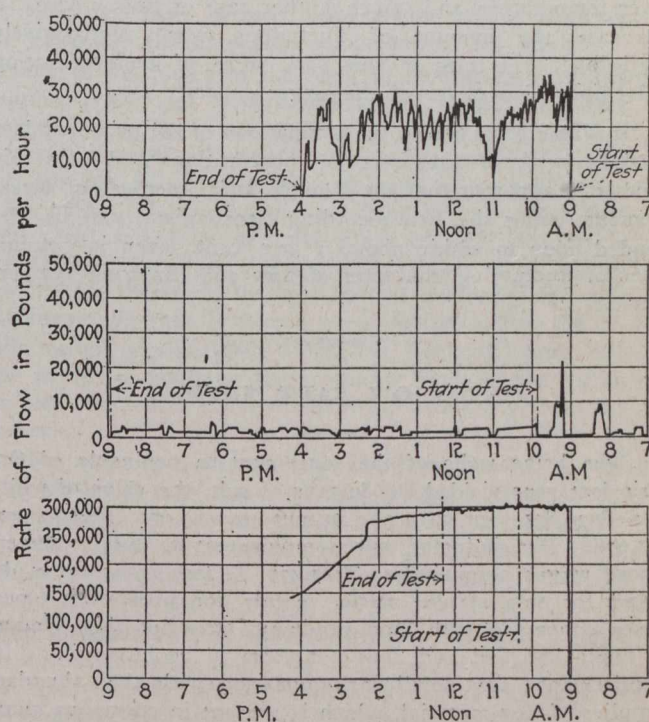


- The apparatus has the following advantages:
- a. It is simple and hence dependable.
- b. Its operation is continuous.
- c. There are no moving parts in contact with the flow except the float which is in a chamber by itself and not in the path of the flow.
- d. Collections of sediment and deposits of scale do not affect the accuracy.
- e. Owing to change of density of the liquid being measured, due to changes in temperature, the float which actuates the recorder is immersed more or less, depending upon this change of density, and the recorder and the float are so constructed that they compensate automatically for these changes in temperature over a wide range.
- f. By making the tank of ample proportions a considerable interval of time takes place between changes in the head on the weir, so that the recording apparatus has a chance to adjust itself to changes in the rate of flow, thus giving a chart very easy to measure with the planimeter.

Like the Venturi meter and the Pitot tube, the V-notch recorder is a continuous flow meter, but unlike these it is not dependent for its accuracy on velocity changes, and hence its record is not subject to the fluctuations due to sudden changes of velocity head observed in these meters while measuring rapidly changing rates of flow. Perhaps the greatest advantage of this method of measurement is found, however, in the way by which it may be checked independently of the recording mechanism. The operator may construct alongside of his recorder an independent "hook" gauge or use the graduated vertical scale and pointer on the extended float rod in the instrument, and can observe from time to time the number of inches head on the weir. By substituting these values in Thomson's formula, the rates of flow as shown on the recorder chart may be checked quickly and accurately. Thus the operator need not depend upon the recorded result until he is sure that it agrees with the



figured result from his hook gauge readings. It is believed, therefore, that the V-notch with its tank is the most satisfactory testing set that could be devised for measuring water under varying conditions of temperature, continuity of flow, and rate of flow.

The tests mentioned in the opening paragraph of the paper were made at Dartmouth College, Philadelphia, and

Location	Dartmouth, Col.	Phila.	New York City.					
Date (1912)	3-23	8-2	8-9	4-19	4-20	4-22	4-23	4-24
Duration of test (hr.)	6.25	10.2	1.96	5	8	13	8	8
	Var.	Var.	Var.					
Temperature of water (F.)	160°-195°	160°-195°	72°-74°
Corrected weight of water by tank (lb.)	143,841	41,625	596,867	291,965	266,009	557,974	352,725	352,725
Corrected weight of water by meter (lb.)	145,538	413,957	602,270	290,525	267,260	557,775	351,501	352,231
Error of meter (lb.)	+1697	-229.3	+5403	-1440	+1251	-199	-1224	-494
% error of meter	+1.18	-0.55	+0.9	-0.49	+0.46	-0.03	-0.34	-0.14

- = low reading. + = high reading.