

The Three Jewells— Pioneers in Mechanical Filtration

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WILLIAM M. JEWELL, last of the pioneers in the distinctively American art of rapid or mechanical filtration of water, died on Nov. 7. Fifty-three years ago William and his brother Ira joined their father Omar in perfecting filters. Although entering the municipal field after the Hyatt, American, National and Warren filters were already established, the Jewell trio soon gained a strong foothold. They maintained their independence during the two mergers of most of their competitors in the '90s but in 1898 yielded eastern territory to the New York Filter Manufacturing Co. and took out a license for the use elsewhere of the Hyatt coagulation-filtration patent.

Omar and William entered the New York Continental Jewell Filtration Co. merger of 1900 under a five-year contract. On its expiration William began independent practice, centering in professional work. Ira had set up for himself before the consolidation. To the patents already in his own name he added from time to time. He built and equipped filter plants and engaged in much litigation. Recently he developed and installed in several filter plants a subsurface filtering and filter washing system. Ira H. Jewell died in 1940, shortly before his brother William.

Omar H. Jewell, first of the Jewell filter trio, was born at Wheaton, Ill., June 1, 1842. He lived to the ripe age of 88 years. As master mechanic for grain elevators he became interested in improving the quality of boiler feed water taken from the notoriously foul Chicago River. Tradition says he built filters in the seventies. The first of his filters seen by William was located in Elevator D, of Armour, Dole & Co., on the South Branch of the Chicago River. Circumstantial evidence points to

1885 as the date of this installation.

Of the scores of filter patents taken out by the Jewell trio, the first ten were granted to Omar in 1888-90. His patent of July 15, 1888, was highly significant for the time in that



Omar Jewell, first of filter trio.

it was for a combination of a filter and chlorine gas generator. The generator consisted of electrodes placed in the dome of the filter tank.

William became chemical engineer of the Jewell Pure Water Co. in 1887, following graduation from the College of Pharmacy, University of Illinois, at the early age of 17. With his father and brother the firm of O. H. Jewell & Sons was formed in 1890. They soon incorporated as the O. H. Jewell Filter Co., which continued in business until the merger of 1900.

The Jewell Pure Water Co. was largely financed and was managed by James B. Clow & Sons, well known Chicago dealers in waterworks supplies. William Jewell was in Europe in 1887-88 erecting steel tank pressure filters, shipped from Chicago. Apparently these were for industrial plants. The Jewell Export Filter Co.

built or equipped filters in many foreign lands. One of the more recent of these was for the city of Warsaw, said to be the largest mechanical filter plant in Europe. It would be interesting to know what happened to it during the blitzkrieg.

The first Jewell filters on a municipal water supply went into use at Rock Island, Ill., April, 1891. Within five years Jewell filters were in use in twenty American cities. (For descriptions of each plant see *Engineering News*, May 21 and 28, 1896.)

Impetus to the adoption of Jewell and other mechanical filters was given by the Providence tests of 1893-94, in which the city was represented by E. B. Weston, and the better-known competitive tests at Louisville in 1895-96, under the direction of George W. Fuller.

An earlier and almost unknown demonstration test at Brockton, Mass., in 1888, would have resulted in an adoption had it not been thwarted by the "advice" of the Massachusetts State Board of Health which had as strong an aversion to the use of alum as a coagulant, as was expressed by Arago fifty years earlier in the review of the art of water purification included in his report on de Fonvielle's pressure filter at Paris. Arago objected to the addition of any foreign matter to water, although he knew it would remove foreign matters already present.

Ira and William Jewell operated the Jewell filter in the Louisville experiments. William, in a letter to the writer, claimed that his filter-rate-controller at Louisville was the first in the field, as also his chlorine-gas producer at Louisville. These producers were based on the conception embodied in the Jewell chlorination-filtration patent of 1888 in which it was said that chlorination could be used separately if desired.