

forming the bottom of the filter bed, is of small consequence, so long as it is actually accomplished. Moreover, a uniform and speedy withdrawal of the dirty wash water by means of properly disposed waste troughs is as essential as uniform distribution of the wash water when entering the filter bed. In other words, a mechanical filter which cannot be quickly and effectively cleansed is defective.

It is to be hoped that the indorsement of the committee's report by the Society will establish certain definite principles of filter design to which manufacturers will conform, and by which purchasers of filters may be guided in judging of the merits of any particular design that may be submitted to them.

George A. Johnson: The report of the committee recommending certain standard procedures in filter practice shows clear evidence that the general proposition has been viewed from the numerous necessary angles and the tentative conclusions drawn from approved practice in filter design and operation. At best the preparation of such a report was a difficult task, for the reason that in water-filtration problems local conditions govern so very largely, and their individual peculiarities are so numerous and varied. This report will serve a valuable purpose in the development of standard practices where possible of application, and the committee is to be congratulated for the skill and conservatism displayed in its preparation.

AMALGAMATION OF MCGRAW PUBLISHING CO. AND HILL PUBLISHING CO., OF NEW YORK.

The McGraw Publishing Co., Inc., and the Hill Publishing Co., of New York, have merged. The name of the company will be the McGraw-Hill Publishing Co. James H. McGraw will be president, E. J. Mehren vice-president and general manager, Arthur J. Baldwin vice-president and treasurer. All the papers owned by the two companies will continue as before, except "Engineering News" and "Engineering Record." These two papers will be merged and known as "Engineering News Record," with Charles Whiting Baker as editor and William Buxman business manager.

The new vice-president and general manager of this important combination of publishing houses has done remarkable work since he entered the field of technical journalism. In the minds of those who know E. J. Mehren there is no doubt at all that in this new connection he will, as he always has in the past, demonstrate his fitness for increased responsibility. Mr. Mehren graduated from the University of Illinois in 1906 and joined the staff of "Engineering Record" the following year as associate editor. Six years later, or in 1913, he became editor and under his care "Engineering Record" has shown remarkable editorial development.

In 1916 Great Britain led in shipbuilding with 510 vessels of 619,000 tons. The United States was second with 1,213 vessels of 560,000 tons. Ships built by all other countries numbered 782, of 720,368 tons. Loss to the world's merchant shipping in 1916 through war causes exceeded the total tonnage constructed, according to estimates prepared by the Federal Bureau of Navigation, Washington, D.C. Vessels sunk are put at 1,149, of 2,082,683 tonnage, and those built at 2,506, of 1,890,943 tons. The net reduction was about 200,000 tons, or one and one-half per cent. of the world's total. These figures were gathered from many unofficial sources, but are declared to be approximately correct.

LETTER TO THE EDITOR.

The Quaker Oats Fire.

Sir,—Doubtless many of your readers will be interested in the following facts which are the result of an investigation by the writer following the recent fire at the Quaker Oats plant at Peterborough, Ont.

Below are given some of the records of the investigation, the conclusions drawn, together with a few general remarks and suggestions with regard to fireproofing.

The concrete was badly cracked. The aggregate was gravel. I found when breaking up pieces that many of the smaller as well as of the larger aggregates had a soft layer of varying thickness, (1 to 3 m/m). Some were only partly covered with it. On closer inspection it became evident that these layers were formed from the surface of the stones themselves, and that they were not, for instance, coatings of clay or other foreign material. I picked out some of the aggregates which had these peculiar formations. The coatings were scraped off and analyzed, (see No. 4965). The stones themselves were afterwards ground up and analyzed, (see Nos. 4964, 4966, 4967).

I found, also, in some parts of the concrete, stratified layers of some fine material. A sample of these was collected and analyzed.

Analysis of Aggregates from the Concrete.

	No. 4964.	No. 4966.	No. 4967.
Volatile matters	39.69%	42.56%	41.53%
CaO (lime)	50.64%	54.42%	52.26%
MgO (magnesia)	0.77%	0.58%	0.74%

From these results we see that the damaged aggregates were composed of limestone.

Analysis of the Coating Scraped Off the Above Tested Aggregates.

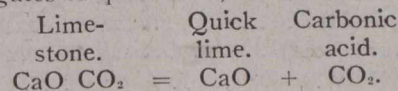
	No. 4965.
CO ₂ (carbonic acid)	25.21%
CaO (lime)	54.32%
MgO (magnesia)	0.86%

The composition of the material is therefore:

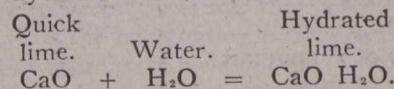
CaO, CO ₂ (carbonate of lime)	57.29%
CaO, H ₂ O (slacked lime)	29.38%
MgO, H ₂ O (hydrate of magnesia)	1.25%

The layers covering the aggregates contained, therefore, considerable amounts of hydrated lime. This was evidently formed in the following way:

The heat from the fire burned the surfaces of the limestone aggregates to quick lime,



This, on the other hand, (CaO) was afterwards slacked to hydrated lime,



Part of the lime was slacked when the firemen poured water on the building, and the rest was gradually formed by absorbing moisture from the surroundings. It is, however, of minor importance for the final results in whatever way the hydration took place. The main thing is that when quick lime is slacked the resulting hydrated lime occupies a volume twice to three times as large. The