

# FIRE AND WATER ENGINEERING.

Established, 1877.

Issued every week by Frederick W. Shepperd Publishing Company

136-138 West 22d Street, New York

Frederick W. Shepperd, President

Subscription rates, \$3.00 a year. Foreign, \$4.56

Organizations embraced in the field covered by

FIRE AND WATER ENGINEERING

The Waterworks Associations

Fire Engineers' Associations

League of American Municipalities

International Association of Municipal Electricians.

New York, Wednesday, October 18, 1911

Entered at New York as second-class matter

Holding up Chicago before the world's gaze as a horrible example in the matter of conflagrations, October 9 was quite generally observed in many states as "Fire Prevention Day." The western metropolis, however, need have no regrets at being so conspicuously advertised, as the movement is purely educational and humanely helpful. The occasion was very appropriately observed in that city, it being the fortieth anniversary of the "Big Fire," and to accentuate the observance with vividness, Mrs. O'Leary and her hoodoo cow were each impersonated in the procession. It is proposed to make the propaganda of fire prevention spread to every city and town in the United States. The prevention of fire losses is one of the most important features in the conservation of national wealth, and the movement should receive the official attention of the governors of all the states. The younger generation is the one that the founders of the movement are most desirous of impressing with its importance. It is not alone sufficient to equip fire departments to put out fires once they are started, but the essential is to equip a department which will prevent the starting of fires.

Representatives of the important cities along the great lakes are to meet in Chicago for the purpose of considering means to check further pollution of the waters of these lakes. For years these lakes have been the dumping places for the filth and refuse of every city along their borders, and this too, notwithstanding that each community derived its water supply from the same source. The wonder is that drastic measures have not been resorted to before to remedy this colossal evil. Instead, however, each city has been combatting typhoid, which has had more to do with increasing mortality figures than all other diseases combined. Economy is the only tangible pretext offered for permitting such conditions to exist in this age when science has evolved sanitary methods by which sewerage can be disposed of. And yet it is hard to believe that these cities, noted for their enterprise and commercial energy, would exercise such parsimony at the expense of the health of their citizens. The growth of the cities in this twentieth century is almost phenomenal. But the growth in city population has not been even equal to the progress in modern sanitation. Few of our forefathers knew the luxury of a bath in the home; few knew of hot and cold water in every room except as it was carried there by servants, few knew of the advantages of modern plumbing with its ultimate connection with some unused

stream or other body of water and fewer knew the advantages of garbage incineration and water filtration. The dumping of the sewage of the cities, carrying disease and pestilence into the rivers and lakes must have one ultimate result—the contamination of the waters into which they are poured. In streams whose flow is rapid and whose waters tumble over boulders in its course, the bringing of the atoms of water into contact with the oxygen of the air, makes the work of self-purification rapid. But when the polluted water is stagnant or nearly so as in rivers whose flow is checked in any way, or in harbors where the action of the waves is retarded, the contaminating elements remain and blend with the general body of water.

The recent collapse of two dams, due it is claimed, to treacherous foundations, would indicate that geology will hereafter be incorporated in the curriculum of engineering schools. That the Johnstown disaster did not impart a lesson is a regrettable fact. It remained for the Austin calamity to emphasize more keenly the dark side of the great achievements which have been made in utilizing the forces of nature for the purposes of man. Is it not a deplorable commentary upon the indifference and negligence of some one that in the face of the too long record of sacrificed human lives, populous communities should be placed in such imminent peril as were the inhabitants of Austin, by the impounding of half a billion gallons of water behind a dam erected upon a foundation known to be treacherous? Both the Austin and the Hatfield dams were in themselves well built structures, capable of resisting the direct lateral water pressure above them, and doubtless would have endured for an indefinite time had not the rock startum upon which they rested, disintegrated under the pressure of water which percolated through the pores of the stratum. Everything seems to indicate that designers and builders of these dams were competent engineers who had computed the stresses and strains with exceptional accuracy, but were not equally proficient as geologists—they had not given the earth construction the necessary study. It illustrates the need of acquiring the science of geology as an integral part of an engineer's training. It seems to have developed, however, in the case of the Austin dam that the constructing engineer had been precluded from bed-rock explorations, because of the additional expense it would involve, while the ends of the Hatfield dam abutted earth that only required extra water pressure to move it out.

An investigation has been in progress in this city for several days touching the hazard to human life because of fire, accident prevention, danger to life and health due to unsanitary conditions, occupational diseases, and an examination of the present status and ordinances, to see to what extent the present laws are enforced. The inquisition is the direct sequel to the disastrous Asch building fire when seven score human lives were lost. It remains to be seen what benefit will eventually accrue from the investigation which has further emphasized the fact that there are thousands of factories fully as dangerous as was the Asch building. To make public the names of these buildings Chief Kenlon declared would create a panic among the thousands employed in them. He volunteered, however, to furnish the Legislative Committee with the addresses of between two and three hundred privately. As the Bureau of Buildings has not the power to enforce the law, except by civil suit there are nearly three thousand factory building owners who have been defying the law, and whose build-

ings are as liable to become charnel houses as the Asch building. They are willing to take their chances with such a long waiting list, and when the case finally does come to trial the owner simply says that he has complied with the law, and the case is thrown out of court, thus making the prosecution practically a farce. Former Chief Croker unhesitatingly admitted that he knew of instances where the chemicals in hand grenades had been removed and oil substituted, so that when used the supposed extinguishers would help the flames along. All these violations have been known for months, and in fact for years, and still the investigations go on. Isn't it about time to deal out a little punishment to these defiant law-breakers, or must the waiting game be prolonged indefinitely? Probably, with the gradual recovery from the shock occasioned by the Asch building fire, the public will settle back into its accustomed apathy, there to remain until the city is again stirred by a similar catastrophe, when the great hullabaloo will be repeated with all its pristine vigor.

As though it were something astounding, a southern newspaper declares that more people are annually killed by fire in their homes in New York than in any other city in the world. The fact that there is only one other city in the world larger than New York reduces the statement to one of trifling wonder. It must be conceded that London's loss from a human standpoint is far below that of New York, as is also its property loss. The cause is too well known to require repeating in the columns of this magazine. As New York is more than twice the size of Chicago, the second city in this country, it is but natural that its loss of human beings from any cause whatever, would be greater. But it is possible that from now on New York may reduce the mortality from this one cause very materially. It is said that the New York tenements were originally built to house the great hordes of immigrants who were thrown into the city from Europe. The end of the Napoleonic wars let loose the advance guard of these in 1817, when New York was a town of detached brick and frame houses, set in gardens. Within twenty months thereafter it was compelled to find room for more than twenty thousand immigrants—mainly Irish peasants. The owners of the houses in the poorer districts of the city provided for them by dividing up the old two-story-and-attic single houses to accommodate two families or more. The situation naturally continued. In 1828 another great rush of immigration began. The supply of old houses was exhausted and the slum builder began to put up the first type of the New York tenements as we know them now—wooden boxes, three or four stories high, sometimes with brick fronts, but always practically of frame construction. The front of the lots being filled, many of these were built back in the old gardens. By 1834 there were at least one hundred thousand people in the tenements of New York. To-day there are more than three and a half millions of people living in tenement houses in this city, but about nineteen thousand of these structures have been built since efficient fire construction laws came into existence, and although nearly a million persons are housed in them, records fail to show a single death resulting from this particular cause. It is a deplorable fact, however, that there still remain more than eighty thousand of the old modern type of tenements occupied by something like two and a half million persons, who are constantly menaced by fire. There is a widely prevailing hope that these fire traps will gradually disappear under the march of fireproof construction