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FIRE PROTECTION HISTORY-PART 115: 1936 (A BRIEF HISTORY OF THE DEVELOPMENT OF THE SPRINKLER SYSTEM)

By Richard Schulte

The fortieth Annual Meeting of the National Fire Protection Association convened in the Viking Room of the Hotel Haddon Hall in Atlantic City, New Jersey in May 1936. Among the presentations made at this meeting was a presentation titled "*Use of Heat-Activated Releasing Mechanisms for Local Alarms*" given by R. W. Hendricks of Underwriters' Laboratories. The following is an excerpt from the presentation briefly addressing the development of sprinkler systems:

"Perhaps it may not be amiss for me to first say something regarding the early history of fire extinguishing devices and systems which also included means of giving local fire alarms.

The first fire extinguisher of record, according to Dana's book "Automatic Fire Protection," was patented in 1723 in England by an eminent chemist named Godfrey. It consisted of a cask of fire extinguishing liquid containing a pewter chamber in which gunpowder was placed. This chamber connected with a system of fuses which when ignited caused explosion of the powder and scattering of the liquid. It is conceivable that this extinguisher may also have been the first local fire alarm device, since the explosion probably constituted a local alarm.

Nearly a hundred years later, in 1809, a sprinkler system was developed by Sir William Congreve, a member of the English Parliament, which included an alarm attachment operated by the dropping of a weight.

John Souther of Boston evolved a sprinkler system in 1872, which also made provision for automatically sounding a steam whistle when steam was turned into perforated pipes as a result of expansion of the piping or the burning of control cords.

Although the lapse of time between the advent of the Congreve and Souther systems was considerable, American engineering and inventive attention was, during this period, being devoted to means of protection against fire, the first perforated pipe sprinkler system being put into service in this country about 1852. It is of interest to note that the first patent on a sprinkler system was taken out in 1872.

Still another early local alarm in conjunction with automatic sprinkler equipment was brought out by Henry S. Parmelee of New Haven, Connecticut, in 1878. The system was provided with an alarm valve which would cause a whistle to sound in case sprinklers opened. The device is described as being a clapper type check valve which was placed in the sprinkler piping, near the base of the riser. A lever was connected to the hinged part of the clapper and extended through a stuffing box in the valve body. A wire ran from the outer end of the lever to a steam whistle and lifting of the clapper, due to flow of water in the system, caused the whistle to sound. This device was the forerunner of and apparently quite similar in some respects to present-day alarm valves.

From 1872 to 1885 the sprinkler systems installed were largely of the perforated pipe type, although the trend of invention was in the direction of systems with automatic sprinklers having fusible releasing mechanisms, and it seems that not a great deal of attention was devoted to the alarm feature.

From 1885 to 1900 several automatic sprinklers involving fusible releases were developed and it was during this period that the first alarm valve for wet-pipe sprinkler systems appeared in this country. These valves were to a considerable extent like alarm valves of the present day, all of which involve in their design provision for sounding local, electrical and mechanical alarms."

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Source: "Proceedings of the Fortieth Annual [NFPA] Meeting", Atlantic City, New Jersey, 1936.