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FIRE PROTECTION HISTORY-PART 41: THE NINTH ANNUAL MEETING OF THE NFPA-1905 (HERSEY DETECTOR METER)

By Richard Schulte

The ninth annual meeting of the National Fire Protection Association (NFPA) was held in New York on May 23rd, 24th and 25th, 1905. Among the reports presented at this meeting was a report on what is referred to today as a detector check valve. The following is the text of the report:

"***Hersey Detector Meter.***

This device is called the "Hersey Detector Meter." Its object is to measure accurately drafts up to about 150 gallons per minute, and to detect and exhibit the flow of any additional quantity in excess of the above amount.

The device consists of a check-valve in the fire service main and a meter on a by-pass a-round it. There is no mechanism in the main pipe except the check-valve, which offers no objectionable resistance, and gives a practically unrestricted waterway for use in case of fire.

What the detector does is, first, to cause all drafts up to about 150 gallons per minute to go around through the by-pass meter, where they are all measured; second, to give a positive indication that while this is going on[,] *the check is closed; third to give a positive indication if the draft exceeds 150 gallons per minute and about how many hours such an excess has been going on and, if desired, to indicate about when it took place.*

The device is furnished completely assembled so that it may be set as one piece in the main pipe line. It may be assembled so that the by-pass will be on either side of the main fire line, or on top or underneath, if more convenient. The by-pass is controlled by valves so as to permit inspection of the meter without closing the fire line. In case it is desired to use the whole device in place of the main yard check, the valve on the mill side can be a check-valve.

The main check-valve is provided with a differential seat which, with the by-pass, given an initial resistance of about 6 per cent of the available pressure. When the by-pass meter is delivering about 150 gallons per minute, the friction loss through the meter reduces the back pressure on the check to the equalizing point, and any draft, in excess of 150 gallons per minute, unseats the check and finds unrestricted passage through it.

The moment the check leaves its seat a small amount of water flows from the differential seat to the atmosphere through the small indicating meter, and this meter will continue to run as long as the check is off its seat.

The clapper is so weighted that it will close when the flow drops somewhat below the flow which caused it to open.

The device will therefore accurately measure all leaks or ordinary small drafts, will give an unrestricted waterway for use in case of fire, and will detect and show if water has been used in very large quantities, giving an approximate idea of the length of such use, and of about when drafts occurred.

Mr. French. In closing this report, which had to be rather hurriedly put together, but which I hope covers the main facts, I wish to say that this is another case where great benefits have come from co-operation between different societies. Several years ago some of us met the members of the American Water Works Association in Detroit, and that was the beginning of a method of working together and an era of good feeling which is bound in the long run to bring about the solution of a great many of these questions which we have been struggling for some years; and your Committee is very much indebted to the gentlemen of the American Water Works Association.

Mr. Kunhardt. I move that the report of the Committee be accepted and the Committee be continued.

Mr. Campbell. Mr. President, in conjunction with this report, while not strictly discussing it, I wish to say at this time that the fraternization between our respective committees I am proud to say began at the time when I was President of the American Water Works Association. The experts from the National Fire Protection Association were invited to attend the meeting of the American Water Work Association at Detroit. All that was done at that time was simply in the line of mutual felicitation, which, I remember, led to a remark by one of our members that "this sounds very much like jollying." Well, it gave me very much pleasure to retire from the chair and ask one of the Vice President to take my place, and to reply to that remark that jollying was a gift of the American people, and that when we had got down to a point where we could jolly one another there was some hope of our getting together on business lines. I am very glad to say, in seconding the motion to adopt the report of the Committee, that this report is a culmination of what was stated at the meeting.

Mr. Kunhardt. Mr. President, at the joint meeting with the Water Works Association this resolution was passed, and I think it would be in order for this organization to pass it now.

(The resolution beginning "That it is the sense of this organization," etc.)

The President. That is in the report, and the adoption of the Committee's report will carry with it the adoption of this resolution.

Mr. French. The resolution is in the Committee's report, and it may be that the adoption of the report would cover the matter, but still I think it would be a very excellent plan to meet the action of the American Water Works Association by an equally positive action on the part of this Association, if all agree.

(The resolution moved by Mr. Kunhardt was adopted, the report of the Committee was accepted, and the Committee continued.)"

Source: *Proceedings of the National Fire Protection Association*, Volume 1904-1907

From a technical standpoint, there isn't much to be gleaned from the report above, other than the fact that what we know today as a detector check valve was introduced in the first decade of the nineteen hundreds. Essentially, the check valve described above is the same as the detector check valve in use today. The only difference is the size of the valve- the detector check valves manufactured a century ago were huge in comparison to the valves used today.

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