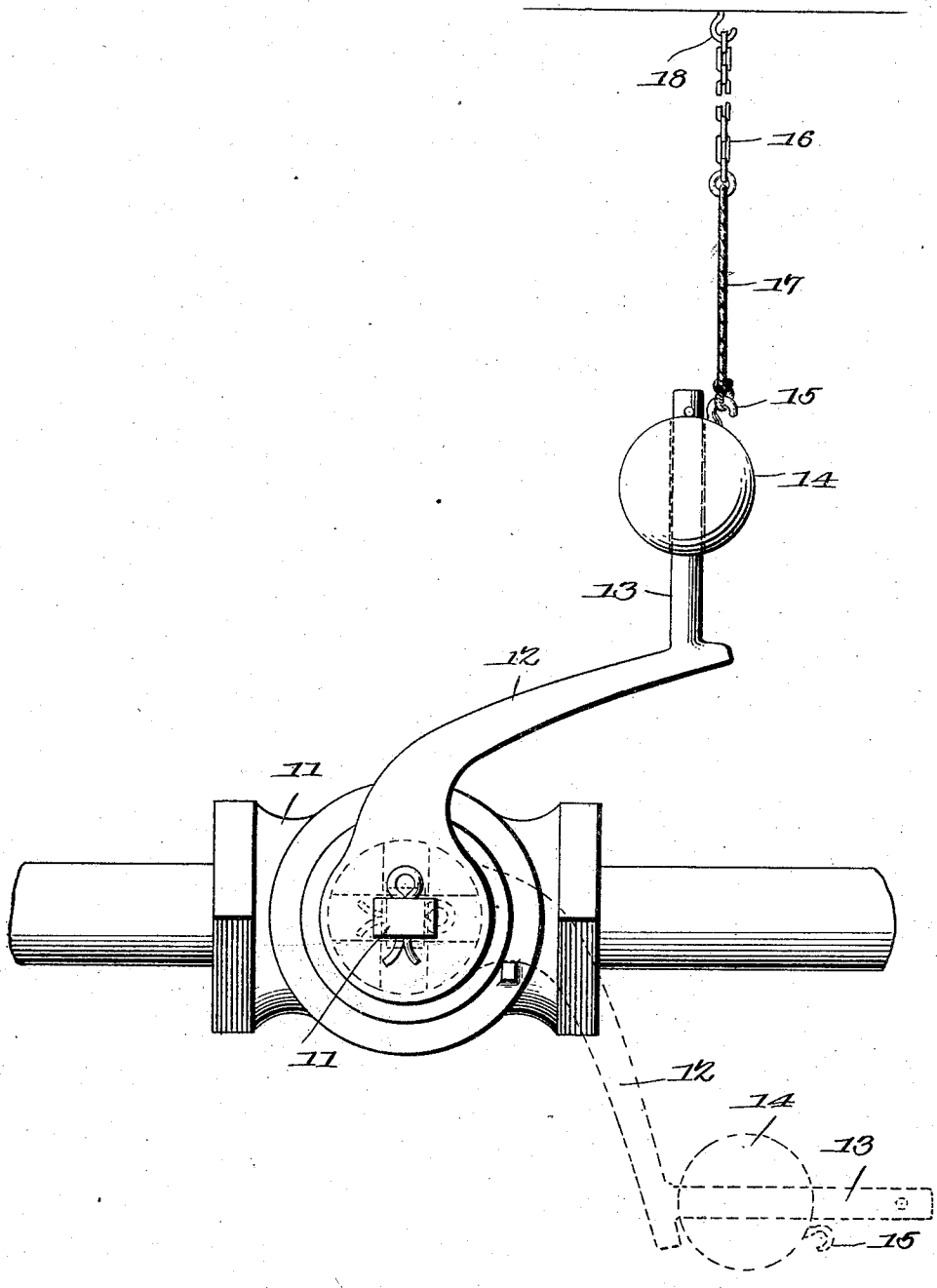
No. 795,840. PATENTED AUG. 1, 1905.

H. C. KLEIN.

AUTOMATIC VALVE OPERATING DEVICE.

APPLICATION FILED JAN. 3, 1905.



Witnesses

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AUTOMATIC VALVE-OPERATING DEVICE.

No. 795,840. Specification of Letters Patent. Patented Aug. 1, 1905.

Application filed January 3, 1905. Serial No. 239,461.

To all whom it may concern:

Be it known that I, HENRY C. KLEIN, a citizen of the United States, residing at Janesville, in the county of Rock and State of Wisconsin, have invented a new and useful Automatic Valve-Operating Device, of which the following is a specification.

This invention relates to devices for automatically closing or opening a valve when the temperature rises above a certain predetermined degree, and has for its object to simplify and improve the construction and increase the efficiency and certainty of action of devices of this character.

With these and other objects in view, which will appear as the nature of the invention is better understood, the same consists in certain novel features of construction, as hereinafter fully described and claimed.

In the accompanying drawing, forming a part of this specification, and in which corresponding parts are denoted by like designating characters, is illustrated the preferred form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the invention is not necessarily limited thereto, as various changes in the shape, proportions, and general assemblage of the parts may be resorted to without departing from the principle of the invention or sacrificing any of its advantages.

In the drawing thus employed the figure represents a side elevation of a valve with the improved device applied to its stem.

The improved device may be applied to any of the various forms of valves having quick-action stems, either rotative or slidable, and to valves employed for any pupose where it is required to shut off or open the valve in event of the temperature rising above a certain predetermined degree, so that in event of a conflagration in a building in which the improved device is installed the valve will be automatically closed or opened, as the case may be, and thus shut off the flow of gas or other inflammable substance or to automatically turn on the extinguishing liquid.

For the purpose of illustration the improved device is shown applied to the stem 10 of an ordinary supply-valve 11—such, for instance, as the valve employed between gas-meters and the main supply-pipes, to which the device is more particularly applicable.

The improved device comprises an arm 12 for attachment to the valve-stem and extended laterally, preferably in a curved line, and projecting at an angle to the valve and having an extension 13 disposed for vertical position out of alinement with the stem when the valve is in normal position and with a weight 14 slidable upon the extension. The weight is provided with a hook 15, and connected to the hook is a suspending means, such as a cable or chain 16, with a fusible element 17 at one or more points therein. The suspending member will be connected at its outer end 18 at any convenient point to support the weight at the outer or free end of the extension 13, as shown in full lines in the drawing, when the valve-stem is in normal position. It is obvious that the member 16 may be conducted to any desired distance and as many of the fusible elements 17 employed as may be desired, depending on the circumstances and the construction of the building in which the device is installed. By this simple means when a fire occurs in the building the fusible element will be severed at an early stage in its progress, with the result of releasing the weight, which in falling imparts a blow upon the outer end of the arm 12, and thus very effectually starts it into movement for closing or opening the valve, as the case may be.

Valves of the character to which this device is applicable generally remain inactive for long periods of time and frequently become corroded and are liable to stick in the valve-casings and require some force to open or close them, and by disposing the weight 14 at the free end of the vertical extension when the weight is released it imparts a relatively heavy blow to the free end of the arm 12 and positively releases the valve-stem and effectually overcomes any tendency of the valve to stick in the casing. The action is thus positive and certain, so that failure to act at a critical period is not liable to occur.

The weight can be of any required size, according to the form of valve employed, and the member 13 of any required length to increase or decrease the force of the blow imparted thereby upon the arm 12.

In erecting gas-meters a section of lead pipe is usually employed between the supply-pipe valve and the meter, and in event of conflagration this lead-pipe section frequently melts and releases the gas, which igniting burns freely and often adds materially to the conflagation. The improved device herein described and shown when applied to the supply-

valve of gas-meters between the main pipe and the lead connections will automatically shut off the flow of gas and prevent danger from the flow of the same after the lead connection is melted. To this end the fusible element 17 should be of material that will be severed by a lower temperature than that required to melt the lead connection above referred to, so that the weight may be released and the valve actuated at an early stage of the conflagration.

The improved device may be employed without structural change or material modification for opening a valve and may thus be readily applied to automatic sprinklers and the like for flooding buildings with fire-extinguishing liquids or compounds in event of a conflagration, as will be obvious.

Having thus described the invention, what is claimed is—

The combination with a valve-stem of an operating-arm extending laterally therefrom and provided with an extension disposed substantially vertical when the valve is in normal position, a weight slidable upon said arm extension, and a fusible element connected for suspending said weight at the free end of said arm extension.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY C. KLEIN.

Witnesses:
JAS. A. FATHERS,
A. E. BADGER.