

No. 688,755.

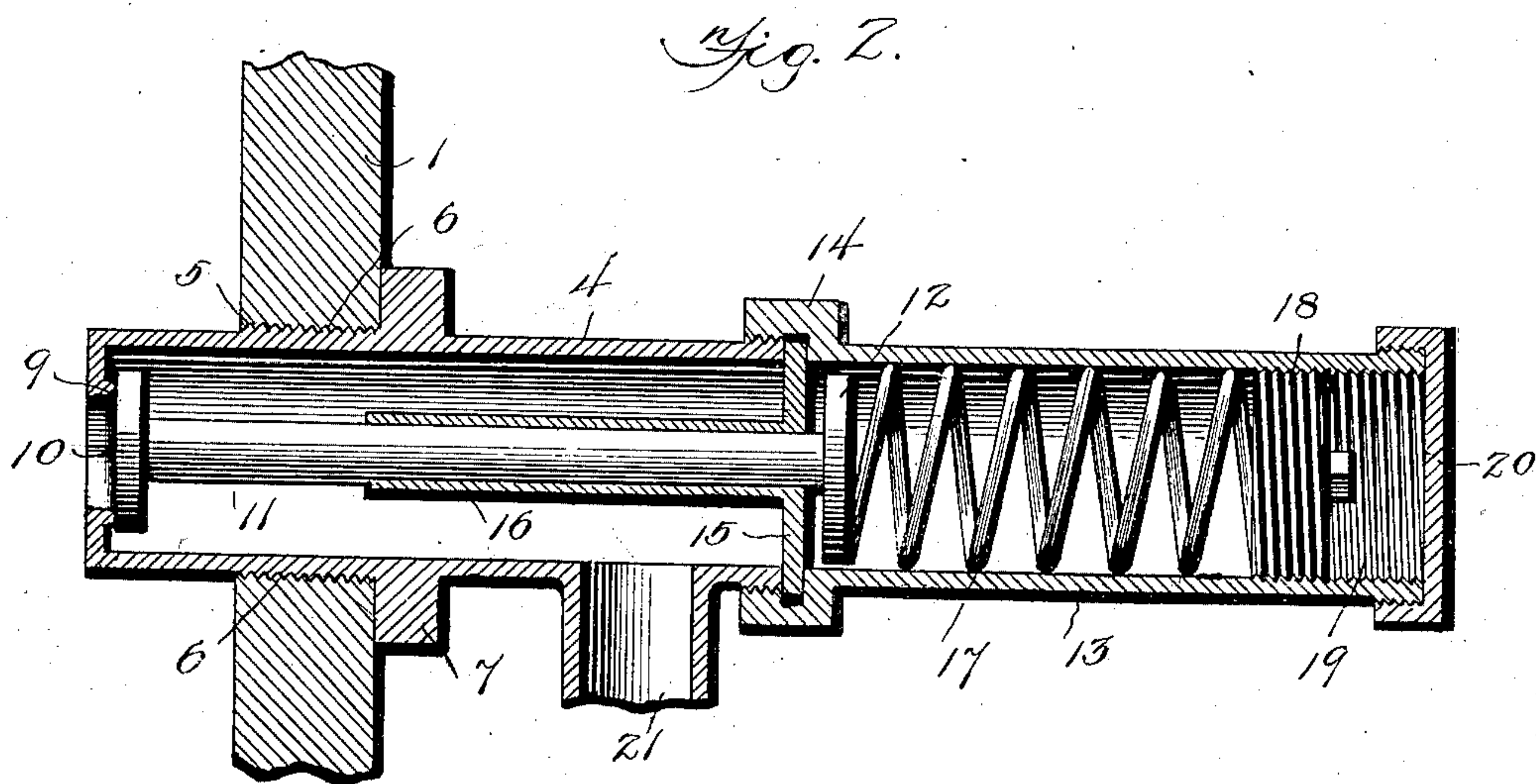
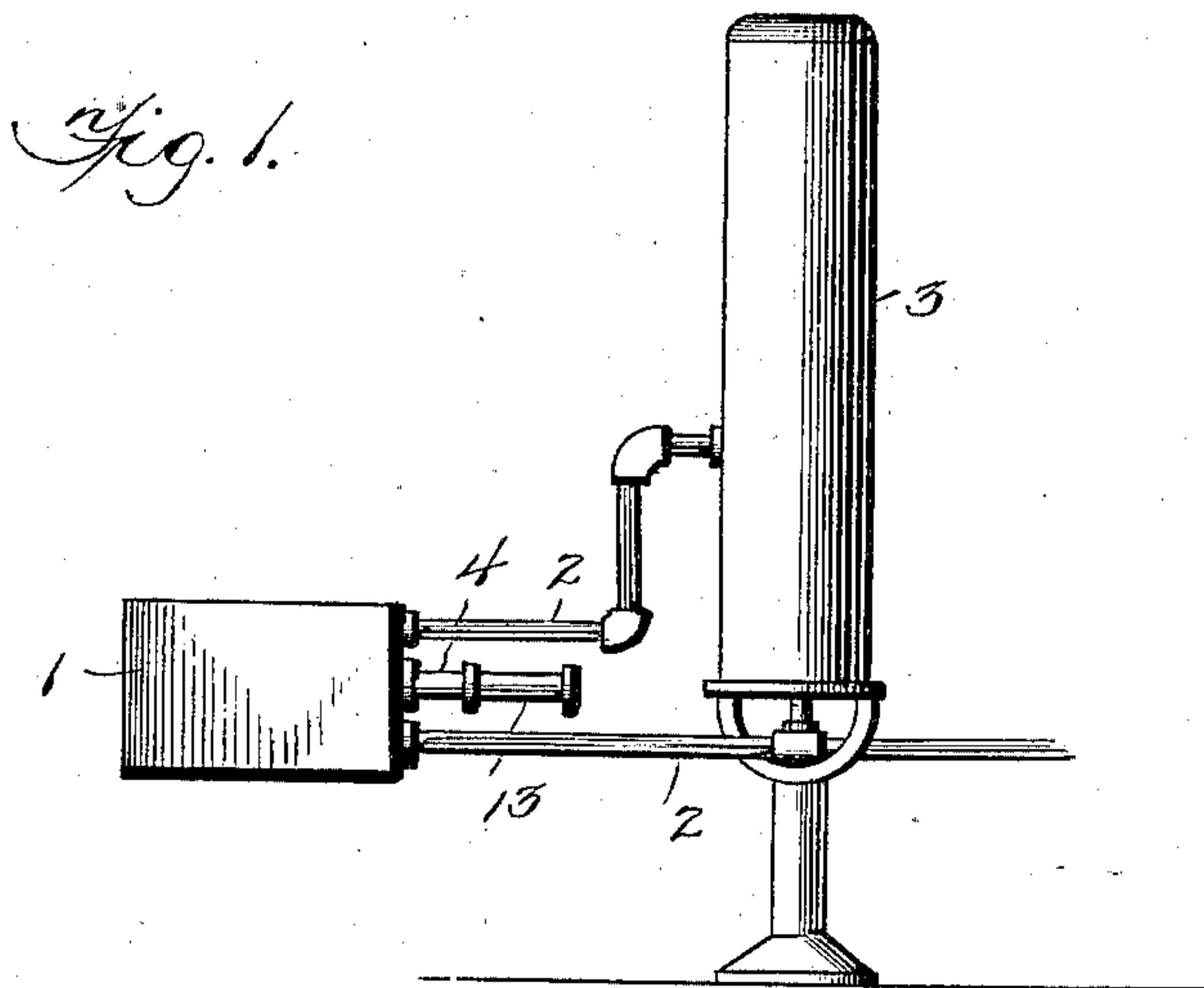
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G. H. TRAXEL.

SAFETY ATTACHMENT FOR WATER BACKS.

(Application filed Apr. 10, 1901.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

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SAFETY ATTACHMENT FOR WATER-BACKS.

SPECIFICATION forming part of Letters Patent No. 688,755, dated December 10, 1901.

Application filed April 10, 1901. Serial No. 55,188. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HENRY TRAXEL, a citizen of the United States, residing at Maysville, in the county of Mason and State of Kentucky, have invented certain new and useful Improvements in Safety Attachments for Water-Backs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to water-backs of the type which are commonly employed in connection with kitchen ranges or stoves for supplying hot water from the stand-boiler, and has special reference to an improved safety attachment or appliance for the water-back to provide for automatically relieving the pressure therein at any and all times when such pressure becomes excessive, and especially providing means for obviating the bursting or burning out of the water-back in the event of freezing of the water therein or in the circulating-pipe connections.

Disastrous accidents frequently occur by reason of the explosion of water-backs and the circulating-pipes of the ordinary kitchen hot-water-supplying apparatus mainly on account of ice forming in the water-back or the circulating-pipes, and the fire being thereafter started causes the steam to generate in the water-back and being prevented from having vent or circulation bursts the water-back or the pipes.

The present invention provides simple and improved means for avoiding the accidents of the character above noted by associating with the water-back an improved safety attachment or appliance which may be adjusted to open under any predetermined pressure and provide for the automatic venting or relief of excessive pressure in the water-back.

With these and other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

The essential features of the invention are necessarily susceptible to some modification; but the preferred embodiment of the improve-

ments is shown in the accompanying drawings, in which—

Figure 1 is a diagrammatic elevation of a water-back-heating system, showing the preferred position of the improved safety attachment or appliance contemplated by the present invention. Fig. 2 is an enlarged sectional view of the improved safety attachment or appliance and a portion of the water-back to which it is applied.

Like numerals of reference designate corresponding parts in each of the figures of the drawings.

In carrying out the invention the improved safety attachment or appliance may necessarily be associated with any type of water-back in use—such, for instance, as the box type of water-back, as well as with the coil form of back; but still the invention possesses special utility in connection with the ordinary box-like water-back, such as shown in the drawings.

Referring to the drawings, the numeral 1 designates an ordinary box-like water-back, such as is commonly placed within kitchen ranges or stoves, and which water-back has connected therewith the circulating-pipes 2, which are associated in the usual manner with the upright or stand boiler 3, said pipes 2 being also usually coupled to one end of the water-back. These are the usual parts of the ordinary hot-water system associated with kitchen ranges or stoves, and the present invention preferably contemplates the arrangement of the safety attachment at the same end of the water-back as the circulating-pipes and between such pipes, as plainly shown in the drawings.

The safety attachment or appliance is practically an improved form of safety-valve specially designed for the purpose. The said safety attachment or valve includes in its general organization a tubular valve-casing 4, provided intermediate its ends with an exteriorly-threaded portion 5, adapted to detachably engage in the threaded opening 6, formed in one end of the water-back between the circulating-pipe connections. Contiguous to the exteriorly-threaded portion 5 the valve-casing 4 is provided with an exterior stop-collar to limit the screwing in of the valve-casing,

and by reason of the exterior threads 5 being arranged at an intermediate point the inner end of the valve-casing projects a distance into the water-back, whereby the same will
 5 be thawed as quickly as the water-back itself to permit of the venting of steam before it reaches a dangerous pressure.

The valve-casing 4 is provided in its inner open end with an inturned valve-seat flange
 10 8, having at its inner edge an annular valve-seat rib 9, against which is normally seated the valve-disk 10, provided at one end of a reciprocatory valve-stem 11, extending longitudinally the full length of the casing, and provided
 15 at its other end with a follower-head 12, working within a casing extension 13, having a detachable coupling connection 14 at one end with the outer end of the valve-casing 4. Between the contiguous coupled ends
 20 of the casing 4 and its extension 13 is held a guide head or plate 15, from which is extended a guiding-tube 16, projecting longitudinally within the casing 4 and forming an extended guide or bearing for the stem 11. A pressure-spring 17 is arranged within the extension 13 and bears at one end against the follower-head 12, while the other end thereof
 25 bears against an adjustable tension-nut 18, which is exteriorly threaded to adjustably engage with the interiorly-threaded section 19
 30 within the outer end portion of the casing extension 13. A detachable cap 20 is fitted over the outer end of the casing extension 19 to protect the adjustable nut from being tampered with.
 35

The valve-casing 4 is provided contiguous to its outer end and exterior to the water-back with a vent-port 21.

By adjusting the nut 18 the valve 10 may
 40 necessarily be set to open under any predetermined pressure, and it will be understood that when there is any excessive pressure created in the water-back, and especially in the event of freezing, such pressure will find
 45 ready vent past the valve 10 and through the vent-port 21.

From the foregoing it is thought that the con-

struction, operation, and many advantages of the herein-described safety attachment or appliance will be readily understood without further description, and it will also be
 50 understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the scope or sacrificing any of the advantages of
 55 the invention.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an attachment of the class described, 60 the combination with the water-back, of a valve-casing having at one end a valve-seat, a casing extension coupled to the outer end of the valve-casing, a guide-head clamped between the coupled ends of the casing and the
 65 casing extension, said guide-head having a guiding-tube projecting longitudinally within the casing, a valve cooperating with the seat and having a stem extending through the guiding-tube and carrying a follower-head located
 70 within the casing extension and bearing against the head, and an adjustable tension device mounted within the extension and bearing against said spring.

2. In an attachment of the class described, 75 the combination with the water-back, of a valve-casing fitted to the water-back and provided at its inner end with an interior valve-seat located a distance within the back, a casing extension coupled to the outer end of
 80 the valve-casing, a valve-disk having a stem arranged longitudinally of the casing and provided with a follower-head, guiding means for the stem, a pressure-spring arranged within the casing extension, a tension device adjust-
 85 ably mounted inside of the casing extension beyond one end of the spring, and a closure for said casing extension.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE HENRY TRAXEL.

Witnesses:

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