April 27, 1926. 1,582,276

H. G. KITTO

DETECTOR FOR OVERHEATED PIPES

Filed March 14, 1924.

Fig. 1.

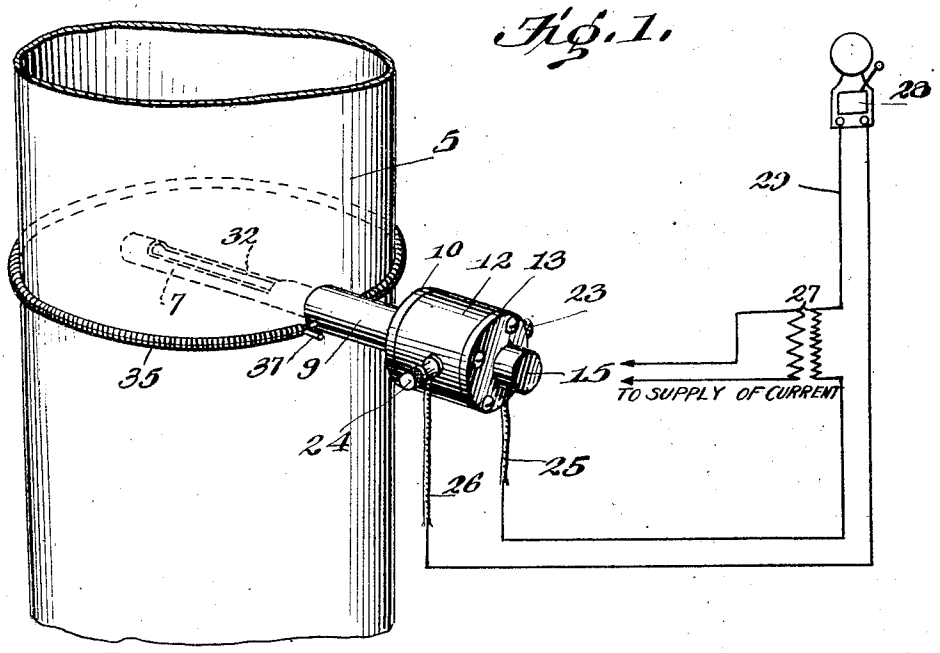


Fig. 2.

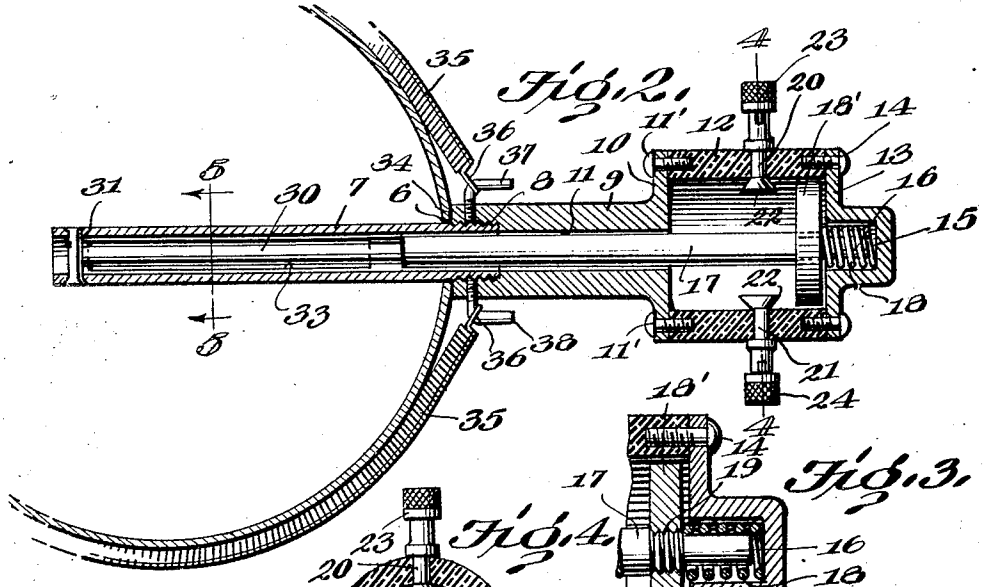


Fig. 3.

Fig. 4.

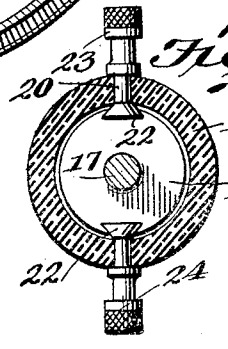
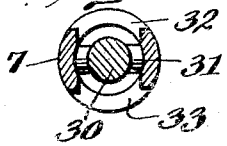


Fig. 5.



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Patented Apr. 27, 1926. 1,582,276

UNITED STATES PATENT OFFICE.

HAROLD G. KITTO, OF KEWANEE, ILLINOIS.

DETECTOR FOR OVERHEATED PIPES.

Application filed March 14, 1924. Serial No. 699,369.

To all whom it may concern:

Be it known that I, HAROLD G. KITTO, a citizen of the United States, residing at Kewanee, in the county of Henry and State of Illinois, have invented certain new and useful Improvements in a Detector for Overheated Pipes, of which the following is a specification.

This invention relates to a device for closing an electric circuit to an alarm, for detection of overheated furnaces or stove pipes, which often cause chimney fires.

An object of the invention is to provide a device that is adapted to be attached to a stove pipe, a portion thereof to project into said pipe, to close an electric circuit to an alarm when the temperature within the pipe reaches a certain height.

Another object of the invention is the provision of a circuit closing device, having a strip of metal arranged within the pipe that is subjected to a low fusion point, which will melt to allow the electric circuit to be closed when the temperature reaches a danger point, and said strip of fusible material adapted to be readily removed for the replacement of another, to reload the device.

A further object of the invention is to provide means which will permit the alarm to be readily attached to or detached from a stove pipe, and the attaching means being so constructed and arranged to hold the circuit closing device substantially in position upon a pipe.

It is also an object of the invention to provide a device of the character indicated, which is simple and substantial in construction, which can be manufactured economically, and which will be thoroughly efficient and practical in use.

With the foregoing and other objects in view, which will be apparent as the description proceeds, the invention resides in the construction and arrangement of parts, as hereinafter described and claimed, it being understood that changes can be made within the scope of what is claimed, without departing from the spirit or scope of the invention.

The invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a perspective view of my improved alarm showing it applied to a stove pipe, and also diagrammatically showing the same wired to a bell,

Figure 2 is a longitudinal section through the device applied to a stove pipe,

Figure 3 shows an enlarged fragmentary section of one end of the device,

Figure 4 is a section taken on line 4—4 of Figure 2, and

Figure 5 is an other section taken on line 5—5 of Figure 2.

In carrying out my invention the numeral 5 indicates a metal stove pipe of the usual and well-known character having an opening 6 therein, through which extends the tube 7 of my improved device. The tube 7 has threads 8 on one end which are received in the end of an extension 9 provided on the end plate 10. The extension 9 has a cylindrical passage way 11 therein of the same size as the interior of the tube 7.

Attached to the end plate 10 by means of screws 11′ is a cylindrical member 12 of insulating material, and to the opposite end of the cylindrical member 12 is attached a second plate 13 by means of screws 14. The second plate 13 has an outwardly pressed pocket 15 therein which receives the reduced end 16 of the rod or bar 17. A spring 18 is arranged about the reduced end 16 in the pocket 15 to force the rod 17 forward, said spring engaging against a disc 18′ which is threaded or otherwise secured to the rod 17 as at 19.

To close an electric circuit when the rod 17, carrying the disc 18, is forced forward, a pair of contact members 20 and 21 are disposed directly opposite each other on the insulated cylindrical member 12, said contacts having a small or fine edge 22 thereon which are engaged by the disc 18 to bridge the circuit from one contact to the other.

The outer end of the contact members 20 and 21 have binding posts 23 and 24 respectively, to which wires 25 and 26 are attached. Said wires connect to the transformer 27 and to the bell 28, and said bell and transformer are connected at their opposite terminals by a wire 29. The supply of current such as 110–115 volt house line is connected by wire to the other terminals of the transformer for supplying current to same.

The rod or bar 17 terminates a short distance beyond the end of the extension 9, and the end thereof is adapted to engage one end of a strip or bar of fusible material 30, said bar of fusible material 30 having a low fusion point. A pin 31 extends across the end

of the tube 7 against which the opposite end of the strip of fusible material engages.

Upon opposite sides of the tube 7 are provided longitudinal slots 32 and 33 which allow the heat in the stove pipe to act upon the fusible metal.

The extreme end 34 of the extension 9 forms a shoulder to abut against the pipe 5, when the coil spring 35 encircles the pipe. The opposite ends of the spring 35 have eyes 36 adapted to be received over the hooks 37 and 38 carried by the extension 9.

When the device is set ready for use the current is broken to the bell 28 due to the strip of fusible material 30 holding the rod 17, carrying the disc 18′, back, thus compressing the spring 18. When the metal strip 30 is melted due to excess heat the spring 18 will force the rod 17, carrying the disk 18′ forward, which will bridge the contacts 20 and 21 and close a circuit through the supply of current and bell.

When it is desired to reload the device, that is to replace the used strip of fusible metal, one end of the spring 35 is disconnected from one of the hooks 37 or 38, which will allow the device to be removed from the pipe 5. A new strip of fusible metal can be inserted through either slot 32 or 33, compressing the spring 18, and breaking the supply of current to the bell. If desired the tube 7 may be removed from the extension 9 to reload the device.

Having thus described my invention, what I claim as new is:

A heat detector comprising a circuit closer having an active element, hooks provided at opposite sides of the circuit closer, a coil spring adapted to be connected at its ends with the hooks, a tube attached to the circuit closer and receiving the end portion of the active element thereof, said tube being provided at diametrically opposite sides with openings, an abutment pin carried at the end portion of the tube and a bar of fusible material housed within the tube between the opening thereof and interposed between the end of the active element and the circuit closer and the abutment pin.

In testimony whereof, I have affixed my signature.

HAROLD G. KITTO.