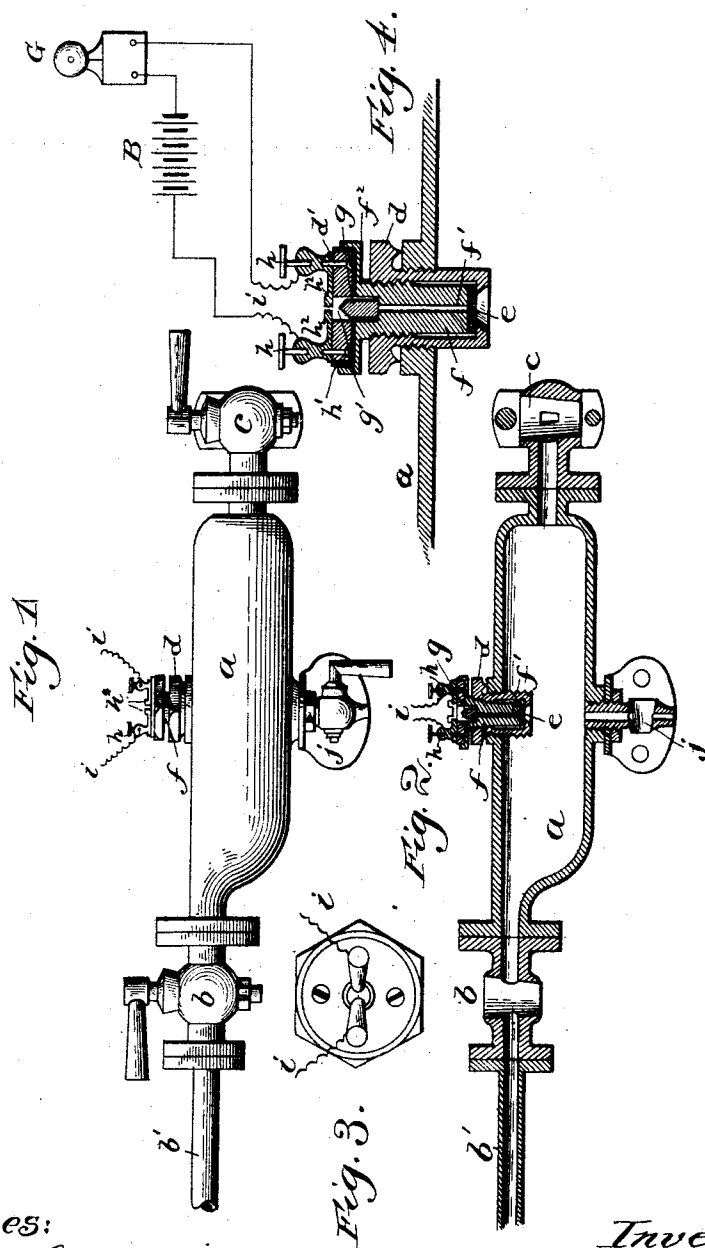


(No Model.)

P. KEREKES.
BOILER FEED ALARM.

No. 471,311.

Patented Mar. 22, 1892.



Witnesses:

J. B. McGirr.
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Inventor:

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UNITED STATES PATENT OFFICE.

PETER KERÉKES, OF BUDA-PESTH, AUSTRIA-HUNGARY.

BOILER-FEED ALARM.

SPECIFICATION forming part of Letters Patent No. 471,311, dated March 22, 1892.

Application filed March 18, 1891. Serial No. 385,568. (No model.)

To all whom it may concern:

Be it known that I, PETER KERÉKES, a subject of the Emperor of Austria-Hungary, residing at Buda-Pesth, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Boiler-Feed Alarms, of which the following is a specification.

Many accidents have shown how dangerous the slightest neglect can be in feeding steam-boilers, and many arrangements have been made which should remind the engineer of the feeding of the boiler whenever the water sinks below the normal height.

The subject of my invention is also a signal arrangement which immediately calls the engineer for the feeding of the boiler by an electric bell or a whistle whenever the water sinks to the lowest permissible level.

The accompanying drawings show my apparatus, as follows:

Figure 1 is a front view. Fig. 2 is a vertical section lengthwise. Fig. 3 is the alarm arrangement in top view, and Fig. 4 in transverse section, the two latter on an enlarged scale.

The apparatus consists of a cylindrical horizontally-mounted metal water-reservoir *a*, Figs. 1 and 2, at whose two ends, respectively, are attached cocks *b* and *c*. Cock *c* is fastened by one of its flanges to the reservoir *a* and with the other flange to any accessible part of the boiler at the height to which the water-level can sink. Cock *b* is attached to that end of the reservoir which is connected by a narrow pipe *b'* with the steam-space of the boiler. When filling the boiler, the cones of these cocks *b* and *c* are set "open," in consequence of which the apparatus and the pipe *b'*, which leads to the steam-space, are filled to the same height as the water stands in the boiler.

Extensive thermometric observations have proven that the temperature of the water in the reservoir *a*, even after several weeks' working of the boiler, exceeds the temperature of the surrounding air by only 27° centigrade. When the water-level in the boiler sinks to the point at which the opening in the plug *c*, attached to the boiler, permits the admission of steam instead of water into the reservoir *a*, the water in the reservoir is quickly emptied by the pressure of the steam in connection

with the steam-space by the little pipe *b'*, immediately upon which a high temperature is generated in the reservoir conforming to the tension of the steam in the boiler, whereby the pane *e*, made of easily-molten metal and which is laid into sleeve *d* of the apparatus *a*, is melted and allows a stream of steam to escape through the small opening *f'* in plug *f*, in consequence of which the piston *g*, made of aluminium and which is easily movable in plug *f*, is pushed upward and closes the contacts *h* of an electric-bell current, mounted on the upper part of plug *f*, whereby the signal is given that the water in the boiler has sunken to the lowest permissible point.

The action of the contacts *h* and the piston *g* is as follows: Secured in the plate-shaped upper dilatation *f*² of the stopper *f* is an insulated disk *h'*, on which two contacts (screw-clutches) *h* are by means of screws *d'* fixed in diametrical opposition to each other. From these screw-clutches or contacts *h* the conductor-wires *i* extend to the battery *B* and through the bell-work *G*. From each contact *h* is also protruding a flange *h*² above the edge of the perforation *g'*, but in such manner as not to meet with each other. Only when the metallic piston *g* is forced upward by steam does its conical end enter between the two flanges *h*², in this manner closing the circuit and causing the electric-bell work *G* to operate.

When the apparatus has signaled, it is easily turned off by the two handles *b* and *c* by setting them to "closed."

If the water in the boiler is again at its normal height, the apparatus is made ready for use in the simplest manner, in case an electric bell is used, by unfastening the wires *i*, taking away the remaining part of the melted pane *e* by pressing down a new pane by means of plug *f*, filling the apparatus with cold water, and putting the two cocks *b* and *c* on "open." The cock *b* may also be used as a common test-cock, and it is necessary that the same is, as is prescribed for test-cocks, blown through from time to time to see that the communication between the safety apparatus and the boiler is good. Cock *C*, attached to the apparatus, has the same arrangement, which must also be blown through from time to time, so as to be assured that the steam-passage of the

apparatus is intact. The plug *j* serves to let the water flow through the reservoir when the apparatus is being put into order again, so as to cool off the sooner, and, on the other hand, to empty the water when the boiler is not being worked in the winter.

I claim—

In a boiler-feed alarm, the combination, with a water-reservoir mounted on the boiler, of an alarm apparatus mounted on said reservoir, consisting, essentially, of a sleeve *d*, provided with a plug *f*, an insulated disk *h'*, secured in the plate-shaped upper dilatation *f*² of the same, piston *g*, and opening *f'*, and at the top

provided with electrical contacts and at the opposite end with a pane of easily-fusible material, whereby when said pane melts a column of steam passes through the opening *f'* and by raising the piston *g* into engagement with the contacts closes the electrical circuit, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

PETER KERÉKES.

Witnesses:

A. S. BÜSING,
H. KUSTERER.