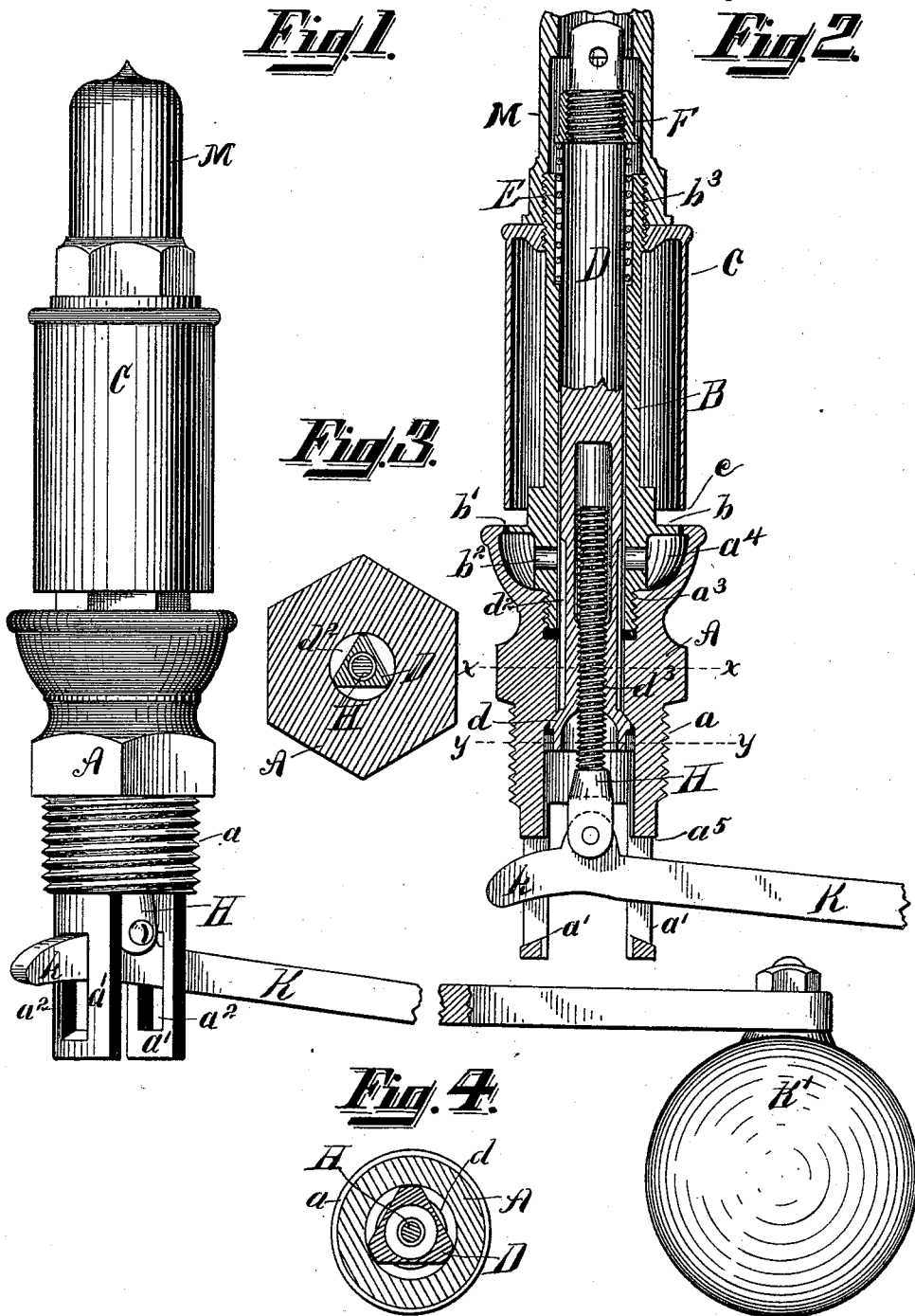


(No Model.)

G. B. ESSEX.
BOILER ALARM.

No. 496,557.

Patented May 2, 1893.



WITNESSES
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UNITED STATES PATENT OFFICE.

GEORGE B. ESSEX, OF DETROIT, MICHIGAN, ASSIGNOR TO THE MICHIGAN LUBRICATOR COMPANY, OF SAME PLACE.

BOILER-ALARM.

SPECIFICATION forming part of Letters Patent No. 496,557, dated May 2, 1893.

Application filed April 15, 1892. Serial No. 429,377. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. ESSEX, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Alarm-Whistles for Boilers; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a perspective of my alarm whistle for boilers. Fig. 2 is a sectional view of the same. Fig. 3 is a horizontal section on the line xx of Fig. 2. Fig. 4 is a horizontal section on the line yy of Fig. 2.

My invention relates to alarm whistles for steam boilers, and its object is to provide a whistle that will sound an alarm when the water in the boiler goes either above or below a certain predetermined limit.

Another object is to provide for readily adjusting the device.

These objects I accomplish by a construction shown in the drawings, in which A is the base portion of the shell or case of the whistle. This part A is provided with the threaded portion, a , by which it is attached to the boiler. Below the threaded portion are the extensions, a' , a' , each provided with the slot a^2 , to accommodate the lever of the float, as herein-after described.

Screwed into the part A of the case at a^3 , is the inner case or shell, B. This is provided with an annular flange b , which nearly fills the mouth of the cup portion, a^4 , of the case A, leaving an annular opening b' .

The case B is threaded for a distance from the upper end, to which is screwed the whistle proper, C. This whistle C extends down nearly to the case A, and presents its lower edge c to the annular opening b' .

Mounted in the inner case is a plunger D, having the enlarged portion d , forming a steam joint at d' with the case A. This plunger is made triangular for a distance above the lower end, leaving steam passages d^2 leading up to the horizontal steam passage b^3 in the case B. I also form the enlarged portion d triangular, as shown in Fig. 4.

The case B has an enlarged cavity at b^3 , in which is located the spring E. This spring acts against the nut F screwed on the top of the plunger, and by its action holds the plunger to the upper extremity of its movement, and forces the enlarged portion d to its seat in the case A.

The plunger D is internally threaded at d^3 . With this threaded portion is engaged the bolt H, to the lower end of which is pivoted the lever K. This lever has a portion k extending beyond the pivot, so that the lever has portions on each side of its pivot, passing through the slots a^2 . On the outer end of the lever K is the float K' .

The plunger D is rotatable within its case, and is provided with a slot in its upper end, not shown, by which it may be turned by a screw driver, or by inserting a nail or other tool. I provide the cap M to cover the upper end of the plunger, which cap I screw to the case B above the whistle C.

The operation of my device is as follows: The device is screwed into the boiler, the extensions a' , a' , depending into it. The lever is then pivoted to the bolt H, the float K' resting in and on the water, and following the rise and fall of the water. The cap M is then removed and the plunger rotated with a screw or other tool. As the plunger rotates, the bolt H is forced up or down and the pivot end of the lever adjusted vertically at will. When the device is placed in the boiler and its working parts are in their normal position, the enlarged portion d of the plunger closes the steam passages through the whistle; but when the water rises in the boiler a sufficient distance, the float will carry the lever upward until it strikes against the case A at the upper end of the slot at a^5 . This point then becomes the fulcrum of the lever, and any further upward movement of the float will cause the lever to draw down on the bolt H and the plunger, and unseat the portion d . This allows the steam to pass up through the passages d^2 to the passage a^3 , and out through the annular opening b , where it will sound the whistle. In like manner, if the water goes below a certain limit in the boiler, the lever will drop and the extension k will strike against the case A at the upper end of its

- slot, and draw down the plunger and sound the whistle. The device may be adjusted to allow a greater or less variation between the upper and lower water limits, by adjusting the pivot of the lever vertically. This is done by screwing the cap M, and rotating the plunger. This plunger having a screw connection with the bolt H, moves this bolt vertically and secures the adjustment.
- 10 I am not aware that this class of alarm whistles has ever been used, in which an adjustment has been provided outside of the boiler, and one that can be adjusted without opening the boiler.
- 15 What I claim is—

1. In an alarm whistle for boilers, the combination of a case, a plunger located in said case and adapted to operate the valve, a float

lever pivoted to the valve, said case provided on either side of said plunger with a projection adapted to operate as a fulcrum for said float lever, whereby the valve is opened whenever the float goes above or below a certain limit substantially as described.

2. In an alarm whistle for boilers, the combination of the case A, the inner case B, the plunger D, and the float lever K, pivoted to said plunger and adapted to fulcrum on the case at either side of said plunger, substantially as and for the purposes described.

In testimony whereof I sign this specification in the presence of two witnesses.

GEORGE B. ESSEX.

Witnesses:

MARION A. REEVE,
C. H. FISK.