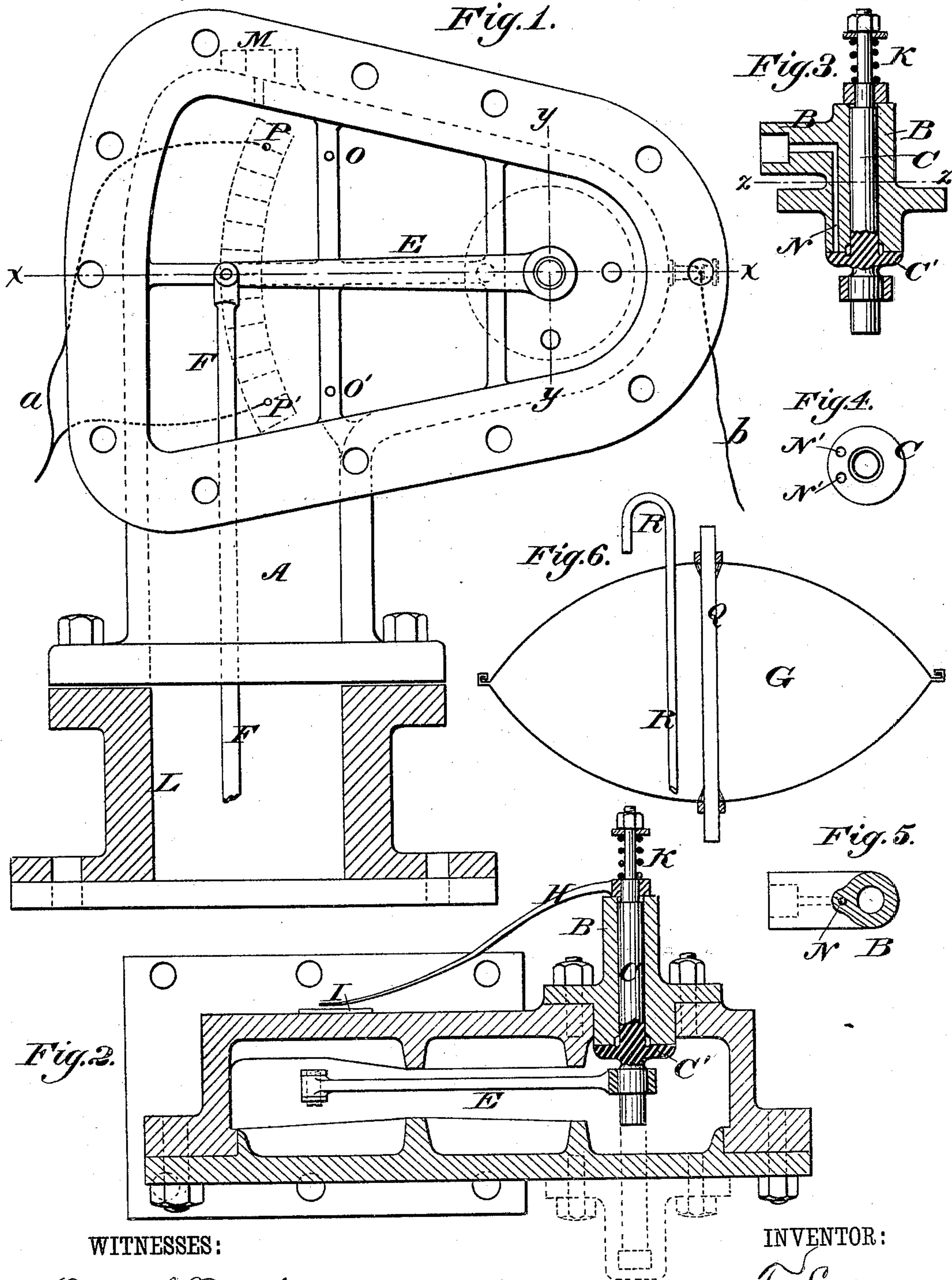


(No Model.)

F. LADRY.
Indicator for Steam Boilers.

No. 232,981.

Patented Oct. 5, 1880.



WITNESSES:

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FLORENT LADRY, OF BRUSSELS, BELGIUM.

INDICATOR FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 232,981, dated October 5, 1880.

Application filed July 12, 1880. (No model.) Patented in Belgium January 19, 1880, and June 3, 1880.

To all whom it may concern:

Be it known that I, FLORENT LADRY, of Brussels, Belgium, have invented a new and Improved Float and Mechanism for Announc-
5 ing the Water-Level in Steam-Boilers, of which the following is a specification.

My improvements relate to high and low water indicators for boilers.

The construction and operation will be ex-
10 plained in detail hereinafter with reference to the accompanying drawings, wherein—

Figure 1 is an elevation of the apparatus, the base being in section and the cap or cover removed. Fig. 2 is a horizontal section on the
15 line *xx* of Fig. 1. Fig. 3 is a vertical section, on line *yy* of Fig. 1, of the valve and seat for the alarm-whistle. Fig. 4 is a face view of the valve-disk. Fig. 5 is a cross-section of the valve-seating on line *zz* of Fig. 4. Fig. 6 is
20 a vertical section of the float.

Similar letters of reference indicate corresponding parts.

A is a box of cast-iron for containing the mechanism, sustained upon the hollow base L,
25 that is to be attached upon the boiler. Upon one side of box A is fitted a socket or sleeve, B, which forms a support for a steam-whistle, and is provided with apertures N, that communicate with the interior of box A.

30 C is a plug or pin passing through sleeve B, and provided with a disk, *c'*, which constitutes a valve having the inner end of sleeve B for its seat, and having apertures N'. The outer end of plug C is fitted with a spiral
35 spring, K, and a nut for retaining the spring under tension, so that it tends to draw the disk *c'* to its seat. The plug C may be further supported by extending its inner end into a bearing that is formed on the opposite side of
40 box A, as shown by dotted lines in Fig. 2.

E is an arm secured on the valve-plug C, and connected at its outer end with the rod F, that extends through base L and carries the float. Upon the outer end of plug C is
45 fitted an indicating-hand, H, that shows by the indicating-scale I the position of the float. The movement of arm E is limited by two fixed studs, *o o'*.

At opposite ends of the scale I are studs *p*
50 *p'*, that are connected with the wire *a* of an electrical circuit containing an alarm-bell at the desired place, the other wire, *b*, being connected with box A, and studs *p p'* insulated from the case.

55 The float G (shown in Fig. 6) is constructed

of copper or other metal, hollow and in round, oval, or other form. It is fitted with a cross-tube, Q, for receiving the rod F, on which the float is secured by nuts or otherwise, and the float is further provided with a pipe, R, that
60 extends from the outside at the top of the float to near the bottom at the inside. The outer end of pipe R is curved downward, but may be otherwise shaped to allow steam to enter the float for equalizing the pressure upon
65 the float, so that the float shall not be broken by the outer pressure. In case there is condensation of steam within the float the water will be expelled through pipe R by the inter-
70 nal pressure.

By this construction the steam has access
to the interior of the float and prevents water from entering, thus insuring proper operation of the apparatus.

The float may be used also in connection
75 with feed-water apparatus.

The apparatus will be adjusted so that when the water reaches its proper height the float will have risen far enough to bring the upper
80 opening, N', in disk *c'* in communication with the upper passage, N, and when the water falls to the lowest safe point the lower opening, N', will communicate with lower passage, N, by the fall of the float. Steam may then
85 pass to the whistle by the passage N, and thus give the alarm. The indicating-arm H may at the same moment close the circuit by the wires *a b*, and thus give an alarm at the
90 distant place, or the studs *p p'* may be set so that the circuit is closed only when the wa-
95 ter has risen or fallen beyond the point at which the whistle is sounded. The indicating-hand also shows the height of the water at all times.

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

In high and low water indicators, a float having only one small pipe extending close to
100 the bottom of float and boiler, to allow the air and steam to circulate freely between the float and boiler in order to maintain the same pressure on the inside and outside of the float, as set forth.

In testimony whereof I have signed my
105 name to this specification in the presence of two subscribing witnesses.

Witnesses: FLORENT LADRY.

LOUIS FOURDIN,

JEAN VANDERSYPEN.