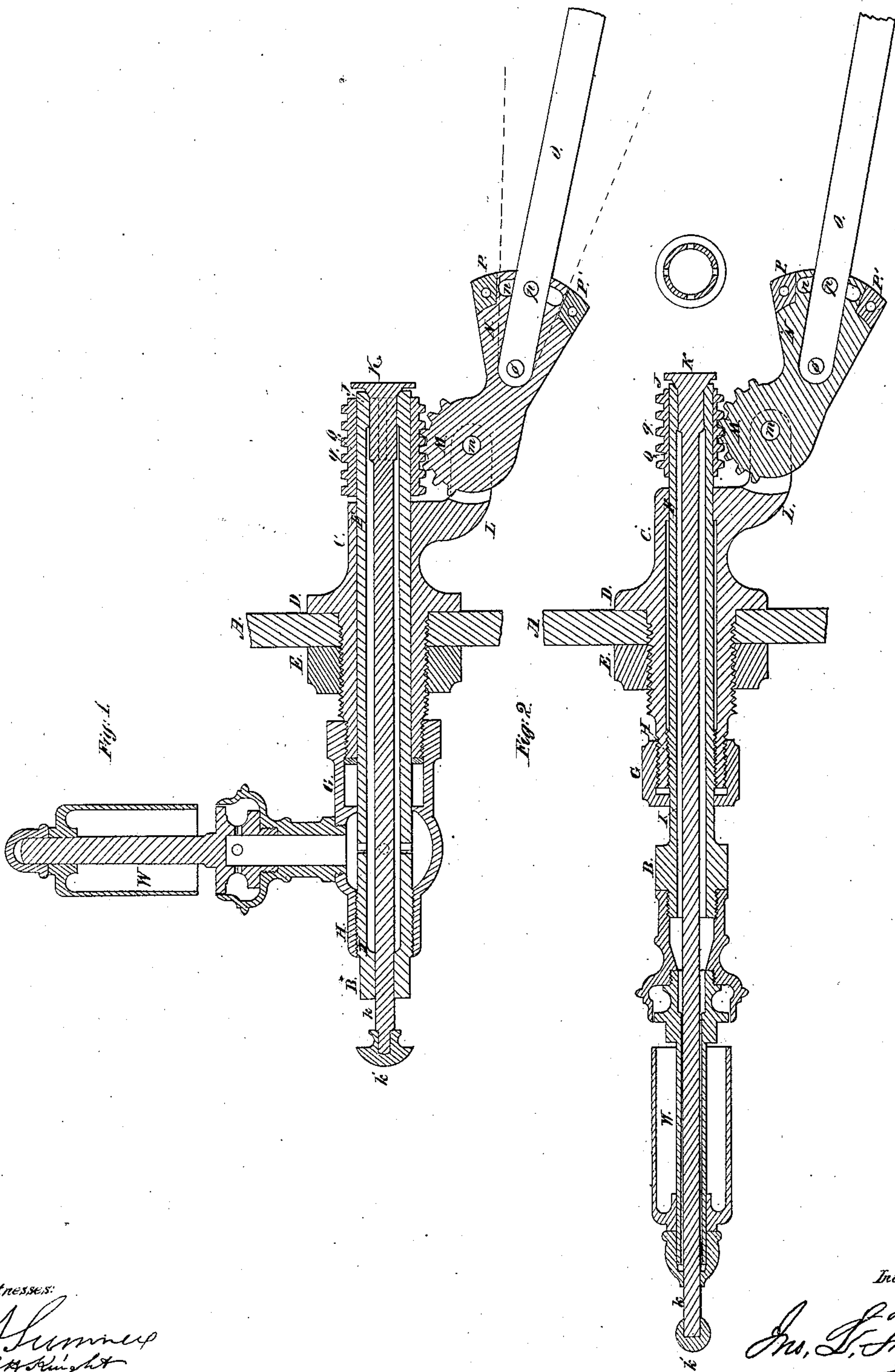


J. L. Frisbie,

Steam-Boiler Indicator,

N^o 24,017.

Patented May 17, 1859.



Witnesses:

*A. Sumner
G. H. Knight*

Inventor:

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UNITED STATES PATENT OFFICE.

JOHN L. FRISBIE, OF CINCINNATI, OHIO.

IMPROVED WATER-INDICATOR FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **24,017**, dated May 17, 1859.

To all whom it may concern:

Be it known that I, JOHN L. FRISBIE, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Water-Indicators for Steam-Boilers; and I do hereby declare the following to be a full and exact description thereof, reference being had to the annexed drawings, making part of this specification.

The invention relates to a construction of an automatic steam alarm-whistle, by which the engineer is enabled (without entering the boiler and without removal or disarrangement of the apparatus) to vary the point of alarm, or, if occasion require, to sound the whistle by hand.

Figures 1 and 2 are axial sections representing two forms of my improvement adapted to the end of a boiler.

A represents a part of the end of a boiler. The pipe B, which conducts the steam to the whistle W, is not fixed immovably in the boiler, as in the customary mode, but is adapted to be adjusted longitudinally within a box, C, provided with a collar, D, and a nut, E, for attachment to the boiler. The inner end of the box C fits the pipe B by a ground joint, F, its outer end being furnished with a stuffing-box, G, immediately within and adjoining which the interior of the box C is screw-threaded, H, to receive a corresponding male screw, I, on the pipe B, so that by simply turning or rotating the pipe B on its axis its inner end can be made to project more or less into the boiler. The inner end of the pipe B is formed into a seat, J, to receive a conical valve, K, whose stem *k* traverses the entire length of the pipe B, projecting somewhat beyond the outer end of the latter, where it terminates in a knob, *k'*, or other suitable provision for receiving a blow from the hand of the engineer, whenever he may desire to sound the whistle independently of the automatic apparatus.

The inner end of the box C has a lug, L, which forms the journal-bearing of a piece,

M N, called the "sector." Concentric with the journal *m* of this sector is a half spur-wheel, M, which gears to a circular rack, *q*, upon a sleeve, Q, which slides upon the inner end of the pipe B. The other portion of the sector consists of a fan-shaped wing, N, to which the ball-arm O is hinged at *o*. A slot, *n*, in the wing N, concentric with the hinge *o*, and a bolt, *p*, enable a more or less elevated attachment of the arm to the wing, by which device whistles of a uniform pattern may be adapted to a great variety of boilers.

P P' are stops for use in certain cases where the ball may be required to have a somewhat greater range than the sector.

It is obvious that the sleeve Q will impinge against and thus open the valve with greater or less readiness, according as the pipe B is retracted from or protruded into the boiler, thus causing the alarm to occur at whatever stage of water may be desired.

By a slight and self-evident change in the form and position of the sector M N the apparatus may be easily adapted for insertion in a variety of positions, either in the end or in the top of a boiler.

I claim as new and of my invention herein—

1. The described combination and arrangement of the box C H, adjustable pipe B I J, valve K, sleeve Q *q*, and sector M N, operating in the described connection with the float-arm O, for the purpose of varying the point of alarm from the outside of the boiler, as set forth.

2. The cogged sector M N, provided with a segmental slot, *n*, in the described combination, with the sliding sleeve Q *q*, float-arm O, and bolt *p*, to enable the application of the alarm to any part of the boiler, as set forth.

In testimony of which invention I hereunto set my hand.

JNO. L. FRISBIE.

Witnesses:

GEO. H. KNIGHT,
A. SUMNER.