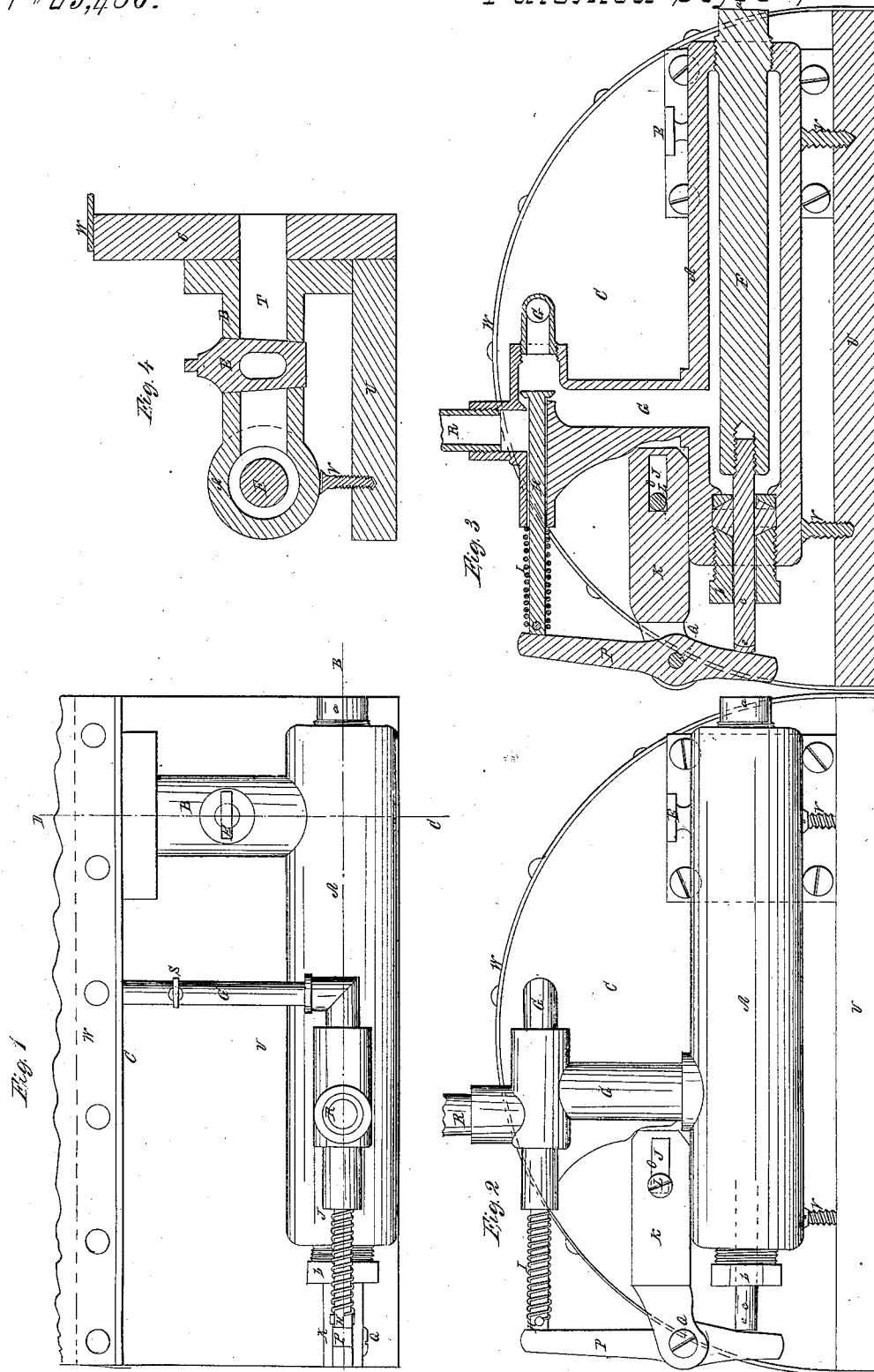


S. W. Brown.

Steam-Boiler Indicator.

N^o 25,480.

Patented Sep 20, 1859.



UNITED STATES PATENT OFFICE.

SAMUEL W. BROWN, OF LOWELL, MASSACHUSETTS.

STEAM-PRESSURE INDICATOR OR ALARM.

Specification of Letters Patent No. 25,486, dated September 20, 1859.

To all whom it may concern:

Be it known that I, SAMUEL W. BROWN, of Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a new and useful Steam-Pressure Indicator; and I hereby declare that the following specification, in connection with the accompanying drawings and references thereon, constitute a lucid, clear, and exact description of the construction and use as well as application of the same.

In referring to the said drawings, Figure 1 denotes a plan or top view of my invention, and its application or connection to a steam boiler; Fig. 2, an elevation of the same; Fig. 3, a longitudinal and vertical section on line A, B, of Fig. 1; Fig. 4, a transverse and vertical section on line C, D, of Fig. 1.

Invention.—The nature of my invention consists in the arrangement and combination of cylinder A, rod F, and c, tube G, and valve H, with each other, and operated in the manner hereafter described, by steam or water, in or contiguous to chamber or tube G, and cylinder A, to sensitively and correctly indicate the pressure of steam, all as will be hereafter seen.

Construction.—To enable persons skilled in the art to which my invention appertains to construct and carry out the same I will describe it as follows:

My full sized invention is the same every way as indicated in the drawings, excepting that the cylinder A, should be 20 inches in length instead of 10 inches as shown in the drawing.

I construct a hollow iron cylinder seen at A, in the several figures of the drawings. On the side and near to one of its ends a stand B, is formed or cast with it by which it is connected with the boiler head C, or other part W, of it if desired. A hole seen at T, Fig. 4, is formed through the stand B, which connects with a similar hole formed through the boiler head, and also with the interior of the cylinder A. This plate T, is formed at right angles with the cylinder A. In the neck of the stand B, I place a stop cock E, for shutting the water from the boiler, also one in tube G, seen at S, for shutting off the steam if desired.

One end of the cylinder A, is bored and

threaded to receive a rod or bar of zinc, or other equivalent metal which is similarly threaded so as to be screwed therein while its end a, projects from the end of the cylinder A, and is squared off to receive a wrench by which it may be turned in or out for adjusting it to correctly operate when expanded, the other parts of my invention and indicate any required pressure. In the opposite end of cylinder A, I form a stuffing box l, through one end of the bar F, of a reduced size, or piece of brass screwed therein seen at c, passes, and which may be expanded through it as will be hereafter seen. Near to the opposite end of cylinder A, from where the stand B, projects I form a tube G, the opening of which connect by one end with the interior of cylinder A, and by opening at opposite end with that part of the boiler which is occupied by steam. In the tube G, I form a valve H, which is closed or brought together by the spiral spring I.

On the cylinder A, I form a stationary ear J, and to this I secure an adjustable arm K, by means of screw L, and slot O. To the outer end of this arm I fix a lever P, so as to freely swing on pivot Q. The lower end of this lever comes in contact with reduced end c, of zinc bar F, while the upper end comes in contact with the end of valve H, as seen in the drawings. The fulcrum or pivot Q, on which the lever P, turns is one third the distance from reduced end c, of zinc bar F, to valve H. The object of this is to give sufficient movement to valve H, by the expansion of zinc or metal bar F, to at once give alarm on a sufficient increase of heat. The pivot Q, may be adjustable so as to regulate the action of lever P, by expansion of bar F, to effect the desired purpose. A tube R, connects with valve H, and may reach to fire box or to a whistle, bell, or any desired kind of a contrivance or alarm so that when the valve H, is opened the steam will at once give notice.

Advantages.—The advantages of my invention are, 1, that it is cheaply constructed, 2, that it is simple and not liable to get out of order, 3, that it is sure to operate and give timely warning to the engineer, of the danger to himself, and those around him as well as to the property under his charge, 4,

that it can be repaired without removal from the boiler, and 5th it can be adjustable to any required pressure.

Having thus described my invention I will
5 state my claim as follows.

What I claim as my invention and desire to secure by Letters-Patent is—

The arrangement and combination of cylinder A, rod F, and c, tube G, an valve H,

with each other in the manner described for 10 indicating or giving the alarm with steam, from the same or contiguous chamber essentially in the manner and for the purposes fully set forth.

SAML. W. BROWN.

Witnesses:

E. W. SCOTT,

HENRY J. COLBURN.