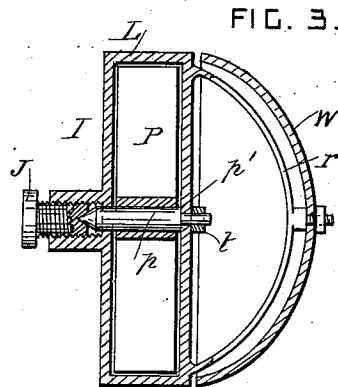
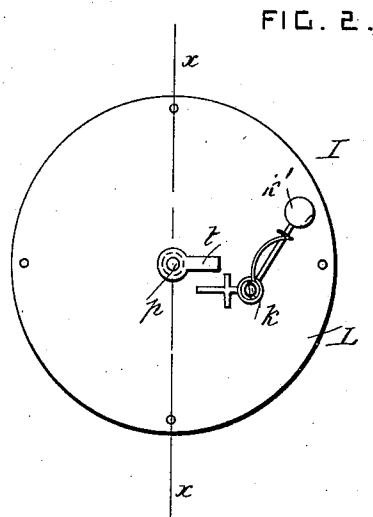
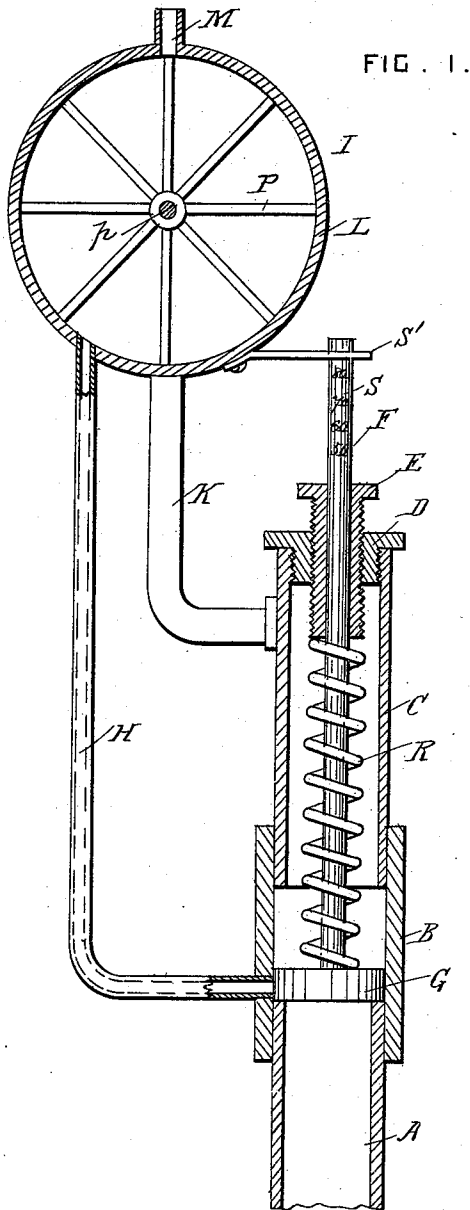


(No Model.)

D. C. McAULAY.
BOILER PRESSURE INDICATING ALARM.

No. 566,997.

Patented Sept. 1, 1896.



Witnesses

F. C. Laberge
A. J. Bachand

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By Attorney *J. A. Marion*

UNITED STATES PATENT OFFICE.

DANIEL C. MCAULAY, OF PORT MORIEN, CANADA.

BOILER-PRESSURE-INDICATING ALARM.

SPECIFICATION forming part of Letters Patent No. 566,997, dated September 1, 1896.

Application filed June 6, 1896. Serial No. 594,533. (No model.) Patented in Canada May 15, 1896, No. 52,264.

To all whom it may concern:

Be it known that I, DANIEL C. MCAULAY, a citizen of the Dominion of Canada, residing at Port Morien, in the county of Cape Breton and Province of Nova Scotia, Canada, have invented certain new and useful Improvements in Alarms for Steam-Boilers, (for which I have obtained Canadian Patent No. 52,264, dated May 15, 1896;) and I do hereby 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 appertains to make and use the same.

This invention relates to alarms for steam-boilers indicating when the pressure in the boiler exceeds a given maximum; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a vertical section of the alarm. Fig. 2 is a front view of the motor-casing with the bell removed. Fig. 3 is a vertical section taken on the line *xx* in Fig. 2.

A is a pipe which is secured to the boiler or to a steam-pipe leading from the boiler, and B is a socket secured on the upper end of the pipe A.

C is a pipe secured in the upper end of the socket B, and D is a screw-threaded cap closing the upper end of the pipe C.

E is a tubular plug screwed in the cap D.

F is a rod which is slidable in the plug E, and G is a piston-valve secured on the lower end of the rod, sliding in the socket B and closing the opening of the pipe A.

R is a spring encircling the rod F and holding the valve upon its seat so that no steam escapes until the maximum pressure is exceeded and the valve is forced upward against the pressure of the spring.

I is a rotary motor provided with a cylindrical case L.

P are the arms of the motor, secured to a shaft *p*, which is journaled in the case. The shaft *p* has a shoulder *p'* at one end to prevent the steam from escaping, and J is a pivot-screw engaging with the casing and with the other end of the shaft and adapted to adjust the shoulder *p'* so that it runs steam-tight against the casing. The motor is supported by the bracket K, secured to the pipe C.

H is a steam-supply pipe connected at one end to the socket B at the side of the piston-valve and at the other end to the lower part of the motor-casing, so that the steam issuing from the pipe H will impinge upon the arms of the motor and will revolve the shaft *p*.

M is the exhaust-pipe at the top of the motor-casing.

A numbered scale S is marked on the projecting end of the rod F, and S' is a stationary pointer for indicating the pressure at which the valve is raised.

When the pressure of the steam exceeds the prearranged maximum, the valve G is raised and the steam rushes up the pipe H and turns the motor.

The alarm is given by means of a bell W, secured to one side of the motor-casing by the arms *r*.

A tooth *t* is secured on the projecting end of the shaft *p*, and *k* is a spring-pressed trip-lever arranged in the path of the tooth and carrying a hammer *k'*. This hammer strikes the bell at each revolution of the motor and rings the bell as long as the motor continues in motion.

What I claim is—

1. In a steam-boiler alarm, the combination, with a spring-pressed piston-valve connected to the boiler, of a rotary motor, a steam-supply pipe connected to the motor and admitting steam to it when the said piston-valve is raised, a tooth on the motor-shaft, and a bell provided with a spring-pressed trip-hammer operated by the said tooth, substantially as set forth.

2. In a steam-boiler alarm, the combination, with a pipe A having a socket B at its upper end, of a pipe C secured to the said socket and provided with a cap, a plug screwed in the cap, a rod slidable in the said plug and provided with a piston-valve at its lower end normally closing the pipe A, a spring interposed between the said piston-valve and plug, a rotary motor, a bell sounded by the said motor, and a steam-supply pipe connecting the motor with the pipe A when the said piston-valve is raised, substantially as set forth.

3. In a steam-boiler alarm, the combination, with a bell, of a rotary motor provided with arms and a central shaft having a

shoulder p' inside the motor-casing, a screw
bearing against the other end of the motor-
shaft and operating to press the shoulder
against the casing thereby preventing the
5 steam from leaking out around the shaft, a
tooth secured on the projecting end of the
shaft, and a spring-pressed trip-hammer ar-
ranged in the path of the said tooth and op-

erating to ring the bell as long as the motor
is in motion, substantially as set forth. 10

In testimony whereof I affix my signature
in presence of two witnesses.

DANIEL C. MCAULAY.

Witnesses:

NEIL FERGUSON,
CHARLES MCAULAY.