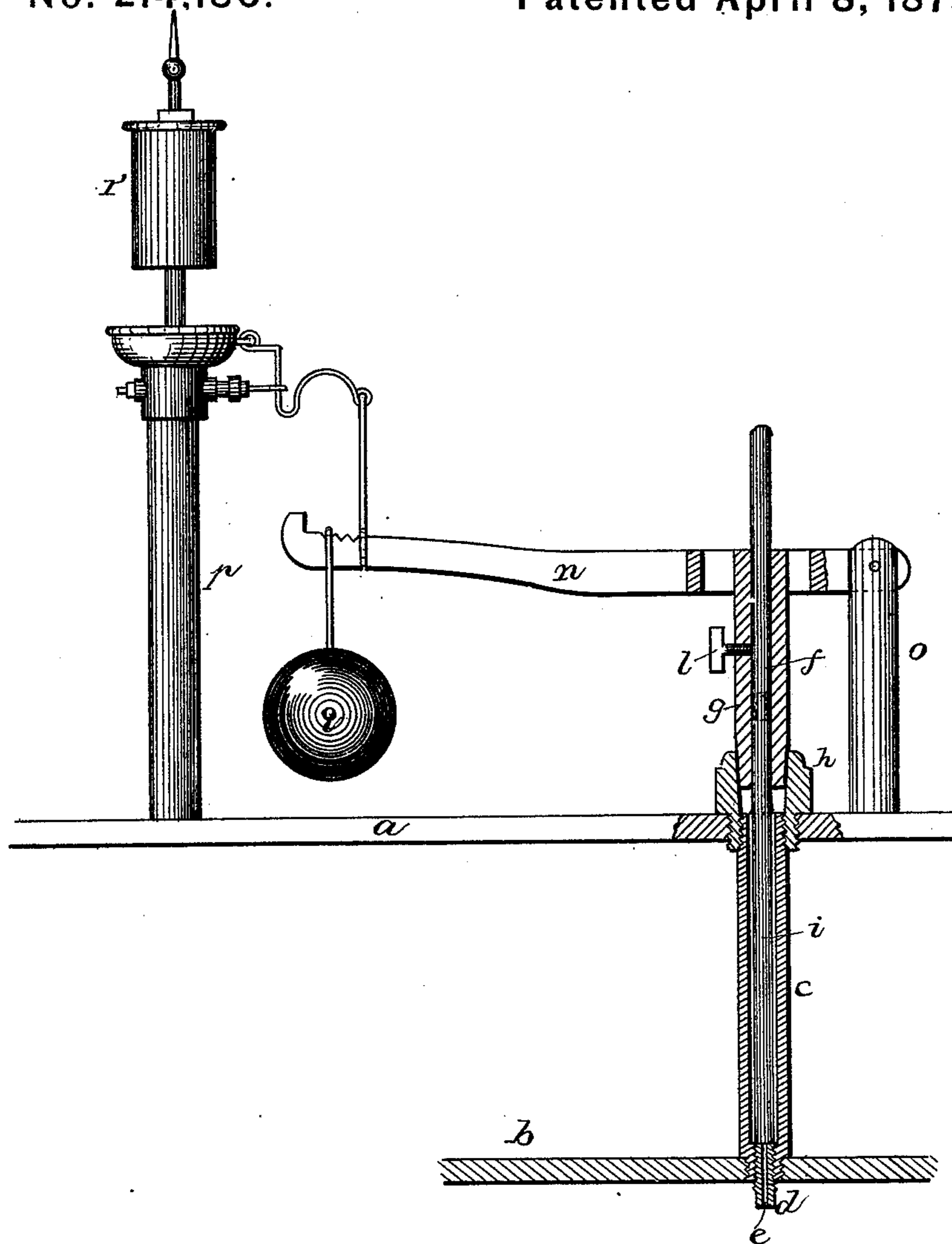


J. A. & S. E. PELPHREY.
Alarm-Whistle for Steam-Engines.

No. 214,186.

Patented April 8, 1879.



Witnesses:

J. W. Garner,
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Inventors.

J. A. Pelphrey,
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per
F. A. Lehmann, atty.

UNITED STATES PATENT OFFICE

JOHN A. PELPHREY AND SAMUEL E. PELPHREY, OF FLAT GAP, KENTUCKY,
ASSIGNORS OF ONE-THIRD THEIR RIGHT TO ELDER J. PELPHREY, OF
SAME PLACE.

IMPROVEMENT IN ALARM-WHISTLES FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. **214,186**, dated April 8, 1879; application filed
February 27, 1879.

To all whom it may concern:

Be it known that we, JOHN A. PELPHREY and SAMUEL E. PELPHREY, of Flat Gap, in the county of Johnson and State of Kentucky, have invented certain new and useful Improvements in Alarm-Whistles for Steam-Engines; and we 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 pertains to make and use it, reference being had to the accompanying drawing, which forms part of this specification.

Our invention relates to an improvement in low-water alarms for steam-engines; and it consists in the construction and arrangement of parts, whereby, when the crown-plate or top of the flue of the boiler becomes heated, a rod, made of some easily-melted material, begins to melt, which causes a weighted lever connected to the whistle or alarm to sink downward, and thereby cause the whistle or alarm to sound, and thus notify the engineer that the water has fallen below the level of the crown-plate or top of the flue, as will be more fully described hereinafter.

The accompanying drawing is a side elevation of our invention, partly in section.

a represents the top of a boiler, of any suitable construction, and *b* the crown-sheet or top of a flue, according to the kind of a boiler used, as our invention is equally applicable to tubular or flue boilers. Through the top of the boiler and the crown-sheet or flue are made two holes, directly in line with each other, and screwed into these two holes is the tube or pipe *c*, which has a male thread on each end, the said threads forming steam-tight joints. Into the lower end of the pipe *c* is screwed a copper plug, *d*, which has a small hole, *e*, through its center.

Placed inside of the pipe *c*, so that its lower end will rest upon the top of the plug *d*, is a rod, *i*, made of lead or any metal, or alloy of metals, that will melt at a low temperature. The upper end of this rod has a tenon formed on it, so as to fit in a corresponding socket in the lower end of the rod *f*, which passes up through the tube *g*, that plays freely up and down through the top of the pipe *c* or into the screw-plug *h* on its upper end.

For convenience in fastening the pipe *c* into the top of the boiler, a plug may be screwed upon its top, and then the plug screwed into the boiler. Either or both means of fastening the pipe in position may be used.

The tube *g*, having been adjusted so that it can sink downward uninterruptedly some distance before it is stopped, is fastened to the rod *f* by means of a set-screw, *l*, so that the two will move together.

The long lever *n* is pivoted to the top of the standard *o*, which is screwed into the top of the boiler, and is pivoted on both sides of the tube *g*, while its outer end is weighted down by the weight *q*, and is connected in any suitable manner with a steam-valve in the pipe *p*, on the top of which the whistle *r* is placed. As the lever *n* is fastened to the pipe *g*, and as the pipe is fastened to the rod, it is evident that the lever will move with the pipe and rod when they sink downward.

As here shown, our invention is applied to a tubular boiler; but, as above stated, it can be applied to flue-boilers equally well, being always placed at that end of the flue that is nearest to the fire.

The operation of our invention is as follows: As long as the top of the flue or the crown-sheet is covered by water the heat will have no effect upon the fusible rod *i*; but should the water fall below this point the plug *d* will soon become so hot that the lower end of the rod *i* will begin to melt, and the melted metal will run through the hole *e* down into the fire or the flue. As soon as this rod begins to melt the rod *f* on its top and pipe *g* at once begin to sink down with it, being forced by the weight *q* on the outer end of the lever. As the lever moves with the pipe and rod its outer end sinks downward also, and in so doing operates the valve in the steam-pipe and so sounds the alarm.

After water has been pumped in until a suitable level is reached the alarm may again be set by loosening the set-screw *l* in the pipe *g*, and then raising the pipe upward on the rod *f* a suitable distance, and then again fastening it by the screw. In this way the alarm can be used again and again until the fusible

rod *i* is used up, when the rod can be replaced by another one.

Instead of the outer end of the lever being connected to a steam-whistle, any other suitable alarm may be used.

Having thus described our invention, we claim—

1. A tube or pipe, *c*, passing down through the top of the boiler into the crown-sheet or flue, and having its lower end closed by a perforated non-fusible plug, in combination with a low-water alarm, constructed substantially as shown.

2. The combination of the tube *c*, passing down through the top of the boiler into the crown-sheet or flue, with the non-fusible plug, having a hole through its center, and a fusible rod, *i*, arranged, as shown, in relation to the plug *e* and the alarm mechanism, substantially as described.

3. The combination of the tube *c*, plug *d*, having a hole through its center, fusible rod *i*, pipe *g*, rod *f*, and a weighted lever that has one end connected to an alarm, substantially as set forth.

4. In a low-water alarm, a fusible rod of sufficient length to allow it to be adjusted for use again and again after its end has been melted off, in combination with the rod *f*, tube *g*, set-screw *l*, and a weighted lever, substantially as specified.

In testimony that we claim the foregoing we have hereunto set our hands this 17th day of February, 1879.

JOHN A. PELPHREY.

SAMUEL E. PELPHREY.

Witnesses:

JACOB LEMASTER,

LENARD BROCKETT.