

No. 728,512.

PATENTED MAY 19, 1903.

F. E. STANLEY.
WATER LEVEL INDICATOR.
APPLICATION FILED OCT. 25, 1902.

NO MODEL.

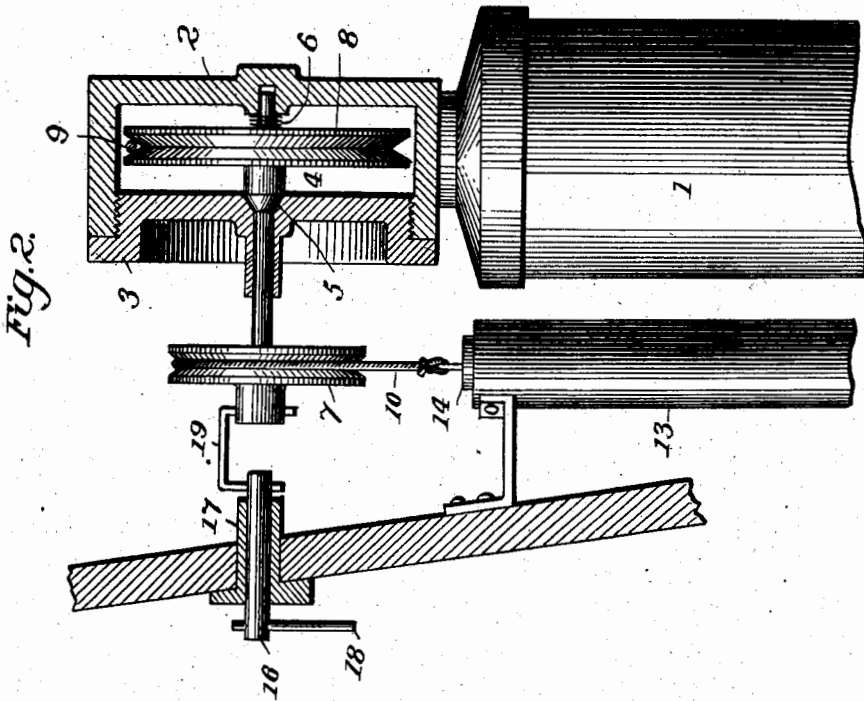
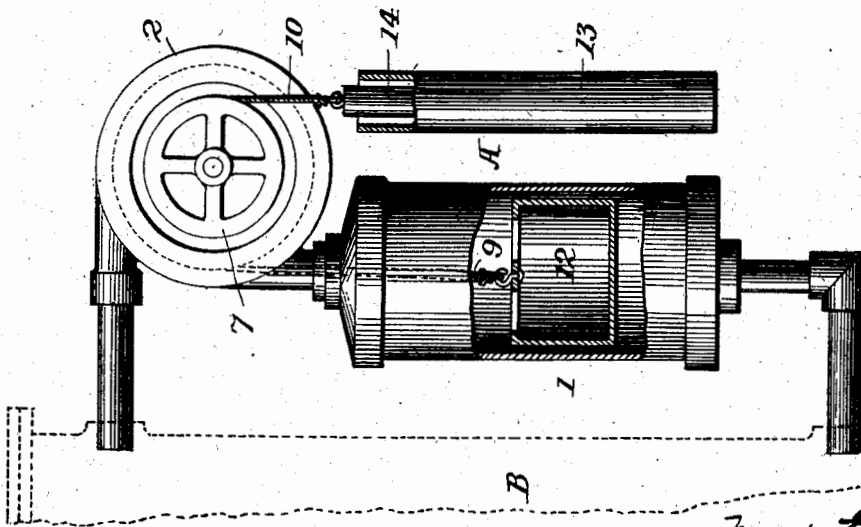


Fig. 2.



Witnesses
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FIG. 1.

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FRANCIS E. STANLEY, OF NEWTON, MASSACHUSETTS.

WATER-LEVEL INDICATOR.

SPECIFICATION forming part of Letters Patent No. 728,512, dated May 19, 1903.

Application filed October 25, 1902. Serial No. 128,747. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS E. STANLEY, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Water-Level Indicators, of which the following is a specification.

My invention relates to devices for indicating the position of the water-level in boilers; and my invention consists of a device having a casing, a shaft extending through one side of the same, weights suspended to rock the shaft in different directions, according to which weight preponderates, and an indicator actuated by said shaft, together with details of construction, as fully set forth hereinafter and as illustrated in the accompanying drawings, in which—

Figure 1 is a part-sectional elevation of a water-level indicator embodying my invention; Fig. 2, an enlarged section of the upper part of the apparatus, showing its relation to the side of a vehicle.

There is a casing A, shown as consisting of two connected casing-sections 1 2, so made to facilitate construction, although a single continuous casing containing all the parts may be used.

The casing 2 has a detachable side or end 3, centrally through which extends a shaft 4, having an annular beveled shoulder 5 fitting a conical seat in the head 3 and constituting a valve, which prevents leakage between the shaft and casing, a light spring 6 between the pulley and back of the casing tending to hold the valve 5 to its seat until pressure exists within the casing to secure the like result. On the shaft 4, outside the casing, is a grooved pulley 7, and a grooved pulley 8 is within the casing.

Around the pulleys 7 and 8 in opposite directions pass wires or cords 9 10, a cup 12 being suspended from the cord 9 within the section 1, while a weight 14, guided suitably, as by an open-ended tube 13, is suspended by the cord 10. The weight is much heavier than the cup.

The casing communicates at the upper end with the boiler B (indicated in dotted lines) above the normal water-line and at the bottom with the boiler near its lower end, and

when it contains water the superior weight of the weight 14 will lift the cup 12 above the water-level until its weight, consisting of the cup and its contained water, is equal to and counterbalances the outside weight 14. It will be evident that as the level of the water descends the entire body of water in the cup constitutes a relatively heavy weight and the cup will descend and that sufficient power is thus secured to turn the shaft 4, which by its change in position may be the means in any suitable manner of indicating to the operator the position of the water-level. Thus the shaft may move a pointer 18, the position of which the operator can determine by sight or feeling. When the water-level rises in the boiler and casing 1, the cup immersed in the water, which is of comparatively light weight, will not counterbalance the weight 14, which will preponderate and lift the cup, turning the shaft 4 and pointer. If both weights were arranged within the casing, a rise of water in the boiler, so as to surround both weights, would so reduce the relative weight of the weight 14 that it might not be sufficient to overcome that of the other weight and the friction. This is avoided by arranging the weight 14 outside of the casing.

Preferably in a motor-vehicle the pointer 18 is carried by a short supplementary shaft 16, turning in a bearing 17, extending through the side of the vehicle below the driver's seat, and to avoid the binding and friction which would result from want of axial coincidence between the two shafts—say if the side of the vehicle warps—there is a flexible connection between them. Thus a link 19 has parallel ends which extend through transverse openings in the shafts, as shown, and so connects them that they turn together. It will also be evident that for the cup may be substituted a solid or other weight so proportioned as to be overbalanced by the weight 14 when the gravity of the other weight is reduced by the presence of the liquid.

It will be evident that various different indicating devices may be substituted for the pointer shown and its connections with like effect.

Without limiting myself to the construction shown, I claim—

1. The combination of the casing and means

for connecting it with a boiler above and below the normal water-level, a shaft extending through the casing, and weights supported on opposite sides of the shaft, one within
5 and the other outside of the casing, the inner weight in the form of a cup open at the top, substantially as set forth.

2. A water-level indicator consisting of a casing communicating with a boiler both
10 above and below the normal water-level, a shaft extending through the casing, weights supported from opposite sides of the shaft, one within and the other outside the casing, the outer weight proportioned to overcome
15 the inner weight only when the latter is immersed in the water, and a pointer on a supplemental shaft connected flexibly to the

main shaft to turn therewith in both directions, substantially as set forth.

3. The combination with the casing, of a
20 shaft extending through the same, two pulleys on the shaft, one outside and the other inside the casing, a cup-shaped weight supported from the inner pulley and a counterweight from the outside pulley, and a counter-shaft
25 carrying an indicator and connected flexibly with the main shaft, substantially as set forth.

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

FRANCIS E. STANLEY.

Witnesses:

J. W. BACON,

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