

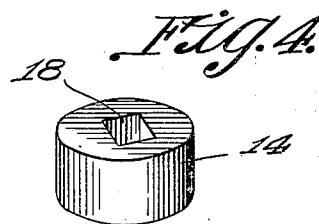
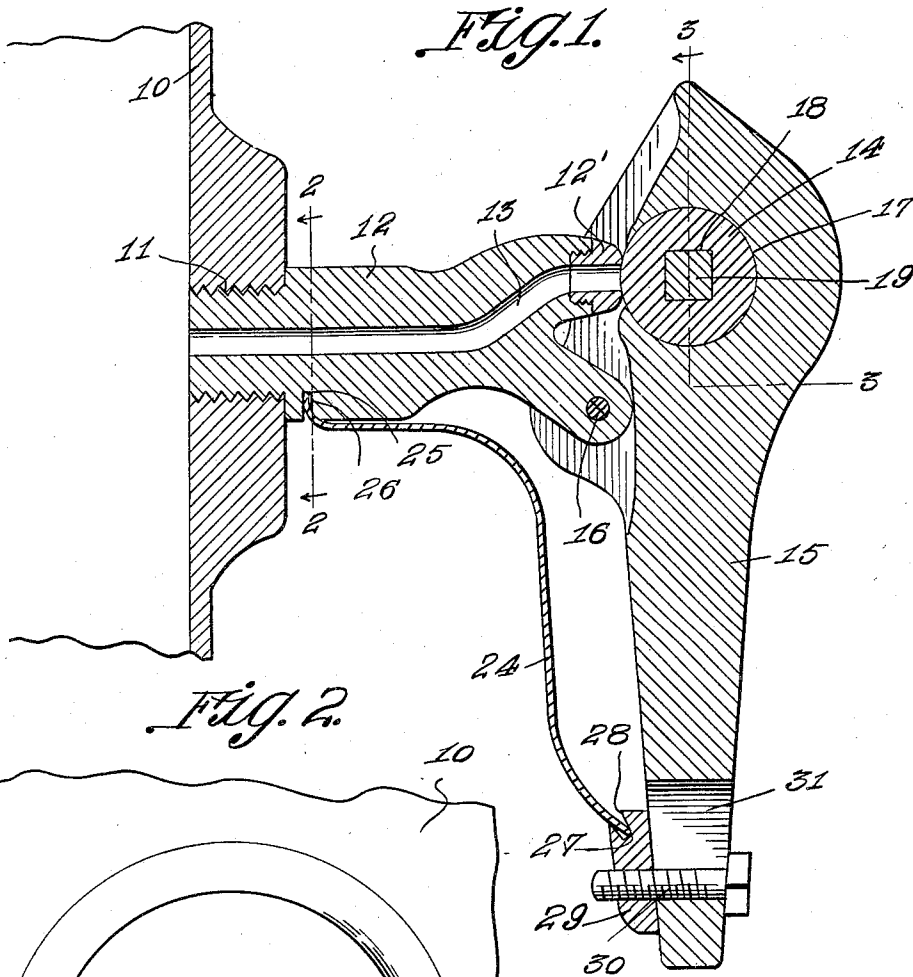
April 12, 1932.

C. M. COPELIN

1,854,110

WATER GAUGE

Original Filed Jan. 14, 1927 2 Sheets-Sheet 1



Leachman,
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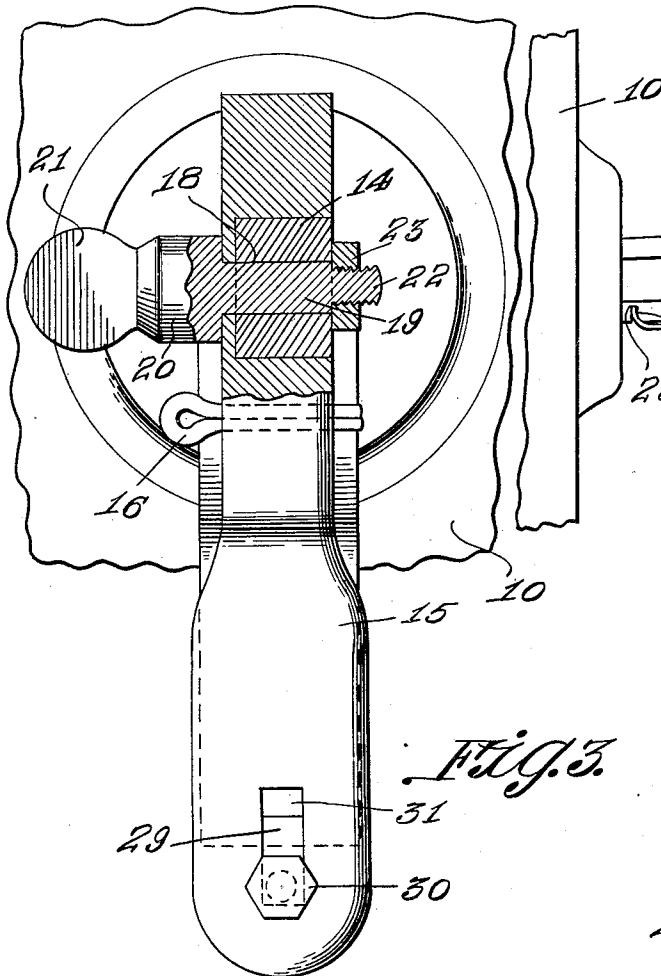


Fig. 5.

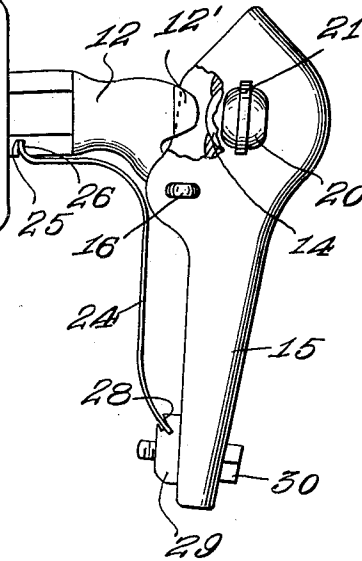


Fig. 3.

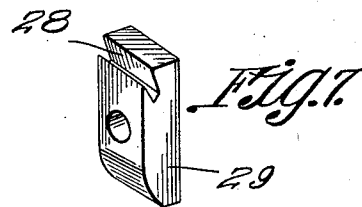
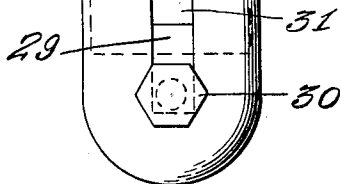


Fig. 7.

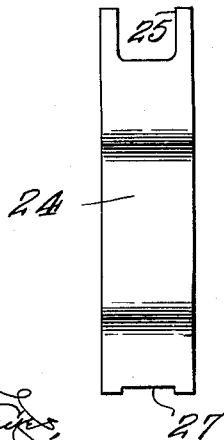


Fig. 6.

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UNITED STATES PATENT OFFICE

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WATER GAUGE

Application filed January 14, 1927, Serial No. 161,150. Renewed August 17, 1931.

This invention relates to gauges for use upon steam boilers and has for an object the provision of a gauge which will act to relieve steam pressure and to provide means for determining the level of water within the boiler.

Another object of the invention is the provision of a gauge which will also function as an automatic pressure relief valve and which in addition may be manually operated either to relieve pressure or determine the water level.

Another object of the invention is the provision of a device which in addition to the above and other advantages, has certain of its parts mounted for adjustment to provide for wear, as well as to provide for their renewal when necessary.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claim.

In the drawings:

Figure 1 is a sectional view illustrating the invention.

Figure 2 is a section taken substantially on the line 2—2 of Figure 1.

Figure 3 is an elevation partly in section, the section being on the line 3—3 of Figure 1.

Figure 4 is a detail perspective view of the valve member.

Figure 5 is a side elevation partly broken away showing the invention in open position.

Figure 6 is an elevation of the spring.

Figure 7 is a perspective view of the spring adjusting block.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the reference character 10 indicates a portion of the wall of a container, to which the invention is shown as applied. The invention may be used in various connections, but is especially designed as a combined water gauge and pressure relief valve for steam boilers so that the reference character 10 indicates a portion of a boiler. Removably positioned within an opening provided in the boiler as indicated at 11, is a

nipple 12, whose outer end is provided with a nipple extension 12'. This nipple is provided with a passage 13 whose inner end opens into the boiler and whose outer end is adapted to be closed by a valve member 14.

The valve member 14 is carried by a lever 15 and the latter is pivotally mounted upon the nipple 12 as indicated at 16. This valve member is of cylindrical formation and is adapted to rotate within a circular opening or pocket 17 provided in the lever 15. The valve member 14 is provided with a rectangular opening 18 for the reception of the rectangular shank 19 of a pin 20. This pin is provided at one end with a finger piece or head 21, while extending from its opposite end is a reduced threaded portion 22 which receives a nut 23. The valve member 14 is thus removably held within the pocket 17 and is capable of rotation therein by rotating the finger piece 21.

The valve member 14 is preferably formed of lead or other soft metal and is adapted to contact the outer end of the nipple extension 12' so as to close the outer end of the passage 13. A tight closure is thus provided. By rotating the valve member, a fresh surface may be presented to the outer end of the nipple so that the proper closure may be provided. When the parts become worn or useless, the nipple 12 and valve member 14 may be readily replaced.

The valve member 14 is yieldingly held in engagement with the nipple extension 12' by means of a spring 24. One end of this spring is notched as at 25 and this notched end is received within a kerf 26 provided in the nipple. The opposite end of the spring is also notched as shown at 27 and this last referred to end is received within a groove 28 provided in an adjusting block 29. The block 29 is adjustably secured to the lower end of the lever 15 by means of a bolt 30 and the latter is adjustable upon said lever within a slot 31.

Excess pressure within the boiler will move the lever pivotally so as to relieve such pressure and thereby warn the attendant that water within the boiler is dangerously low.

By manually operating the lever 15 to open the passage 13, water may flow from the boiler provided the water is of sufficient height. The height of the water may thus be determined. A number of the devices may
5 be arranged in vertically spaced relation so that they will provide means for testing the height of the water.

The invention is susceptible of various
10 changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claim.

Having described the invention what is
15 claimed is:

In combination with a container, a gauge comprising a nipple having a passage there-through open at its outer end and its inner end in communication with the container, a
20 lever normally disposed substantially at right-angles to the nipple and having a pocket therein open at one side, means spaced laterally from the nipple to pivotally mount the lever, means located within and extending
25 through the open side of the pocket to engage the nipple and close the outer end of the passage, said lever having a slot therein adjacent its free end, a block adjustable longitudinally of the lever within the slot and a spring
30 having one of its ends secured to the nipple and its other end secured to said block to yieldingly hold the lever in a position whereby the nipple is maintained closed.

In testimony whereof I affix my signature.

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CARL M. COPELIN.

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