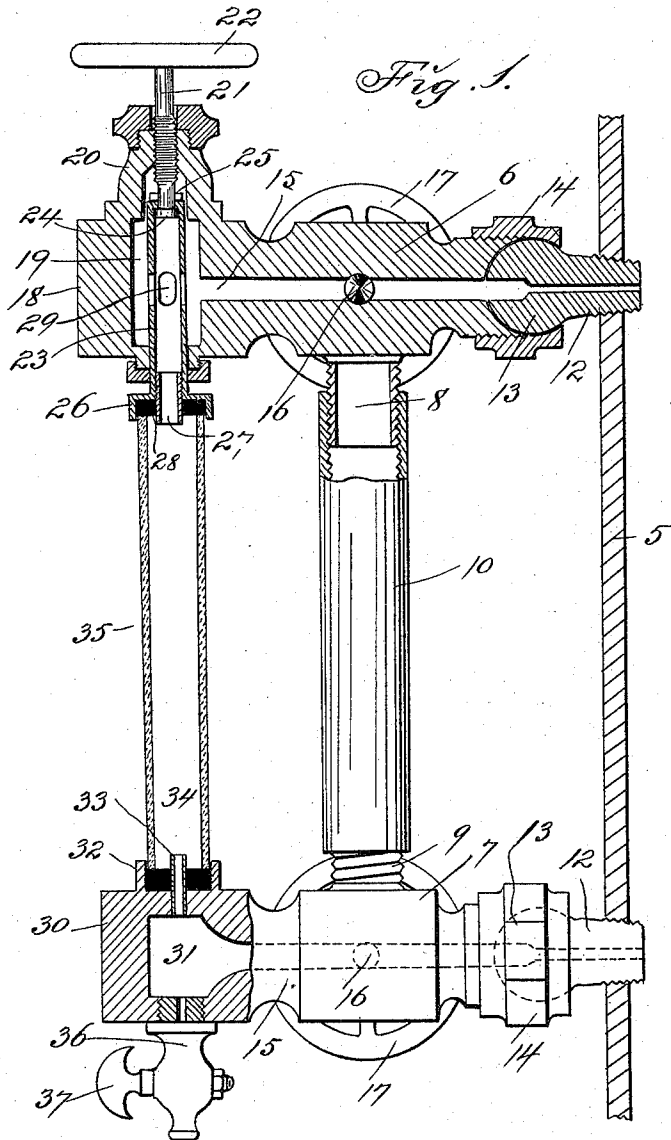


(No Model.)

C. E. REED.
WATER GAGE.

No. 580,530.

Patented Apr. 13, 1897.



WITNESSES

B. Nordfors
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3

INVENTOR

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UNITED STATES PATENT OFFICE.

CHARLES EDWARD REED, OF BARTOW, FLORIDA, ASSIGNOR TO FLORENCE C. REED, OF SAME PLACE.

WATER-GAGE.

SPECIFICATION forming part of Letters Patent No. 580,530, dated April 13, 1897.

Application filed July 23, 1896. Serial No. 600,265. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EDWARD REED, a citizen of the United States, and a resident of Bartow, in the county of Polk and State of Florida, have invented certain new and useful Improvements in Water-Gages, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof, in which similar numerals of reference indicate corresponding parts.

This invention relates to water-gages for steam-boilers; and the object thereof is to provide an improved device of this class in which the glass tube which constitutes the gage proper is held in place by end pressure alone, whereby the packing-nuts now employed are rendered unnecessary, a further object being to provide a water-gage in which the glass tube connections cannot be thrown out of line by crooked threads in the boiler nor by the expansion and contraction of the boiler-shell.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, said drawing being a sectional side view of my improved water-gage and its attachments and showing also a section of the boiler.

In the drawing forming part of this specification I have shown at 5 a part of the boiler-shell, and in the practice of my invention I provide a water-gage which consists of two separate similar end pieces 6 and 7, which are connected by means of cylindrical projections 8 and 9, formed, respectively, on the end pieces or parts 6 and 7, said projections being screw-threaded and being connected by a tube 10, the inner walls of which are screw-threaded at their opposite ends.

The end pieces 6 and 7 are connected with the shell of the boiler by means of plugs 12, which are connected with said end pieces by ball-and-socket joints, as shown at 13, each end piece being screw-threaded and being provided with a screw-threaded cap 14, which forms a part of the ball-and-socket joint.

The end pieces 6 and 7 are each provided with central longitudinal bores 15, which are controlled by valve-plugs 16, provided with rings or heads 17, by which they are oper-

ated, and the outer end of the part or end piece 6 is provided with a head 18, in which is a vertical chamber 19, which is provided with an upwardly-directed extension 20, through which passes a screw-threaded bolt 21, which is provided with a ring or handle 22, by which it is operated, and said bolt passes into a vertically-movable tube 23 and is held therein by a head 24 and a plug or pin 25, and the lower end of the tube 23 passes through the lower side of the head 18 and is provided with an annular cap 26, through which passes a tubular plug 27, and around the tubular plug 27, within the cap 26, is a ring 28, of suitable packing material, and said tube 23 is provided centrally with side ports or openings 29.

The outer end of the end piece or part 7 is also provided with a head 30, having a chamber 31, with which the bore 15 communicates and which is provided at its upper side with a tubular extension or flange 32 and with a tubular plug 23, which forms a communication with the chamber 31, and placed within the tubular extension or flange 32 is a packing-ring 34, of any suitable material, and mounted between the packing-rings 28 and 34, and held in place by the cap 26 on the tube 23 and the tubular extension or flange 32, is the glass tube 35.

It will be understood that the cap 26 may be raised or lowered by simply turning the handle or ring 22, and in order to place the glass tube 35 in position said tube 23 is raised and the glass tube is placed upon the packing-ring 34, after which the tube 33 is lowered so that the upper end of the glass tube will enter within the cap 26 and press upon the packing-ring 28, and the object of the tubular plugs 27 and 33 is to prevent the packing from closing the communication with the chambers 19 and 31. It will thus be seen that the glass gage 35 is held in place entirely by end pressure, and the nuts usually employed for this purpose are not necessary with this construction, and it will be understood that I may also provide vertical rods or any other suitable devices to protect the glass tube 35 and to prevent the accidental breaking thereof.

It will also be seen that the gage is con-

connected with the boiler by ball-and-socket joints, by which the end pieces or parts 6 and 7 are connected with the plugs 12, and by means of this construction I obviate any irregularity in forming the holes in the shell of the boiler into which the plugs 12 are screwed, and also any irregularity in forming the threads in said holes.

It will be seen that the end pieces 6 and 7 may be held in proper line at all times by means of the tube 10 and that by turning said tube said end pieces may be brought together or separated, and the lower side of the head 30 of the end piece 7 is also provided with an escape-pipe 36, having a valve 37, and it will thus be seen that I accomplish the object of my invention by means of a device which is simple in construction and operation and perfectly adapted to accomplish the result for which it is intended.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A water-gage consisting of separate end pieces which are provided with screw-threaded projections on which is mounted a screw-threaded tube, said end pieces being adapted to be adjusted toward or from each other by turning said tube, and said end pieces being provided at one end with screw-threaded plugs which are connected therewith by means of ball-and-socket joints, and by means of which the gage is adapted to be connected with a boiler, and said plugs and said end pieces being provided with longitudinal ports or passages, and the outer ends thereof, be-

ing in connection with a glass tube which is held in place by end pressure, substantially as shown and described.

2. A water-gage consisting of separate end pieces which are provided with screw-threaded projections on which is mounted a screw-threaded tube, said end pieces being adapted to be adjusted toward or from each other by turning said tube, and said end pieces being provided at one end with screw-threaded plugs which are connected therewith by means of ball-and-socket joints, and by means of which the gage is adapted to be connected with a boiler, and said plugs and said end pieces being provided with longitudinal ports or passages, and the outer ends thereof, being in connection with a glass tube which is held in place by end pressure, one of said end pieces being provided with a vertically-movable tube, the lower end of which is provided with a cap which is provided with a packing-ring, and the corresponding end of the other end piece being provided with a tubular extension in which is placed a packing-ring, and said glass tube being placed between said packing-rings, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this the 17th day of July, 1896.

CHARLES EDWARD REED.

Witnesses:

C. C. WILSON,
 SOLON G. WILSON.