R. M. VIANDS.

WATER GAGE VALVE.

APPLICATION FILED JULY 19, 1915.

1,284,496. Patented Nov. 12, 1918.

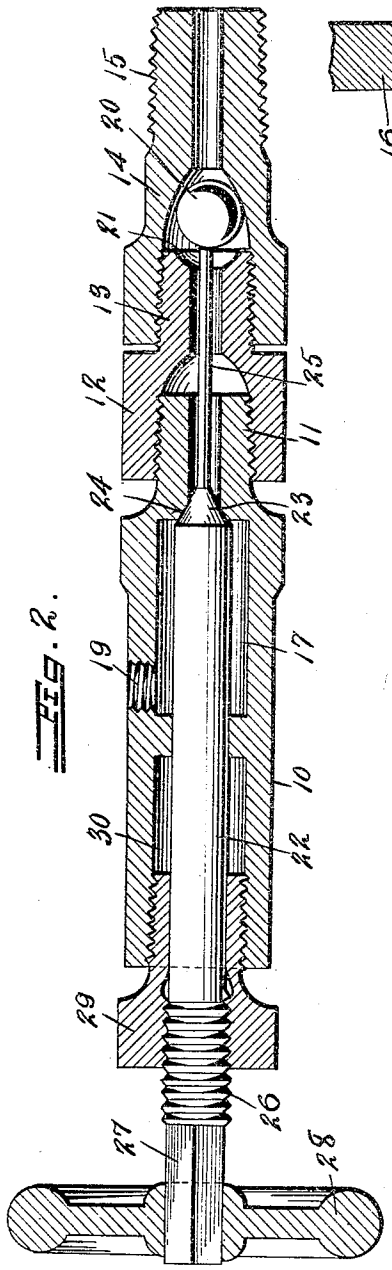


Fig. 2.

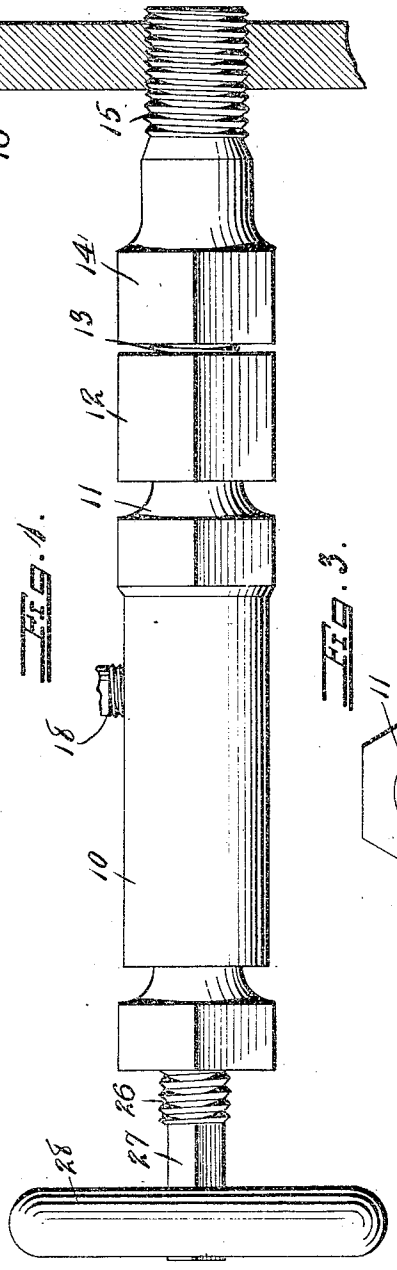


Fig. 1.

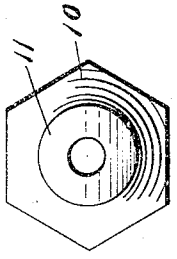


Fig. 3.

Witnesses

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WATER-GAGE VALVE.

1,284,496. Specification of Letters Patent. Patented Nov. 12, 1918.

Application filed July 19, 1915. Serial No. 40,743.

To all whom it may concern:

Be it known that I, ROBERT M. VIANDS, a citizen of the United States, residing at Hagerstown, in the county of Washington and State of Maryland, have invented certain new and useful Improvements in Water-Gage Valves, of which the following is a specification.

This invention relates to an improved valve which is intended to be used in connection with a water gage and the principal object of the invention is to so construct the valve that a check valve forming part thereof may be normally held out of an operative position when the main valve is in place but permit it to move to an operative position when the main valve is removed for cleaning and repair purposes.

Another object of the invention is to so construct the stem of the main valve that it will serve to hold the check valve in an open position when the main valve is in place.

Another object of the invention is to so construct this valve that the various parts can be easily taken to pieces thus permitting the valve to be easily cleaned.

This invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a view in elevation of the improved valve.

Fig. 2 is a longitudinal sectional view through the improved valve.

Fig. 3 is a view in elevation looking at one end of the body portion of the valve.

The body portion 10 is provided with a neck 11 which is externally threaded so that it may be removably mounted in the nipple 12. This nipple 12 is also provided with an externally threaded neck 13 which fits into the auxiliary valve housing 14 which auxiliary valve housing terminates at end in a threaded stem 15. From an inspection of Fig. 2 it will readily be seen that when the threaded stem 15 of the auxiliary valve housing 14 is connected with the boiler 16 the body portion 10 of the valve can be removed from the nipple 12 without it being necessary to remove the nipple or auxiliary valve housing. It will also be noted from an inspection of Fig. 2 that a clear passage is formed from the boiler through the auxiliary valve housing and nipple and into the chamber 17 of the body portion and that therefore water from the boiler can pass into the chamber 17 and up into the gage glass through the pipe or union 18 which fits into the threaded opening 19 communicating with the interior of the chamber. The gage has not been shown since it is not an essential element of the invention and any type of water glass or gage can be used. In order to prevent leakage of water or steam from the boiler, it being obvious that this can be used in connection with a steam gage as well as a water gage, there has been provided a ball 20 which is mounted in the auxiliary valve housing and moves into engagement with the valve seat 21 when the body portion 10 is removed. This ball therefore constitutes a safety valve to prevent the leakage of water or steam when the body portion is removed. The main valve stem 22 passes longitudinally through the body portion and is provided with a conical end 23 which engages the valve seat 24 when the stem 22 is in a set position thus preventing the passage of steam or water into the chamber 17. A pin 25 extends from the head 23 of the valve stem 22 and engages the ball 20 thus holding the ball out of engagement with the seat 21 and preventing the ball from interfering with the passage of steam or water through the neck 13 of nipple 12. The outer end portion of the valve stem 22 is threaded as shown at 26 and terminates in a squared extension 27 upon which is mounted the hand wheel 28. The threaded portion 26 passes through the packing gland 29 and is in engagement with the threads thereof as shown in Fig. 2 so that this gland serves as means for adjustably mounting the valve stem as well as serving for compressing the packing which is placed in the chamber 30 formed in the outer end portion of the body portion 10.

When in use the auxiliary valve housing is screwed into the threaded opening of the boiler 16 and the union 18 of the steam or water gage is screwed into the threaded opening 19 of the body portion. When the stem 22 is in the position shown in Fig. 2 the flow of steam or water into the chamber 17 will be prevented but when the hand wheel 28 is turned to withdraw the head 23 out of engagement with the seat 24 the steam or water can flow into the chamber 17 and into the gage. It should be noted however that when the main valve 23 is opened it does not move a sufficient distance to permit the valve 20 to move into engagement with the

seat 21 and therefore the ball valve 20 will not interfere with the flow of water or steam through the nipple 12. When it is desired to grind the valve head 23 or to clean the body portion the body portion will be removed by placing wrenches upon the gripping faces of the body portion and nipple as shown in Fig. 1 and the body portion then turned out of engagement with the nipple. The pressure of the steam or water will then force the ball valve into engagement with the seat 21 and will prevent the steam or water from escaping from the boiler. The valve stem can then be removed and the necessary repairs made, the stem replaced and the body portion then again connected with the nipple.

Therefore the device which I have provided for connecting the gage with the boiler is provided with two valve or control elements one being a main valve and the other an emergency or safety valve. It should also be noted that this connection is so formed that its various parts can be easily removed for cleaning or repairing and that therefore this valve will be very convenient to handle. It should also be noted that with this device a great deal of time can be saved since when it is desired to grind the valve head it is not necessary to put out the fire of a boiler or withdraw the steam and hot water but that the body portion 10 can be removed whenever desired without danger of the hot water or steam escaping and scalding the operator.

What is claimed is:—

A device as described comprising a hollow body portion provided with a side opening forming an outlet an inner partition wall dividing said body portion into two equal compartments and positioned upon one side of said outlet, a gland threaded into the open end of one of the compartments to form a packing chamber, a reduced neck extending from the opposite end of the body portion and provided with a longitudinal bore having its inner end opening into the remaining compartment and enlarged to form a valve seat, a valve stem extending through said gland and partition wall and supported for sliding movement in said wall, a valve head formed on the inner end of said stem and engageable with said seat a nipple threaded upon said neck and recessed at its outer end to provide a second valve seat, an auxiliary valve housing supported upon said nipple and enlarged interiorly to provide a frusto conical chamber surrounding said seat, a ball valve loose in said chamber for engagement with said seat, and a stem carried by said valve head and extending through the reduced neck of the body and the nipple for engagement with said ball valve.

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

ROBERT M. VIANDS.

Witnesses:
E. M. JENKINS,
GEO. A. DAVIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."