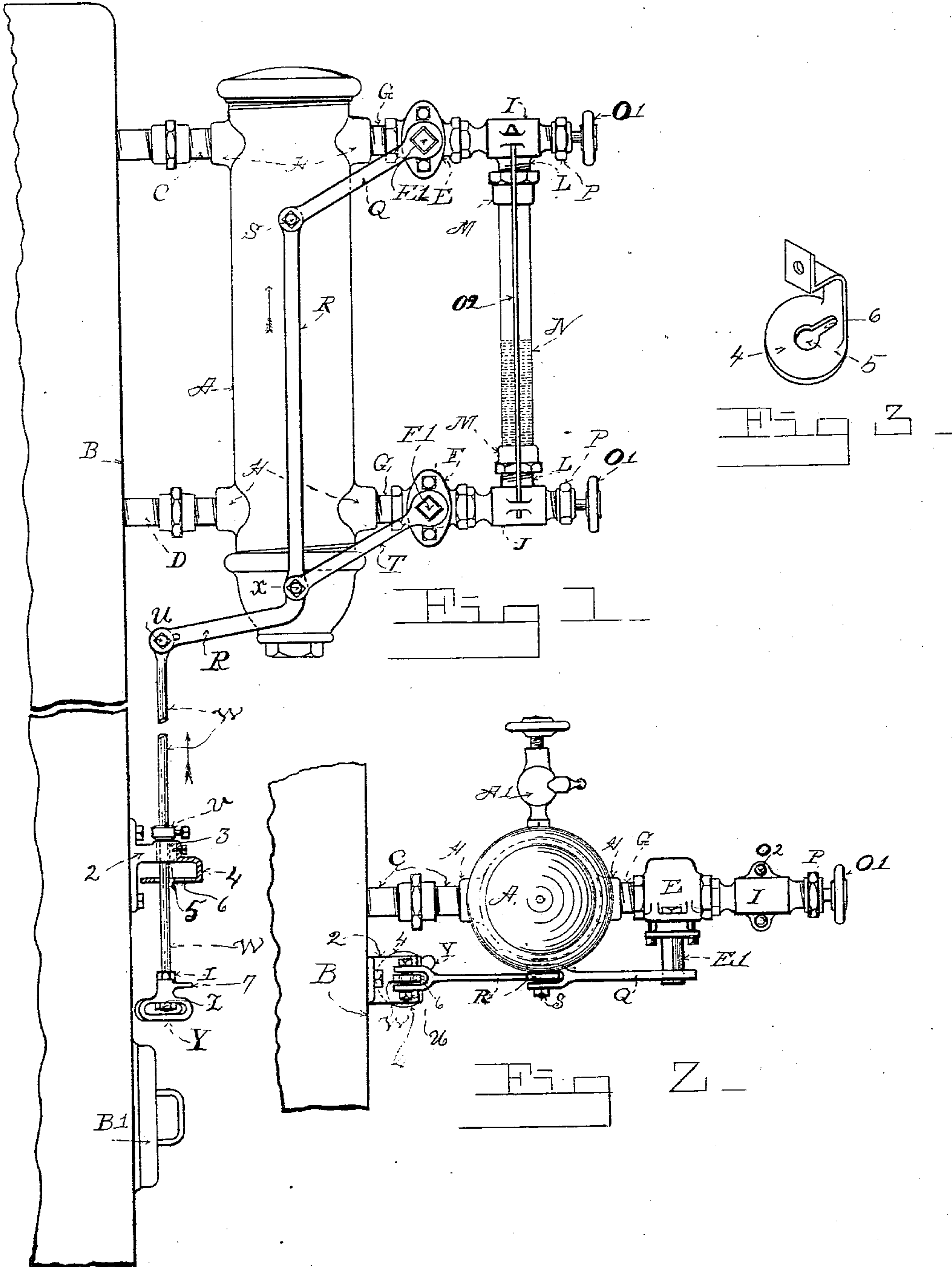


(No Model.)

M. J. REUTER.  
WATER GAGE SHUT-OFF FOR BOILERS.

No. 557,702.

Patented Apr. 7, 1896.



Witnesses  
Jacob Desserich  
John W. Helbig

Inventor  
By his Attorney Michael J. Reuter  
H. S. Bailey



# UNITED STATES PATENT OFFICE.

MICHAEL J. REUTER, OF DENVER, COLORADO.

## WATER-GAGE SHUT-OFF FOR BOILERS.

SPECIFICATION forming part of Letters Patent No. 557,702, dated April 7, 1896.

Application filed November 9, 1895. Serial No. 568,452. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL J. REUTER, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Manually-Operating Instantaneous Water-Gage Shut-Offs; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to a mechanism for manually closing both the steam and water passages between the water-columns and the glass water-gages of steam-boilers; and the objects of my invention are, first, to provide a mechanism by which the fireman can simultaneously close from the floor of the boiler-room both valves in the steam and water passages leading from the water-column to the glass gage when from any cause the glass breaks; second, to provide means by which they may both be simultaneously closed and locked when the fireman wishes to repair, clean, or adjust any part thereof. I attain these objects by the mechanism illustrated and described in the accompanying drawings and specification, in which—

Figure 1 represents a side elevation of a water-column and water-gage with my invention applied thereto. Fig. 2 represents a plan view of the same. Fig. 3 represents a perspective view of the locking-clip.

Similar letters and figures of reference refer to similar parts throughout the several views.

Referring to Fig. 1, A designates the water-column; A', in Fig. 2, a gage-cock; B, a fragment of a boiler; B', the fire-door; C and D, pipe connections between the boiler and the water-column. E and F designate valves. They are connected by nipples G to the bosses H of the water-column. I and J are also valves, threadedly connected to the valves E and F. These are provided with projecting-nipples L, which, with the glands M, are adapted to hold the glass water-gage N and secure it to the valves I and J. O designates the handles of the valve-stems O' of the valves I

and J, and P the packing-glands. O<sup>2</sup> designates guard-rods.

My invention is more particularly adapted to boilers of large capacity. In such boilers the water column and gage are located some twelve or fourteen feet above the floor of the boiler-room, and when a gage-glass breaks the fireman must first secure a ladder in order to reach the valves I and J, which he must close by hand, during which time he is liable to be severely burned by the escaping steam and hot water.

To apply my invention, I place between the water-column and glass gage, in both their pipe connections, valves E and F. I preferably use valves having asbestos valve-seats, as they do not expand enough to bind and can always be depended on to work freely. I form the ends of both of the valve-stems square, and to the stem of the valve E, I secure one end of a lever Q. The opposite end of this lever is pivotally bolted to the upper end of the rod R by the bolt S. A lever T is secured at one end to the stem of the valve F, and at its opposite end it is pivotally bolted to the rod R by bolt X. A slot is cut in the end of the rod to allow this end of the rod R and the rod W to work freely on the bolt U.

The levers Q and T and rod R are arranged and adapted to connect the valve-stems E' and F' and the valves E and F together in predetermined positions relatively to their ports and to one another, so that both valves will be opened or closed, and consequently the passages from the water-column to the glass gage, synchronously by a direct vertical movement of the rod W. This rod W depends from the end of the rod R, to which it is pivoted by the bolt U. Its lower end is extended to within easy reaching distance of the fireman from the floor of the boiler-room. An adjustable collar V is placed on it to define its downward stroke. The end of the rod is threaded, and a handle Y is freely secured thereto by nuts Z and I, which are turned on the rod to hold the handle between them. A bracket 2 is secured to the boiler, in which is an aperture 3, through which the rod freely passes, and by which it is supported in operative relation to the levers and the rod above.

To the bracket I secure a clip 4, which I



illustrate in Fig. 3. Through the clip an aperture 5 is made, through which the rod W passes. A slot 6 is cut in the clip, which radiates from the aperture. On the handle a projecting finger or lug 7 is cast, which is adapted to be passed through the said slot when the handle and rod are raised their full height.

In the position of the levers Q and T and rod R illustrated in Fig. 1 the valves are open and steam is free to pass from the boiler through the upper part of the column and the nipple, the valve E, and also valve I to the glass gage, and also the water is free to flow from the bottom part of the said column through similar parts to the glass gage, and should the glass break, which it is apt to do at any time, both steam and water escape very rapidly, necessitating the instant closing of the valves. This is accomplished by the fireman grasping the handle and raising the operating-rod W up to the clip. This upward movement of the operating-rod carries the rod R upward, and also the levers T and Q, and instantly closes both valves E and F at the same time, and as it is necessary to keep the valves closed until the broken glass can be replaced by a new one the projection 7 on the handle is lifted through the slot in the clip and the handle is turned around on the rod to carry the finger away from said slot, when it is allowed to rest on top of the clip and thereby holds the rods and lever up and locks the valves in a closed position.

My invention is very simple and useful and always reliable and is especially valuable where a battery of large boilers are in the charge of one or two firemen. With this device the valves I and J can be entirely dispensed with.

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

1. The combination with the water-column and the water-gage, of an independent asbestos valve connected in the water-passage and also in the steam-passage between said water-column and the said glass water-gage, and adapted to control the steam and water passages between the two, levers secured to the

ends of the valve-stems of said valves, a rod pivoted to said levers and adapted to conjunctively unite the two, an operating-rod pivotally secured to the outer end of one of said levers, a bracket adapted to support said rod, a handle freely secured to rotate on the end of said rod and arranged within reach of the boiler-room floor, a projecting lug on said handle, and means for locking said rods and levers and valves in a position to close the passages between said water-column and said water-gage glass, substantially as described.

2. The combination with the water-column and the water-gage, of an independent asbestos valve connected in the water-passage and also in the steam-passage between said water-column and the said glass water-gage, and adapted to control the steam and water passages between the two, levers secured to the ends of the valve-stems of said valves, a rod pivoted to said levers and adapted to conjunctively unite the two, an operating-rod pivotally secured to the outer end of one of said levers, a bracket adapted to support said rod, a handle freely secured to rotate on the end of said rod and arranged within reach of the boiler-room floor, a projecting lug on said handle, and a clip having a plate portion adapted to surround said operating-rod and a slot in said clip through which said projecting lug of said handle is adapted to pass whereby said operating-rod is normally moved to open or close said valves and passages instantly and synchronously, or to lock the same in a closed position, as set forth.

3. The combination of water-gage, the gage-glass, the nipples, the asbestos valves, the levers secured to the valve-stems, the rod co-operatively connected therewith to move them unitedly and at the same time, the operating-rod, the adjustable collar, the handle, the bracket and the clip, all constructed and arranged to operate substantially as herein set forth.

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

MICHAEL J. REUTER.

Witnesses:

JACOB DESSERICH,  
JOHN W. HELBIG.