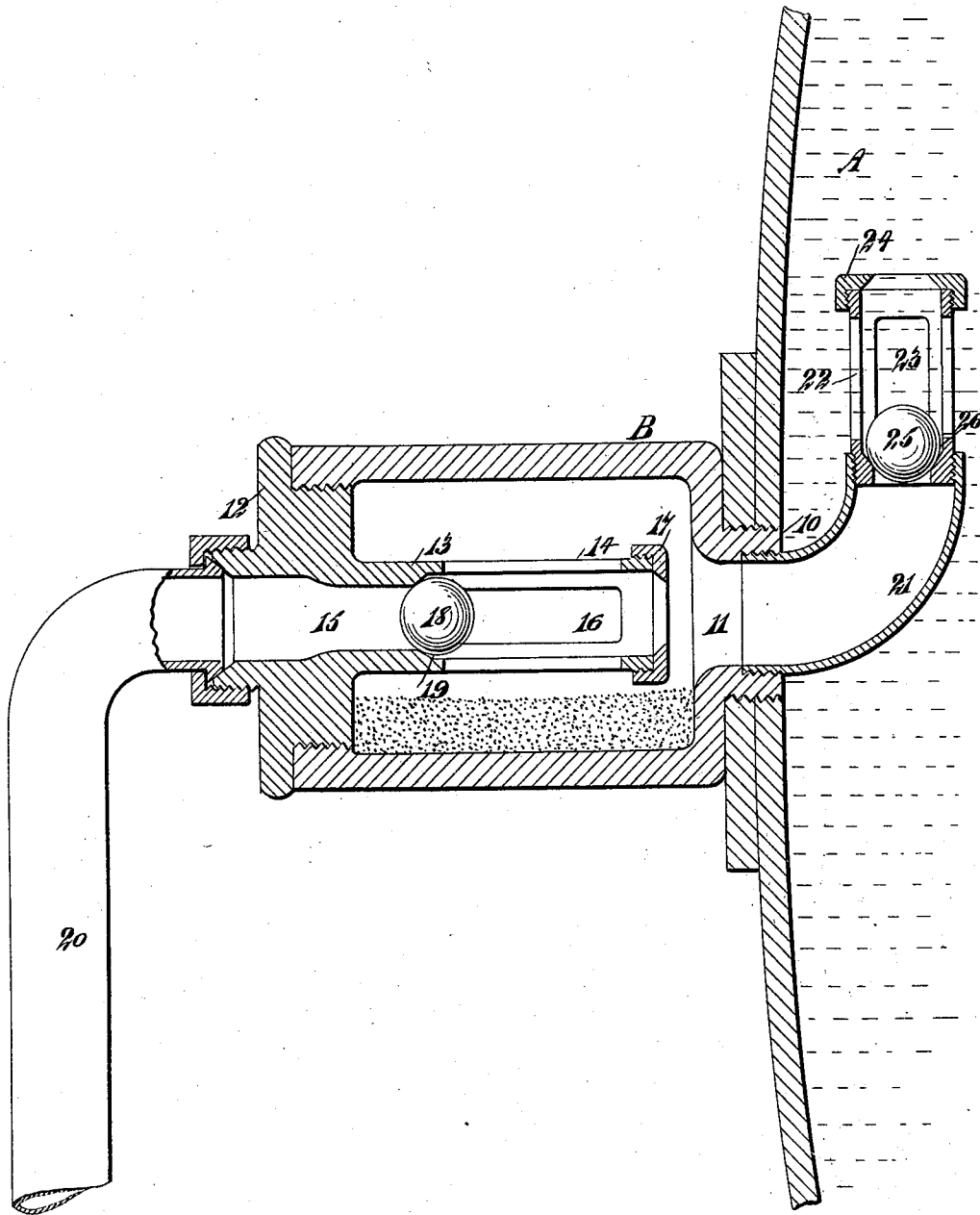


(No Model.)

F. ALBIN.
SAFETY CHECK FOR BOILERS.

No. 562,267.

Patented June 16, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK ALBIN, OF DODGE CITY, KANSAS.

SAFETY-CHECK FOR BOILERS.

SPECIFICATION forming part of Letters Patent No. 562,267, dated June 16, 1896.

Application filed December 16, 1895. Serial No. 572,320. (No model.)

To all whom it may concern:

Be it known that I, FRANK ALBIN, of Dodge City, in the county of Ford and State of Kansas, have invented a new and Improved Safety-Check for Boilers, of which the following is a full, clear, and exact description.

My invention relates to an improvement in safety-checks for boilers, and the object of the invention is to provide an appliance especially adapted for use in connection with locomotive-boilers; whereby in the event the connection between the ejector and the boiler should be broken off, a safety check-valve within the boiler will prevent the exit of water therefrom, and whereby, further, an inside check or safety valve will be employed in connection with an outside check or safety valve, the latter being contained within the mud pocket or chamber and so arranged that in the event the interior valve should become clogged the exterior valve will act to prevent the water of the boiler from escaping. Another object of the invention is to so construct and to so combine the outer and inner check or safety valves as to prevent the corrosion of the boiler by alkalies or other solids contained in the feed-water, and whereby also all foreign substances, such as waste or scales, which find their way into the feed-water and necessitate the cooling of the boiler and consequent loss of time, will be retained in the exterior chamber or mud-pocket and will not enter the boiler.

A further object of the invention is to so construct the exterior chamber or mud-pocket that it can be opened and cleaned while the boiler is under steam.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawing, forming a part of this specification, which is a vertical section through a portion of the boiler and likewise a vertical section through the safety-check applied to the boiler.

In carrying out the invention a mud-pocket is located outside of the boiler A, and the said mud-pocket consists of a pocket or casing B, which at its inner end is provided with a collar 10, exteriorly threaded, whereby it is screwed into a threaded opening made in the

shell of the boiler; and the said collar surrounds an opening 11, which is made at one end of the said casing. The opposite end of the casing is interiorly threaded to receive a cap 12, and the said cap is provided with an inner extension 13, and a valve-cage 14, integral with or attached to the said extension, the extension and likewise the cap being provided with a bore or interior chamber 15. The cage 14 is provided with various openings 16, preferably made longitudinally therein, and is provided at its inner end with a spanner-nut 17. The valve 18 contained within the cage is a ball-valve, and is adapted to close the bore or chamber 15 in the cap and its extension 13 by finding a seat 19 in the latter.

The injector-pipe 20 is secured to the cap 12 in any suitable or approved manner and communicates directly with the chamber 15 therein. A tube 21, preferably of an elbow type, is screwed into the collar 10 of the casing B of the mud-pocket, and extends upward within the boiler A. A valve-cage 22, likewise provided with openings 23, is screwed into the upper end of the connecting-pipe 21, being provided at its upper end with a spanner-nut 24, and the said cage contains a ball-valve 25, which finds a seat 26 in the bottom of the cage and normally closes the upper end of the connecting pipe or tube 21.

The feed-water is passed through the injector-pipe 20 in the usual way, and when it is forced within the casing B through the valve-cage 14 therein, any foreign matter that may be contained within the said feed-water will drop through the openings in the cage and find lodgment within the said casing, the interior of which constitutes virtually a mud-pocket, and the water will then pass into the boiler through the connecting-tube 21, raising the ball-valve 25 and escaping through the openings in the cage 22 in which the said valve is located.

As heretofore stated, the normal position of both of the ball-valves 18 and 25 is to close the inlets of the cages in which they are located, and as the weakest point of the mud pocket or casing B is at its connection with the boiler, in the event that the said mud drum or casing should be broken off the valve 25 will effectually prevent the escape of water from the boiler and therefore prevent dam-

age due from scalding water or escaping steam in the event of a collision, for example. In the event that the interior valve should become clogged and will not work, the escape of water from the boiler will be prevented by the outside or auxiliary valve 18.

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

10 1. A safety-check for boilers, the same comprising a casing having at one end a bossed opening and having the opposite end open, a cap fitted within said open end of the casing, the cap having a tube axially coincident with
15 the cap and terminating in a valve-cage, a ball confined within said cage, an elbow-pipe held at one end by the boss of the opening in the casing, a valve-cage at the opposite end of the elbow-pipe, and a ball confined within
20 said valve-cage, substantially as described.

2. A safety-check for boilers, comprising a casing, a nut at one end of the casing, a valve carried by the nut and held out of contact with the sides of the casing whereby a mud-
25 pocket is formed in the casing, and a second valve supported on the casing and communicating with the interior thereof, substantially as described.

3. A safety-check, the same consisting of a
30 casing capable of having communication with the boiler at one end and having its remaining end open, a cap removably fitted within said end, and a valve carried by the cap, the valve being held away from the sides of the

casing whereby a mud-pocket is formed in 35 the casing, substantially as described.

4. A safety-check for boilers, the same consisting of a cylindrical casing having at one end means by which it may communicate with the boiler, the opposite end of the casing being open, a cap removably fitted within said
40 end, an axially-coincident valve-cage carried by the cap and located within the chamber, and a valve-ball inclosed by the cage, substantially as described.

5. A safety-check, having a cylindrical casing, one end of which is open and the remaining end having a central opening surrounded by outwardly-projecting boss, a cap removably fitting within and closing the open end
50 of the casing, the cap having an axially-coincident tube extending into the casing and the tube having its inner end formed with a valve-cage and the bore of the tube being extended through the cap and the cap having a
55 boss projecting from the opening therein and oppositely to the tube, a ball operating with the valve-cage of the tube, an elbow-pipe connected at one end with the boss of the casing, a valve-cage carried by the remaining end of
60 the elbow-pipe and a ball operating with the cage of the elbow-pipe, substantially as described.

FRANK ALBIN.

Witnesses:

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