

No. 897,198.

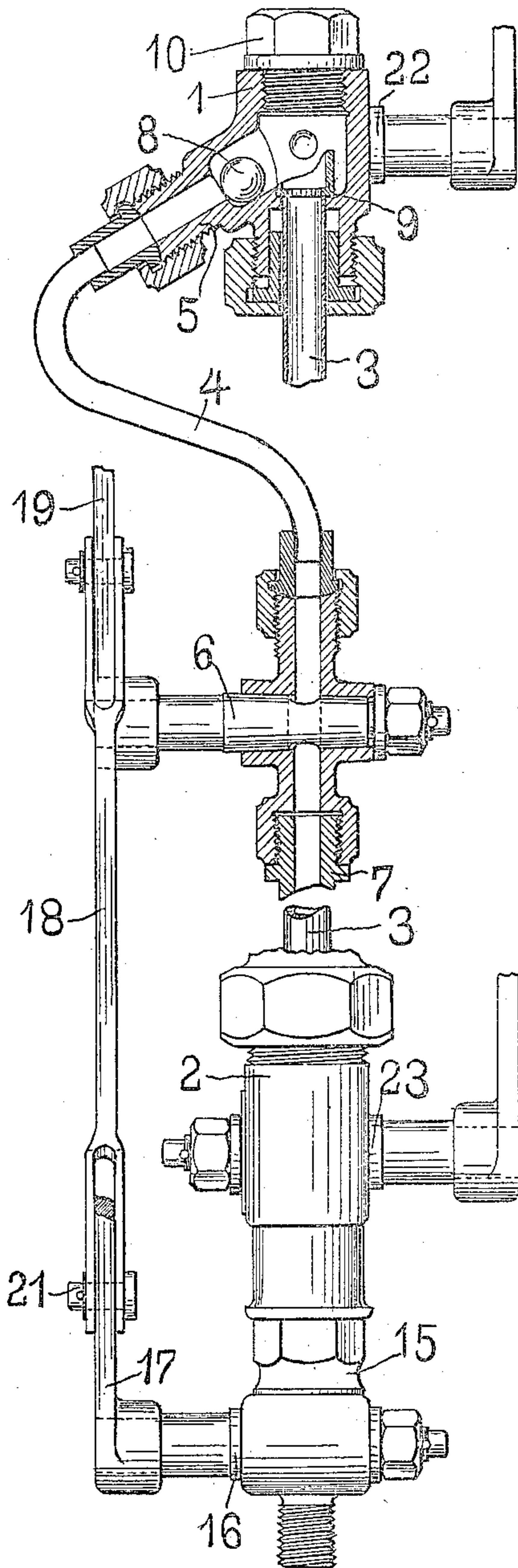
PATENTED AUG. 25, 1908.

S. DONNERSBERG.
WATER GAGE.

APPLICATION FILED JULY 27, 1907.

2 SHEETS—SHEET 1.

FIG. 1.



WITZESSES:

ITZ \sqrt{ETZLOR} .

Wm. Zell.
Chas Kaufmann.

Sigmund Lönnersberg
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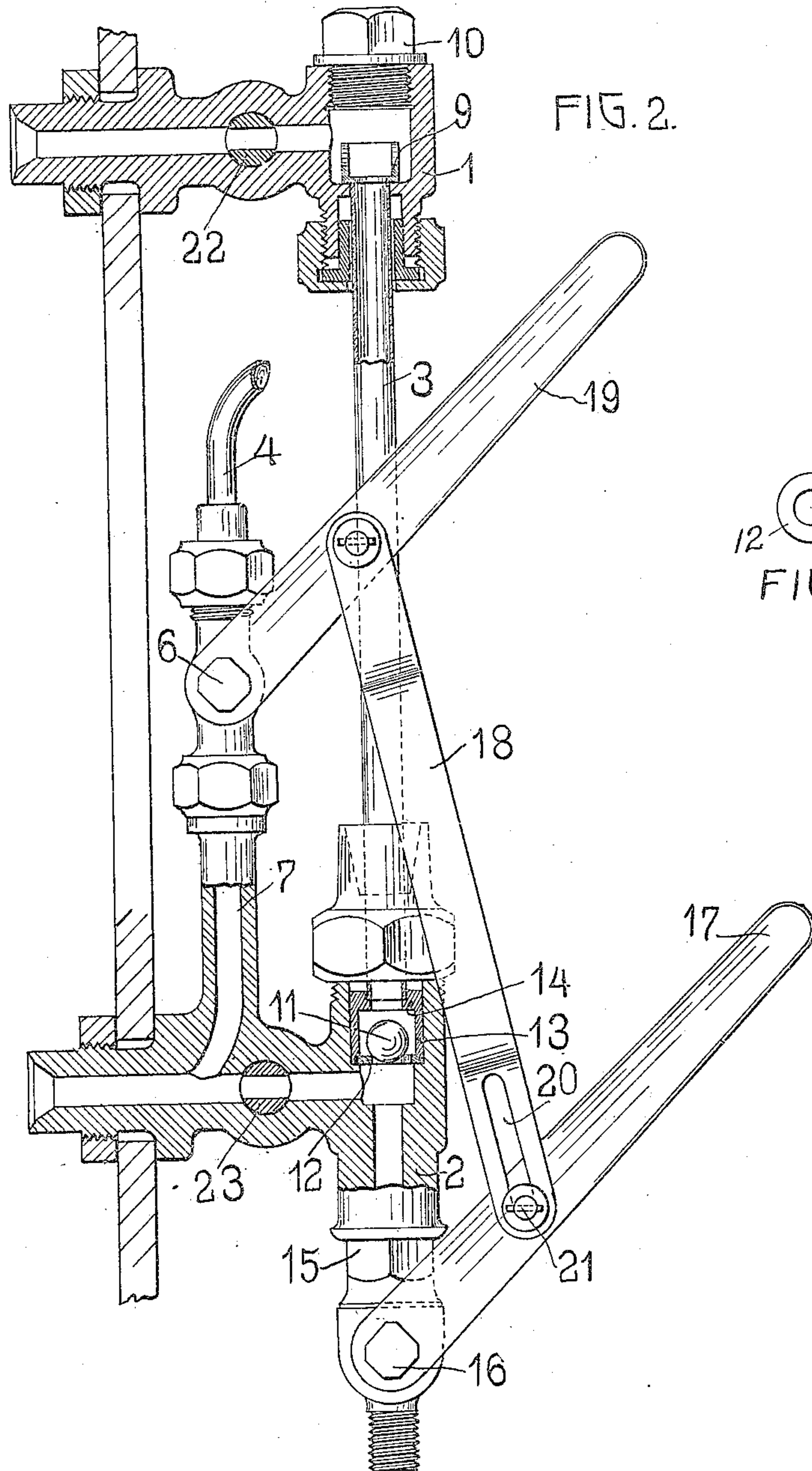
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2 SHEETS—SHEET 2.



WITNESSES.

Wm. D. Bell.
Elie Kaufmann.

INVENTOR.

Sigmund Donnersberg
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UNITED STATES PATENT OFFICE.

SIGMUND DONNERSBERG, OF STANISLAWOW, AUSTRIA-HUNGARY.

WATER-GAGE.

No. 897,198.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed July 27, 1907. Serial No. 385,803.

To all whom it may concern:

Be it known that I, SIGMUND DONNERSBERG, officer of the Imperial Royal Austrian State Railroads, a resident of Stanislawow, Galicia, in the Empire of Austria-Hungary, and a subject of the Emperor of Austria-Hungary, have invented new and useful Improvements in Water-Gages; and I do hereby 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 letters of reference marked thereon, which form a part of this specification.

My invention relates to the class of devices which are used on steam-boilers or like apparatuses to show the height of the water in the same and the object of my invention is to provide a water-level indicator having means for automatically cutting off the flow of steam as well as of water to the sight-glass, when the latter is broken.

A further object of my invention is to provide means for preventing an undesired action of the safety valve controlling the passage of the steam to the sight glass, when the blow off cock is opened.

In order to better understand my invention reference is had to the accompanying drawings, in which

Figure 1 is a front elevation of a water column with a central section through the cap and through the rear connecting parts. Fig. 2 is a side elevation, partly in central section through the cap and the bottom part. Fig. 3 is an underneath plan view of a certain valve seat 12.

In the safety water level indicators used to-day provision has been made for cutting off the flow of water into the column, when the sight-glass becomes broken, but the steam could pour forth, making the danger of scalding imminent and chiefly the man closing the valve which is usually arranged in the connecting part between the cap and the boiler is in danger to be scalded.

According to my invention I arrange between the usual fittings such as the cap 1 and the base-piece 2 besides the sight-glass 3 a second connecting duct 4 which leads from the part 5 of the cap 1 to a cock 6 and therefrom through a pipe 7 to the connecting part of the base-piece and the boiler. This duct is used to actuate the steam check-valve, in

order to close the flow of steam into the column, because the water, rising under certain conditions in it, pushes a valve ball 8 which is loosely lying within the hollow and preferably inclined part 5, upon the valve-seat 9. The valve seat 9 is arranged above the top of the sight-glass 3 and provided with lateral ribs for safely guiding the ball upon its seat. The sight-glass 3 is brought into place through an opening provided in the top of the cap 1 which is closed by means of a threaded plug 10, while the glass tube may be secured by means of any convenient steam tight packing within the cap and the base-piece.

The automatic water check valve consists of a ball 11 placed within the base-piece 2 and resting upon a seat 12, if inactive, *i. e.* if the water check-valve is open, as the circular opening of the seat 12 has a notch which forms the necessary communication between the sight-glass and the base-piece conduit. Above the seat 12 a tubular part 13, having a valve seat 14 is placed and when thrown upwards, the ball 11 seats itself upon this valve seat, closing thereby the passage to the column 3.

The base-piece 2 carries as usually a blow off fitting 15, wherein a cock 16 is placed. The lever handle 17 of the cock 16 is connected with the lever handle 19 of the cock 6 by means of a coupling-link 18 which is provided with a slot 20, into which the pin 21 of the lever 17 reaches and wherein it slides, when the lever handle 19 is swung downwards, in order to close the cock 6 at first and thereupon, while swinging the handle 19 further downwards, to open the blow off cock 16.

The water-level indicator operates in the following manner: When the sight-glass breaks, the water, while rushing out, throws the ball 11 upwards and presses it against the valve-seat 14, thereby closing the water port; on the other hand the water rises also in the pipe 4, carrying with it the ball 8 which arrives upon its valve seat 9 and is forced against it by the pressure of the steam and water, thereby closing the upper end of the sight glass and preventing the exit of steam. Thereupon the communication to the boiler may be shut by turning the valves or cocks 22, 23 without any danger of scalding for the man attending thereto. If the blow off has to be opened, it is necessary to close the cock 6 at first, as otherwise the water would rush

through the by-pass 4 into the glass tube 3 and would carry the ball 8 upon its seat 9, consequently cutting off the steam from the sight glass; this is prevented by the connecting link 18 placed between the handles of the cock 6 and 16.

My invention has been described in connection with a water gage for steam boilers, but the apparatus is obviously applicable with equal facility to any vessel for holding fluid and gaseous matter under pressure and it is not limited in its use in connection with a steam boiler.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I desire to secure by Letters Patent is:

1. In a device of the class described comprising a cap, a base-piece, a blow off cock in said piece and a sight tube secured with its ends in said cap and in said base piece, a passage for liquid connecting the cap with the base-piece, means for interrupting the said passage, and means for coupling said

means with the blow off cock, substantially as set forth.

2. In a device of the class described a cap, a base piece, a sight tube arranged in said cap and base piece a by-pass between the cap and the base piece and a blow off cock in said base piece, in combination with means for closing said by-pass, and rods connecting the said means with the blow off cock, substantially as set forth.

3. In a device of the class described a cap, a base piece, a sight glass arranged in the cap and base piece, a valve ball and a blow off cock in the base piece in combination with a by-pass, a valve ball and checking means in said by-pass and coupling links between the said checking means and the blow off cock, substantially as set forth.

In testimony, that I claim the foregoing, I have hereunto set my hand this 5th day of July 1907.

SIGMUND DONNERSBERG.

Witnesses:

STAN. R. V. DZBANSKI,
ROBT. W. HEINGARTNER.