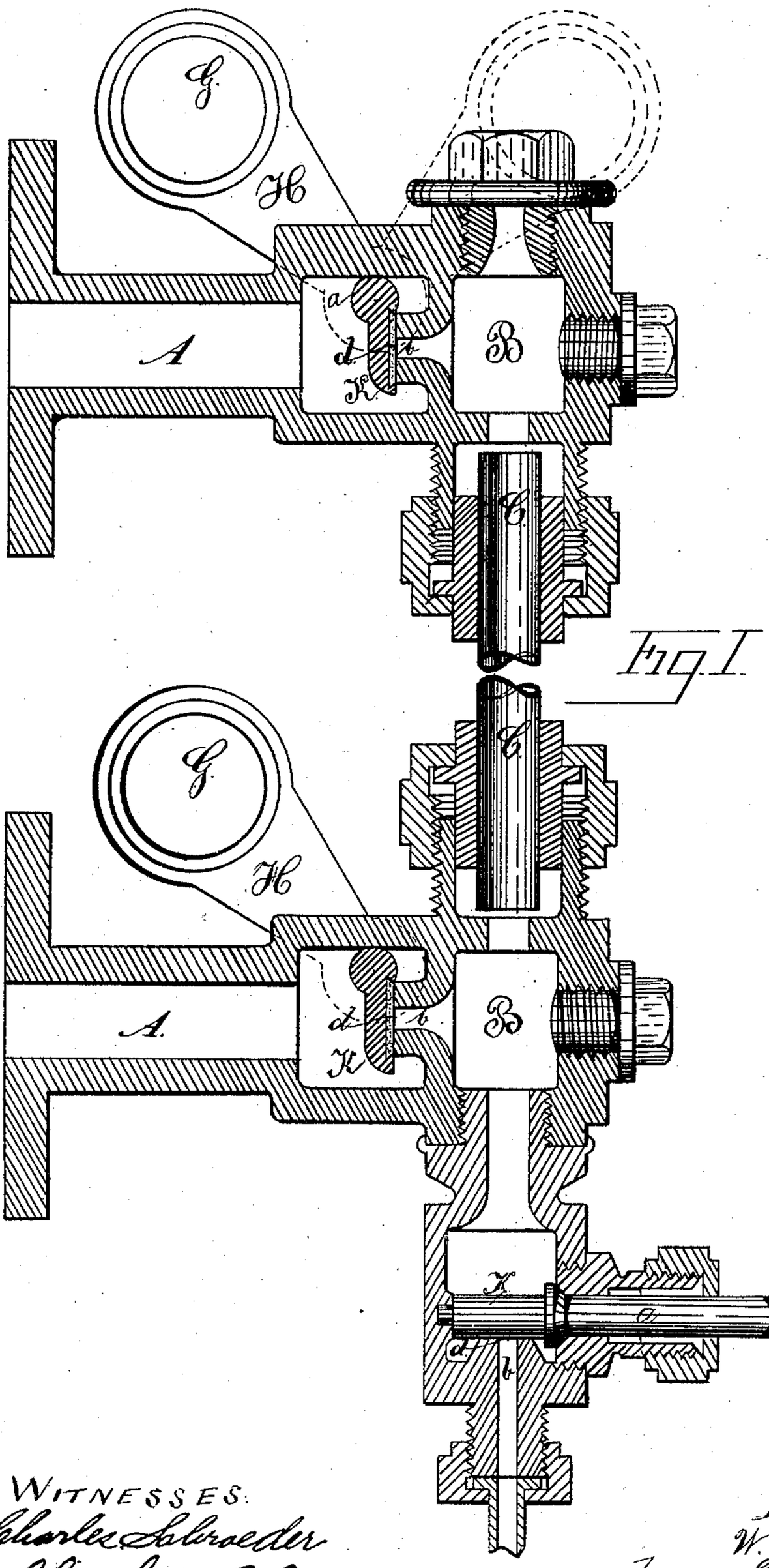
(No Model.) 2 Sheets—Sheet 1.

W. O. SCHUMANN.

WATER GAGE.

No. 468,508. Patented Feb. 9, 1892.



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(No Model.) 2 Sheets—Sheet 2.

W. O. SCHUMANN.

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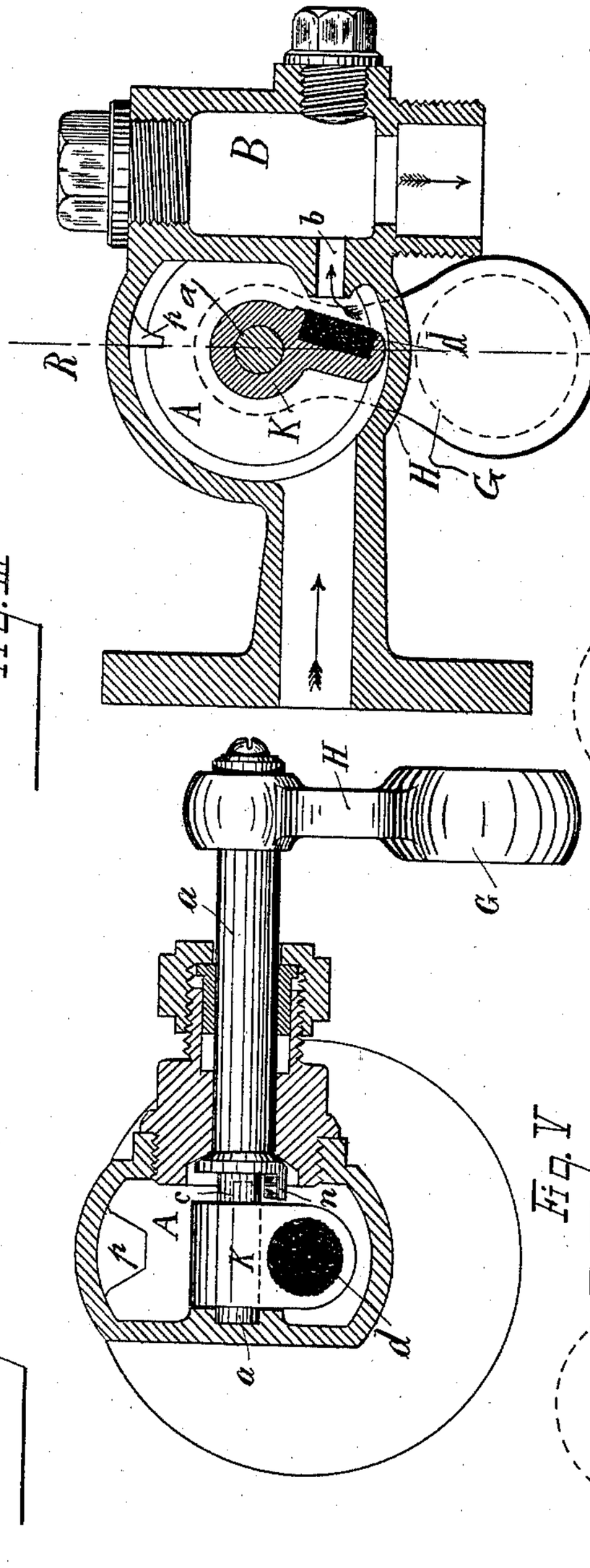

FIG. III

FIG. II

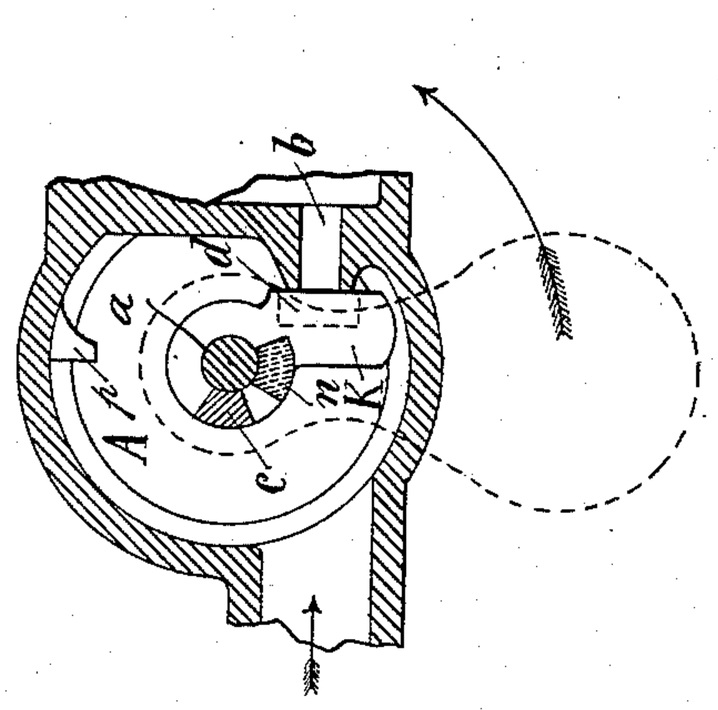

FIG. IV

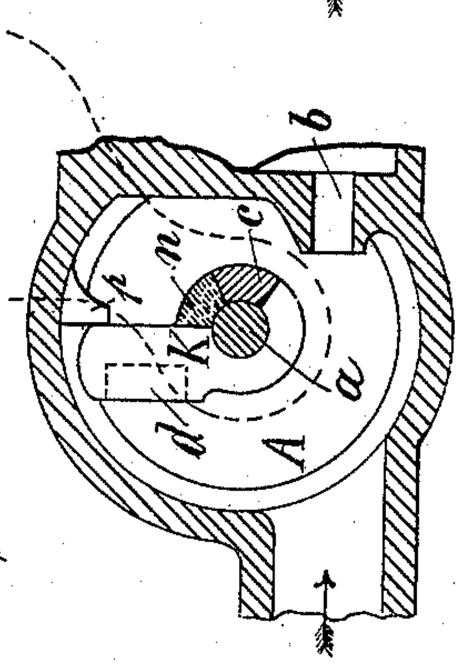

FIG. VI

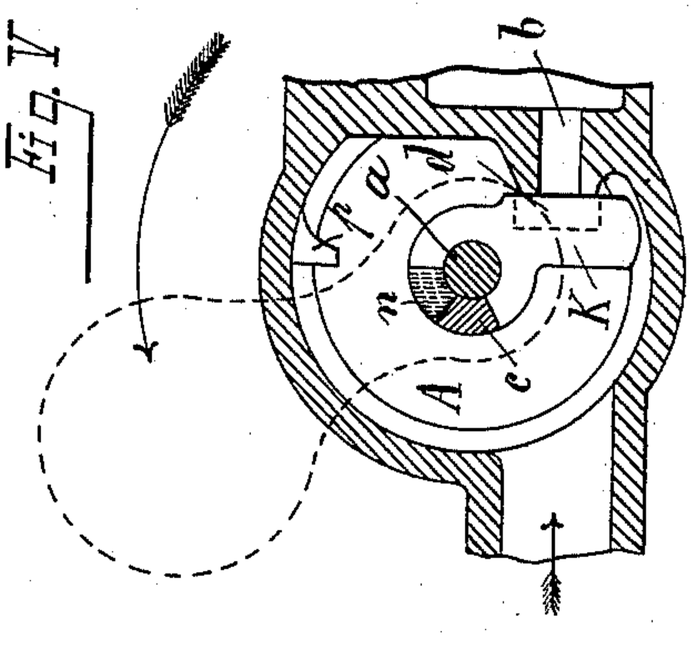

FIG. V

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UNITED STATES PATENT OFFICE.

WILHELM OSCAR SCHUMANN, OF LEIPSIC, GERMANY.

WATER-GAGE.

SPECIFICATION forming part of Letters Patent No. 468,508, dated February 9, 1892.

Application filed October 19, 1891. Serial No. 409,235. (No model.)

To all whom it may concern:

Be it known that I, WILHELM OSCAR SCHUMANN, a subject of the King of Saxony, and a resident of Leipsic, in the Kingdom of Saxony, Germany, have invented certain new and useful Improvements in Water-Gages, of which the following is a specification.

This invention relates to an improvement in gage-glasses for steam-boilers, and especially to devices for closing the sockets or necks in which the ends of the gage-glass are held.

The invention consists in the construction, with a gage-glass socket having a projecting neck or nozzle, of a shaft in said socket, a handle on the end of said shaft, and a valve on said shaft adapted to rest against the end of said nozzle or neck.

The invention also consists in the construction and combination of parts and details which will be fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure I is a vertical longitudinal sectional view of a gage-glass provided with my improvement. Fig. II is a transverse sectional view of a modification of the same on the line R R, Fig. III. Fig. III is a vertical longitudinal sectional view of one of the necks or sockets in which the end of the gage-glass is held, the valve being shown open. Fig. IV is a similar view, the valve being shown closed. Fig. V is a similar view showing valve closed. Fig. VI is a similar view showing valve raised, so as to leave the chamber free for cleaning the glass.

Similar letters of reference indicate corresponding parts.

In the drawings, A A are the necks or sockets that are to be connected with the boiler, said necks or sockets each being provided with a chamber B, which chambers are connected by a gage-glass that is secured at its ends in said sockets or necks A in the usual manner. In each neck or socket A a spindle is mounted to turn, and on one end of the same the lever H is fastened, carrying the weight G on its end. On each spindle *a* the valve K is secured, which is provided with a packing-piece *d*, adapted to seat on the end of the short nozzle or neck *b*, projecting from the chamber B. In case the gage-glass breaks and the steam and water escape from the boiler all that is necessary is to bring the lever H from the position shown in dotted lines in Fig. I into the position shown in full lines, whereby the valves K are seated on the ends of the short necks or nozzles *b* and closed, thus interrupting the communication between the boilers and the chambers B, and thus also interrupting the communication between the boiler and the gage-glass, and thereby preventing further escape of steam or water. The weights G on the ends of the lever H facilitate shifting the valves, and the pressure of the steam and water, acting on said valves, hold them seated against the ends of the nozzles *b*.

The above construction has the advantage that no grinding in of valves is necessary, as the packing-plate *d* causes the valve to close the nozzles *b* effectually and they do not wear off. If the valves are to close automatically in case the gage-glass breaks, the construction shown in Figs. II to VI is used, and in this case the valve K is mounted loosely on the spindle *a* and said valve is provided with a shoulder *c*, against which the hook-lug *n*, formed on the spindle *a*, can act. The casing in which the spindle turns is made cylindrical and is provided at its top with a stop-lug *p*, against which the stop-lug rests when in raised position. The valve of this construction can also be closed by hand, if desired, which is accomplished by turning the lever H in the direction of the arrow *x'*, Fig. IV, until it hangs vertically. The hook-lug *n* of the spindle now bears against the rear side of the valve and presses that side of the valve provided with the packing-plate *d* against the end of the nozzle *b*, in which position the valve is held by the pressure of the steam and water and the weight G of the lever H. In case the valve is to be placed into a position so as not to interfere with the cleaning of the necks or sockets and the nozzles *b* the lever H is turned in the direction of the arrow x^2, Fig. VI, and as the lug *n* bears on the shoulder *c* it presses the valve upward and against the stop-lug *p*, in which position the valve is held by the action of the weight *g* of the lever H. When the valve is to be closed by hand, the lever H

is turned in the direction of the arrow x^3, Fig. V, when the hook-lug n bears on the shoulder c and holds the valve against the end of the nozzle b, as shown.

Fig. III shows the parts adjusted for the automatic closing of the valve in case the gage-glass breaks. The lever G is in vertical position, and the valve H hangs from the spindle, as shown in Fig. III, and permits the steam and water to pass through the nozzle b. In case the gage-glass breaks the steam and water rushes from the boiler against the rear side of said valve and presses the packing-plate d against the end of the nozzle b, and thus closes said valve and prevents the further escape of steam and water.

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

1. The combination, with a gage-glass having a chamber provided with a projecting neck or nozzle, of a rocking shaft in said socket, a weighted handle on the end of said shaft, and a valve mounted on said shaft and adapted to seat against the end of said neck or nozzle, substantially as set forth.

2. The combination, with a gage-glass socket having a chamber or neck provided with a projecting neck or nozzle, of a shaft in said socket, a lever on the end of said shaft, a valve provided with a shoulder and mounted on said shaft, and a hook-lug on the shaft, substantially as set forth.

3. The combination, with a gage-glass holder having a chamber provided with a projecting neck or nozzle, of a shaft in said socket, a lever fixed on the end of the shaft, a valve provided with a shoulder mounted on said shaft, a hook in said shaft, and a stop formed on the top part of said chamber, against which stop the valve can rest when in raised position, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

WILHELM OSCAR SCHUMANN.

Witnesses:

CARL BORNGRAEBER,

PAUL WETZIG.