D. A. WOODBURY.

WATER-GAGES FOR STEAM-BOILERS.

No. 194,796. Patented Sept. 4, 1877.

Fig. 1.

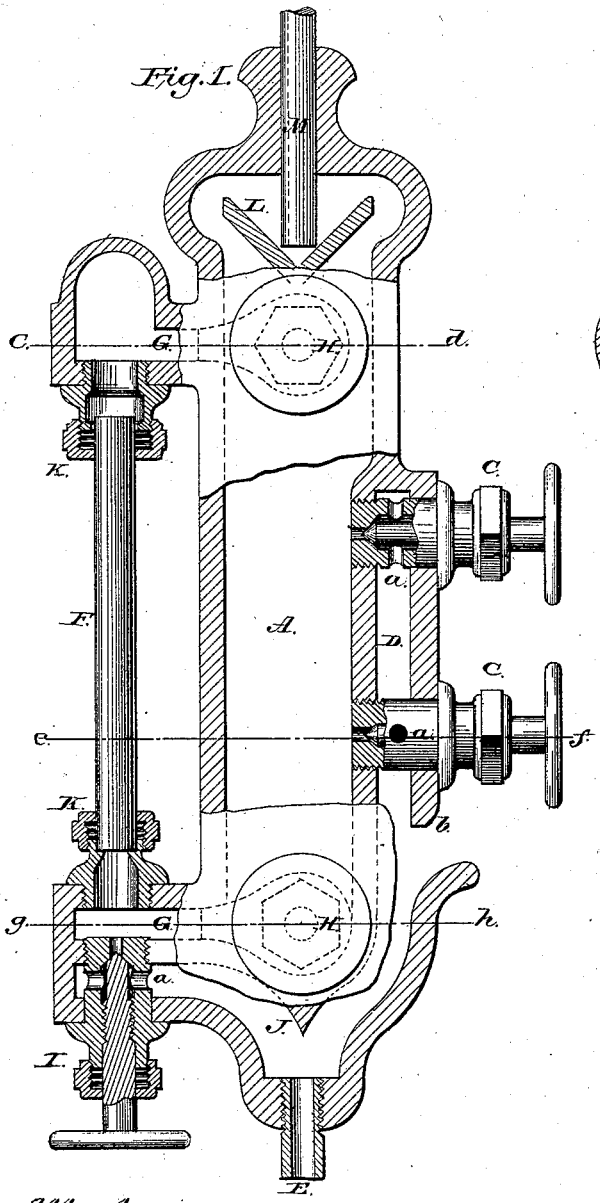


Fig. 4.

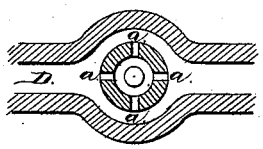


Fig. 2.

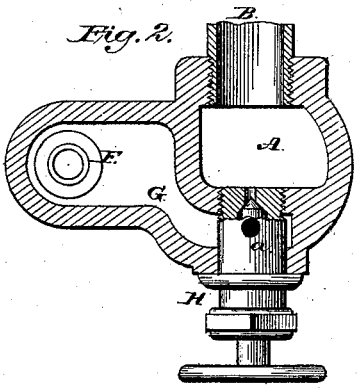
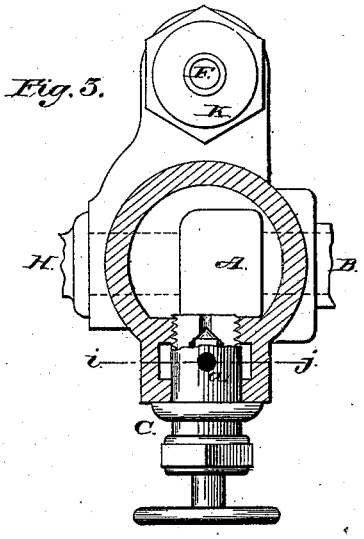


Fig. 3.



Attest:

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UNITED STATES PATENT OFFICE.

DANIEL A. WOODBURY, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN WATER-GAGES FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **194,796**, dated September 4, 1877; application filed March 29, 1877.

To all whom it may concern:

Be it known that I, DANIEL A. WOODBURY, of the city of Rochester, county of Monroe, and State of New York, have invented a new and useful Improvement in what are known as "Gage-Columns for Steam-Boilers," which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a front view in part section, the portion shown in section being on a vertical line through the center. Fig. 2 is a cross-section on the lines *c d* and *g h*, Fig. 1. Fig. 3 is a similar one on the line *e f*. Fig. 4 is a section on the line *i j*.

The object of my invention is to furnish a more compact device containing the gage-cocks and water-gage, in which all of the water discharged shall be concentrated at one point, from which it may be conveyed through a single pipe; also, in which all of the cocks used shall be mutually interchangeable; also, to provide an attachment for the steam-gage which shall obviate the necessity of using what is known as a "siphon."

In the drawings, A is the main chamber, communicating with the boiler, above and below the water-line, through the pipes B B, in the usual manner.

The gage-pipe F, with its stuffing-boxes K K, is supported by projections formed on the side of the chamber A, and communicating with it through the passages G G and cocks H H. These cocks are placed opposite the pipes B B, furnishing convenient openings through which these pipes may be cleared when required.

C C are the gage-cocks, discharging through the opening *a a* into the common passage D, thence into the pipe E. Any suitable number of cocks may be used, all discharging into one common passage.

The passage D is provided with the external aperture *b*, through which the character of the discharge can be seen, if necessary. The cock I is placed below the gage-tube F, connecting with it through the passage G, and discharging into the passage J, thence into the pipe E. Through this cock the sediment collecting in the gage may be blown out in the usual manner.

The cocks shown are all of what is known as the "compression form," but are so constructed as to fit steam-tight into the metal upon both sides of passages into which they discharge. The construction is best shown in I, Figs. 1 and 4. Any other form of cock capable of being so fitted and discharging in the manner described may be substituted.

The cocks used being all of one form and size greatly simplifies the manufacture, and an extra one, kept in reserve, will supply either place should one require renewing. This last feature is of great value where repairs cannot be readily obtained. It also enables one much used, and consequently more worn, to be exchanged with one less used.

Inside of the chamber A, and near its top, is formed the basin L, to retain water deposited by condensation. The pipe M, leading to the steam-gage, extends into and reaches nearly to the bottom of this basin, and the end is thus kept constantly immersed, thereby dispensing with the siphon in general use. This pipe may be cast with and form a part of the chamber A, if desired. This basin, being made shallow, with sloping sides, has the further advantage of non-liability to injury in case of freezing.

The operation of the different parts will be readily understood without further description.

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

1. The gage-cocks C C, in combination with the passage D and chamber A, all constructed and operating substantially as shown and described, and for the purpose specified.

2. The cock I, in combination with the passage J and chamber A, substantially as shown and described.

3. The basin L, in combination with the pipe M, substantially as shown and described.

D. A. WOODBURY.

Witnesses:

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C. A. BOUGHTON.