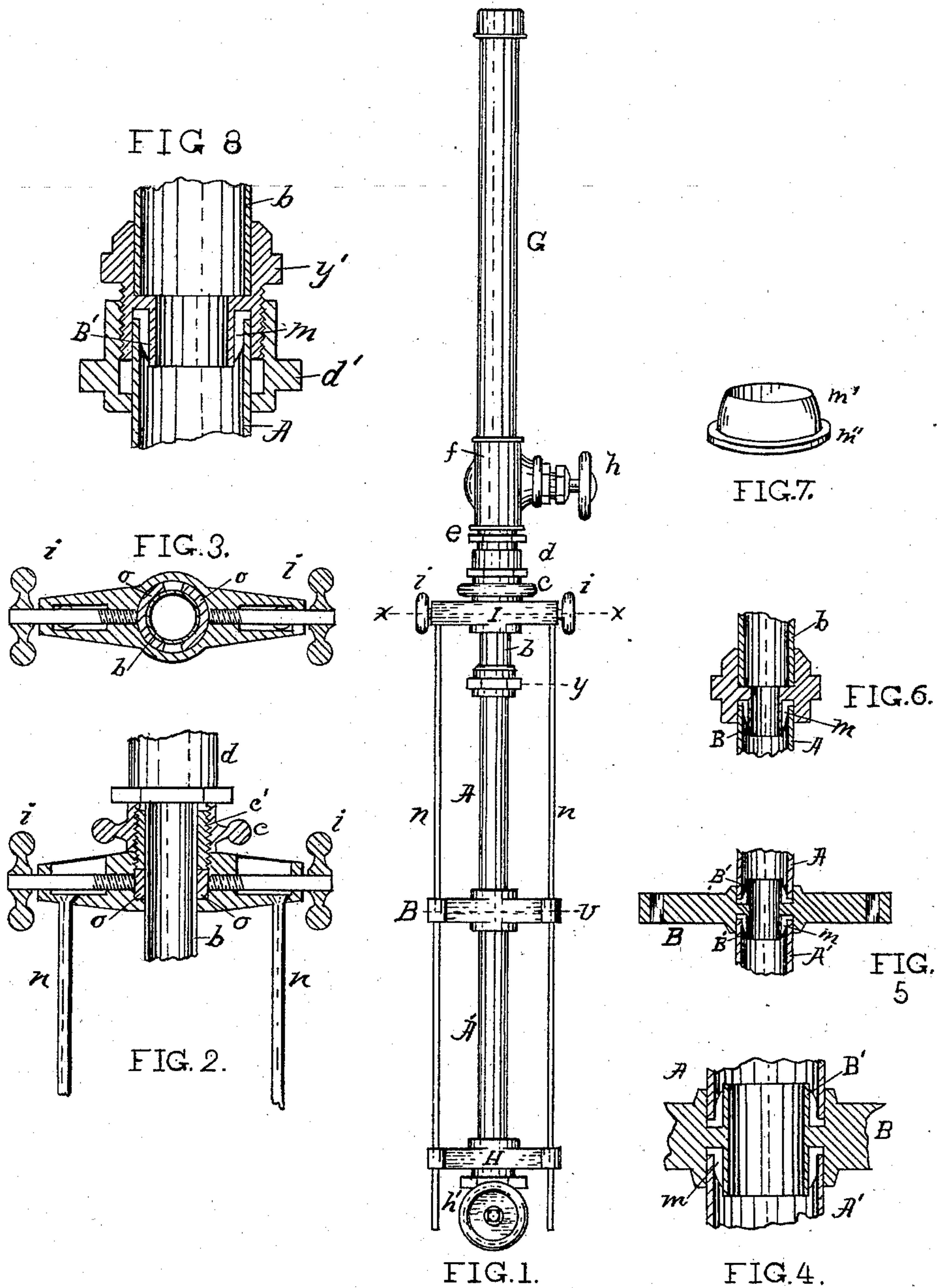


(No Model.)

H. G. BROOKS.
WATER GAGE.

No. 442,010.

Patented Dec. 2, 1890.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY G. BROOKS, OF BATTLE CREEK, MICHIGAN.

WATER-GAGE.

SPECIFICATION forming part of Letters Patent No. 442,010, dated December 2, 1890.

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To all whom it may concern:

Be it known that I, HENRY G. BROOKS, a citizen of the United States, residing at Battle Creek, in the county of Calhoun and State of Michigan, have invented a new and useful Improvement in Sight-Glasses, of which the following is a specification.

My invention relates to improvements in sight-glasses which are used to reveal the amount of water in steam-boilers; and the objects are, first, to provide a device which can be adjusted to the requirements of any length of transparent tubes; second, to provide means whereby two or more pieces of tubing can be joined so as to form a substitute for one long piece, and, third, to improve the seating of such tubes, whereby additional security against leakage and entirely preventing the wearing away of the tubes by the action of the steam and water. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of my sight-glass. Fig. 2 is a vertical section, and Fig. 3 a horizontal section through xx . Figs. 4 and 5 are vertical sections of the joining or splice bar B; Fig. 6, a vertical section at y ; Fig. 7, a perspective view of my improved gasket; Fig. 8, a sectional view of my improved seating and gasket combined with the ordinary stuffing-box.

Similar letters refer to similar parts in the several views.

In Fig. 1 the cocks h and h' are in pipes connecting with the boiler in the usual way.

G is a cylindrical chamber provided with a stuffing-box d at its lower end, through which a hollow rod b extends nearly to its upper end. The lower or protruding end of said hollow rod is provided with my improved seating for the glass tube A, which will be hereinafter more fully described.

The clamping-bar I, which surrounds the piston, is shown in section in Figs. 2 and 3, in which ii are screws butting against circular foot-pieces oo , which embrace the hollow rod b . The hand-nut c turns on a threaded extension c' of the bar I, and is made to butt against the stuffing-box d . The protecting-rods nn serve also to hold the joining-bar B in position. The elements of the seatings of the glass tubes are, first, the inner tube B',

(shown in section in Figs. 4, 5, 6, and 8,) and, second, the gasket, Fig. 7, and m , in the several views, which is composed of suitable elastic material, tubular in form, being thin at its upper edge and increasing in thickness toward the flange at its base. Said gasket is composed, essentially, of two parts: first, the upper conical portion m' , operating as a packing between the inner cone B' and the glass tube, and, second, the flange m'' at its base, which forms a seating for the ends of the glass tubes. It will be seen that by this seating the wear caused by the action of the steam and water is prevented. The ordinary stuffing-box may be used with this seating for additional security against leakage, as shown in Fig. 8. The joining or splice bar B, used only when two or more sections are employed, as when a tube is broken, (shown in section in Fig. 5,) is provided with the seatings described, as is also the bar H, which may be attached to the cock h' , or be made as a part of it.

To set a glass of two sections, put the lower section A' in position upon H and adjust the joining-bar B. In a like manner place the upper section A in position and bring the hollow piston down upon it, pressing all its joints firmly together. Adjust the clamping-bar I so that the hand-nut c abuts against the stuffing-box d , clamp it securely in this position to the piston b by means of the screws ii abutting against the embracing foot-pieces oo , when by turning the hand-nut c , abutting against the stuffing-box d , the piston is forced still farther down and the tubes are firmly seated in the elastic material of the gaskets.

I have thus far referred only to sight-glasses for steam-boilers, for the reason that some of its parts are especially adapted to such use—viz., that which protects the ends of the glass tubes from the action of the steam and water—while in general it is equally as well adapted to many forms of lubricators now in use.

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

1. The cylindrical chamber G, provided with the stuffing-box d , the hollow rod b , and the clamping-bar I, carrying the hand-nut c , in combination with the glass tube of a sight-glass, substantially as and for the purpose specified.

2. The cylindrical chamber *G*, having the stuffing-box *d*, the hollow piston *b*, the clamping-bar *I*, carrying the hand-nut *c*, and the joining-bar *B*, in combination with the glass tubes
5 of a sight-glass, all substantially as set forth.

3. The clamping-bar *I*, having the set-screws *i i*, circular foot-pieces *o o*, threaded extension *c'*, and hand-nut *c*, in combination with
10 *G*, and glass tube of a sight-glass, substantially as set forth.

4. The seatings having the inner tube *B'* and the gasket *m*, in combination with the glass tubes of a sight-glass, as described.

5. The gasket *m*, having a flanged base and
15 an upper portion which gradually decreases in outside diameter from the base to the top, substantially as described.

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Witnesses:

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