

(No Model.)

G. W. BROWN.

STEAM GAGE.

No. 318,691.

Patented May 26, 1885.

Fig. 1.

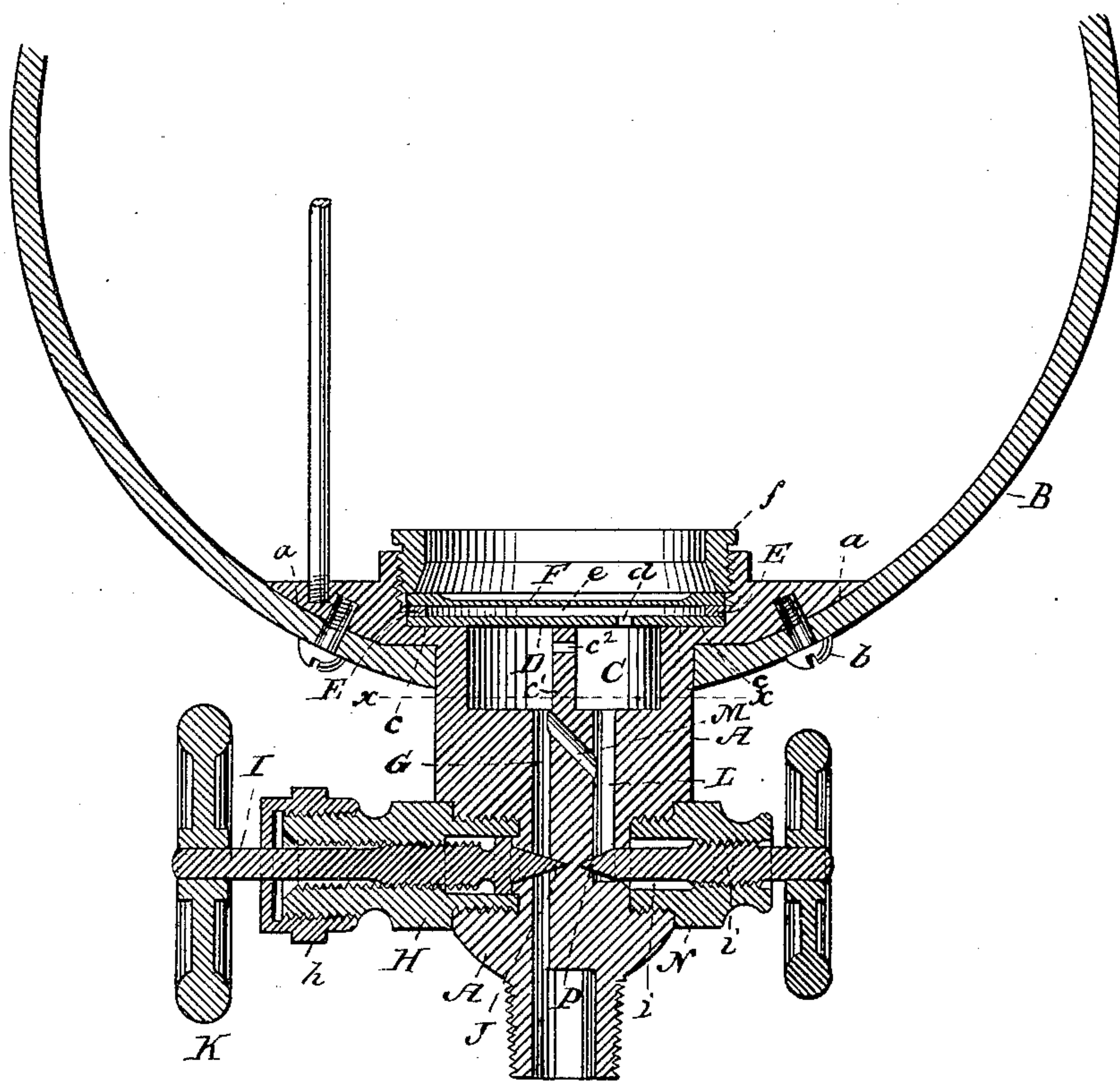
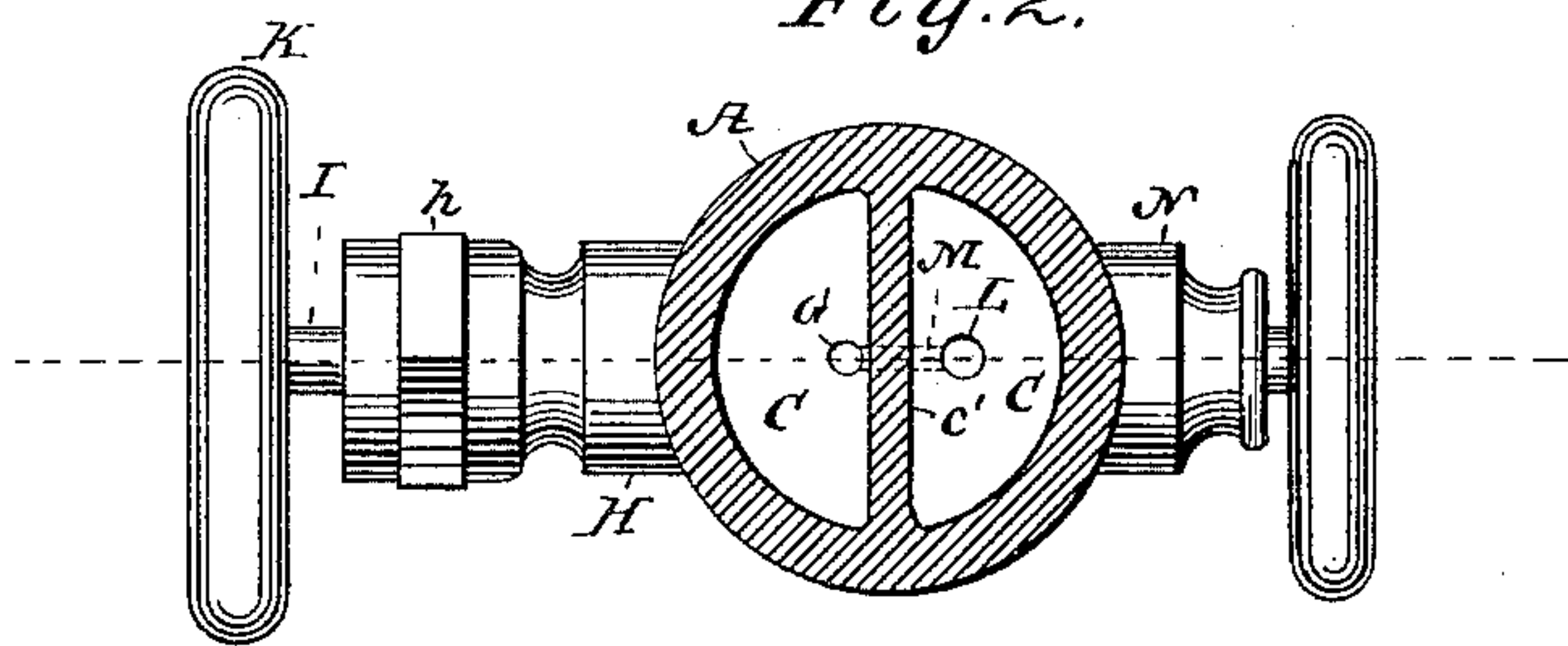


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

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STEAM-GAGE.

SPECIFICATION forming part of Letters Patent No. 318,691, dated May 26, 1885.

Application filed February 18, 1885. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BROWN, a citizen of the United States, and a resident of Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Steam-Gages, of which the following is a specification.

My invention relates to an improvement in steam-gages, the object being to provide a new and novel arrangement of devices for conveying the pressure of steam from the boiler to the diaphragm, and also to provide means for allowing the escape of the condensed steam when the gage is not in use for the purpose of preventing the freezing of such and injury to the diaphragm.

With these ends in view my invention consists in certain novel features of construction and combination of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents my improvement in vertical section. Fig. 2 is a section on the line *x x* of Fig. 1.

A represents a casing, provided on its upper edge with the flange *a*, fitting within and seated on the gage casing or box B, being securely held in place by means of the screws *b*. In the upper end of this casing A is formed the annular chamber C, the upper portion being screw-threaded and formed with shoulders *c*, on which rests a metal plate, D, provided with the opening *d*. Over this plate D fits the diaphragm F, made of steel or other desired material, and between which and the plate D is inserted the metallic ring or washer E, forming a steam-space, *e*, below the diaphragm, the latter being retained in its position by the screw-threaded ring *f*, fitting down thereon. If desired, the chamber C may be formed with a partition, *c'*, provided with an opening, *c''*, allowing the chambers communication with each other. Into one of these two chambers leads the passage G, formed in the casing A, and communicating with the boiler, said passage conveying the live steam through the partition *c'* and plate D to the diaphragm, and by exerting a pressure thereon operates suitable mechanism within the gage-box.

In the side of the casing A fits the screw-plug H, serving as a bearing for the valve-stem I, passing centrally through it and pro-

vided on its inner end with the valve J, for opening or closing the passage G, and provided on its outer end with the hand-wheel K. On the end of said plug H fits a cap, *h*, for forming a steam-tight joint. In the opposite side of the casing A fits the screw-plug N, provided with a port, L, leading from the chamber on the opposite side of the partition *c'*, said passage L communicating with the passage G through the passage M.

In the opening *i* fits the valve-stem O, the forward end thereof being provided with a valve, P, adapted to open and close the passage L, the stem being of such size that the steam can easily circulate around it and escape into the open air through the opening *i*, the opposite end of the stem being provided with a hand-wheel. It will now be readily seen from the above description that when the gage is not in use the valve J may be closed and the valve P opened, which will allow all the steam within the casing A to escape, thereby relieving the diaphragm of the pressure, and allowing it to assume its normal position, and also preventing the steam in cold weather from freezing therein, and thereby injuring the diaphragm. If it is desired to clean the chamber C of any sediment, both valves are opened and the steam rushing through the chamber will force all such sediment out through the passages L and *i*.

My invention is exceedingly simple in construction, is of few parts, and can be manufactured at a small initial cost.

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

1. The combination, with a casing provided with a steam-chamber, of a plate secured in said casing over the chamber and provided with an opening, a diaphragm secured above the plate, a washer located between the plate and diaphragm, forming a chamber between them, said casing being provided with an inlet and outlet passage connecting with the steam-chamber, and valves for opening and closing said passages, substantially as set forth.

2. The combination, with the casing having a steam-chamber formed therein, of a plate secured above the chamber and provided with an opening, a diaphragm secured above the

plate with a steam-space between them, said casing being provided with an inlet and outlet to the chamber, and with a passage connecting them, and valves for opening and closing said inlet and outlet, substantially as set forth.

3. The combination, with the casing A, provided with the chamber C, having the partition *c'*, and passages G, L, and M, of the plate D, washer E, diaphragm F, and valves for operating the passages G and L, substantially as set forth.

4. The combination, with the casing A, provided with the chamber C and passages G, L,

and M, of the plate D, washer E, diaphragm F, ring *f*, screw-plugs H and N, and valves J P, all of the above parts being constructed and adapted to operate substantially in the manner and for the purpose set forth.

Signed at Mansfield, in the county of Richland and State of Ohio, this 30th day of January, A. D. 1885.

GEORGE W. BROWN.

Witnesses:

THOS. E. BARROW,
J. P. HENRY.