

(No Model.)

M. J. McCARTER.
GAGE COCK.

No. 445,474.

Patented Jan. 27, 1891.

Fig: 1.

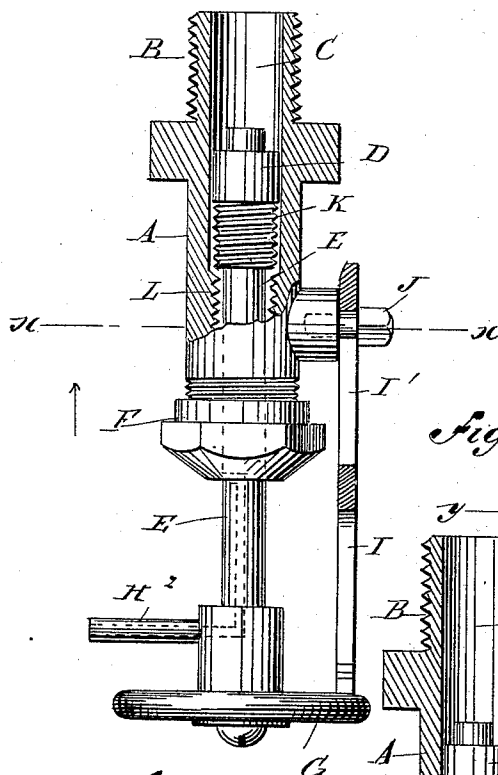


Fig: 2.

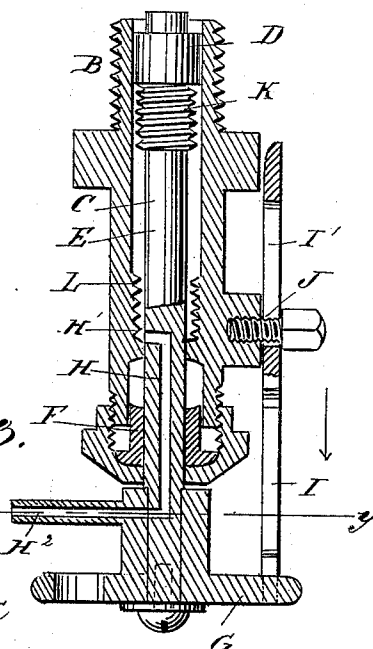


Fig: 3.

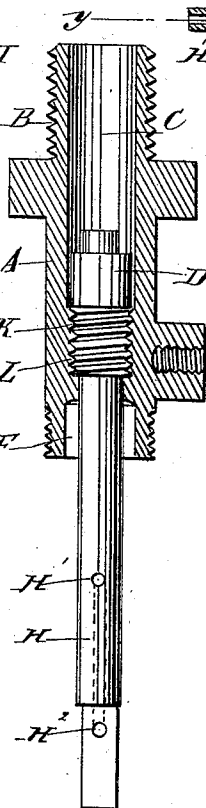


Fig: 4.

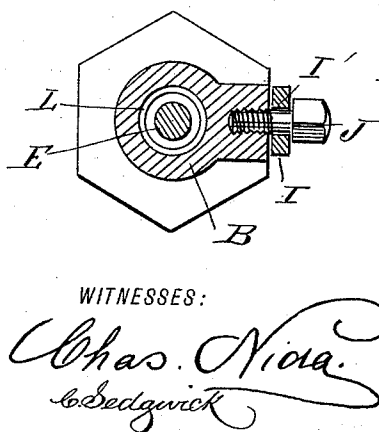
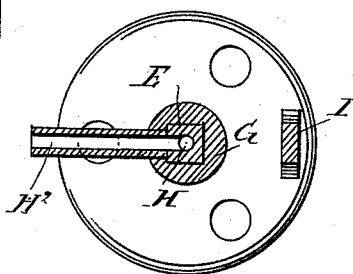


Fig: 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

MARSHALL J. McCARTER, OF NORRISTOWN, PENNSYLVANIA.

GAGE-COCK.

SPECIFICATION forming part of Letters Patent No. 445,474, dated January 27, 1891.

Application filed July 3, 1890. Serial No. 357,615. (No model.)

To all whom it may concern:

Be it known that I, MARSHALL J. McCARTER, of Norristown, in the county of Montgomery and State of Pennsylvania, have invented a new and Improved Gage-Cock, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved gage-cock which is simple and durable in construction, not liable to get out of order, and adapted to be packed at any time when in use and under boiler-pressure.

The invention consists of a piston fitted to slide loosely in a casing or barrel, a rod extending from the piston through the stuffing-box into the said barrel and provided with a bore adapted to connect the interior of the barrel with the outside.

The invention also consists in certain parts and details and combinations of the same, as will be described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement with parts in section. Fig. 2 is a sectional side elevation of the same in a different position. Fig. 3 is a sectional side elevation of the improvement as arranged for packing the barrel when under pressure. Fig. 4 is a sectional plan view of the improvement on the line *x x* of Fig. 1, and Fig. 5 is a similar view of the same on the line *y y* of Fig. 2.

The improved gage-cock is provided with a casing or barrel A, having at one end an exterior thread B, adapted to screw into the shell of the boiler or adapted to connect with a pipe connected with the boiler. The casing A is provided with a central bore C, open at one end to the interior of the boiler, so that water or steam under pressure can pass into the said bore. A piston D is fitted to slide loosely in the bore C and is held on a rod E, passing through a stuffing-box F, held in the opposite end of the casing A from that which the steam or water enters under pressure.

On the outer end of the rod E is arranged a suitable handle G, for conveniently manipu-

lating the rod E and its piston D, as herein after more fully described. In the rod E is produced a bore H, having one end H' adapted to open into the bore C on the lower side of the piston D, as shown in Fig. 2, the other end H² of the bore connecting at all times with the outside. When the piston D is in its innermost position, as shown in Fig. 1, the end H', as well as the end H², is connected with the outside, so that steam or water passing the piston D in the bore C cannot pass to the outside on account of the stuffing-box F packing the rod E tightly.

On the handle G is secured a guide I, provided with a slot I', through which passes a screw J, screwing in a lug formed on the casing A. The guide I serves to prevent the rod E and its piston D from turning, at the same time limiting the upward or downward movement of the same. By this arrangement the outlet H² always stands in one direction, so that the operator when trying the boiler is not scalded by the escaping steam or water.

On the rod E, near the piston D, is formed a thread K, adapted to screw into a thread L, formed in the bore C, near to or at the bottom of the same. The thread K is so arranged in relation to the guide I that when the gage-cock is in its normal position, as shown in Fig. 1, the inner end of the thread K is a short distance above the other end of the thread L, so that the two threads do not touch or meet each other. The screw J then engages the upper end of the slot I', so that a further downward movement of the rod E is prevented and the threads K and L are not injured.

The operation is as follows: When the several parts are in position, as shown in Figs. 1 and 2, and the gage-cock is applied on the boiler, then the steam or water under pressure passes into the end of the bore C, presses against the piston D, and forces the latter downward until the upper end of the slot I' of the guide I strikes against the screw J. When the piston D and its rod E are in this position, as shown in Fig. 1, the bore H is disconnected at its upper end H' from the bore C, and consequently no steam or water can pass from the said bore to the outside. Now when the operator desires to try the boiler he moves the handle G upward until the hub

of the handle strikes against the stuffing-box F, as illustrated in Fig. 2. The upper end H' of the bore H now connects with the bore C, so that the steam and water passing by the piston D from the boiler will pass into the bore H and out through the end H², so that the operator can see whether steam or water escapes. The moment the operator releases the pressure on the handle G, the steam or water under pressure in the boiler acts on the piston D and forces the latter downward into the position shown in Fig. 1, so that the bore H is again disconnected from the bore C. Now, in case the packing F is worn out, so that steam or water leaks past the rod E, and it is desirable to repack the barrel, then the operator first removes the screw J from the guide I, then takes hold of the handle G and turns the latter, so that the thread K on the rod E screws in the female thread L in the barrel A until the piston D strikes against the upper end of the thread L and prevents further outward movement of the said rod E. When the thread K has engaged the thread L, communication between the bore C and the stuffing-box is shut off, so that the operator can now conveniently remove the gland of the stuffing-box F, repack the latter, and again screw the stuffing-box on without any danger of being scalded by leaking steam or water. When this has been accomplished, the handle G is turned in an opposite direction, so as to unscrew the rod E from the thread L. When the rod I is again in line with the boss on the barrel A, the screw J is again inserted and the device is again ready for use, as above described. Thus it will be seen that no valve whatever is necessary in the construction or operation of this device, and said device can

be repacked at any time when in use and under boiler-pressure. It will further be seen that in order to actuate the device it is only necessary to press the handle H upward by hand or by a suitable tool, the return motion being accomplished by the pressure of the steam or water in the boiler.

In this improved gage-cock no valve or seat is used, and it has neither lever, crank, nor weight in order to operate it.

The device is not liable to clog or close up with sediment, as the piston forces out any deposit that may collect while the cock is shut.

In case of leakage, all that is necessary is to repack the device, as above described.

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

1. In a gage-cock, the combination, with a barrel having a central bore and a screw-thread formed therein, of a piston fitted loosely in the said bore, and a rod extending from the said piston and provided with a thread adapted to engage the said bore-thread, substantially as shown and described.

2. In a gage-cock, the combination, with a barrel having a central bore and a screw-thread formed therein, of a piston fitted loosely in the said bore, a rod extending from the said piston and provided with a thread adapted to engage the said bore-thread, and a stuffing-box held on the said barrel and through which is adapted to pass the said rod, substantially as shown and described.

MARSHALL J. McCARTER.

Witnesses:

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