No. 865,535. PATENTED SEPT. 10, 1907.

J. G. SAXE.

GAGE COCK.

APPLICATION FILED APR. 19, 1906.

Fig. 1.

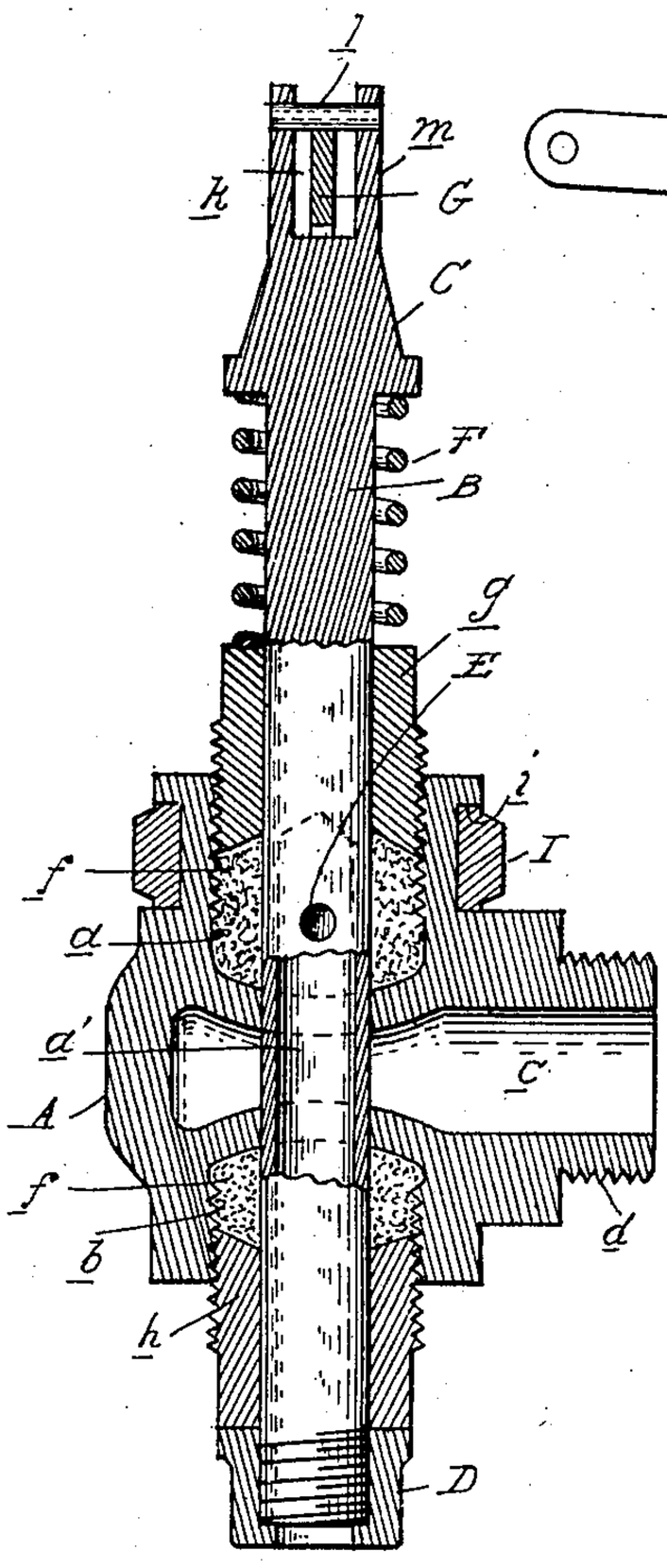
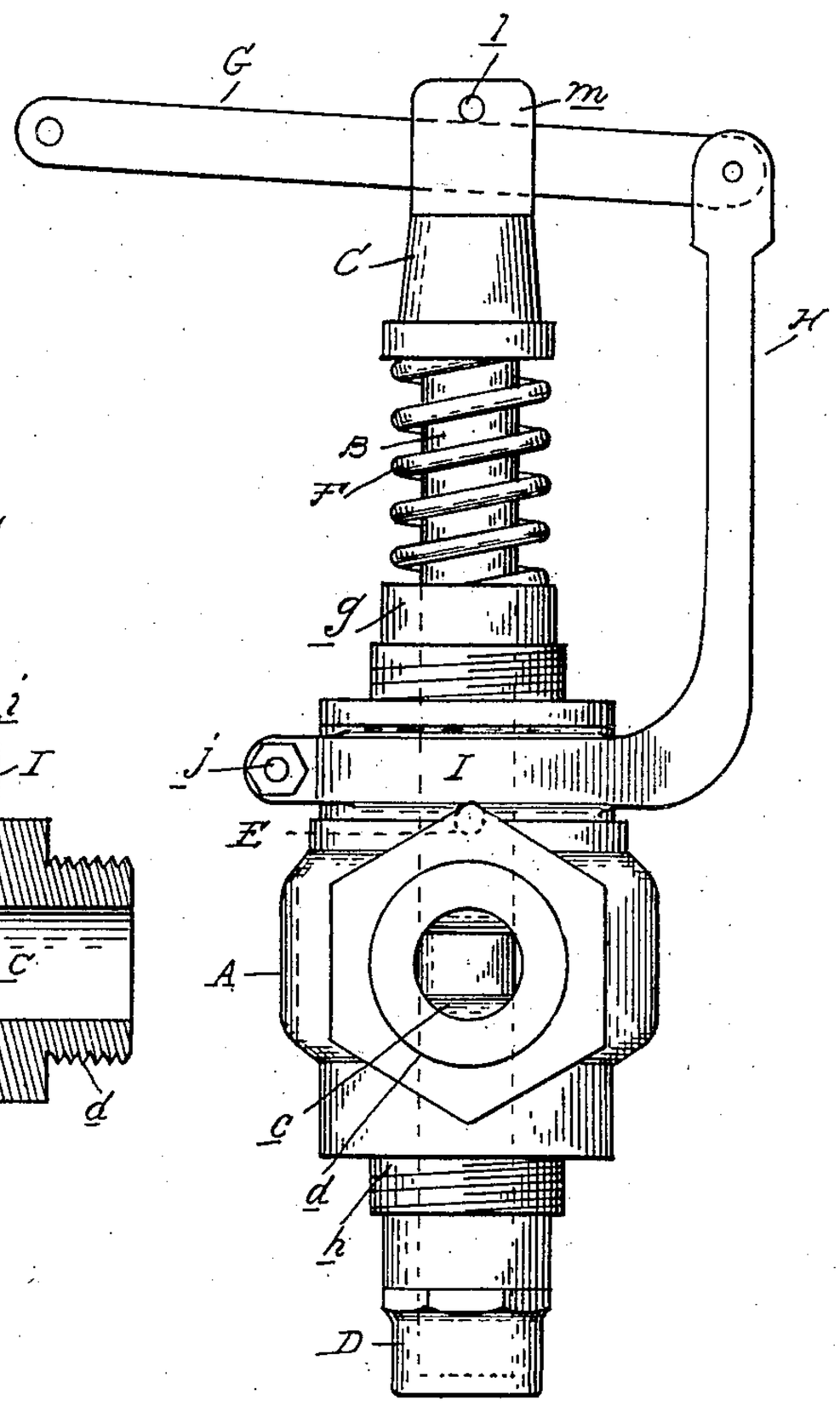



Fig. 2.




Witnesses
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# UNITED STATES PATENT OFFICE.

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## GAGE-COCK.

No. 865,535. Specification of Letters Patent. Patented Sept. 10, 1907.

Application filed April 19, 1906. Serial No. 312,703.

*To all whom it may concern:*

Be it known that I, JOHN G. SAXE, a citizen of the United States of America, residing at Port Huron, in the county of St. Clair and State of Michigan, have invented certain new and useful Improvements in Gage-Cocks, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates particularly to a gage cock for steam boilers and consists in the novel and peculiar construction of the device, and in the arrangement and combination of its parts as more fully hereinafter set forth.

In the drawings illustrating the invention, Figure 1 is a sectional view through the gage cock, with the plunger partly in elevation; Fig. 2 is a view in side elevation taken at right angles to Fig. 1.

In the drawings thus briefly described, A represents the casing having oppositely-disposed openings *a b* formed in its ends, and an inlet *c* intermediate the openings provided with a threaded nipple *d* adapted to be inserted in the boiler.

Within the openings described is placed packing material of any suitable character, designated by the reference-letter *f*, which is held in place by suitable glands *g h* fitting within the openings, as shown in Fig. 1. To secure the desired tightness of packing, the inner ends of the openings *a*, *b*, are tapered and the inner ends of the glands *g*, *h*, are provided with tapered recesses, as shown in Fig. 1. Also to provide for the reception of the requisite amount of packing material and sufficiently large glands and still retain the comparatively small size of casing, I contract the inlet *c* between the openings *a*, *b*, as clearly shown in Fig. 1.

Arranged within the casing and extending through and beyond the packing material and glands is a plunger B, having a chamber *a'* therein extending through one end forming a discharge passage. The plunger terminates at its upper end in a head C, and carries at its lower end a tubular nut D, which forms a stop limiting its upward movement and also forms a nozzle for said discharge passage.

E is an inlet port leading to the discharge passage in the plunger and adapted upon movement of the latter to establish communication between the interior of the casing and the outside atmosphere.

Interposed between the head C and the end of the gland *g* is a spiral spring F which holds the plunger in its upward position, with its inlet port E within the packing and normally out of communication with the casing inlet.

An operating member, preferably in the form of a handle or lever, as G, is employed for reciprocating the plunger, pivoted to a support H cast integral preferably with a clamping ring I, which engages the upper portion of the casing and is held against longitudinal movement by a shoulder *i*. *j* represents a bolt or other suitable securing device for holding the clamping ring in proper engagement with the casing and to permit of horizontal adjustment. The lever described extends from the arm or support H transversely of the plunger and engages a slot *k* formed in the plunger head, the lever being held from displacement by a pin, as *l*, extending through the furcations *m*.

In practice, the gage cock is applied to the boiler in the usual manner, the plunger inlet being normally out of communication with the casing interior. Upon the depression of the lever the plunger moves downwardly until its inlet port passes beyond the packing and into communication with the interior of the casing, when the steam from the inlet enters the plunger and is discharged therefrom through its lower end.

By reason of the spiral spring, the return of the plunger to its initial and inoperative position is automatically effected, or, if desired, the spring may be dispensed with and the upward movement of the plunger effected through its detachable connection with the operating lever. In practice, both the spring and the detachable connection referred to is employed, as in the event that the spring becomes worn and ineffective the plunger can still be readily returned to its initial position by hand. The detachable connection afford means whereby the parts may be disconnected to permit of the removal of the plunger for the purpose of cleansing or re-packing.

Attention is especially directed to the fact that by reason of the peculiar arrangement of the parts the steam pressure upon the plunger is uniform, enabling the latter to be operated in one direction as well as the other without the necessity of overcoming the steam pressure; furthermore, the plunger, working within the stuffing-boxes dispenses entirely with the necessity of a valve-seat, thus simplifying the construction and eliminating the possibility of escape of steam by reason of the dirt accumulating on the seat and preventing the valve from properly closing.

The extent of reciprocation of the plunger may be regulated to a nicety by means of the stop-nut D, while the construction of the entire device is such that the boxes may be easily and readily re-packed when necessary.

What I claim as my invention is,—

In a gage cock, the combination with a casing having an inlet passage and opposed transverse passages communicating therewith, said inlet passage being restricted

between said transverse passages, of annular packing glands in said transverse passages, and a tubular valve extending through said glands and opposed passages and having an inlet opening arranged to be registered with the restricted portion of said inlet passage, a rigid stop on one end of said valve, a spring sleeved on said valve and having its opposite ends bearing against said stop and one of said glands, a removable tubular stop for the other end of said valve forming an outlet nozzle and arranged to seat against the other gland and rotatably adjustable means for operating said valve.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN G. SAXE.

Witnesses:
HUGH H. HART,
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