

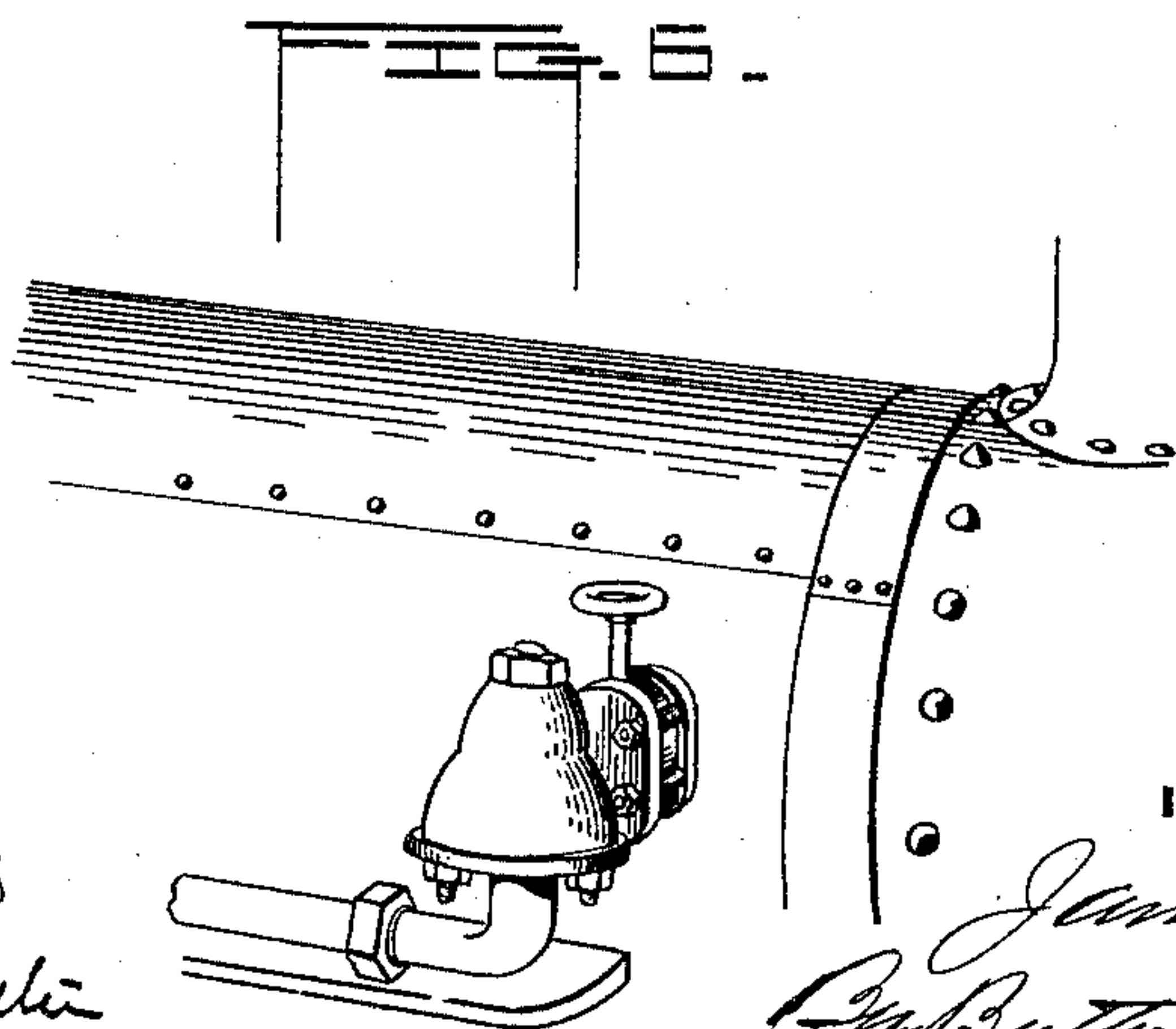
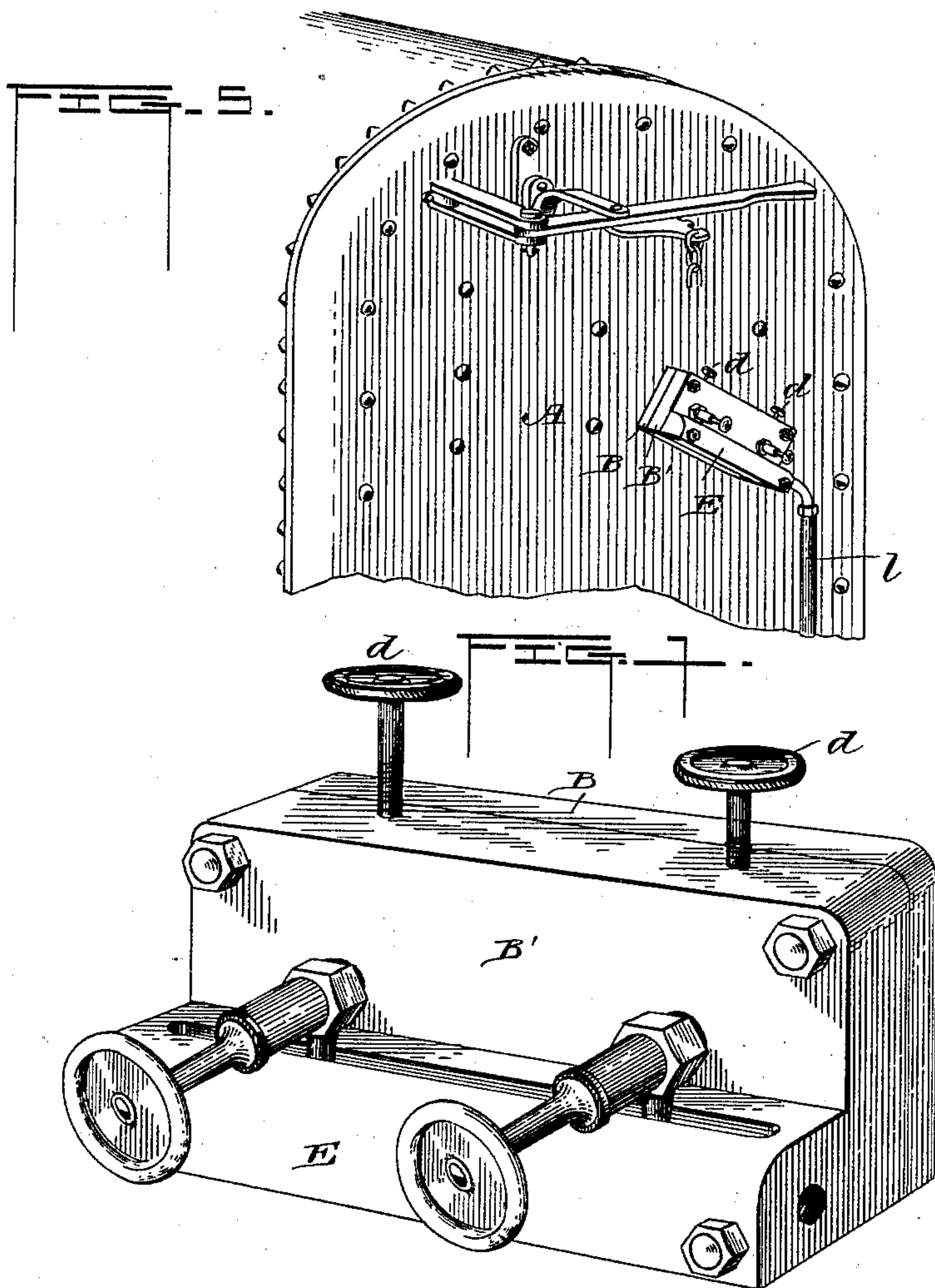
(No Model.)

2 Sheets—Sheet 1.

J. S. BOES.
CUT-OUT VALVE FOR GAGE COCKS.

No. 465,091.

Patented Dec. 15, 1891.



WITNESSES

L. G. Comerford
Harry Wintichall

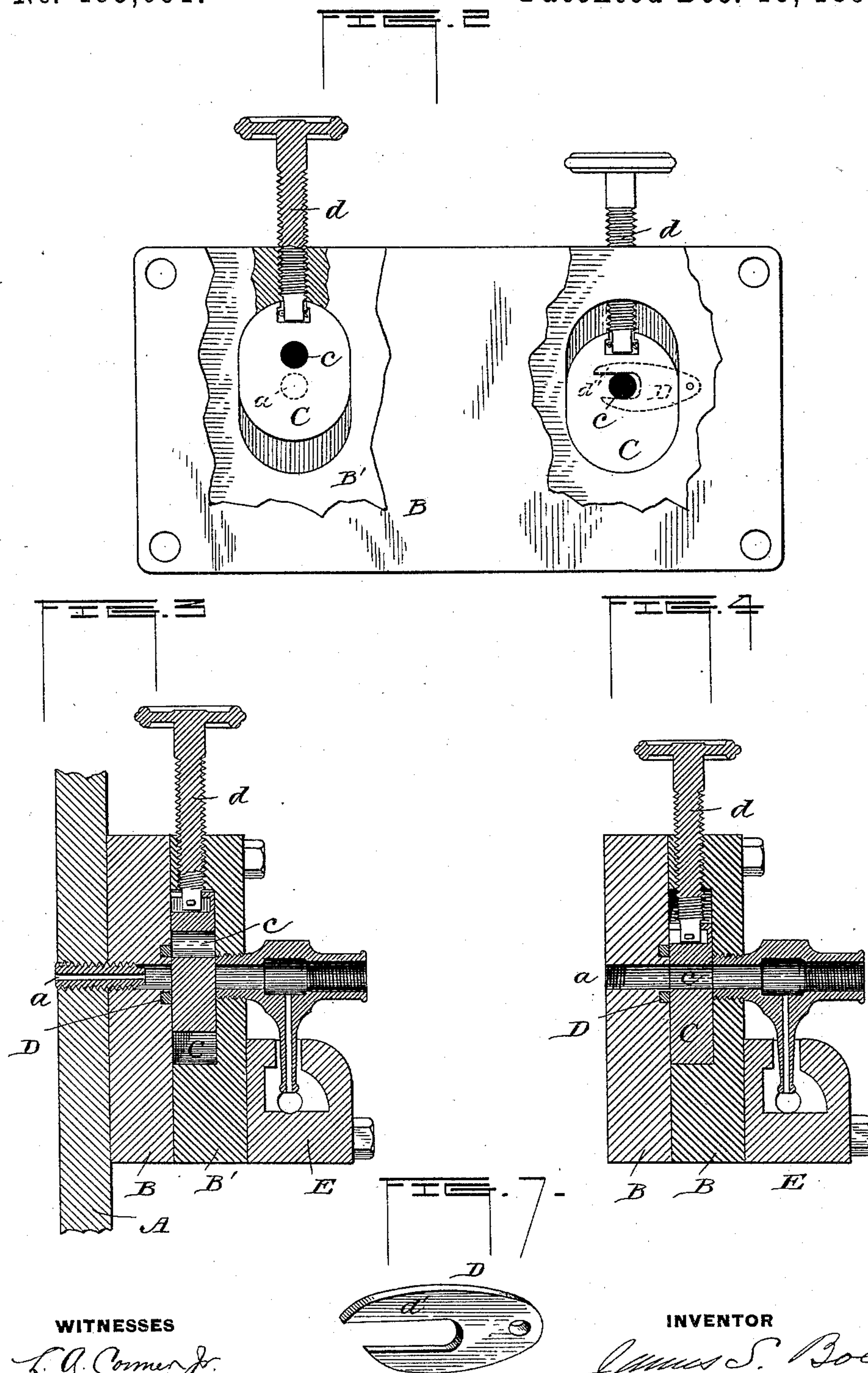
INVENTOR

James S. Boes
By Butternut Hall & Brown
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UNITED STATES PATENT OFFICE.

JAMES SHELTON BOES, OF CLIFTON FORGE, VIRGINIA.

CUT-OUT VALVE FOR GAGE-COCKS.

SPECIFICATION forming part of Letters Patent No. 465,091, dated December 15, 1891.

Application filed February 26, 1891. Serial No. 382,962. (No model.)

To all whom it may concern:

Be it known that I, JAMES SHELTON BOES, a citizen of the United States, residing at Clifton Forge, in the county of Alleghany and State of Virginia, have invented certain new and useful Improvements in Cut-Out Valves for Gage-Cocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide a simple and effective cut-out valve to be applied to gage-cocks and check-valves of steam-boilers, particularly such as are designed to be used in connection with steam-engines, whereby a defective gage-cock or check-valve may be readily removed and ground, repaired, or replaced with safety to the attendants or occupants of the cab when used upon a steam-engine without the necessity of blowing off steam and extinguishing fires, as is now the common practice in case the gage-cock or check-valve of a steam-engine becomes defective or leaks.

To this end my invention consists in the improved construction and arrangement of devices, all as hereinafter described, and particularly pointed out in the claims at the end of this specification.

In the accompanying drawings, representing my invention, similar letters of reference are used to designate similar parts in the several figures.

Figure 1 is a perspective view of the valve-casing, with my improvements connected therewith, adapted to be attached to the boiler. Fig. 2 is a longitudinal broken section through the valve-casing, showing the cut-out valves in different positions. Fig. 3 is a vertical cross-section on the line xx of Fig. 2. Fig. 4 is a similar section on the line $x'x'$ of Fig. 2. Fig. 5 is a perspective view showing the valve-casing and cut-out attachments applied to the gage-cock of a steam-boiler. Fig. 6 is a similar view showing the cut-out applied to a check-valve. Fig. 7 is a perspective view of the spring-plate, which holds the cut-out valve in place.

In carrying out and into practice my invention I propose to employ a suitable casing for the reception of the cut-out valve and the at-

tachments of the gage cock or cocks, which casing is adapted to be removably secured to the head A or other suitable part of the boiler in the manner indicated in Fig. 5; but of course the cut-off valve may be applied to gage-cocks or check-valves without the necessity of using a casing of the described construction, and the style of the casing may be varied to suit the requirements of the use to which the invention is to be put in any particular case, as instanced in the application of the device to a check-valve, as shown in Fig. 6. The said casing preferably consists of two rectangular plates B B', which may be secured together by bolts, as shown, and attached to the boiler in any suitable manner, being shown in Fig. 3 as secured by the nipples or screw-plugs a , which are provided with suitable steam-passages leading to the gage-cocks and are screwed into the boiler and the plate B, as shown in said figure. The plate B' has a recess or countersink B', which is preferably elongated and terminates in curved bottom and top walls, and within which is seated a slide-valve which preferably consists of a plate or disk having the general shape of said countersink, so as to fit snugly and tightly therein, with capability of adjustment across the path of the water-passages through the casing by means of the screw-threaded bolt d , which is screwed into the top of the casing or plate B' and may be secured to the valve in any suitable manner, as by the slot-and-bolt connection, forming a swivel-joint between the valve and rod, as indicated in Figs. 3 and 4. The cut-out valve C has a port c and is placed within the casing, so that it may be properly adjusted to open and close the steam or water passage leading from the boiler to the usual gage-cock or from the injector to the ordinary check-valve, the cut-out being located between the boiler and the gage-cock or check-valve, so that the steam or water passage may be closed or opened accordingly as the cut-out is raised or lowered, in the manner indicated in Figs. 3 and 4, respectively, the port c in the latter position of the valve being adapted to register with said passage.

In order to prevent leakage and to hold the cut-out valve firmly in place with its outer face resting against the inner surface of the coun-

tersunk casing in whatever position of adjustment the valve may be, and so that the outer face of the valve will always fit smoothly and tightly against said inner wall of the casing or plate B', I provide a spring-plate D, which is preferably formed with a forked end *d'* and is seated in a countersink or recess in the plate B of the casing, behind the cut-out valve, but so as to press firmly thereon and hold the same against the opposite wall of the inclosing recess. The forked end *d'* of this spring-plate projects across the face of the valve beyond the port *c*, and the opening of the fork is adapted to register with the steam or water passage and the port in the cut-out valve, when the latter is open, as indicated in Fig. 2, so that an extended bearing-surface is provided without interfering with the free passage of the fluid when the cut-out is open. I also attach to the front of the casing a drip receptacle or trough E, which is designed to conduct the water of condensation or waste from the gage cock or cocks into a suitable pipe or tube, as at *e* in Fig. 5, from whence it may be conducted to any suitable place or receptacle for the same.

By the above arrangement I provide a simple, durable, inexpensive, and thoroughly effective cut-out valve for gage-cocks and check-valves, which is adapted to operate in a very satisfactory manner so as to cut off the steam or water when it is desired to remove the gage-cock or check-valve for the purpose of grinding or repairing the same without rendering it necessary to blow off steam or extinguish the fire in the fire-box in order to permit this to be done, as is now the common practice with devices of this character now in general use.

I am aware that it has heretofore been proposed to place an ordinary turn-plug or stop-cock in the stem or body of the gage-cock so as to interrupt the passage of steam or water from the boiler to the gage-cock; but such devices are subject to leakage and fail to accomplish the desired results, and I therefore do not claim any such constructions broadly.

In my improved construction the elongated cut-out valve is held firmly to its seat by the forked spring-plate, the forked portion of which straddles the steam-passage, and maintains a firm bearing against the sliding valve so as to exert a direct force in pressing the valve to its seat in every adjustment of the valve, and there is no part of the cut-out valve exposed, the same being inclosed within a recess in the two-part casing, which may be separated to permit the removal of the valve and its seating spring, and the pressure of the fluid with the described arrangement is exerted in forcing the valve to its seat when the steam-passage is closed. By this means

all danger of leakage is prevented, and the action of the cut-out is rendered positive and effective for the purposes stated.

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

1. A cut-out attachment for gage-cocks and check-valves for steam-boilers, comprising a valve-casing, an adjustable sliding valve seated within an elongated recess in said casing and adapted to be moved back and forth across the steam or water passage leading from the boiler to the gage-cock or check-valve through said casing, means for adjusting said cut-out valve, and a spring-plate for holding the cut-out valve firmly to its seat, substantially as described.

2. In combination with a steam-boiler and a gage-cock or check-valve connected therewith, the adjustable sliding cut-out valve interposed in the steam or water passage between the boiler and the cock or check-valve, means for adjusting said cut-out valve, and a forked spring-plate adapted to hold the cut-out valve firmly to its seat, substantially as described.

3. In combination with the boiler, the removable valve-casing, the gage-cock attached thereto, the sliding cut-out valve adjustably seated in a recess in said casing, means for adjusting said valve, and a spring-plate adapted to hold the cut-out valve firmly to its seat, substantially as described.

4. An attachment for steam-boilers, comprising the removable valve-casing composed of two recessed portions having steam-passages through the same, the adjustable sliding cut-out valve seated within the recess in said casing across the steam or water passage therein, the gage-cock connected with said passage, and means for adjusting the cut-out valve so as to open and close the passage leading to said gage-cock, substantially as described.

5. The combination of the boiler, the removable valve-casing having a suitable valve-recess and steam or water passage therein, the gage-cock connected with said passage, the sliding cut-out valve seated within the recess in said casing and adapted to be adjusted so as to open and close said passage, a spring-plate seated at the back of the valve in said recess for holding the cut-out valve to its seat, and means for adjusting said valve, substantially as described.

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

JAMES SHELTON BOES.

Witnesses:

B. H. THOMAS,
W. I. STEELE.