T. KELLY & C. L. GERDS.

TRY COCK FOR STEAM BOILERS.

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952,036.

Patented Mar. 15, 1910.

Fig. 1

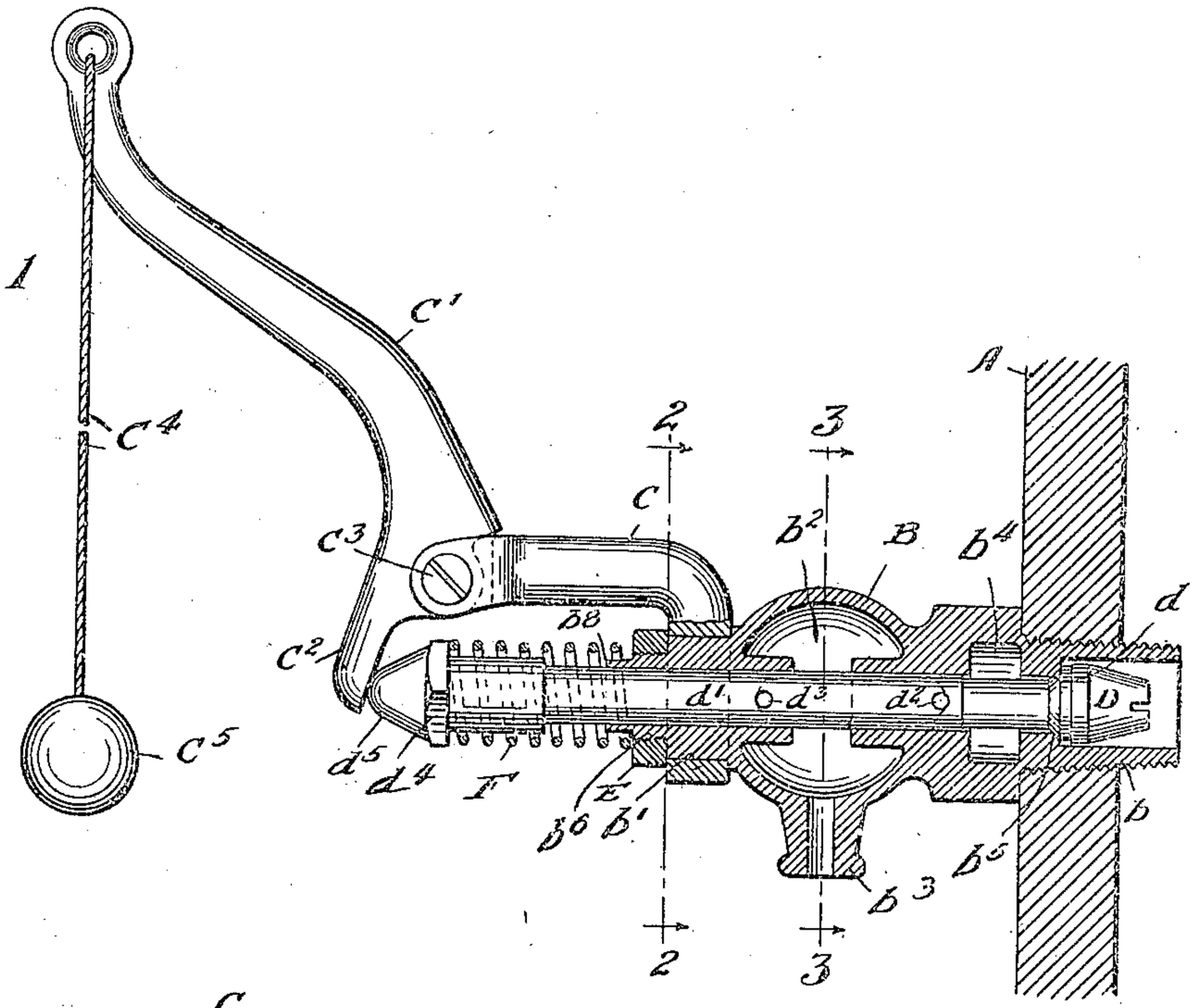


Fig. 2

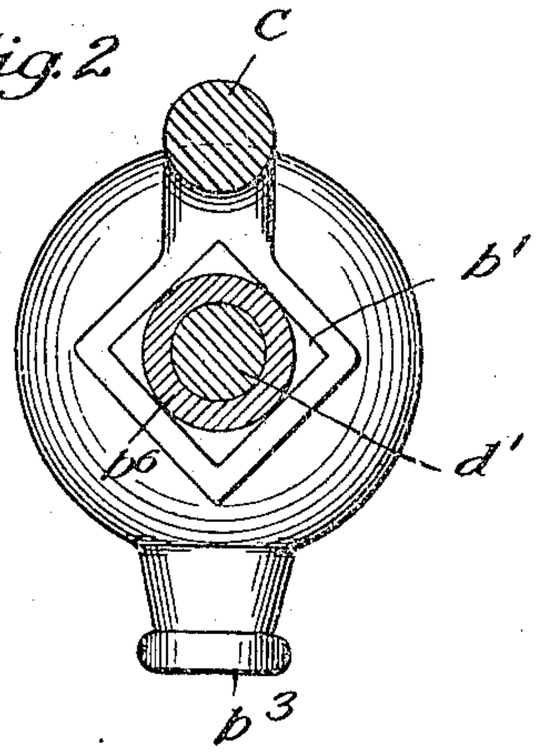


Fig. 3

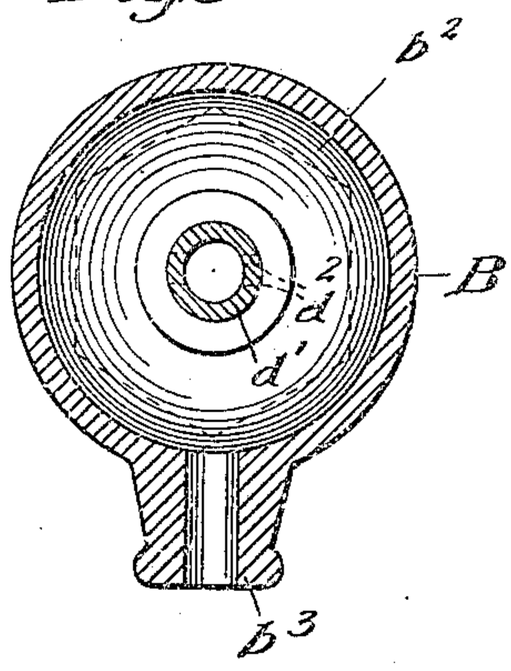
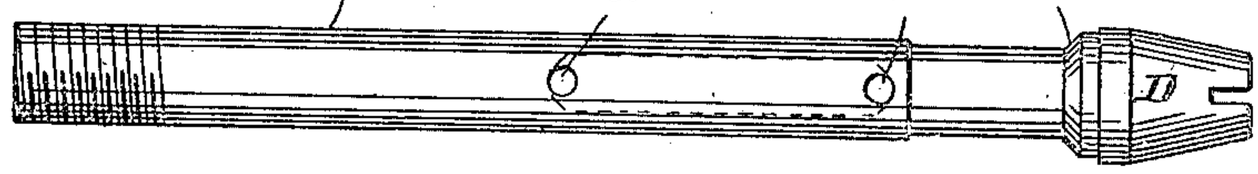


Fig. 4



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UNITED STATES PATENT OFFICE.

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TRY-COCK FOR STEAM-BOILERS.

952,036. Specification of Letters Patent. Patented Mar. 15, 1910.

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To all whom it may concern:

Be it known that we, THOMAS KELLY and CHARLES L. GERDS, citizens of the United States, said THOMAS KELLY residing in Milwaukee, in the county of Milwaukee, in the State of Wisconsin, and said CHARLES L. GERDS residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Try-Cocks for Steam-Boilers, of which the following is a specification.

Our invention relates to improvements in the construction of try-cocks for steam boilers, one or more of which are usually employed below the ordinary water line, and one or more above the same, to enable the engineer to readily test the water in the boiler for safety against explosion.

Heretofore with the construction of boiler try-cocks commonly in use, difficulty is experienced by reason of the violently issuing steam and water speedily cutting out the valve seats in the valve and on the valve shell or body.

The object of our invention is to provide an improved construction of steam boiler try-cock which will practically overcome this difficulty or objection.

Our invention consists in the means we employ to practically accomplish this object or result; that is to say, it consists in a steam boiler try-cock comprising a valve shell or body having a screw threaded nipple adapted for insertion in the steam boiler head or shell, and furnished with a valve seat and an outlet chamber, and also furnished with a cushioning chamber between the valve seat and outlet chamber, and a valve having a valve seat adapted to engage the valve seat on the body or shell and provided with a hollow stem furnished with two ports therethrough, one communicating, when the valve is open, with the cushioning chamber and the other with the outlet chamber of the valve shell or body; so that the cushioning chamber, in connection with the restricted passage leading through the valve stem from the cushioning chamber to the outlet chamber will serve to prevent the steam or water issuing through the valve or try-cock with such violence as to cut or injure the valve seats.

Our invention further consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown and described and specified in the claims.

In the accompanying drawing, forming a part of this specification Figure 1 is a side elevation, partly in central longitudinal section, of a steam boiler try-cock embodying our invention; Figs. 2 and 3 are vertical cross sections on lines 2—2 and 3—3 of Fig. 1; and Fig. 4 is a detail view of the valve and valve stem.

In the drawing A represents the head or other portion of a steam boiler to which our improved try-cock is applied. B is the valve shell or body, the same having a screw threaded nipple b adapted for insertion in a screw threaded opening in the boiler head, and a square or rectangular shank portion b^1 for receiving the supporting arm C to which the operating lever C^1 is pivoted. The valve shell or body B is further provided with an enlarged outlet chamber b^2 and discharge nipple b^3, and a cushioning chamber b^4 interposed between the outlet chamber b^2 and the valve seat b^5. The valve D is provided with a valve seat d adapted to engage the valve seat b^5 of the shell or body. The valve D has a hollow stem d^1 furnished with two ports d^2 and d^3, the former adapted to communicate with the cushioning chamber b^4 and the latter with the outlet chamber b^2 when the valve is open, the hollow stem and these ports thus affording a restricted passage between the cushioning chamber and the outlet chamber when the valve is open, so that the cushioning chamber may effectively perform its function of preventing steam or water issuing with violence from the boiler and thus cutting out the valve seats d and b^5.

The lever supporting arm C is secured in position on the valve shell or body by a nut E engaging the screw threaded reduced portion b^6 of the valve shell or body B. The valve D is held closed by the steam or other pressure in the boiler and also by a spring F, which surrounds the valve stem and bears at its outer end against a threaded cap d^4 with which the valve stem d^1 is provided at its outer end, said cap having a rounded or cam-shaped head d^5 for engagement with the short arm C^2 of the operating lever C^1, which is hinged to the supporting arm C by a connecting pin C^3. The valve shell or body B is preferably furnished at its outer end with a reduced extension b^8 to

support the inner end of the spring free from the valve stem.

The operating lever C^1 is furnished with a pull-cord C^4 having a knob or handle C^5.

We claim:

1. In a steam valve try-cock, the combination with a valve shell or body having a threaded nipple adapted to enter the boiler, and provided with a valve seat, an enlarged outlet chamber and a cushioning chamber between the valve seat and the outlet chamber, of a sliding valve having a valve seat and a hollow stem furnished with two ports, one communicating, when the valve is open, with said cushioning chamber and the other with said outlet chamber of the valve shell or body and forming a restricted passage between said cushioning chamber and enlarged outlet chamber to prevent the steam or water violently issuing and cutting out the valve seats, substantially as specified.

2. In a steam valve try-cock, the combination with a valve shell or body having a threaded nipple adapted to enter the boiler, and provided with a valve seat, an enlarged outlet chamber and a cushioning chamber between the valve seat and the outlet chamber, of a valve having a sliding valve seat and a hollow stem furnished with two ports, one communicating, when the valve is open, with said cushioning chamber and the other with said outlet chamber of the valve shell or body and forming a restricted passage between said cushioning chamber and enlarged outlet chamber to prevent the steam or water violently issuing and cutting the valve seats, a supporting arm on said valve shell or body, and an operating lever having a short arm engaging the end of the valve stem, substantially as specified.

3. In a steam valve try-cock, the combination with a valve shell or body having a threaded nipple adapted to enter the boiler and provided with a valve seat, an enlarged outlet chamber and a cushioning chamber between the valve seat and the outlet chamber, of a sliding valve having a valve seat and a hollow stem furnished with two ports, one communicating, when the valve is open, with said cushioning chamber and the other with said outlet chamber of the valve shell or body and forming a restricted passage between said cushioning chamber and enlarged outlet chamber to prevent the steam or water violently issuing and cutting the valve seats, a supporting arm on said valve shell or body, and an operating lever having a short arm engaging the end of the valve stem, a spring surrounding the valve stem and a cap on the end of the valve stem against which one end of the spring bears and which is directly engaged by said short arm of the operating lever, substantially as specified.

4. In a try-cock, the combination with a valve body, having a threaded nipple, a valve seat, a cushioning chamber and an enlarged outlet chamber, of a sliding valve having a valve seat and a stem furnished with a restricted passage communicating at one end thereof with said cushioning chamber and at the other end thereof with said outlet chamber when the valve is open, a spring coöperating with the steam pressure of the boiler to hold the valve closed and a supporting arm and lever for opening the valve, said enlarged outlet cushioning chamber and the restricted passage between said chambers serving to prevent the steam from violently issuing and cutting the valve and its valve seat, substantially as specified.

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