

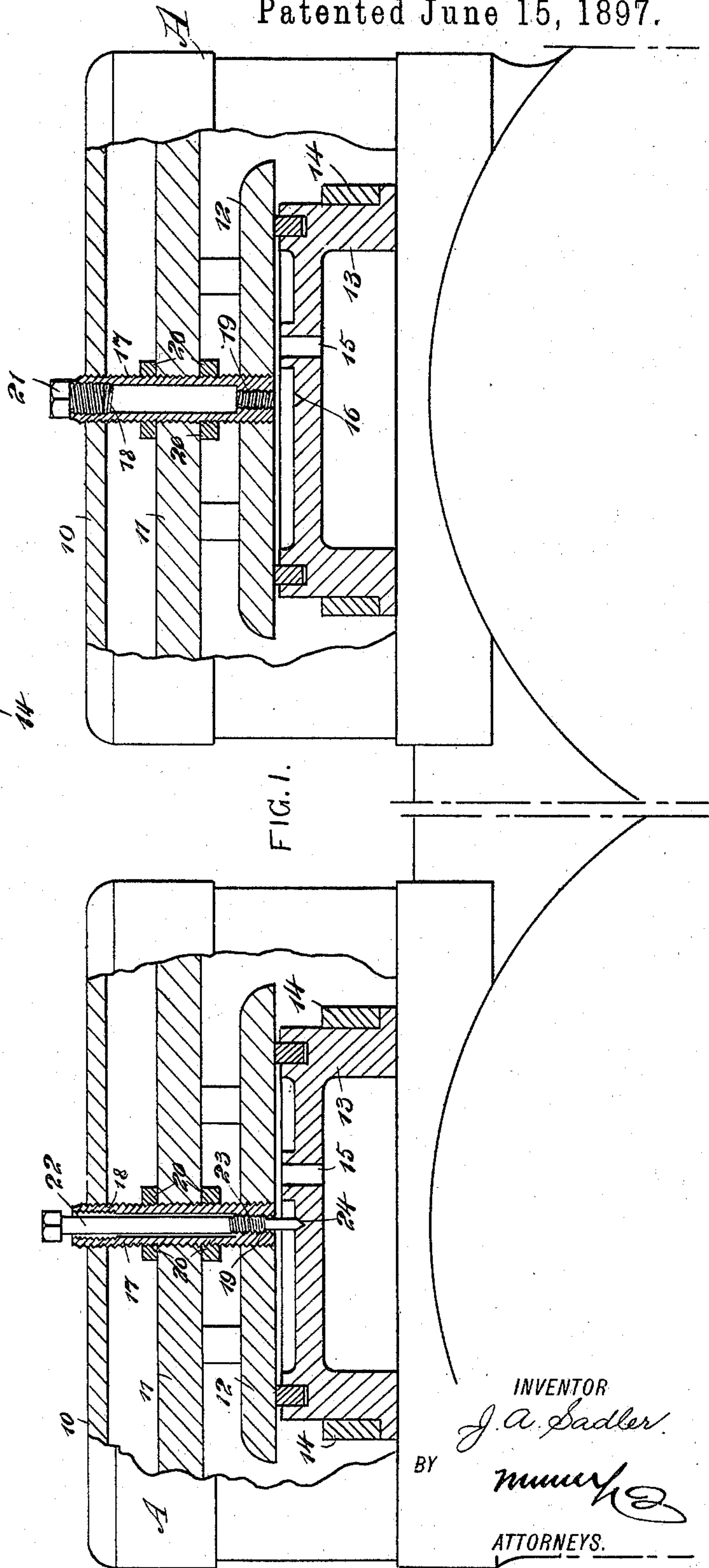
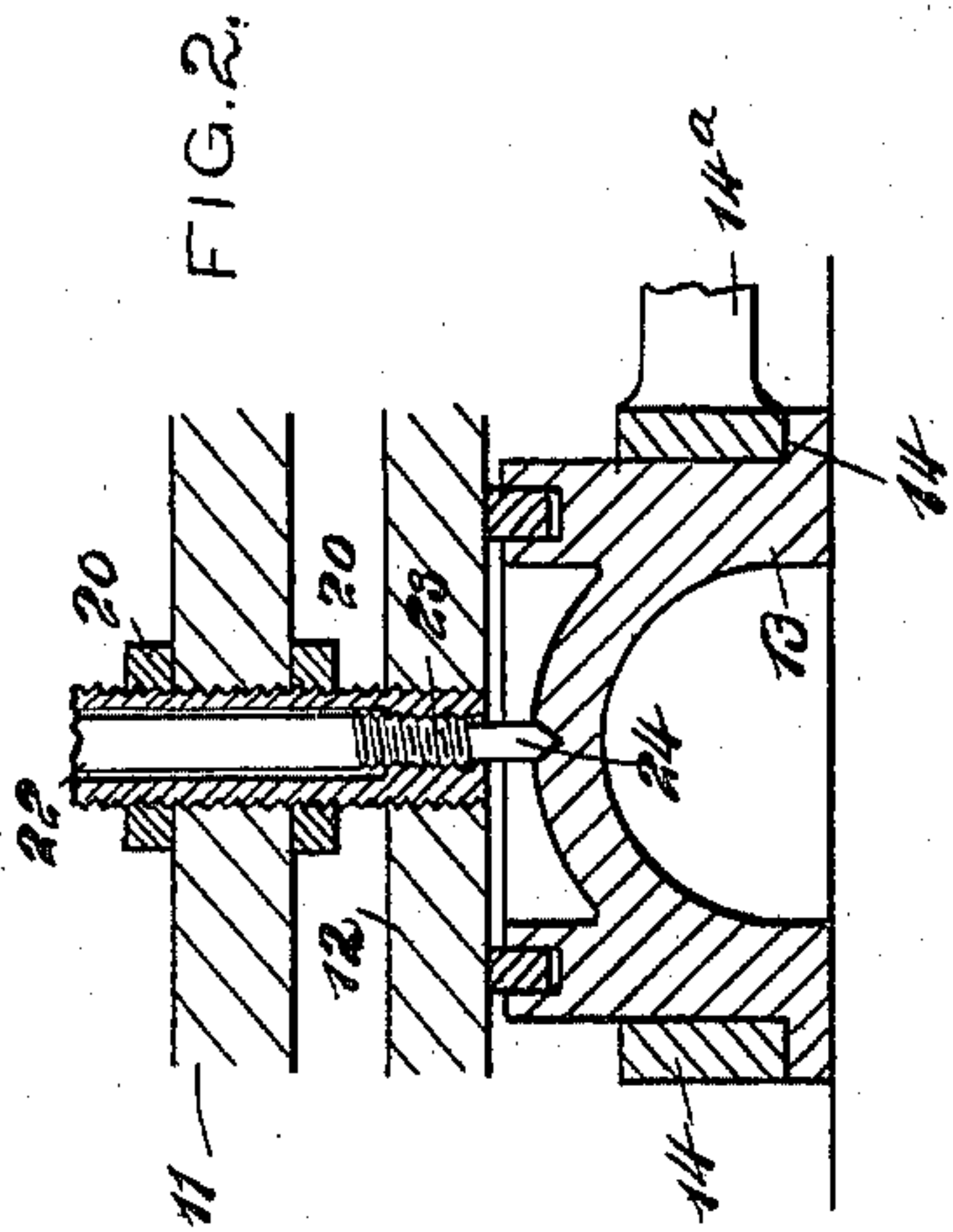
(No Model)

J. A. SADLER.

BALANCED VALVE TESTING AND LOCKING DEVICE.

No. 584,651.

Patented June 15, 1897.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES ALEXANDER SADLER, OF CLARENDON, TEXAS.

BALANCED-VALVE TESTING AND LOCKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 584,651, dated June 15, 1897.

Application filed September 2, 1896. Serial No. 604,650. (No model.)

To all whom it may concern:

Be it known that I, JAMES ALEXANDER SADLER, of Clarendon, in the county of Donley and State of Texas, have invented a new and Improved Balanced-Valve Testing and Locking Device for Locomotives, of which the following is a full, clear, and exact description.

The object of the invention is to provide a simple testing and locking device for balanced valves of locomotives, the testing device being so placed with relation to the valve that it may be accurately determined whether the valve on one or the other side of the engine is leaking without removing the outer plates from the valve-casing or removing the covers from the steam-chest.

Another object of the invention is to provide a means whereby, for example, when the engine is to be uncoupled on the road the balance-valve may be securely locked and the locking device applied or removed in a convenient and expeditious manner.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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

Figure 1 is a sectional view through the valves of the two cylinders of a locomotive, the testing block or device being shown as in position in one of the casings and the stop-pin or stop device being in position in the casing of the opposite valve; and Fig. 2 is a longitudinal section through a portion of one of the casings and balance-valve, illustrating the stop-pin in locking engagement with the valve.

In carrying out the invention the casing A for the valve is of any desired construction, being provided with the usual outside cover 10. Within the said casing the steam-chest cover 11 is located, likewise the balance-valve plate 12 and the balance-valve 13, the latter having applied thereto the ordinary yoke 14 and rod 14^a. In the balance-valve, however, usually at one side of its center at the top, a release-opening 15 is produced, and likewise in the top of the balance-valve at a central point a cavity 16 is made, the said

cavity being ordinarily of angular or V formation. A sleeve 17 is exteriorly threaded and is screwed into suitable openings made in the steam-chest cover 11 and balance-valve plate 12. The interior of the sleeve, near its outer end, has a thread 18 produced therein, and the bore of the sleeve is practically of uniform width, except at its lower end, where the bore is reduced, and its wall contains a thread 19, as is particularly shown at the right in Fig. 1. The sleeve is firmly held in place through the medium of jam-nuts 20, located one at each side of the steam-chest cover and in engagement with the upper and the lower faces of the same.

The chest-plug 21 is normally screwed in the upper or outer end of the sleeve 17, and the stop-pin 22 that is employed is provided with a suitable head and is of such diameter that it will fit loosely in the sleeve 17. Near the lower end of the pin an exterior thread 23 is formed to receive the threaded surface 19 in the inner end of the sleeve, and the lower extremity of the pin is reduced in diameter and is so shaped as to enter and fit snugly in the depression 16 in the top of the balance-valve when the latter is in a central position within the casing.

In the event that the engineer should discover a leakage of steam through the medium of the exhaust, for example, it becomes necessary to determine at what side of the engine the leakage occurs. This fact may be ascertained, as heretofore stated, without removing any portion of the valve-casing or valve structure, simply by removing the plug 21, whereupon the leakage will pass up from beneath the balance-valve through the release-opening 15 and thence out through the sleeve, and the valve at which the leakage occurs having been found the various parts may then be removed to make suitable repairs without disturbing the valve at the other side of the engine.

The sleeve 17 will be found useful for oiling the valve. For example, coal-oil may be introduced upon the top of the valve through the tube and will serve to remove any gummy substance that frequently forms at that point and interferes with the proper action of the valve. When it is desired to lock the valve, the test-plug 21 is removed from the sleeve

and the reversing-lever of the engine having been placed in a central position, thereby centering the valve, the stop-pin is introduced into the sleeve and screwed downward until
5 its lower end firmly locks with the valve, as shown in Fig. 2 and at the left in Fig. 1.

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

10 1. In a balance-valve, the combination with a valve provided with a release-opening in its top, of a sleeve held in the valve-casing above the valve and having its lower end in communication with the release-opening of
15 the valve, the said sleeve having each of its ends internally screw-threaded, whereby the sleeve is adapted to be closed by a plug or to receive a stop-pin for engaging the valve, substantially as and for the purpose set forth.

20 2. In a balance-valve, a sleeve secured in the cover and having its lower end over the upper portion of the valve, and a stop-pin constructed to be placed in the said sleeve, the lower portion of the stop-pin finding a
25 countersunk seat in the upper portion of the

balance-valve, as and for the purpose set forth.

3. In a balance-valve for locomotives, the combination, with a valve having a release-opening in its top, together with a seat, and
30 a sleeve secured in the cover of the steam-chest, extending from an exterior point on the cover to a point over the balance-valve, the said sleeve being in communication with the release-opening, the said sleeve having
35 its lower end reduced in diameter and interiorly threaded, of a plug removably placed in the upper end of the steam-chest, and a stop-pin arranged to be placed in the sleeve when the plug is removed, the said stop-pin
40 having a threaded portion for engagement with the interiorly-threaded lower portion of the sleeve, the lower end of the stop-pin finding a seat in the upper portion of the balance-valve when the pin is in position in the sleeve,
45 as and for the purpose set forth.

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Witnesses:

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