

No. 756,492.

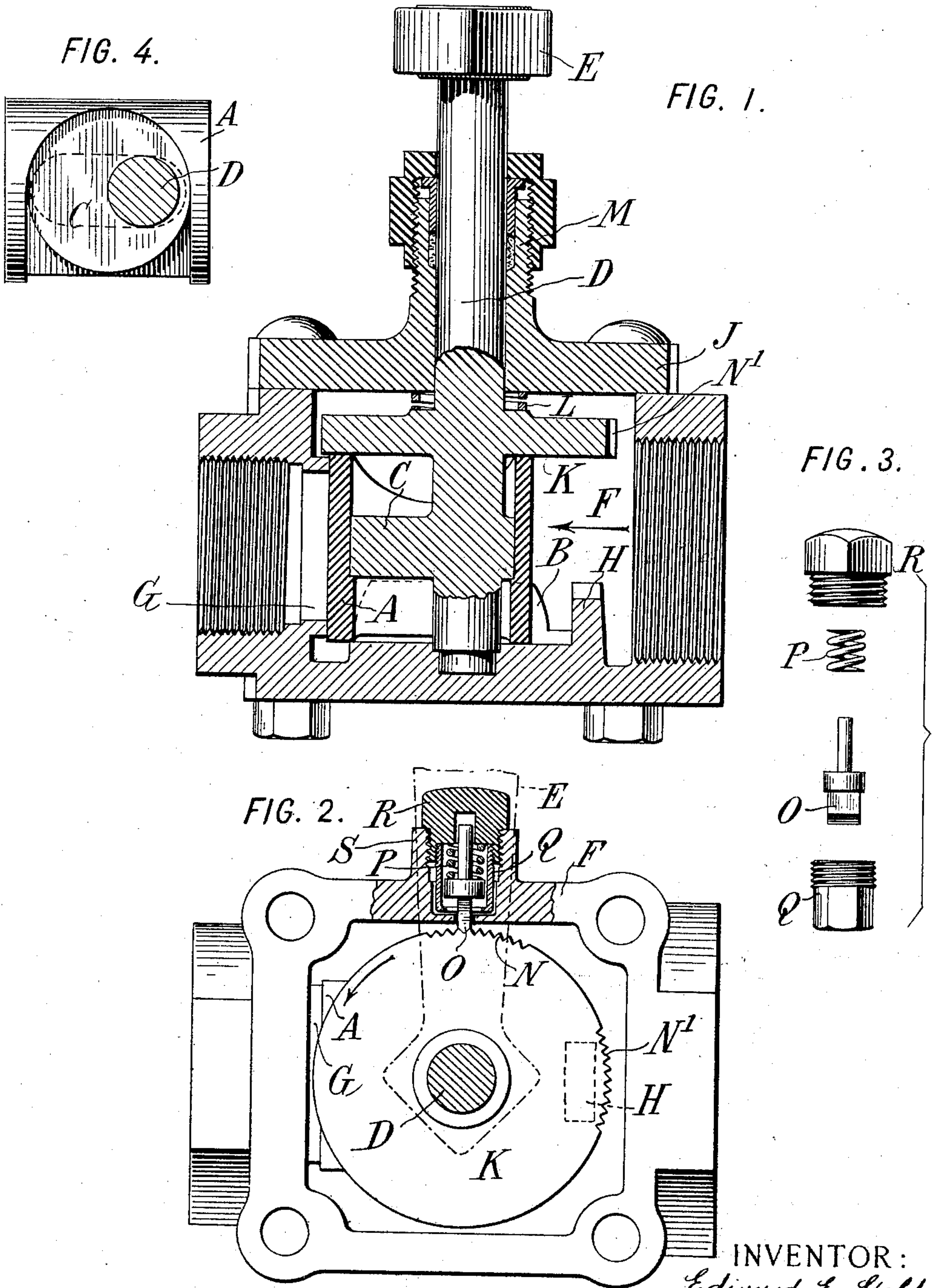
PATENTED APR. 5, 1904.

E. E. GOLD.

STEAM VALVE FOR TRAIN PIPES.

APPLICATION FILED NOV. 23, 1903.

NO MODEL



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UNITED STATES PATENT OFFICE.

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STEAM-VALVE FOR TRAIN-PIPES.

SPECIFICATION forming part of Letters Patent No. 756,492, dated April 5, 1904.

Application filed November 23, 1903. Serial No. 182,426. (No model.)

To all whom it may concern:

Be it known that I, EDWARD E. GOLD, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Steam-Valves for Train-Pipes, of which the following is a specification.

Steam-pipes for trains according to some systems are provided with valves at the opposite ends of each car. When the steam is on, the valve at the rear end of the rear car is usually left open a very little to permit drainage and the passage of some steam. According to my invention a valve is provided specially adapted for use as an end valve on such train-pipes.

My improved valve permits a regulable slight leakage of steam, and for this purpose is provided with means for holding it in any desired one of a plurality of positions closely adjacent to its closed position. The possibility of adjusting the opening and holding the valve firmly in the adjusted position adapts it to trains of different lengths, the operation of the system on long trains being more efficient where the opening of the rear end valve is larger than would be necessary for shorter trains. Various other advantages are referred to in detail hereinafter.

The accompanying drawings illustrate an embodiment of the invention.

Figure 1 is a longitudinal section. Fig. 2 is a plan of the inside of the valve, the top plate being removed and a portion of the mechanism being shown in section. Fig. 3 shows in plan the several elements of one part of the impositive lock used. Fig. 4 is a detail view of the valve-body.

The stem of the valve and the casing or other suitable fixed structure are provided with complementary interengaging devices which are pressed into engagement with each other with a pressure sufficient to hold the valve in any one of the desired positions in which it may be set, notwithstanding the jarring which it receives and the steam-pressure which may be against the valve, but not sufficient to prevent the movement of the valve by hand to another position. One member of the impositive lock thus provided may be accessible from outside of the casing, being preferably carried with

the spring which controls it in a special socket attached to the casing from the outside.

The valve shown is similar to a well-known type the construction and operation of which are specifically set out in my Patent No. 585,383, of June 29, 1897. The valve-body A is substantially a cylinder arranged with its axis horizontal and moving in guides B on opposite sides, the movement being effected by means of an eccentric C, carried on the shaft D, the upper end of which carries a hand-lever E. The casing F has at one end a valve-seat G, against which the valve closes. The movement of the valve in the opposite direction is limited by a stop H, projecting upward from the base of the casing. A cover-plate J, preferably having a stuffing-box M formed integrally therewith, is removably arranged to permit the introduction of the valve proper and connected parts into the casing. The improvement is especially adapted to valves of this type with a rotatable or oscillatory operating-stem and a valve proper moved transversely thereto and bodily toward and from its seat, because such a valve indicates at once by the angular position of the handle the exact position of the valve and can be moved from one extreme position to the other quickly by a fraction of a complete turn and because by reason of the eccentric or similar motion-transmitting device employed the first opening movement of the valve may be very gradual. The improvement, however, may be applied to valves of various types other than that herein shown.

A disk K is fixed on the operating-stem of the valve. Preferably the disk K and also the eccentric C are formed integrally with the valve-stem D, and a spring-washer L substantially fills the space between the top of the disk and the inner face of the cover J. The disk overlies the valve A. I thus prevent upward movement of the stem and connected parts or of the valve by the unbalanced upward steam-pressure. The disk K is provided on its edge with a number of beveled teeth N N'. Projecting through the side wall of the casing F is a bolt O of rectangular cross-section and beveled at its inner end and pressed in by a spring P to hold it in engagement with the teeth on the disk K. The arrow in-

dicates the direction of rotation in opening
 the valve, the valve being shown in the closed
 position. The spring P holds the bolt O in
 engagement with the teeth of the disk under
 5 ordinary running conditions. The spring-
 pressure, however, is such as to yield to a
 force applied to the hand operating-lever E.
 Thus the shaft may be turned in any desired
 position in which the teeth of the member
 10 K engage the bolt O, and the engagement
 of these teeth will hold the valve in such
 position. The disk K may be toothed over
 any desired part of its circumference. For
 example, I have shown a series of teeth N in
 15 position to hold the valve shut or in positions
 closely adjacent to its closed position and a
 second series of teeth N' in position to hold
 the valve open with the eccentric at or nearly
 at a right angle to its closed position, which is
 20 the ordinary open position of the valve. The
 teeth N, preferably N' also, are made small, so
 as to permit a very nice adjustment. The
 amount of opening required at the rear end
 of the train is always very slight even though
 25 it is different for trains of different lengths.
 The end of the bolt O is beveled to correspond
 with the teeth N. Any other suitable style
 of engagement between the disk K and the
 bolt O which will hold the valve firmly but
 30 impositively may be substituted for the
 toothed construction shown. For example, a
 strong frictional engagement might serve the
 same purpose, permitting the same slight dif-
 ferences of position.

35 The bolt O and spring P are preferably car-
 ried in a socket Q, separately formed from
 the valve-casing F and attached to the latter
 from the outside. By the use of a special
 socket for these parts their form and size may
 40 be designed without restriction or special
 adaptation to the shape of the valve-casing F
 or the rather limited space therein. The
 socket Q is closed by a cap R at its outer end,
 which acts as an abutment to receive the re-
 45 action of the spring P and which may be ad-
 justed, as shown, to adjust the strength of
 the spring. The casing F has a cylindrical
 boss S, into which the cap R, carrying the
 socket Q and bolt O, screws. This device
 50 can be very easily attached to the casing, and
 the bolt and connected parts can be introduced
 into the socket Q by merely removing the
 cap R.

By making the shaft and eccentric and also
 55 the disk K, where the latter is used, in one
 piece, the casing F, guides B, stop H, and
 valve-seat G in another single piece, and the
 cover-plate J and stuffing-box M in a third
 single piece, the cost is reduced and the as-
 60 sembling or repairing of the valve much fa-
 cilitated. The unitary nature of the socket
 or smaller casing Q and inclosed parts and the
 ease of its application to the valve-casing con-
 tribute also to the same advantage.

65 The invention herein described presents cer-

tain improvements over the invention de-
 scribed in my application, Serial No. 172,280,
 filed September 8, 1903, and has certain broad
 features in common therewith. The broad
 features not claimed herein are claimed in said 70
 application.

Though I have described with great particu-
 larity of detail a complete embodiment of my
 invention, yet it is not to be understood that
 the invention is limited to the specific con- 75
 struction disclosed. Various modifications of
 the same in detail and in the arrangement
 and combination of the parts may be made by
 those skilled in the art without departure from
 the invention. 80

What I claim is—

1. In a steam-valve, an impositive lock com-
 prising a pair of members, one within the
 valve-casing and another extending into said 85
 casing to engage the first and accessible from
 outside of the casing.

2. In a steam-valve, an impositive lock com-
 prising a pair of members, one carried by said
 operating-stem within the valve-casing and
 another carried in a socket attached to said 90
 casing from the outside.

3. In a steam-valve, an impositive lock com-
 prising a pair of members, one carried by said
 operating-stem within the valve-casing and
 another extending into said casing to engage 95
 the first, a socket carrying the latter member,
 and a spring within said socket bearing against
 such member, said socket being attached to
 said casing from the outside.

4. In a steam-valve, an impositive lock com- 100
 prising a pair of members, one carried by said
 operating-stem within the valve-casing and
 another consisting of a bolt O extending into
 the casing and engaging the first-mentioned
 member, a socket Q carrying said bolt, a 105
 spring in said socket pressing said bolt for-
 ward, and a cap R on the outer end of said
 socket.

5. In a steam-valve, in combination, a rota- 110
 table operating-stem D, a valve proper A, and
 an impositive lock including a member held
 against upward movement and engaging the
 top of said valve proper to prevent upward
 movement of the latter.

6. In a steam-valve, a valve-stem D having 115
 an eccentric C, and a locking member K formed
 integrally with said stem.

7. In a steam-valve, in combination, a casing 120
 F having an integral valve-seat at one end, a
 cover J having a stuffing-box M formed in-
 tegrally therewith, a valve-stem D carrying a
 locking member K, and a socket Q carrying
 a cooperating locking member O.

In witness whereof I have hereunto signed
 my name in the presence of two subscribing 125
 witnesses.

EDWARD E. GOLD.

Witnesses:

THEODORE T. SNELL,
 FRED WHITE.