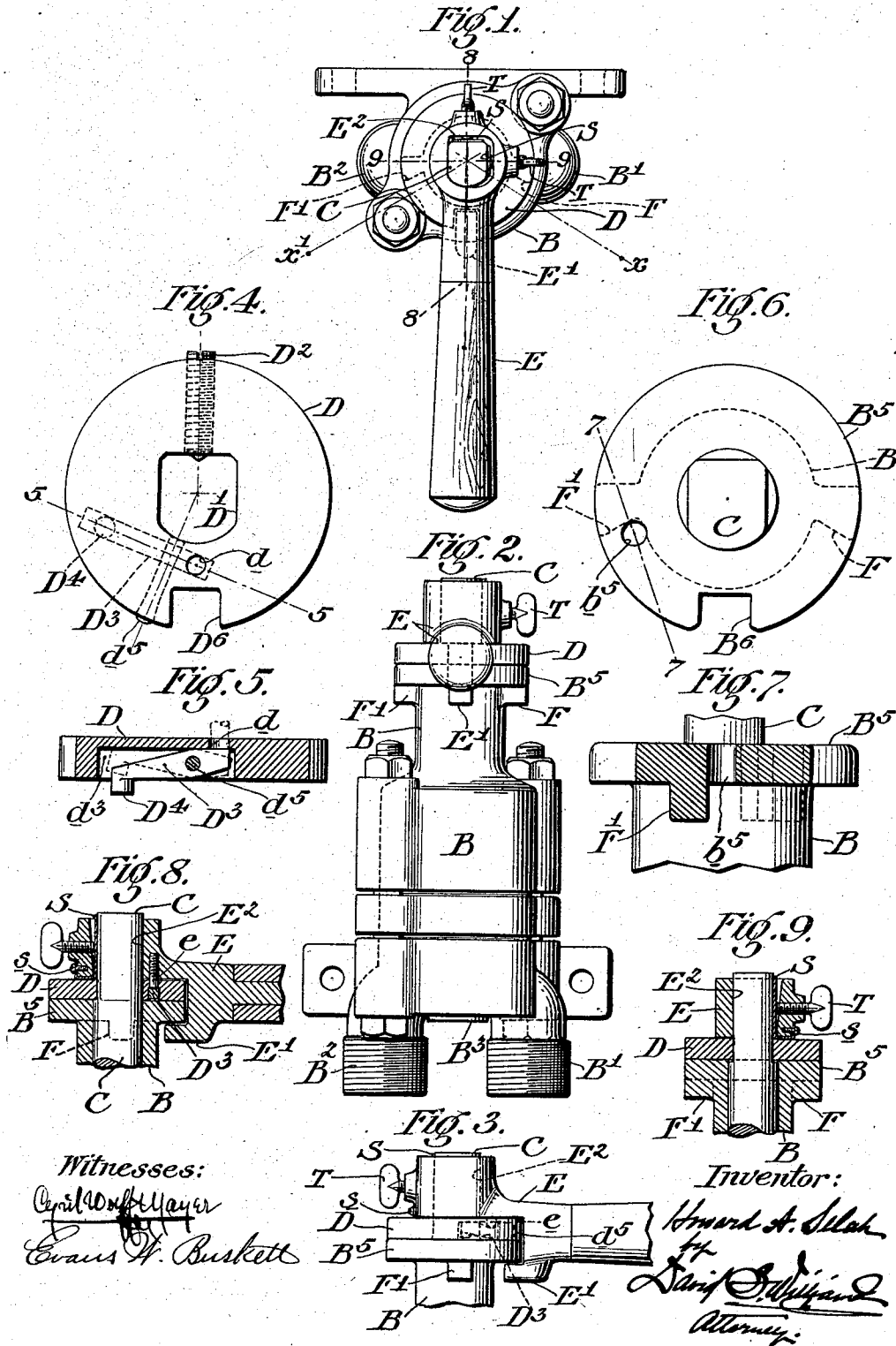


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VALVE.

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VALVE.

1,014,263.

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Patented Jan. 9, 1912.

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To all whom it may concern:

Be it known that I, HOWARD A. SELAH, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Valves, of which the following is a specification.

My present invention relates to a locking device for air brake controlling valves, and particularly to that type of valve employed in connection with street railway cars, such as the so called trolley cars in which an electric controller as well as an air brake controller is mounted on both front and rear platforms of the car.

The object of the present invention is to construct the valve in such a manner that the moment the operating handle is removed from the valve-stem, the valve-stem together with the valve will be locked against turning until the operating lever is again placed in position upon the stem of the valve by the hand of the operator. To this end I employ in connection with an air brake valve of the conventional type, a locking device which will prevent the valve stem and valve from being turned either by the jolting motion of the car or by mischievous persons standing on one of the platforms. In connection with the operating lever I employ means which serves to unlock the valve stem and valve, the moment the lever is properly adjusted to the valve stem and by this means the valve may be placed under complete control when not in use and accidents due to the release of air from the air reservoir avoided during critical periods in the operation of a street car.

The various features of novelty which characterize my invention are pointed out with particularity in the claims annexed to and forming a part of the specification. For a better understanding of the invention, however, and the advantages possessed by it, reference may be had to the accompanying drawings and descriptive matter in which I have illustrated and described one of the forms in which my invention may be embodied.

Referring now to the accompanying drawings, Figure 1 illustrates a plan view of an air brake controller or air valve constructed according to my invention. Fig. 2 represents a front elevation of the air brake

valve. Fig. 3 is a detached side elevation of a portion of the valve stem and valve showing the means employed for unlocking the valve. Fig. 4 denotes a detached and enlarged plan view of the washer adapted to be secured to the valve stem and containing the locking device for securing the valve stem and valve to the upper part of the casing. Fig. 5 shows a transverse section of the washer as taken on the line 5—5 of Fig. 4 showing the position occupied by the clutch when the valve stem is locked to the casing of the valve. Fig. 6 is an enlarged plan view of the top portion of the valve casing showing the recess through which a portion of the operating handle of the valve is inserted when the valve is in a closed position as also the opening engaged by the clutch when the operating lever is removed from the valve stem. Fig. 7 illustrates a detached elevation partly in section of the upper part of the valve casing showing the opening through which a pin on the operating handle constituting a key, is inserted for the purpose of releasing the clutch. Fig. 8 is a vertical section of a portion of the valve stem and operating lever illustrating the method of securing said operating lever to the valve stem, the section being taken on the line 8—8 of Fig. 1 and Fig. 9 is a similar section showing a similar means of securing the operating lever to the valve stem at a point at right angles to that shown in Fig. 8, said section being taken on the line 9—9 of Fig. 1.

Referring now by reference letters to the several parts of the device illustrated in the drawings accompanying this specification. The valve proper is not shown in the drawings but is of the ordinary type and is contained in a casing B, and provided with a valve stem C. This valve as a whole being of the conventional type it is not deemed necessary to describe the same in detail further than to state that the casing B, is provided with the usual nipple B¹ threaded to engage a pipe leading from a source of air supply, a nipple B², in like manner threaded to engage a pipe leading to an air brake cylinder, and an exhaust passage B³, through which air may be exhausted from the air brake cylinder, to the atmosphere.

In carrying out my invention I provide the valve stem C with a washer D, which as shown in Fig. 4 is provided with a central

opening D^1 to conform to the shape of the valve stem, so that in turning the same the washer will turn with it as though the washer was formed as an integral part of the valve stem. The washer D is also provided with a set screw D^2 to guard against vertical movement and with a locking device by which means the washer and valve stem may be secured against turning when the handle or operating lever of the valve is disengaged from the valve stem. In order to accomplish this purpose I provide the upper flanged portion B^5 of the casing B with a drilled hole b^5 , as shown in Figs. 6 and 7 and in the washer D I provide a clutch member D^3 having a tooth D^4 which latter is adapted to enter the hole b^5 of the flanged portion B^5 .

The clutch member D^3 constitutes a lever adapted to a recess d^3 in the washer D , said lever being supported by a pin d^5 . The handle or operating lever E , which is always removed from the valve stem when the operator leaves the car is so constructed and arranged with respect to the valve proper that it can only be removed at a certain position in the arc of its movement as indicated in the position shown in Figs. 1 and 2 in which position both the air supply and discharge to and from the brake cylinder is cut off. To accomplish this the operating lever E is provided with a depending lug E^1 extending within the circumference of both the washer D and the flanged portion B^5 of the valve casing, so that in order to apply or remove the operating handle a recess D^6 is formed in the washer D and a corresponding recess B^6 is formed in the flanged portion of the valve casing as will be noted by reference to Figs. 4 and 6. In addition to the lug E^1 the handle E is also provided with a projection e which may be of any desired shape and this projection which in the present instance is made in the form of a pin constitutes a key for releasing the clutch member from the casing of the valve when the handle or operating lever is applied to the valve stem.

When the handle E is properly adjusted to the valve stem the pin e enters a hole d in the washer D and bears upon the short arm of the lever or clutch member D^3 thus raising the long arm of the lever and releasing the tooth D^4 from the hole b^5 in the flanged portion B^5 of the valve casing after which the valve stem and valve may be turned to any desired position within its range of movement. When the operating lever is removed from the valve stem at the one point at which it is possible to remove the same the valve will be in a closed position, the long arm of the lever D^3 will fall by gravity and its tooth D^4 will enter the hole b^5 of the casing securing the valve against turning until such time as the oper-

ating lever is again applied to the valve stem by the operator.

In order to preserve perfect alinement between the lug E^1 and the slots B^6 and D^6 and at the same time prevent lost motion from developing between the opening E^2 of the operating lever and the stem of the valve I desire to secure said operating lever to the valve stem in the following manner. Against the flat sides of the opening E^2 of the operating lever I secure leaf springs S and S^1 by screws s in such a manner that the free ends of the springs will bear with considerable pressure against the valve stem C and produce a snug fit. In addition to said springs I prefer to employ thumb screws T, T , which as shown in Figs. 8 or 9 of the drawings are threaded to correspondingly threaded openings in the operating lever and which may be backed up against the springs with further pressure when it is desired to secure the operating lever in position during a long continuous journey of a car to which this device is applied. The lug E^1 in addition to performing the office previously described also serve to limit the movement of the working parts of the valve by engaging stops F and F^1 located on the under side of the flanged portion B^5 of the valve casing, so that the extent of movement of said working parts will be confined between the dotted lines X and X^1 as shown in Fig. 1.

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

1. A locking device for air-brake valves comprising a valve casing provided with a valve and valve stem, said casing being provided with a flanged portion inclosing the valve-stem and having a recess to permit an operating handle to be applied to the valve-stem when the valve is closed, a locking lever adapted to turn with the valve-stem and to engage an opening in the valve casing when the valve is closed, and a detachable handle provided with a key adapted to release the locking lever.

2. A locking device for air-brake valves comprising a flanged valve casing provided with a valve-stem and valve, a collar secured to the valve stem and provided with a locking lever adapted to engage an opening in the casing of the valve to lock the valve when the same is in a closed position and a detachable operating handle provided with a key to unlock the valve and a lug adapted to register with a recess in the flanged portion of the casing permitting the operating handle to be removed from the valve stem only when the valve is in a closed position.

3. A locking device for air-brake valves comprising a valve casing, an operating valve provided with a valve-stem, a collar

secured to and carried by the valve-stem, the collar being provided with a fulcrumed lever, constituting a clutch having a tooth adapted to engage an opening in a portion
5 of the casing when the valve is closed, an operating handle provided with a depending key adapted to operate the clutch and means whereby the operating handle may be removed from the stem when the valve is in
10 a closed position.

4. In a valve, a valve casing, a valve provided with a valve stem, a washer secured to the valve stem, a clutch pivoted to

the washer and provided at one end with a tooth adapted to engage an opening in the casing, and an operating handle having a key adapted to release the clutch from the casing of the valve when the operating handle is applied to the valve stem. 15

In testimony whereof I affix my signature 20
in presence of two witnesses.

HOWARD A. SELAH.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."