

C. J. DALY.
HANDLE OR LEVER FOR AIR BRAKE VALVES.
APPLICATION FILED JULY 3, 1911.

1,064,888.

Patented June 17, 1913.

Fig. 1.

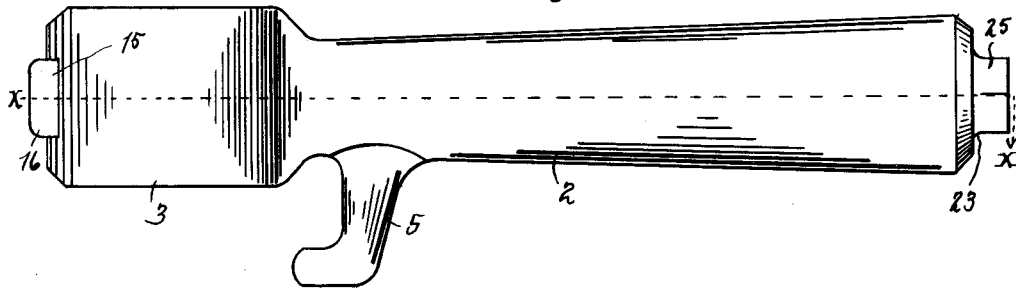


Fig. 2.

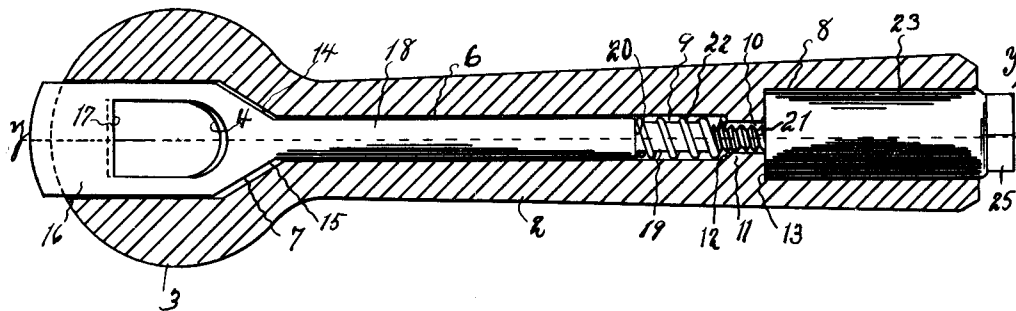
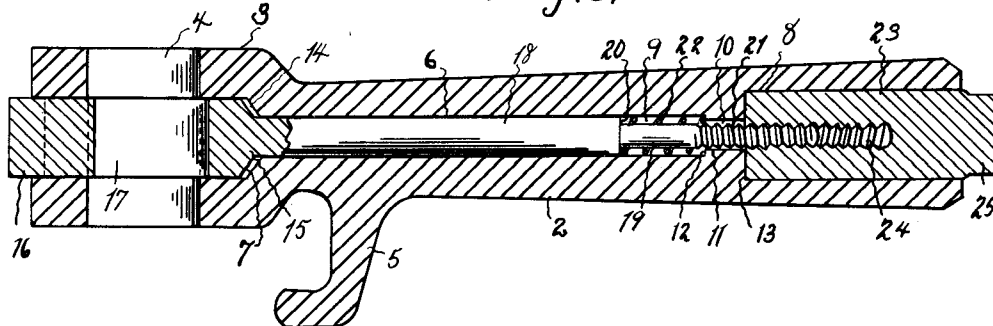


Fig. 3.



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HANDLE OR LEVER FOR AIR-BRAKE VALVES.

1,064,888.

Specification of Letters Patent.

Patented June 17, 1913.

Application filed July 3, 1911. Serial No. 636,690.

To all whom it may concern:

Be it known that I, CHARLES J. DALY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Handles or Levers for Air-Brake Valves, of which the following is a specification.

My invention relates to new and useful improvements in handles or levers for air brake valves and the like, and has for its object to provide a device of this character which will be comparatively inexpensive in the cost of manufacture because of the small number of parts, one which will be strong and durable and have the parts interchangeable whereby repairs may be made readily and quickly and at the same time overcoming the necessity of having to throw away the parts which are injured.

A further object of the invention is to provide a lever or handle of this character to eliminate the lost motion between the valve stem and the lever or handle; further to overcome the necessity of inserting or forcing wedges or other packings between the valve stem and the handle or lever in an effort to secure more accurate control of the movements of the valve, also to overcome the necessity of frequently packing and repairing the valve and adjacent piping, at present made necessary by the custom of forcing or hammering wedges or other packing device into the handle or lever.

Another object of the invention is to overcome the waste of compressed air, thus reducing to a minimum the operation of the car or train by giving the operator a more accurate control of the valve by the elimination of the lost motion between the valve stem and handle or lever. By accomplishing the above named objects, the number of accidents are greatly reduced, the car or train being more completely under the control of the operator on slippery rails, the expense of repairs is diminished as the wheels are less likely to be flattened by an excessive application of air pressure, because of the accuracy with which said air pressure may be applied or released, and the operator has the ability to stop and start the car or train smoothly without jar to passengers or derangement of the delicate mechanism or equipment.

With these ends in view, this invention consists in the details of construction and

combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction in detail, referring by numeral to the accompanying drawing forming a part of this specification, in which—

Figure 1, is a side elevation of my improved handle or lever for air brake valves and the like. Fig. 2, a section at the line $x-x$ of Fig. 1, the operating parts remaining in elevation; and Fig. 3, a section at the line $y-y$ of Fig. 2, portions of the operating parts being shown in section to clearly illustrate the construction.

In carrying out my invention as here embodied, 2 represents the handle or lever having an integral head 3 in which is formed the receiving opening 4 for the valve stem and a guard 5 adapted to pass through an opening in the flange of the valve casing or shell when the valve is closed, and to prevent the removal of the handle or lever when the valve is opened. Through the handle passes a longitudinal central opening 6 having an enlarged portion 7 situated within the head and another enlarged portion 8 in the other end of the handle. Between these enlarged portions is a smaller portion 9 and between this smaller portion 9 and the enlarged portion 8 is a still greater reduced portion 10 forming what we will term a collar 11, producing a shoulder 12. The difference in the sizes of the openings 8 and 10 also produce a shoulder 13 and likewise another shoulder 14 is formed because of the difference in size of the openings 7 and 9. The opening 6 runs entirely through the handle and a clutch member 15 is slidably mounted in said handle, comprising a body 16 having an opening 17 corresponding to the opening 4 in the head of the handle and a shank 18 circular in cross section and reduced in size relative to the body. From the end of this shank is produced a stem 19 which is smaller in size than the shank forming a shoulder 20 upon said shank, and this stem is provided with threads 21. The clutch member is placed in the handle by inserting the stem into the central opening 6 through the enlarged portion 7 in the head, then through the openings 9 and 10 until it extends into the opening 8. Before plac-

ing this clutch member in position, a helical spring 22 is placed upon the stem and this engages shoulders 12 and 20 so that the clutch member is normally forced outward.

5 After the clutch member is placed into the position just described, the adjusting member 23 which is circular in cross section and is provided with a threaded central opening 24, is inserted in the enlarged opening 8 and threaded upon the stem of the clutch member until the inner end of said adjusting member engages the shoulder 13, at which time the continued threading on of the adjusting member 23 will cause the clutch member to be drawn into the handle against the action of the spring 22, and if this adjusting member is revolved in the opposite direction the adjusting member will be threaded from the stem of the clutch member, but the action of the spring will hold said adjusting member in its opening and force the clutch member outward.

The adjusting member is provided with a suitable means to revolve it, this means preferably being an integral nut or wrench hold 25 of any desired shape which projects beyond the end of the handle. By making the means for adjusting the member 23 in the shape of a nut, it permits the use of the reverse lever for the adjustment instead of having a special wrench or other tool to accomplish this.

In practice the openings 4 and 17 are normally in alinement to permit the ready displacement of the handle upon one end of the valve stem, and when in place the adjusting member 23 is revolved in that direction which will draw the clutch member inward, tightening it upon the valve stem so as to prevent the handle from moving about loosely upon the valve stem, so that there is no lost motion between the handle and valve stem, permitting the operator to have more complete control upon the brakes or other valve operated mechanism.

Of course I do not wish to be limited to the exact details of construction as here shown, as these may be varied within the limits of the appended claims without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful, is—

1. In a device of the character described, a handle having an integral head through which passes a valve stem opening, said head and handle having a longitudinal opening formed therein running entirely from one end to the other, said opening being enlarged at its ends and reduced between its central portion and one of the enlarged portions, said enlargements and reductions forming shoulders, a clutch member comprising a body, a reduced shank and a

greater reduced threaded stem, a shoulder being formed between the stem and shank, 65 said clutch member adapted to be inserted in the longitudinal opening from the head end of the handle, a helical spring coiled about the stem and resting against the shoulder on the clutch member and one of the shoulders in the handle, said spring normally forcing the clutch member outward, and means mounted in the handle for drawing the clutch member inward.

2. In a device of the character described, 75 a handle having an integral head through which passes a valve stem opening, said head and handle having a longitudinal opening formed therein running entirely from one end to the other, said opening being enlarged at its ends and reduced between its central portion and one of the enlarged portions, said enlargements and reductions forming shoulders, a clutch member comprising a body, a reduced shank and a 85 greater reduced threaded stem, a shoulder being formed between the stem and shank, said clutch member adapted to be inserted in the longitudinal opening from the head end of the handle, a helical spring coiled 90 about the stem and resting against the shoulder on the clutch member and one of the shoulders in the handle, said spring normally forcing the clutch member outward, and an adjusting member having a central 95 threaded opening and provided with a wrench hold, said adjusting member being mounted in one of the enlarged openings and threaded upon the stem, the wrench hold projecting from the end of the handle by which 100 the adjusting member may be revolved and when so revolved drawing the clutch member inward or unthreading it therefrom to permit the spring to force said clutch member outward.

3. In combination with an air brake handle having a valve stem opening through the head thereof and a slot in said head at right angles to said opening, a clutch member fitted to slide in said slot, said clutch 110 member having an opening therethrough registering with the valve stem opening in the head, a shank formed with the clutch member and passing through a longitudinal central opening in the handle, a threaded 115 extension formed with the shank, an adjusting member threaded on said extension and a spring adapted to force the shank outward.

In testimony whereof, I have hereunto 120 affixed my signature in the presence of two subscribing witnesses.

CHARLES J. DALY.

Witnesses:

EDW. W. AUSTIN,
M. E. YOST.