C. F. HOOFER.

AUTOMATIC MEANS FOR OPERATING FLANGE OILERS, &c.

APPLICATION FILED JULY 11, 1919.

1,343,973.

Patented June 22, 1920.

2 SHEETS—SHEET 1.

Fig 1

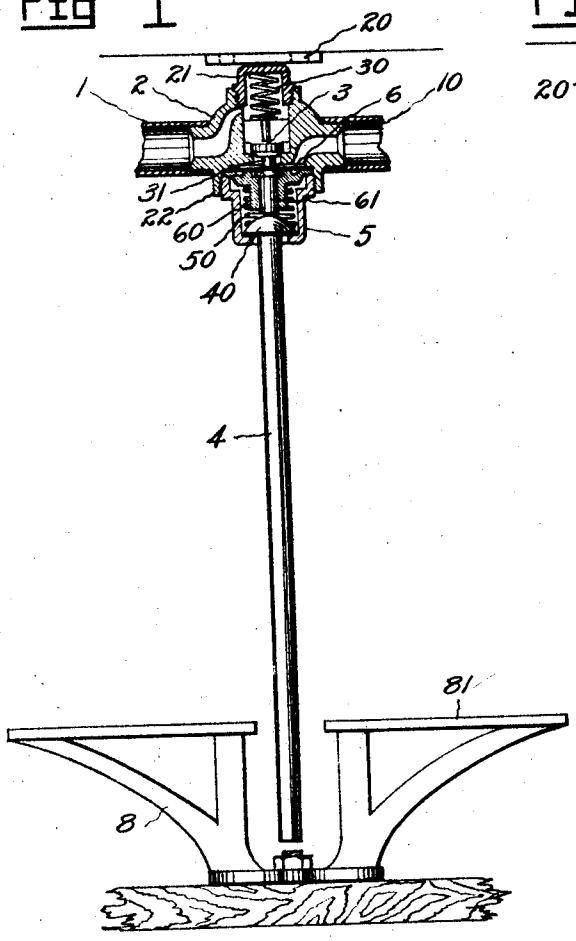


Fig 2

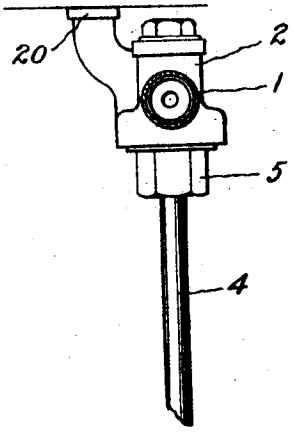
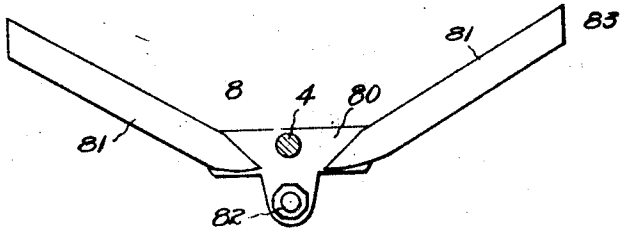


Fig 3



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Fig 4

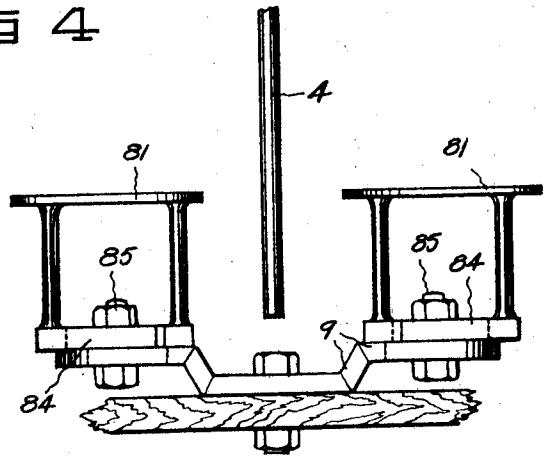
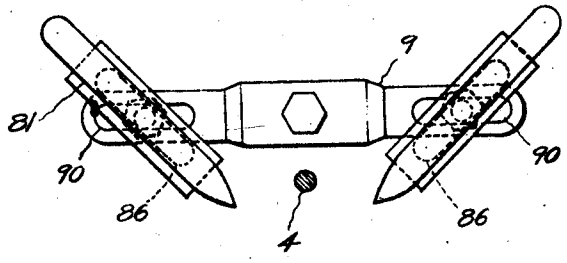


Fig 5



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UNITED STATES PATENT OFFICE.

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AUTOMATIC MEANS FOR OPERATING FLANGE-OILERS, &c.

1,343,973. Specification of Letters Patent. Patented June 22, 1920.

Application filed July 11, 1919. Serial No. 310,083.

To all whom it may concern:

Be it known that I, CHARLES F. HOOFER, a citizen of the United States, and resident of the city of Seattle, county of King, State of Washington, have invented certain new and useful Improvements in Automatic Means for Operating Flange-Oilers, &c., of which the following is a specification.

My invention relates to a means for automatic operation of devices upon cars through the relative movement occurring between the body and truck when the car strikes a curve. The object of my present invention is to provide an improved form of apparatus for doing this work in an improved manner.

My invention consists of certain combinations of parts which will be herein set forth and the novel features and combinations upon which I desire patent will be defined by the claims.

In the accompanying drawings I have shown my invention in a type of construction which is now preferred by me.

Figure 1 is a side view of the device with the valve mechanism in section.

Fig. 2 is a side view of the valve mechanism as seen from a position at right angles to that of Fig. 1.

Fig. 3 is a plan view of the tappet bars by the action of which the valve operating bar is actuated, a section of the valve operating bar being shown in its normal position with reference to the tappet bars.

Fig. 4 is a side view of a construction of tappet bars wherein the individual bars are adjustable both in bodily and angular position.

Fig. 5 is a plan view of the same parts as are shown in Fig. 4.

As ordinarily constructed cars and like vehicles are mounted on two trucks and these trucks have a limited swinging or turning action about a vertical axis or king pin, so that when a car is upon a curve, the parts of the truck which are horizontally removed from the vertical axis of the king pin have a movement laterally, or in a horizontal direction, with relation to adjacent parts of the car body.

It is the purpose of my present invention to provide an improved form of apparatus whereby this relative movement between car body and truck may be used to put in action a particular mechanism, as for instance, a flange oiling device. My invention is however, not limited in its use to this particular apparatus.

The invention has herein been illustrated as used for the control and operation of an air valve, but it will be evident that for the air valve may be substituted any other controlling device which functions as a valve or controlling member to put in action any operating force, as for instance, an electric switch.

The application of my invention is therefore not to be considered as limited to the control of an air valve. The use of this form of power has been illustrated as such power is well adapted for the particular purpose herein mentioned, namely, flange oiling.

A valve casing 2 supported from the car body by a foot 20 is inserted in a pipe line which is supplied with air under pressure. At one side of the valve the pipe 1 contains air under pressure and the pipe 10 at the other side connects with the mechanism which it may be desired to operate by this compressed air. The valve 3 is illustrated as held upon its seat, or closed, both by the air pressure and by the spring 30. A cap 21 permits inspection and removal of the valve. Suspended from the valve casing is a controlling bar 4, in such manner that it is free to swing to a limited amount in more than one direction. As illustrated, the bar 4 has a head 40 at the inside of a cap 5 which is secured to the valve casing 2. A spring 50 within this cap acting upon the head tends to normally hold the bar 4 in a central position.

A flange 22 carried by the valve casing forms a recess at the bottom of which a diaphragm 6 is secured by a plate 60 which in turn is secured by the inner edge of the cap 5 which screws into the flange 22. Mounted in the plate 60 is a pin 61 which extends between the diaphragm 6 and the head 40 of the controlling bar 4. The valve 3 has a tip or projecting pin 31 which extends to the diaphragn 6.

It is evident that if the controlling bar 4 be swung laterally, the rocking of the head 40 will force up the pin 61 and spring the diaphragn upwardly, thus slightly opening the air supply valve 3 and thus supplying operating air to the apparatus desired, in the case mentioned this being the flange oiling device.

Carried upon the truck are two tappet bars

81, these being placed at opposite sides of the end of the controlling bar 4 in position to engage and swing said controlling bar when the truck swings with reference to the car body. In this way the application of the air is controlled by the swinging of the truck.

In the preferred construction the two tappet bars are placed in angular relation to the direction of movement of the part of the truck to which they are secured. The adjacent ends of the tappet bars are also separated sufficiently to provide an opening of ample size for the passage of the controlling bar. Because of the angular position of the tappet bars, when they engage the controlling bar 4 they cause it to swing in such manner that it passes along the inner edge of the tappet bar until it passes off of the end 83. It then swings back to a position, roughly indicated at 41 where it will engage the other side of the tappet bar when this swings back to its normal position. It then drops off of the other or central end of the bar 81 and to the position indicated at 4, which is the position occupied while the car is on a straight piece of track.

As shown in Figs. 1 and 3, the two tappet bars 81 are integral parts of the same casting, this having a base 80 which is secured in place on the truck by a bolt 82. In the form shown in Figs. 4 and 5, the two tappet bars 81 are made separate from and adjustable with relation to the base 9, so that the separation of the two tappet bars and their angular position, may be adjusted. This is shown as follows:

The base 9 is a bar having a slot 90 in each end. The tappet bars have each a lower side or base 84, provided with a slot 86 and are secured to the base bar 9 by bolts 85 which pass through the slots of each. By this means the tappet bars are made adjustable, both as to their separation from each other and as to their angular position.

The valve shown and described is to be considered as typical of a means through the action of which the operation of any mechanism is initiated and controlled. The term valve as used in the claims is to be interpreted as meaning any controlling means which functions in such manner.

It is immaterial whether the fluid controlled be a liquid or a gas, or whether it be an electric current. The term valve is to be construed as including any means by which the supply of such a source of energy is controlled.

What I claim and desire to secure by patent is:

1. A means for controlling a valve mechanism by the swinging of a pivoted truck, comprising a controlling bar carried by the car body and having associated therewith means whereby the valve is opened by the swinging of the bar from its normal position, tappet bars carried by the truck at each side of the normal position of the controlling bar, said tappet bars extending in reversed angular positions with reference to the direction of their movement with the truck and having their adjacent ends separated to permit passage of the controlling bar between them.

2. A device of the character described comprising a diaphragm and means for opening the valve when the diaphragm is sprung in one direction, a rod suspended from the valve casing to swing laterally, said rod having a head and means for connecting said head with the other side of the diaphragm, and tappet members carried by the truck in position to engage the controlling bar.

3. In a device of the character described, a valve controlling bar carried by the car body and mounted to permit lateral swinging and means for controlling the mechanism by the swinging of said bar, two tappet bars carried by the truck and extending respectively at reversed angles to the direction of their movement by the swing of the truck, the adjacent ends of said tappet bars being separated to permit the controlling bar passing between them.

4. In a device of the character described, a valve-controlling bar carried by the car body, and functioning by lateral swinging, a tappet bar base secured to the car truck and extending in the direction of swinging movement of that part of the truck relative to the car body, said base having a slot in each end, two tappet bars having slots in their bases and securing bolts passing through the slots in the tappet bars and their base bar.

5. A valve operating mechanism comprising a valve controlling bar mounted on a car body to have a limited swinging movement about its supported end, means whereby the swinging of said bar may open a valve, a tappet bar mounted upon and to have a bodily movement with the truck to thereby engage said bar to swing it, the bar-contacting surface of the tappet bar being inclined to the direction of its movement, whereby the valve controlling bar may slide off of the following end of the tappet bar and return at the other side thereof.

Signed at Seattle, Washington this 28th day of June, 1919.

CHARLES F. HOOFER.