

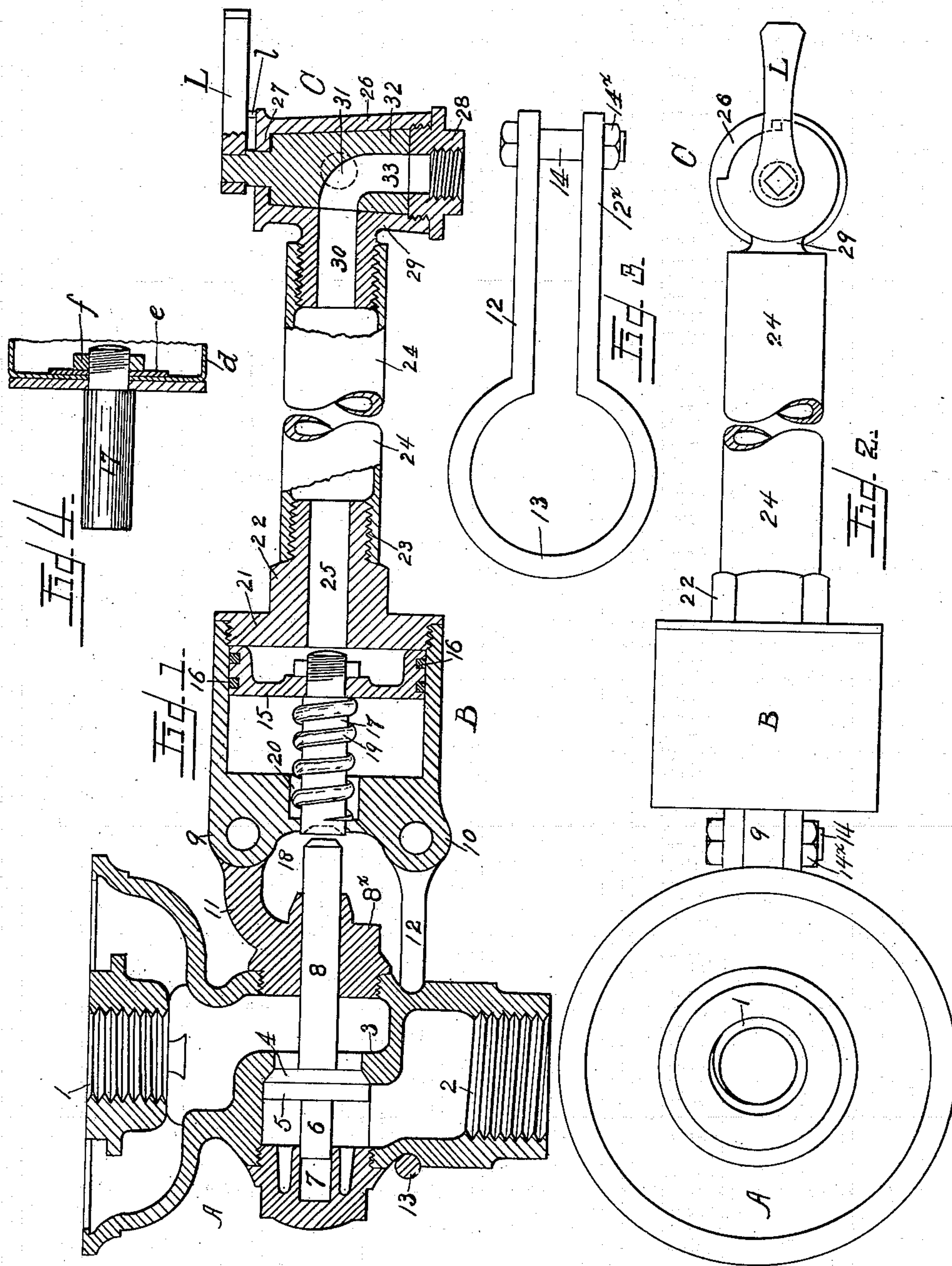
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W. R. LYONS.
MEANS FOR OPERATING STEAM WHISTLES.

(Application filed June 20, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

WALTER R. LYONS, OF TOPEKA, KANSAS.

MEANS FOR OPERATING STEAM-WHISTLES.

SPECIFICATION forming part of Letters Patent No. 615,398, dated December 6, 1898.

Application filed June 20, 1898. Serial No. 683,907. (No model.)

To all whom it may concern:

Be it known that I, WALTER R. LYONS, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Means for Operating Steam-Whistles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to improvements in means for operating steam-whistles; and the object is to provide improved, simplified, and efficient means for the purpose named, whereby the valve located in the valve chest or body of a steam-whistle may be operated or actuated with certainty and expedition.

I have fully and clearly illustrated my invention in the accompanying drawings, wherein—

Figure 1 is a central vertical section through the body of the valve-casing of the whistle and longitudinal vertical section through my improved whistle-actuating device, the connecting-pipe between the hand-valve and the actuating-valve being broken through. Fig. 2 is a top plan view of the parts shown in Fig. 1. Fig. 3 is a detail view of the clamping and supporting strap adapted to be secured about the neck of the whistle-body and connect with and support the lower end portion of the piston casing or cylinder of my device. Fig. 4 is a detail view showing a leather packing secured to the piston to adapt the device for use when compressed air is utilized for moving the piston.

It is the design or purpose of my invention that it may be connected to or associated with the casing of the whistle which carries the valve by which the steam to the whistle is controlled and above which casing the bell of the whistle is suitably mounted. I have not shown the bell of the whistle, because that may be of any of the well-known constructions, as may be that of the valve-casing. I have illustrated this latter as being of an approved type provided with a steam way or port extending therethrough upward and having suitable upper and lower threaded apertures 1 2, in the former of which the bell-

support of the whistle engages and is held, and by the latter the valve-body may be connected and secured to the steam-pipe in well-known ways. In this casing A is formed a vertical wall or partition 3, in which is a valve-seat 4, opening therethrough, and in this valve-seat is arranged a valve 5, formed with a longitudinally-projecting guide-piece 6, sliding in a socket 7, formed in the shell of the valve body or casing. From the opposite face of the valve projects an elongated stem 8, extending through a detachably-secured guide-plug 8^x, screwed in the valve-casing, with its projecting free end in alignment with the stem of the actuating-piston, as shown clearly in Fig. 1 of the drawings.

B designates a casing or cylinder connected to the valve-body by means of ears or lugs 9 10, the former of which engages with the arm 11 on the detachable guide-plug 8^x, and the latter of which is held clamped between the arms 12 12^x of a strap 13, encircling the neck of the valve-body, by means of bolts and nuts 14 14^x, as indicated in the drawings. In the cylinder B is fitted a piston 15, having suitable packing-rings 16 16 to seal the parts in a well-known manner. In the piston is secured a stem 17, which extends rearward and has its free end portion slidingly disposed in and projecting through an aperture 18 in the rear end of the cylinder, and on the stem 17 is arranged an expansive spiral spring 19, one end of which is lodged against the rear end or face of the piston-head and the other end entering a socket 20 in the cylinder and is lodged against the bottom or end wall thereof, as shown in Fig. 1 of the drawings. The force of this spring insures the return movement of the piston back to normal position and so holds it after pressure has been removed from the outer face thereof.

The cylinder B is provided with a detachable head 21, secured therein by any suitable fastenings. I have illustrated it as being provided with annular screw-threads taking in interior screw-threads in the end of the cylinder and formed with an annular flange to fit against the end edge of the cylinder, as shown. The cylinder-head has a central outward-projecting extension 22, provided with exterior screw-threads 23, by means of which the connecting-pipe 24 is secured thereto, and

centrally through the head and the extension 22 is an inlet aperture or conduit 25, by which the steam or compressed air is admitted to the cylinder to actuate the piston. The superficial area of the piston is greater than that of the steam-valve 5 in order that the pressure on the former will overcome the steam-pressure on the latter when the steam or air is admitted into the cylinder, and thus insure the movement of the valve in the valve-casing. It will now be perceived that when the steam or compressed air is admitted into the cylinder B the piston therein will be moved inward against the force of the spring, and that this movement of the piston will move the piston-stem into contact with the valve-stem and effect the movement of the valve off its seat to admit the flow of steam through the valve chamber or body to sound the whistle.

In order that the piston may be actuated with certainty from any desired point, the conduit-pipe 24 is extended to such point and connected to a hand-valve C, wherein 26 designates a tapering cylindrical shell or casing of suitable metal, having a top with an annular flange 27 directed horizontally and inwardly, an open lower end in which is screw-fitted a plug 28, having a central opening and adapted and formed to connect with a pipe (not shown) leading from the steam or compressed-air source, and a laterally-projecting pipe-nipple 29, having a conduit or opening 30, screw-fitted to the conduit-pipe 24, as indicated, and in one side of the shell 26 is an escape-port 31, through which the steam or air escapes when the valve is closed to shut off the progress of the fluid to the piston. In the shell 26 is fitted a valve-plug 32, turnable therein and formed with a way 33, registering at its upper end with the opening to the conduit-pipe 24 and at its lower end with the opening in the plug in the bottom of the shell, so that the valve 22 may be turned to open and close the way and permit and prevent the flow of steam or air to the piston. The escape-port 31 is so arranged and formed in the plug or valve that when the valve is turned to admit the fluid to the cylinder it is closed and when turned to shut off the housed steam or air in the cylinder and pipe it registers with the pipe and the opening in the shell and permits the steam or air in the pipe to escape, thus leaving the steam-pressure of

the valve 5 free to close that valve, and in the movement of the valve force the piston back to normal position if the force of the spring on the piston-stem has not already accomplished this movement of the piston.

The upper end of the valve or plug 32 extends through the opening in the top of the valve-shell, and on the projecting portion is secured a hand piece or lever L, the movements of which are limited by means of a pin l , having its path between stops l' l'' in the edge of the top of the shell, as shown in the drawings.

In Fig. 4 of the drawings I have illustrated the piston as adapted for the use of compressed air as the actuating medium. In this instance a leather packing-disk d is mounted against the face of the piston, where it is held and secured by a metal disk-plate e , clamped against the disk d by a nut f on the projecting end of the piston-stem.

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

The combination with a steam-whistle-valve casing provided with a valve-port, and a valve in the casing formed with a stem slidingly projecting through the wall of the casing with its outer end extending beyond the wall thereof, of a casing or cylinder B detachably secured to the whistle-valve casing and provided with a central port in its outer head, a piston in the cylinder B, a stem in the piston having its free end slidingly projected through the inner wall of the cylinder to contact with the projecting end of the valve-stem, a spring on the piston-stem within the piston-cylinder to push the piston outward, an air or steam pipe 24 connected to the central port in the head of the piston-cylinder, a cylindrical casing 26 connected to the outer end of the said pipe and provided with an escape-port 31, a valve-plug 32 turnable in the casing 26 and formed with a way 33 adapted to register with either the pipe 24 or the said escape-port 31, and means to turn the said plug, substantially as specified.

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

WALTER R. LYONS.

Witnesses:

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