Aug. 10, 1926. 1,595,246

J. F. RAGSDALE

DEVICE FOR PULLING PISTON VALVES

Filed Jan. 7, 1926

Fig. 1.

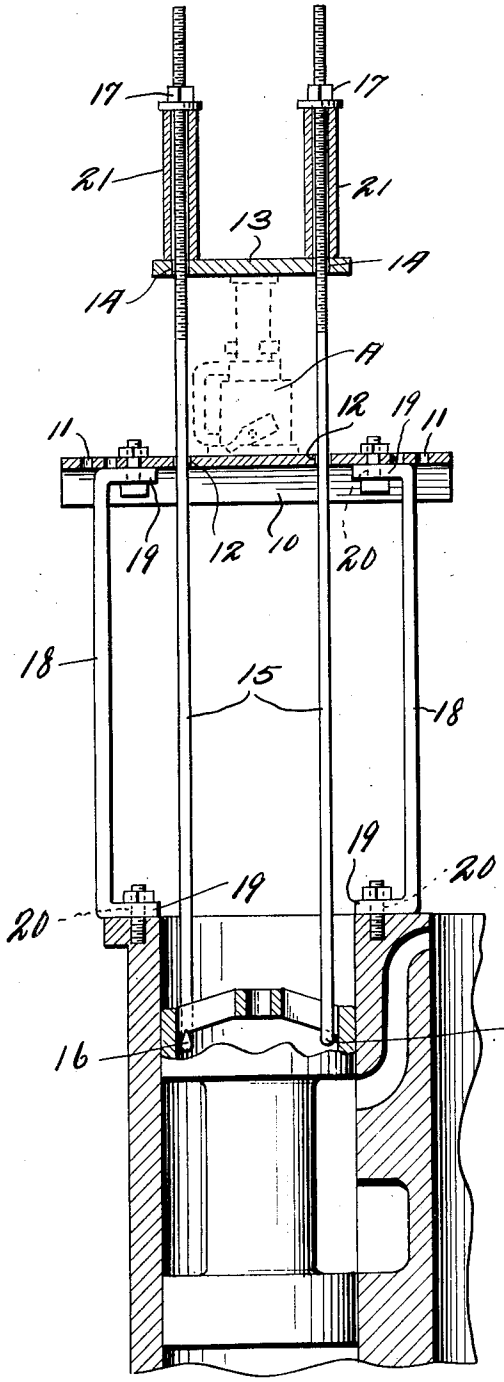


Fig. 2.

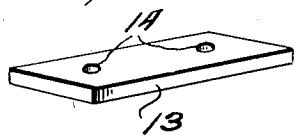


Fig. 3.

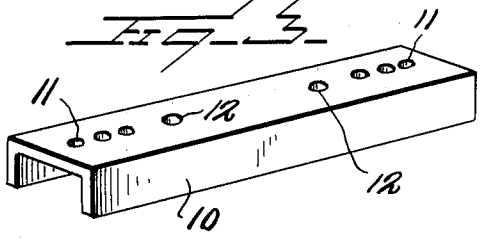
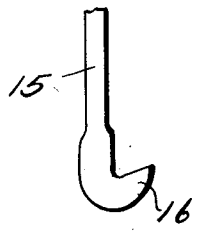


Fig. 4.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR PULLING PISTON VALVES.

Application filed January 7, 1926. Serial No. 79,865.

This invention relates to devices for pulling the piston valves of locomotive cylinders or the cylinders of stationary engines.

The general object of my invention is to provide a device of this character which is very simple, which may be readily applied and with which a standard jack may be used for exerting pulling force upon the piston valve.

A further object of the invention is to provide a device of this character which may be bolted to the cylinder studs as means for supporting the element upon which the standard jack rests and in this connection, to provide means whereby the device may be made to fit cylinders of different diameters.

A still further object is to provide a pulling device of this character so constructed that after one pull has been made by the standard jack the device may be adjusted so as to permit the jack to be turned to its initial position for the second pull.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a vertical sectional view of a piston valve and my mechanism for removing a piston valve;

Figure 2 is a perspective view of the plate 13;

Figure 3 is a perspective view of the plate 10; and

Figure 4 is a detailed view of the lower end of one of the rods 15.

Referring to these drawings it will be seen that my device comprises the transversely extending plate 10 which is preferably of channel iron, this channel iron being formed with a plurality of apertures 11 at each end and two spaced apertures 12 adjacent the middle of the brace. Coacting with this plate 10 is a relatively short brace 13 having two apertures 14. Passing through the apertures 12 and the apertures 14 are the pull rods 15 which, at their lower ends, are angularly bent or hooked as at 16, to engage with the spider of the piston valve, the upper ends of these rods being screw threaded for the reception of nuts 17.

Bolted to the end face of the plate 10 and depending therefrom are the longitudinal braces 18, the upper and lower ends of which are angularly bent as at 19 and formed with apertures 20. The upper ends of these braces are disposed against the end face of the brace plate 10 and bolted thereto by bolts passing through the apertures 20 and in any of the apertures 11. By having a plurality of apertures 11 it is possible to adjust these braces 18 inward or outward to accommodate valve chambers of different sizes. The lower ends of the braces 18 are designed to be engaged with the stud bolts of the valve chamber. Adapted to be used in connection with the pull rods 15 are sleeves 21 through which these pull rods 15 pass.

In the use of this device the braces 18 are secured to the stud bolts of the cylinder and to the transverse plate 10, the pull rods are then disposed through the apertures 12 of this plate and through the apertures 14 of the plate 13. A standard jack of any suitable character, designated A, is then disposed upon the plate 10 with the upper end of this standard A bearing against the end face of the plate 13. The nuts 17 are then tightened down upon the plate 13 and the jack is operated to lift this plate 13 and thus lift the pull rods which being engaged at their lower ends with the spider of the piston valve, raises the piston valve from its chamber. When the standard of the jack has been shifted upward as far as it will go, if it be required to take a second pull, the jack is turned down, the nuts 17 are removed and the sleeves 21 are placed upon the pull rods 15, the lower ends of the sleeves resting upon the plate 13. The nuts 17 are then replaced and bear against the upper ends of the sleeves. A second pull may then be taken.

I claim:—

1. Means for pulling piston valves comprising an apertured member, braces engaging therewith and adapted to bear against the end of the valve chamber wall, pull rods passing through said member and at their lower ends formed to engage with the piston valve, a second member through which the pull rods pass spaced from the first member a distance sufficient to permit a jack to be placed between them, and nuts screw-threaded on the pull rods and adapted to operatively engage with the upper face of said second named member.

2. Means for pulling piston valves comprising an apertured plate, pull rods passing through the plate and their lower ends being formed to engage with the piston valve, means for holding said plate to the

valve chamber, a second plate through which the pull rods pass, the first and second plates being adapted to accommodate a jack between them, sleeves adapted to be disposed over the upper ends of the pull rods and to bear at their lower ends against the second named plate, and nuts having screw threaded engagement with the pull rods and adapted to bear against the upper ends of said sleeves.

3. A device for pulling piston valves comprising a plate adapted to bear against and rest on one end of the chamber of a piston valve, braces adjustably engaged with said plate and depending therefrom, and at their lower ends formed to be engaged with the valve chamber studs, pull rods passing through the plate and having their lower ends hooked and their upper ends screw threaded, a second plate having apertures through which the pull rods pass, the plates being adapted to receive a jack between them, and nuts engaging the screw threaded ends of the pull rods and operatively bearing against the plate.

In testimony whereof I hereunto affix my signature.

JAMES F. RAGSDALE.