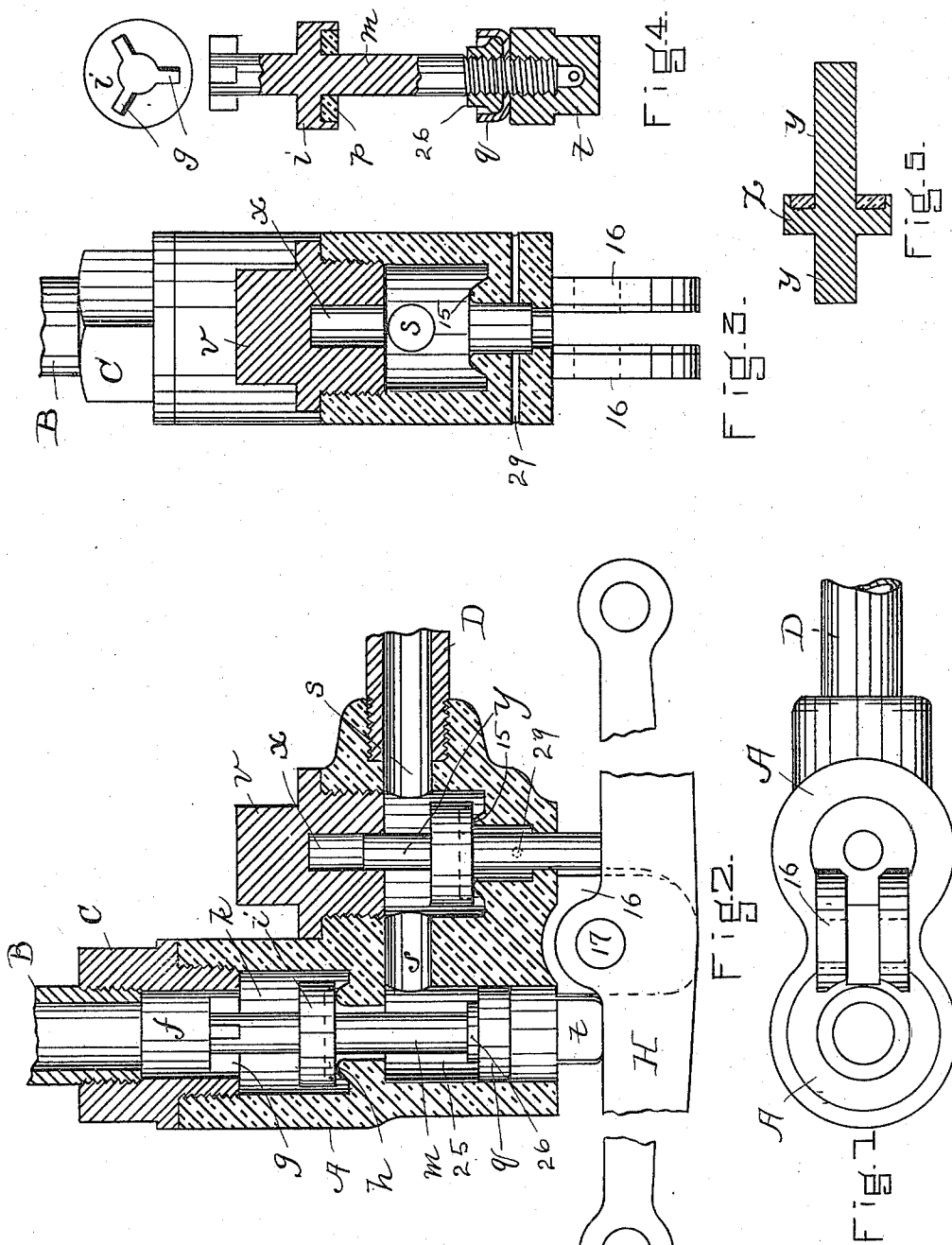


(No Model.)

R. E. TAYLOR.
VALVE FOR AIR HOIST CYLINDERS.

No. 579,370.

Patented Mar. 23, 1897.



WITNESSES.

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RUSSELL E. TAYLOR, OF NORWOOD, MASSACHUSETTS.

VALVE FOR AIR-HOIST CYLINDERS.

SPECIFICATION forming part of Letters Patent No. 579,370, dated March 23, 1897.

Application filed September 17, 1896. Serial No. 606,088. (No model.)

To all whom it may concern:

Be it known that I, RUSSELL E. TAYLOR, of Norwood, in the county of Middlesex, State of Massachusetts, have made certain new and useful Improvements in Valves for Air-Hoist Cylinders, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an under side plan view of my valve, the actuating-lever being removed; Fig. 2, a vertical longitudinal section of the same; Fig. 3, a vertical transverse section through the relief-valve chamber; Fig. 4, a section of the admittance and retaining piston, and Fig. 5 a section of the relief-valve.

Like letters and figures of reference indicate corresponding parts in the different views of the drawings.

My invention relates especially to a lever-actuated valve mechanism for supplying compressed air to the cylinder of an air-hoist and "bleeding" the same; and it consists in certain novel details hereinafter set forth and claimed, the object being to produce a simple, cheap, and effective device of this character wherein many of the objections incident to the use of valves of this class are overcome.

The nature and operation of the mechanism will be understood by those conversant with such matters from the following explanation:

In the drawings, A represents the valve-casing, centrally in which is formed an upwardly-lipped circular seat *h*.

The upper end of the casing is interiorly tapped and screw-threaded, and a hollow nut C is turned therein. The supply-pipe B, connecting with a compressed-air supply, is turned into the outer end of this nut, and in the inner end of said nut, at *f*, the upper end of the stem *m* of the valve *i* plays. Radiating guide-fingers *g* center the stem and permit free passage of air into the chamber *k* above said valve.

The valve *i* is countersunk in its lower face and lipped inwardly at *p* to receive and retain a leather washer for engaging the seat

h. This obviates the necessity of employing ground joints.

Below the seat *h* a chamber 25 opens downwardly through the bottom of the casing, the valve-stem *m* being extended through said chamber and screw-threaded on its lower end to receive a nut 26, against which a cup-shaped leather washer *q* is held by nut *t*. This washer forms a piston sliding tightly in the chamber 25, and the nut *t* projects from the bottom of said chamber in position to be engaged by one arm of the actuating-lever H, which is pivoted at 17 in ears 16 on the bottom of the casing.

Running horizontally through the casing there is a discharge-port *s*, leading from the chamber 25, below the seat *h* and above the piston *q*. The discharge-pipe D is turned into the outer end of this port and connects with the cylinder of the air-hoist. Below the port *s* a valve-seat 15 is formed of the same general shape as seat *h*.

A valve *z* of like construction with the valve *i* engages said seat and forms the relief-valve of the device. The stem *y* of this valve projects downwardly through the bottom of the casing and engages the actuating-lever H at the side of its fulcrum opposite the nut *t*. The stem *y* is also extended upward across port *s* and is centered in a chamber *x* in a screw-plug *v*, turned into the upper wall of the casing, the diameter of said plug being such that when removed the valve *z* may be readily taken out for repacking or other repairs.

Below the relief-valve seat escape-ports 29 are formed in the casing.

In the use of my improvement, the parts being in the position shown in the drawings, to admit compressed air to the hoist-cylinder the operator actuates the lever H to unseat valve *i*, and the air passes from the supply, through port *s*, to the cylinder. As soon as the lever is released the pressure from the supply seats valve *i* and the back pressure from the cylinder acts on the sliding cup-piston *q*, located below port *s*, as described, and serves to retain valve *i* in engagement with its seat.

When it is desired to relieve the cylinder, the lever H is moved in the opposite direction, unseating the valve *z* and permitting

the air to escape through the ports 29. The pressure in the port *s* tends to hold valve *z* seated until the said valve is operated by the lever *H*.

5 Having thus explained my invention, what I claim is—

The casing provided with the supply and discharge arranged substantially as shown in combination with the lever, *H*; the valve, *z*,
10 for closing the supply and provided with the

stem, *m*, in engagement with one arm of said lever; the piston, *q*, carried by said stem; and the valve, *z*, having its stem engaging the opposite lever-arm substantially as and for the purpose specified.

RUSSELL E. TAYLOR

Witnesses:

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GEO. W. WESLEY.