

No. 888,273.

PATENTED MAY 19, 1908.

J. E. THOMPSON.

PISTON.

APPLICATION FILED NOV. 26, 1907.

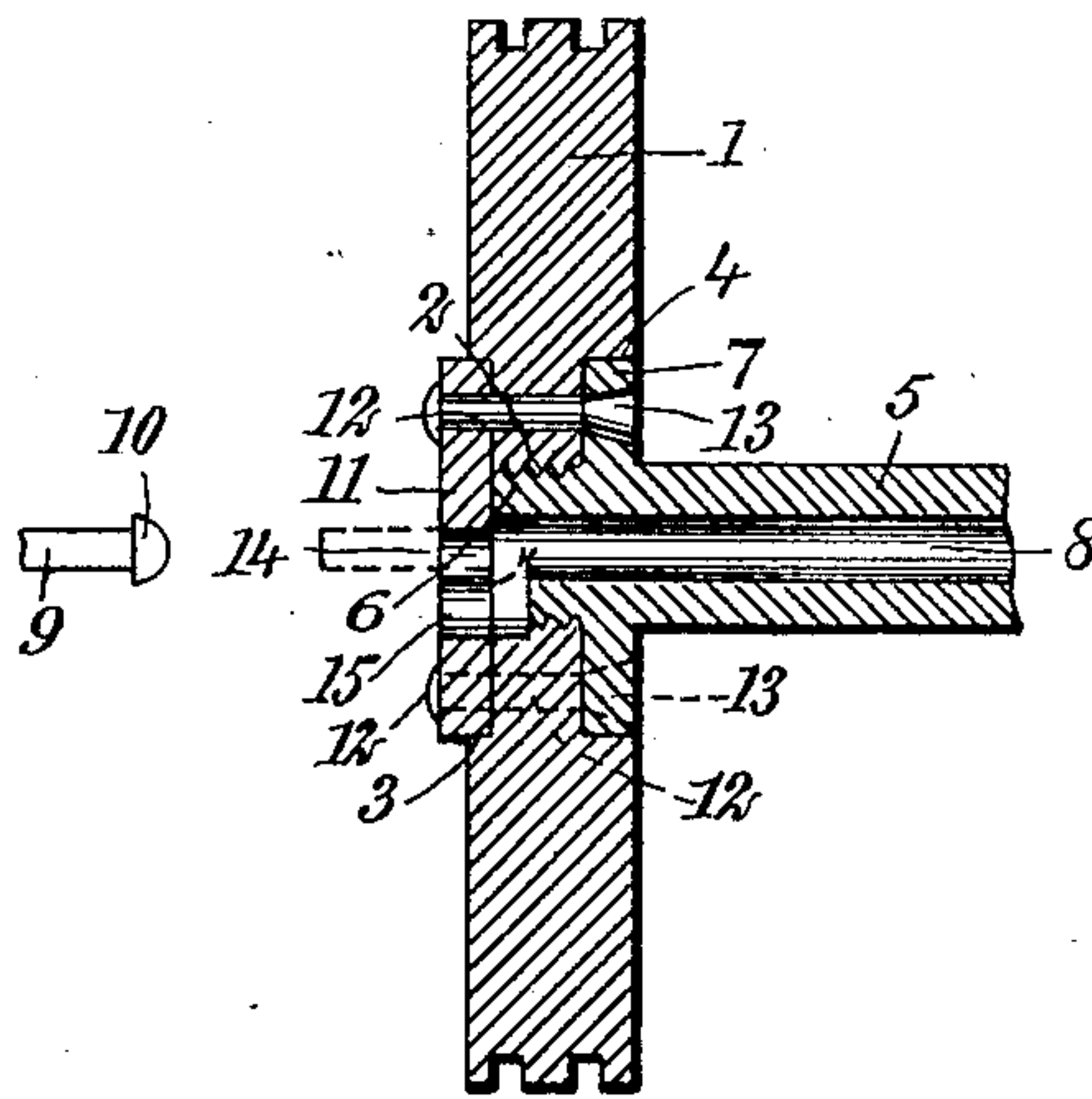


Fig. 1.

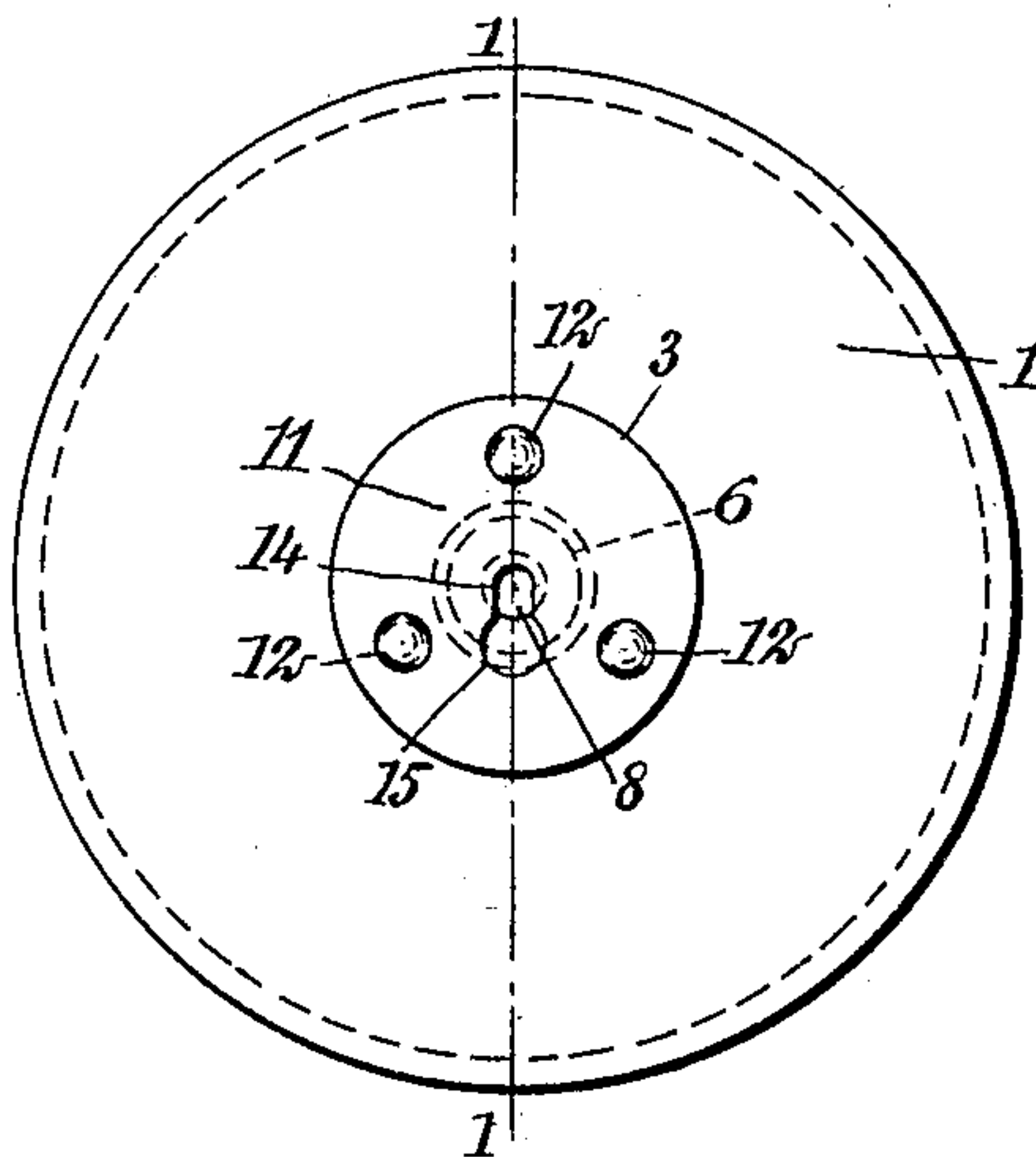


Fig. 2.

WITNESSES

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## PISTON.

No. 888,273.

Specification of Letters Patent.

Patented May 19, 1908.

Application filed November 26, 1907. Serial No. 403,874.

*To all whom it may concern:*

Be it known that I, JOSEPH E. THOMPSON, a citizen of the United States, and a resident of Chattanooga, in the county of Hamilton and State of Tennessee, have invented a new and Improved Piston, of which the following is a full, clear, and exact description.

This invention relates to pistons, and it is particularly useful in connection with reciprocating engines having piston-actuated valve or reversing rods.

An object of the invention is to provide a simply constructed and durable piston-head which can be firmly secured to a piston-rod, and which is formed to actuate a valve-rod.

A further object of the invention is to provide a device of the class described, in which the parts are firmly secured together against accidental displacement, which is formed to actuate a valve-rod, and in which the latter is prevented from becoming accidentally disengaged from the piston.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in both figures, and in which

Figure 1 is a longitudinal section of the piston, and Fig. 2 is an end view of the same.

Before proceeding to a more detailed explanation of my invention, it should be noted that the same is particularly applicable to certain types of reciprocating engines, in which the valve-rod slides within a longitudinal bore of the piston-rod and is actuated by the piston-rod and the piston-head. In engines of this type, it is necessary to construct the pistons so that, when necessary, the valve-rods can be dis-engaged therefrom. My invention permits this to be effected and at the same time prevents the accidental dis-engagement of the valve-rod from the piston. Furthermore, the construction of my device is such that the piston-head is rigidly secured upon the piston-rod and is firmly held against accidental dislodgment therefrom. My invention, however, can also be applied to pistons having solid piston-rods; that is, rods without longitudinal bores.

Referring more particularly to the drawings, I employ a piston-head 1, which may be of any preferred or common form, with the

exception of certain structural details which will appear hereinafter. They include a substantially central, threaded opening 2, through the piston head, having at the opposite faces of the same laterally extended recesses 3 and 4 respectively. The recesses 3 and 4 are preferably concentric with the threaded opening 2.

I employ a piston rod 5 having its extremity 6 threaded. Adjacent to the threaded extremity 6, the piston rod has a laterally projecting integral flange 7, formed to fit in the recess 4 when the threaded extremity 6 is located in the correspondingly threaded opening 2 through the piston head. The piston rod has a longitudinal bore 8, adapted to receive a valve rod 9, which has at one end a head or button 10.

A member 11, is formed to fit in the recess 3 of the piston head, and is secured in position by means of rivets 12. The latter are arranged in suitable registering openings of the member 11, the piston head 1 and the piston rod flange 7. The rivet heads 13 are countersunk in the flange, as is shown most clearly in Fig. 1. The member 11 has a key-hole slot 14 therethrough, the extended portion 15 of which is formed to permit the head 10 of the valve rod to pass through the same. In this way the valve rod can be inserted through the member 11 into the longitudinal bore of the piston rod. The head together with the piston rod, is cut away to permit the entrance of the valve rod. The narrower portion of the key-hole slot 14 permits the valve rod 9 to pass freely therethrough, but prevents the head 10 of the latter from being forced through the same. Thus the member 11, when it engages the head 10 of the valve rod, serves to actuate the latter.

Having thus described my invention, I claim as new and desire to secure by Letters Patent

1. In combination, a piston head having an opening, a piston rod having an end mounted in said opening, a member arranged at the side of said head remote from said rod, said rod having an extension at the side of said head remote from said member, and means for rigidly securing said member, said head and said rod extension together.

2. In combination, a piston head having a threaded opening, a piston rod having a correspondingly threaded end mounted in said opening, said rod having a flange, a member arranged at the side of said head



remote from said rod, and means for rigidly securing said member, said head and said flange together.

3. In combination, a piston head having a threaded opening therethrough, a piston rod having a correspondingly threaded end mounted in said opening, said rod being provided with an integral flange adjacent to said threaded end, a member arranged at the side of said head, remote from said rod, and means for rigidly securing said member, said head and said flange together, said rod having a longitudinal bore adapted to receive a valve rod, said member having an opening adapted to permit the passage therethrough of the valve rod.

4. In combination, a piston head having an opening, a piston rod having an end mounted in said opening, said opening being extended to form recesses at the opposite faces of said head, said rod having a flange arranged in one of said recesses, a member arranged in the other of said recesses, said head, said flange and said member having

registering openings, and securing means arranged in said registering openings.

5. In combination, a piston head having a threaded opening, a piston rod having a correspondingly threaded end mounted in said opening, a member arranged at the side of said head remote from said rod, and means for rigidly securing said member, said head and said rod together, said rod having a longitudinal bore adapted to receive a valve rod provided with a head, said member having an opening comprising a part formed to permit said valve rod head to pass therethrough, and a portion formed to permit said valve rod to pass therethrough and to prevent the passage therethrough of said valve rod head.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH E. THOMPSON.

Witnesses:

CLAUDE NICHOLSON,  
O. P. STEWART.