

(No Model.)

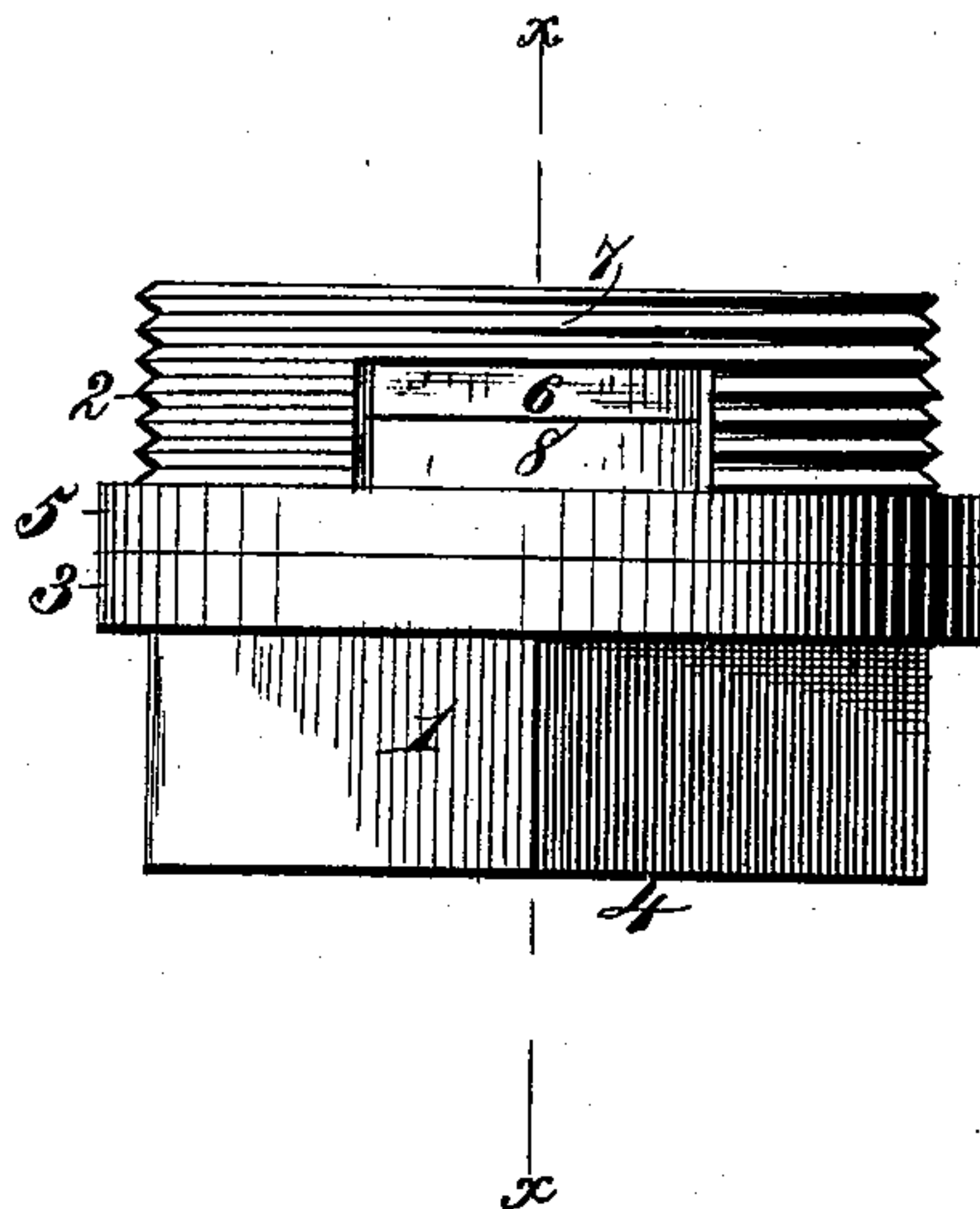
P. T. COFFIELD.

PUMP VALVE.

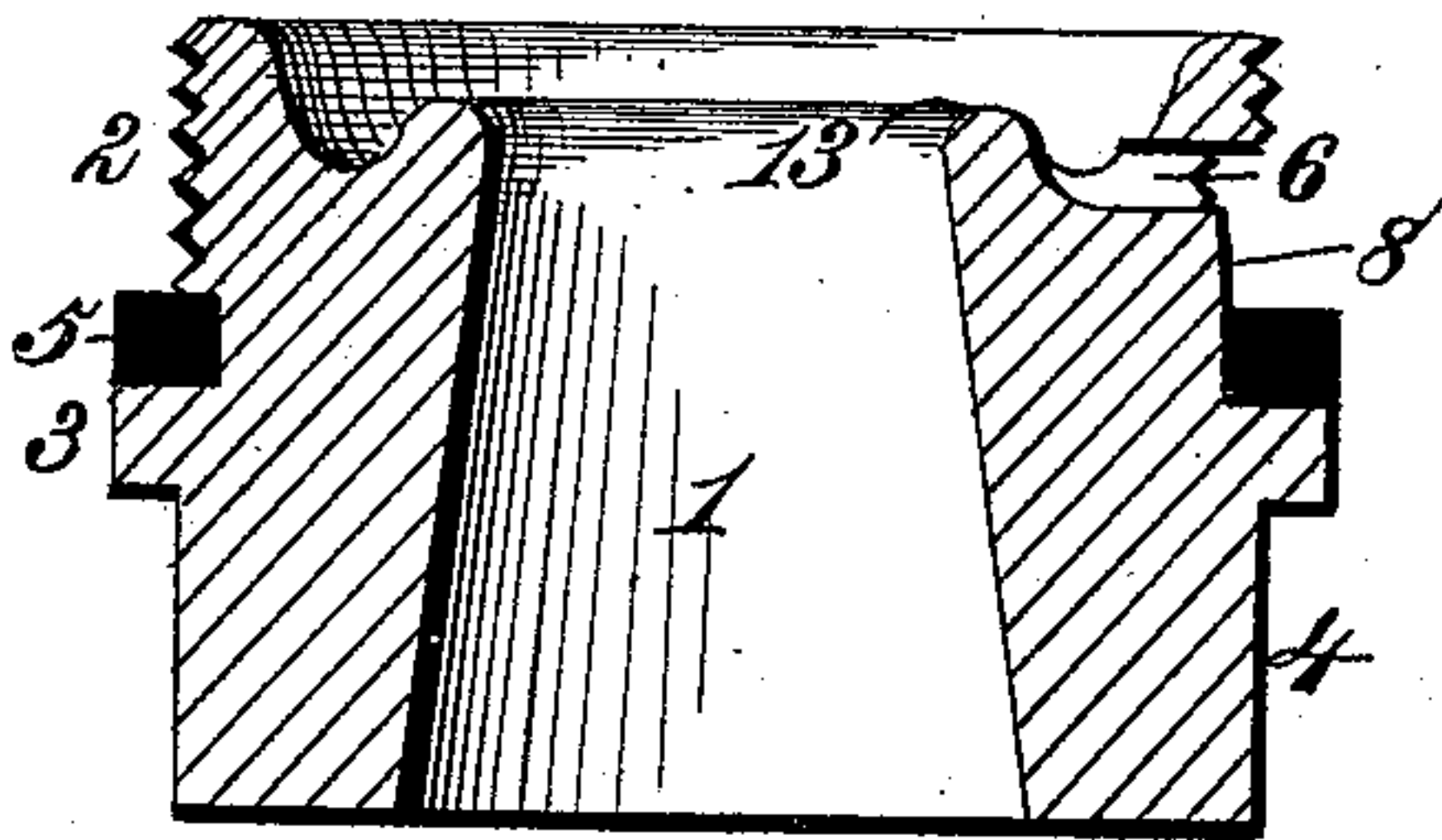
No. 322,795.

Patented July 21, 1885.

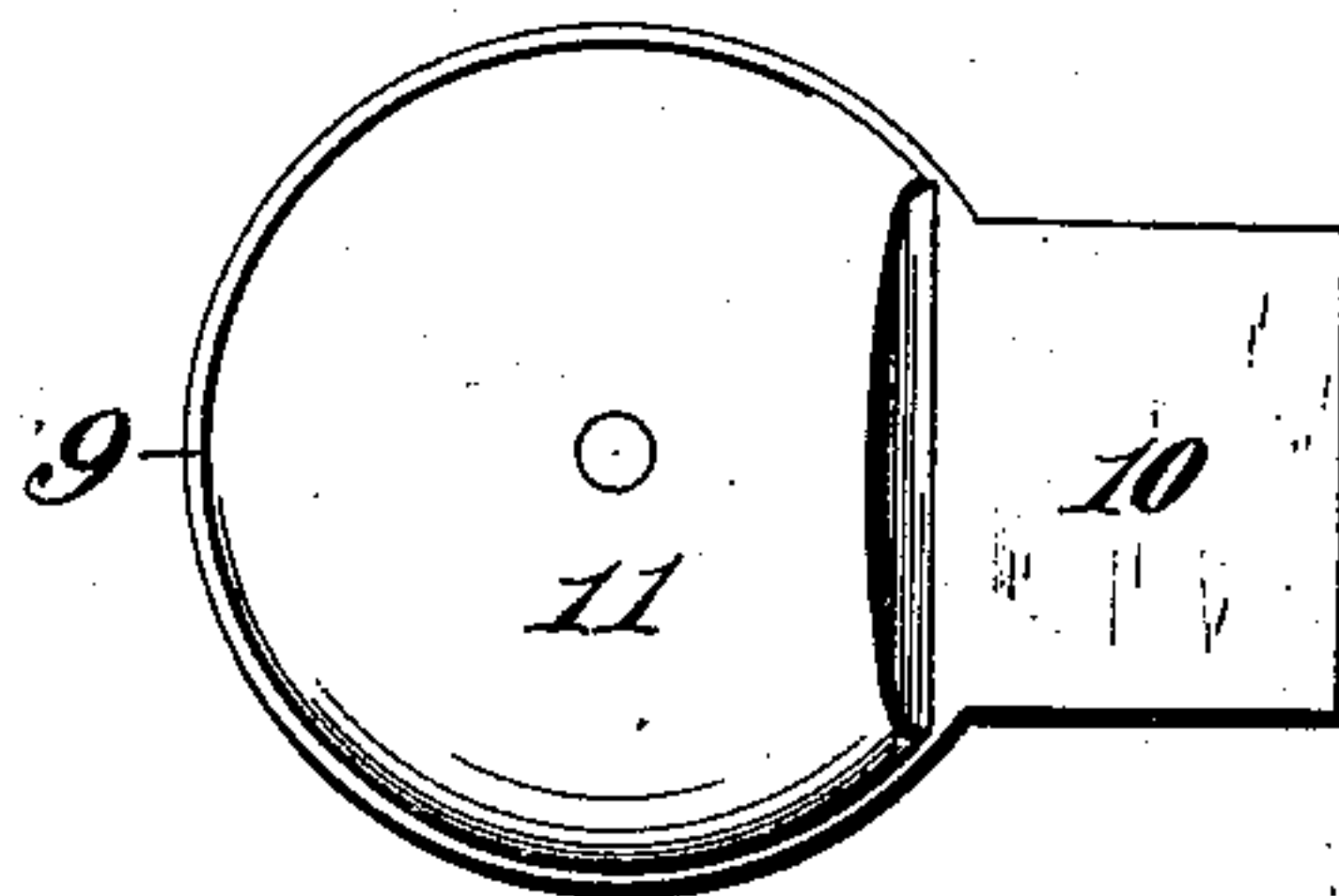
*Fig. 1.*



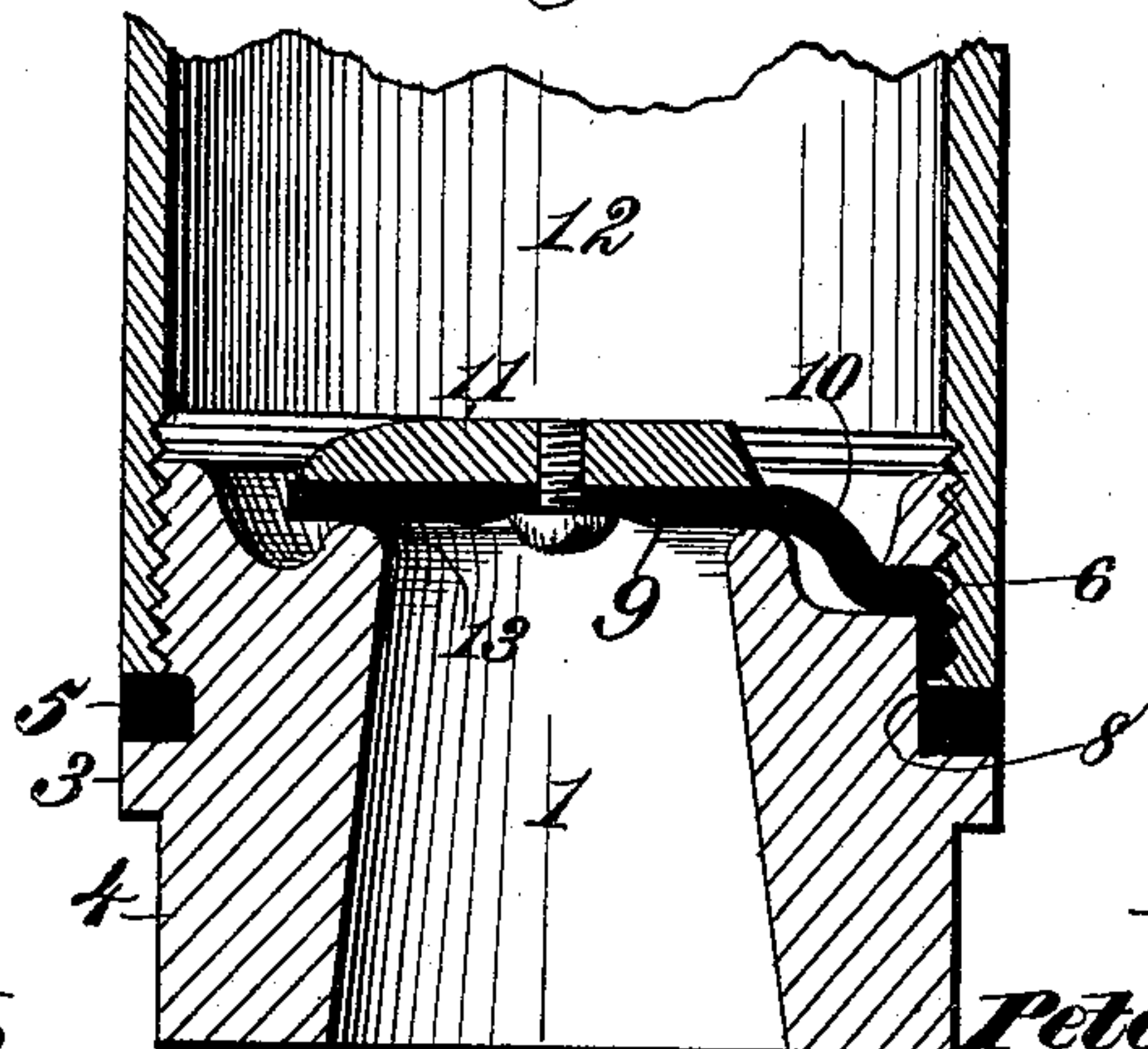
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses.

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# UNITED STATES PATENT OFFICE.

PETER T. COFFIELD, OF NEW CARLISLE, OHIO.

## PUMP-VALVE.

SPECIFICATION forming part of Letters Patent No. 322,795, dated July 21, 1885.

Application filed January 15, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, PETER T. COFFIELD, a citizen of the United States, residing at New Carlisle, Clark county, Ohio, have invented new and useful Improvements in Pump-Valves, of which the following is a specification.

In ordinary hinge or flap valves as hitherto constructed it has been customary to secure the valve to its seat by screws passing through a projecting portion of the material of the valve and into the face of the valve-seat. This method has necessitated the use of screws and the tapping of screw-holes in the body of the valve case or box, both items of expense. In addition, it placed the pivotal point of the valve exceedingly near to the part covering the opening, shortening the hinge so that the valve has but a comparatively limited play, and works rather slow and rigidly. In addition, if a valve so secured needed replacement or repair it would often be found that the screws securing it to its seat had become so rusted into their seats as to render removal extremely difficult and sometimes impossible, in which latter case the tapping of new screw-holes would have to be resorted to, these facts often rendering repairs to the valve difficult and expensive.

The object of my invention, therefore, is to furnish means for securing a valve to its seat without the use of screws or other extraneous fastening attachments, and in such manner that a comparatively long hinge shall be furnished, insuring a wide range and increased ease of movement, and affording facility for ready removal and replacement when repairs may be needed.

In accomplishing these objects of my invention a valve box or case is made of the usual style, with the exception hereinafter noted—that is, a cylindrical block having a central aperture for the inlet is used, one end of which is formed upon its exterior into a screw-thread for attachment to the pump-cylinder, while the other is formed into a nut for its ready manipulation. Around the aperture is formed the projecting rim upon which the valve is to take and be seated. Upon one side of this rim an aperture is formed through the screw-threaded portion of the cylindrical block, at a slight distance below its top. Below this aperture the screw-thread is cut away for a little

space, forming a recess in the wall of the block below the aperture. The valve-leather is formed with an elongated tongue on one side, which, when the valve is to be secured in position, is passed through the aperture noted. The cylinder being then screwed upon the block, forces the tongue into the recess below the aperture and against the inner wall of the recess, the screw-threads of the cylinder taking into the tongue and holding it firmly, thus securing the valve in position. This may be better understood by reference to the drawings, in which—

Figure 1 is a side view of a valve-case constructed according to my invention; Fig. 2, a cross-section thereof; Fig. 3, a plan view of a valve for use therewith; Fig. 4, a cross-section of the valve-seat and cylinder united together.

1 is the box or case formed with the screw-threaded portion 2 for its attachment to the cylinder, the shoulder 3, and the nut portion 4, 5 being the usual leather washer secured in a recess in 1, and resting upon 3 to aid in forming a tight joint between the cylinder 12 and valve box or case 1. Through this block or case passes the central cavity forming the fluid-inlet, which at its inner end is surrounded by the rim 13, forming the valve-seat proper. Through one side of the screw-threaded portion 2, and slightly below its upper edge, an aperture, 6, is made, the screw-thread being cut away below this aperture so as to form a recess, 8, which may extend beneath it to the washer 5 or to the shoulder 3. The portion of the screw-threaded part 2 above the aperture 6 forms a bridge, 7, thereon, affording space for continuous screw-threads, which aid in readily enabling 1 and 12 to be united.

9 is the valve-leather, with the usual weight, 11, secured thereto. On one side the valve-leather is formed with a tongue, 10, of a width nearly equal to the length of the aperture 6.

To secure the valve in position, the tongue 10 is passed beneath the bridge 7 and through the aperture 6. The cylinder 12 and case 1 are then united. As this is being done the inner wall of 12, taking against the projecting end of the tongue 10, forces it downward and inward against the inner wall of the recess 8, the threads of 12 taking into the tongue 10 and forming a thread in practice on it. When 12 is screwed to its seat, it will be seen then that



the valve is held firmly by its tongue 10 being secured tightly between the inner wall of 12 and the wall of the recess 8, and without the expense or the use of any extraneous or additional fastening devices. At the same time, as the pivotal point of the hinge is between the inner end of the bridge 7 and the upper edge of recess 8, a longer hinge is furnished, giving increased ease and delicacy and enlarged amplitude of movement of the valve.

As the valve block or case 1 is usually cast, the aperture 6 and recess 8 may be formed therein at the time of and during the process of casting, so that the means used for securing the valve in its position entail no expense or extra material whatever.

Having thus described my invention, what I claim is—

1. A valve box or case having an aperture, 6, and bridge 7 formed upon one side thereof for receiving and securing the tongue of a valve, substantially as described.

2. The combination of a valve box or case having an aperture, 6, and bridge 7 formed upon one side with the valve having a tongue passing through the aperture, and a cylinder for engaging the outer end of the tongue, substantially as described.

3. The combination of a valve box or case having a bridge, 7, aperture 6, and recess 8, a valve, 9, having tongue 10, and cylinder 12, whereby the valve is secured by the gripping of the tongue between the walls of the recess and cylinder, substantially as described.

4. A valve box or case having bridge 7, aperture 6, and recess 8 for the reception and securement of a valve-tongue, substantially as described.

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

PETER T. COFFIELD.

Witnesses:

C. H. NEFF,  
JONA SMITH.