

No. 773,661.

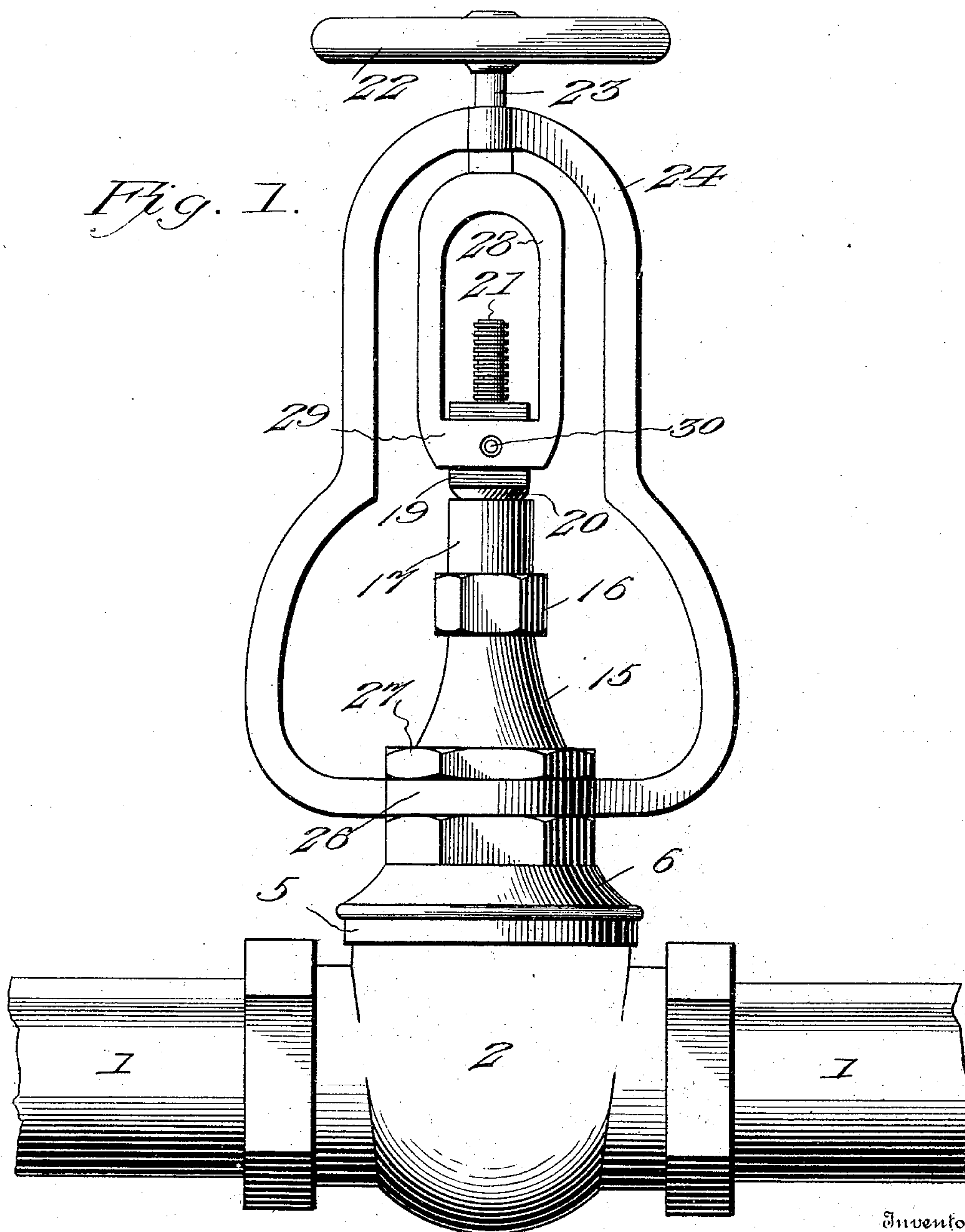
PATENTED NOV. 1, 1904.

J. MANN, SR.
VALVE.

APPLICATION FILED FEB. 20, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



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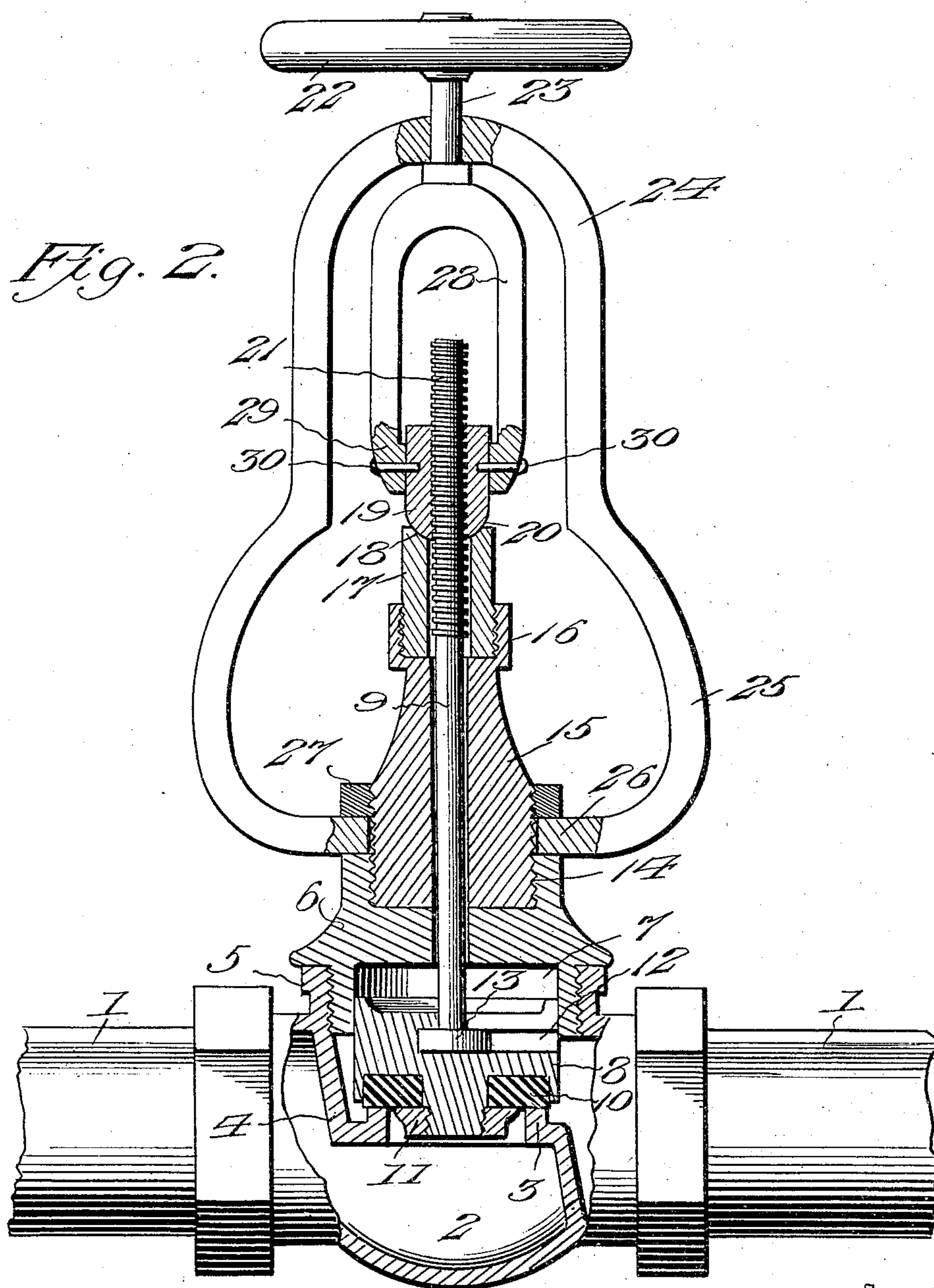
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UNITED STATES PATENT OFFICE.

JOSEPH MANN, SR., OF NEWCASTLE, PENNSYLVANIA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 773,661, dated November 1, 1904.

Application filed February 20, 1904. Serial No. 194,582. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH MANN, Sr., a citizen of the United States, residing at Newcastle, in the county of Lawrence and State of Pennsylvania, have invented new and useful Improvements in Valves, of which the following is a specification.

This invention relates to valves, and has special reference to steam-valves used in connection with pickling-machines, the same being what is termed a "lifting-valve," which is used on an average of every six minutes in the day. In valves of the kind referred to and adapted for the use specified the parts of the valve, and particularly the valve-body and valve-rod, are subject to great wear, so that the life of a valve is not usually longer than four or five weeks. With the valve now in use after the same becomes worn to a leaking condition it has to be thrown away, and the same is true when the threads on the valve-stem become stripped or worn out.

The object of the present invention is to provide a lifting-valve of special construction by means of which the parts which are subjected to the greatest use and wear may be readily detached from the rest of the valve mechanism and thrown away and their places renewed by like parts, thus reducing the cost of renewing the valve to a minimum and also reducing the labor and time necessary to place and keep the valve in perfect working order.

With the above and other objects in view the invention consists in the novel construction, combination, and arrangement of parts, as hereinafter fully illustrated, described, and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a valve constructed in accordance with the present invention, showing also the valve-casing. Fig. 2 is a vertical sectional view of the same, illustrating the manner in which the parts of the valve are combined.

Like reference-numerals designate corresponding parts in both figures of the drawings.

Referring to the drawings, 1 designates a pipe which at a suitable point is provided with an enlarged valve-casing 2, in which is situ-

ated a valve-seat 3, the opening of which leads through a web 4, the said parts being of the usual construction. Extending outward from the valve-casing is an internally-threaded hollow boss 5, into which the valve 55 is screwed and from which the entire valve mechanism may be taken for the purpose of getting at the operative parts of the valve for renewal and repair purposes.

6 designates a cap which is screwed into the hollow boss 5 and provided in its inner side with a cylindrical cavity or space 7, forming a guideway for the valve-body 8, which is adapted to slide up and down therein as it is operated upon by the valve-stem. (Shown at 65 9.) The valve-body 8 is provided with a packing-washer 10 to enable the valve to fit tightly against the seat 3, the packing being shown as held upon the valve-body by means of a nut 11. The valve-body 8 is also provided with a slot 12 to admit a head or enlargement 13 on the adjacent end of the valve-stem 9, whereby the valve-body may be detached from the stem after the parts are disconnected from the pipe and valve-casing. 75 The cap is provided in its upper or outer end portion with an internally-threaded socket 14, in which is received the threaded base of a post 15, provided at its upper or outer end with an internally-threaded cup 16, in which 80 is screwed a hollow cylindrical bearing 17, the upper end of which is hollowed out or concave, as shown at 18, to form a seat for a rotatable nut 19, the lower or inner end of which is rounded, as shown at 20, to correspond with the seat 18, in which it rotates. 85 The stem 8 is screw-threaded, as shown at 21, and works within the nut 19.

The nut 19 is rotated by means of a hand-wheel 22, the shaft or spindle 23 of which 90 passes through a bearing in the upper end of a yoke 24, the lower portion of which is spread, as shown at 25, and embodies a centrally-disposed annulus or ring 26, which surrounds the threaded portion of the post 15 95 and is held against the cap 6 by means of a jam-nut 27. The shaft or spindle 23 after passing through the bearing in the open frame or yoke 24 is provided with an open or divided shank 28, resembling a turnbuckle, the 100

same being provided at its inner or lower end with an internally-squared sleeve 29, which embraces the nut 19, which is also square externally, so as to cause it to rotate with the shank 28, the said shank and nut being detachably connected by means of removable pins or keys 30, which pass through the sleeve 29 into sockets in the nut 19.

The greatest wear comes on the threaded portion of the valve-stem 9, the nut 19, and the valve 8, or rather the packing-washer 10 of the valve. By means of the construction hereinabove described it will be seen that the entire valve mechanism may be unscrewed from the valve-casing and valve-stem and the nut and the valve-stem may be readily dissociated either for repair or renewal of said parts, it usually being necessary only to renew the valve-stem and the nut, which may be done at trifling expense and expeditiously.

Having thus described the invention, what is claimed as new is—

1. A valve comprising a valve-casing, a valve-body mounted therein, a detachable valve-cap in which the valve-body is slidingly mounted, a threaded valve-stem detachably connected with the valve-body, a nut rotatable on said stem and cooperating therewith, a bearing for said nut supported by the cap,

a frame or yoke also supported by the cap, and a valve-operating device journaled in the yoke and having a detachable connection with the nut, substantially as described.

2. A valve comprising a valve-casing, a valve-cap detachably connected therewith, a valve-body mounted in the cap, an open frame or yoke supported by the cap, a threaded valve-stem, a nut cooperating with said valve-stem and bearing, and a valve-operating device journaled in the frame or yoke and having a detachable connection with the nut.

3. A valve comprising a valve-casing, a valve-cap detachably connected therewith, a valve-body mounted within the cap, an open frame or yoke detachably connected with the cap, a post extending outward from the cap, a detachable bearing supported by said post, a nut engaging the threaded stem and seated against said bearing, and a nut-operating device comprising an open shank which embraces and is detachably connected with the nut, substantially as described.

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

JOSEPH MANN, SR.

Witnesses:

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LLEWELLYN JONES.