

(No Model.)

B. F. & G. H. VAN MATRE.  
THROTTLE VALVE.

No. 502,939.

Patented Aug. 8, 1893.

FIG. 1.

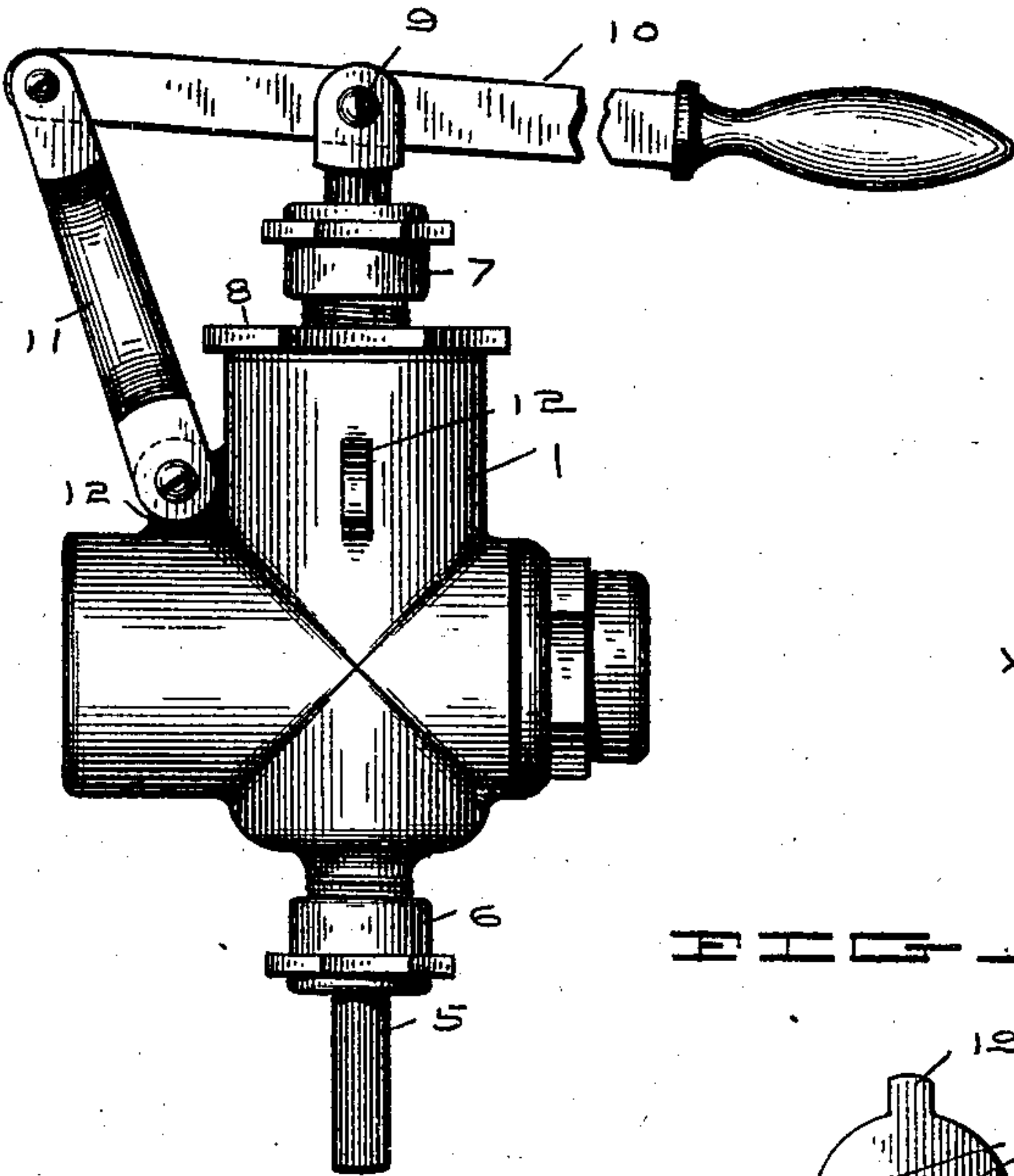


FIG. 2.

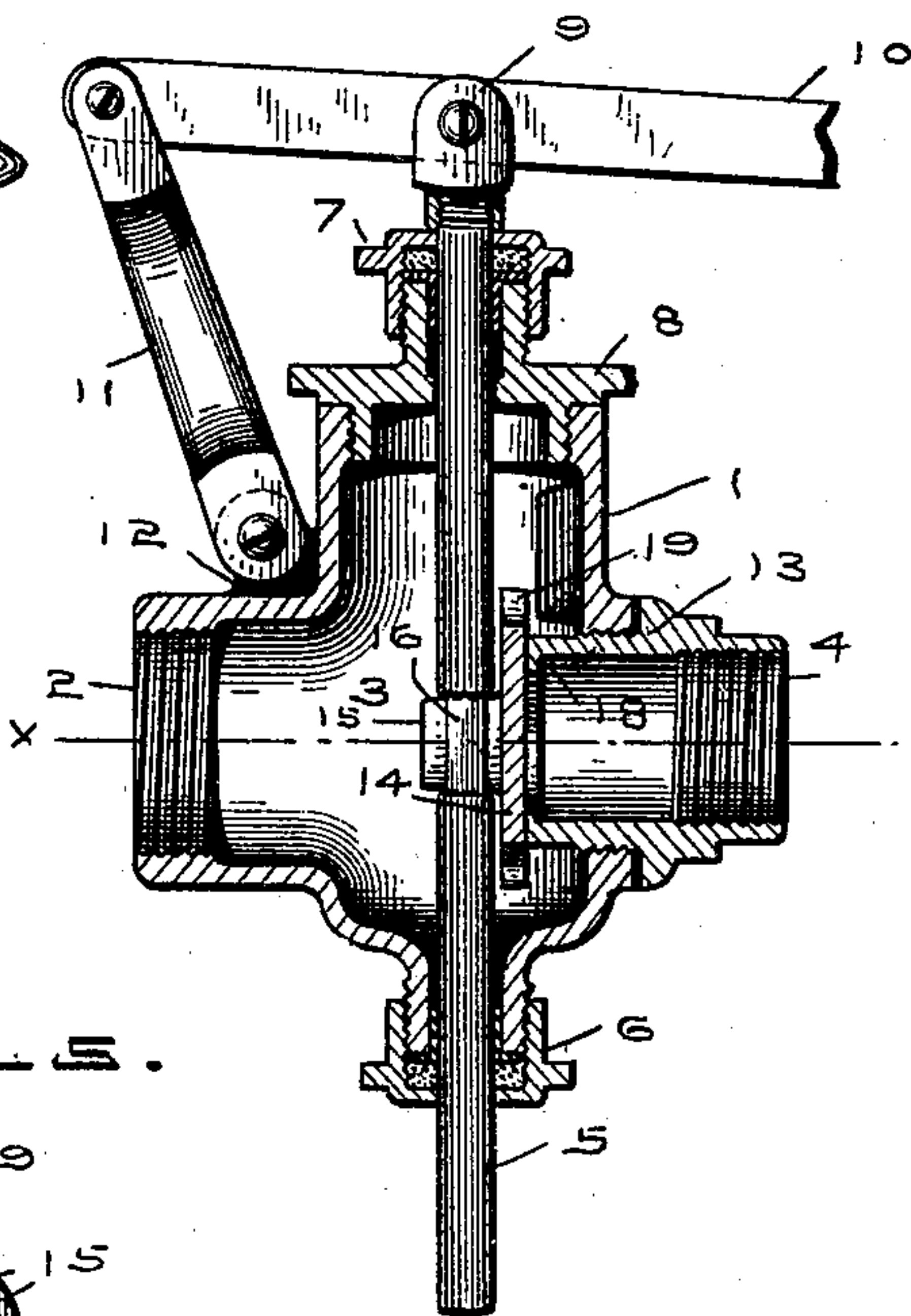


FIG. 3.

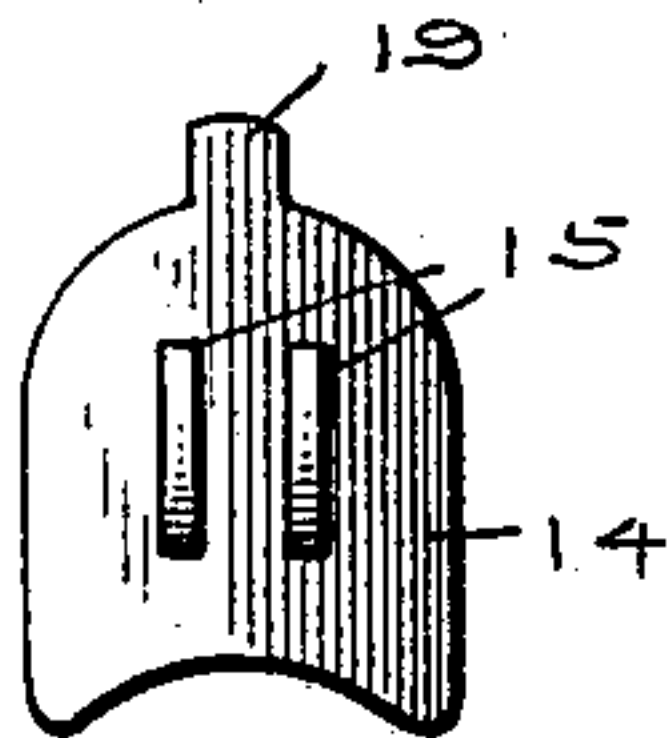


FIG. 4.

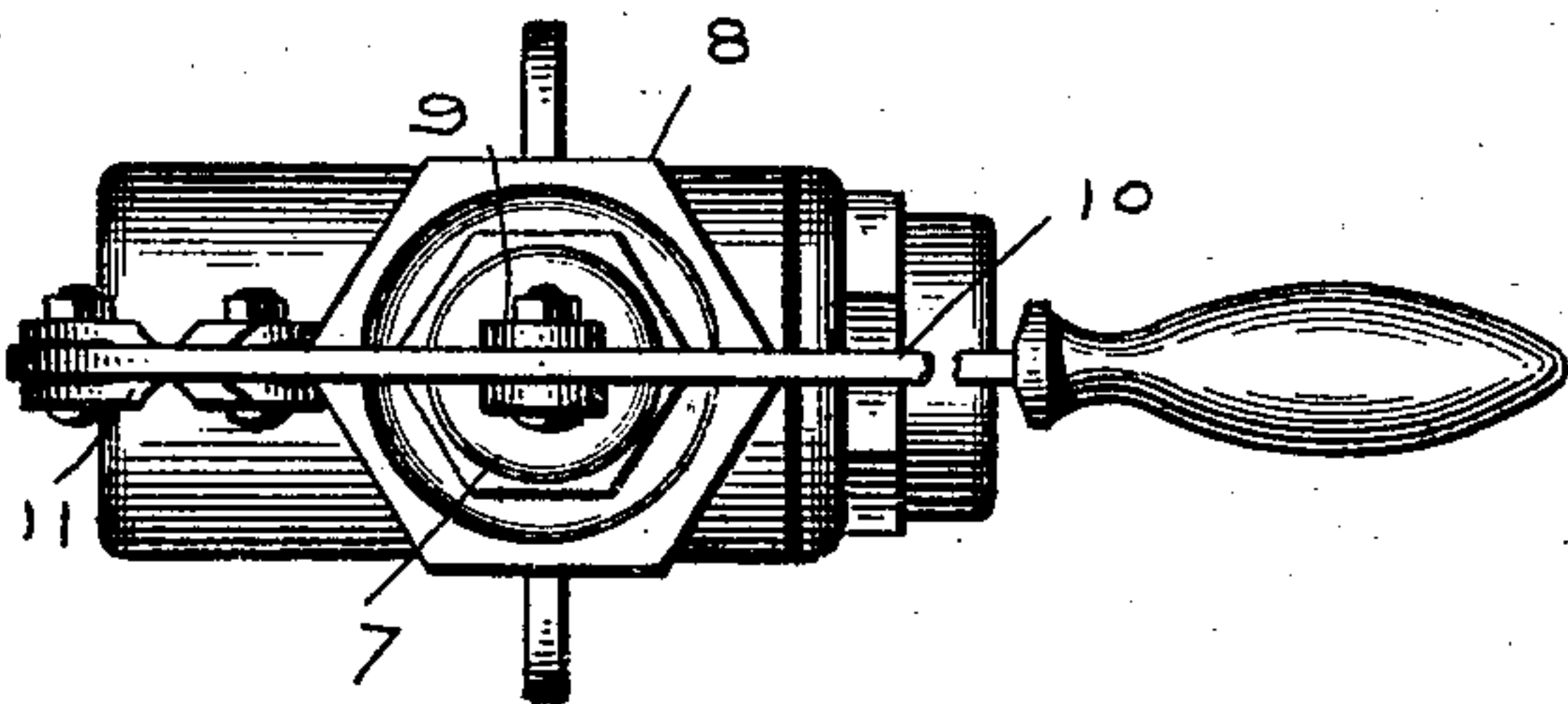


FIG. 5.

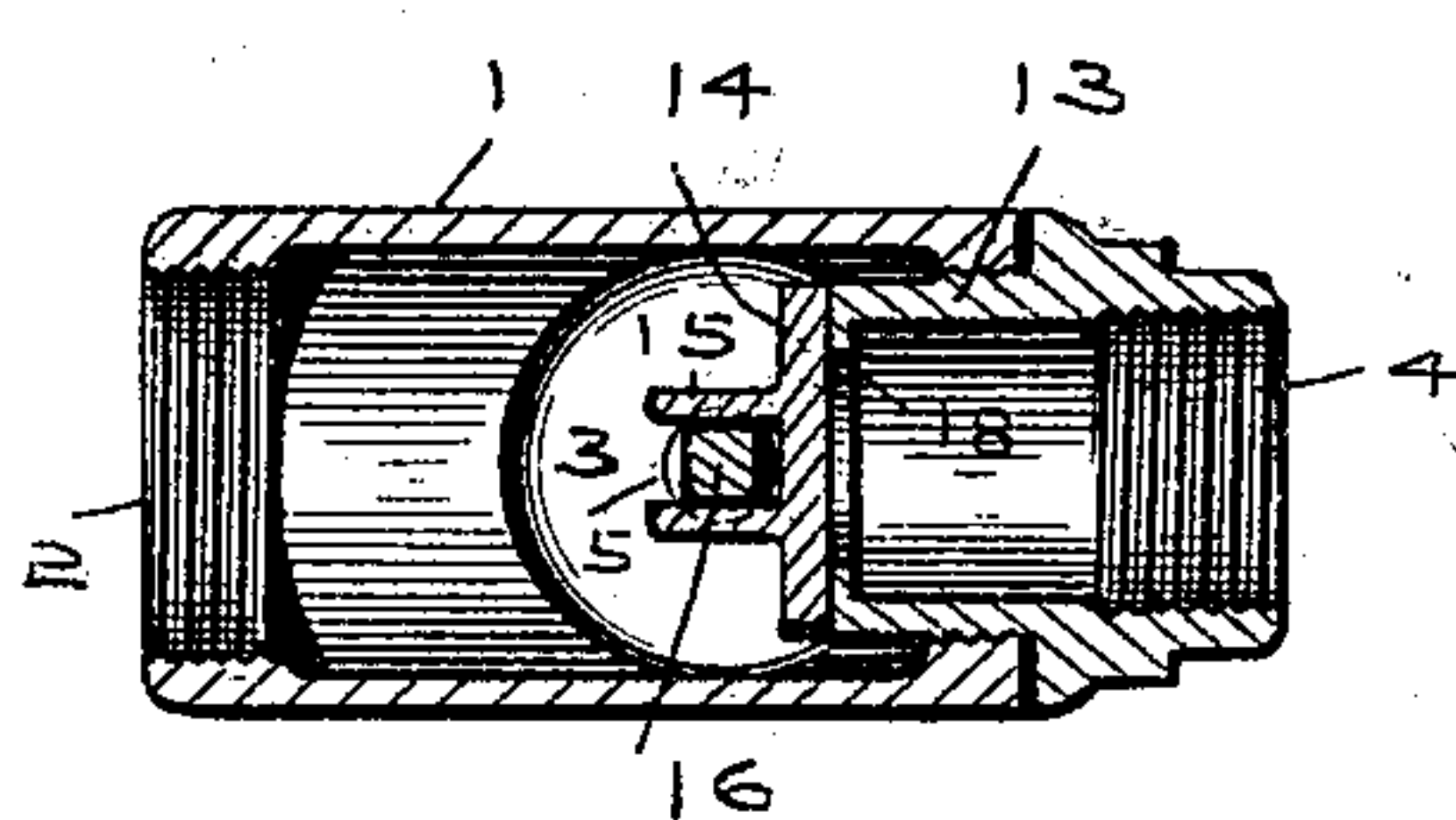
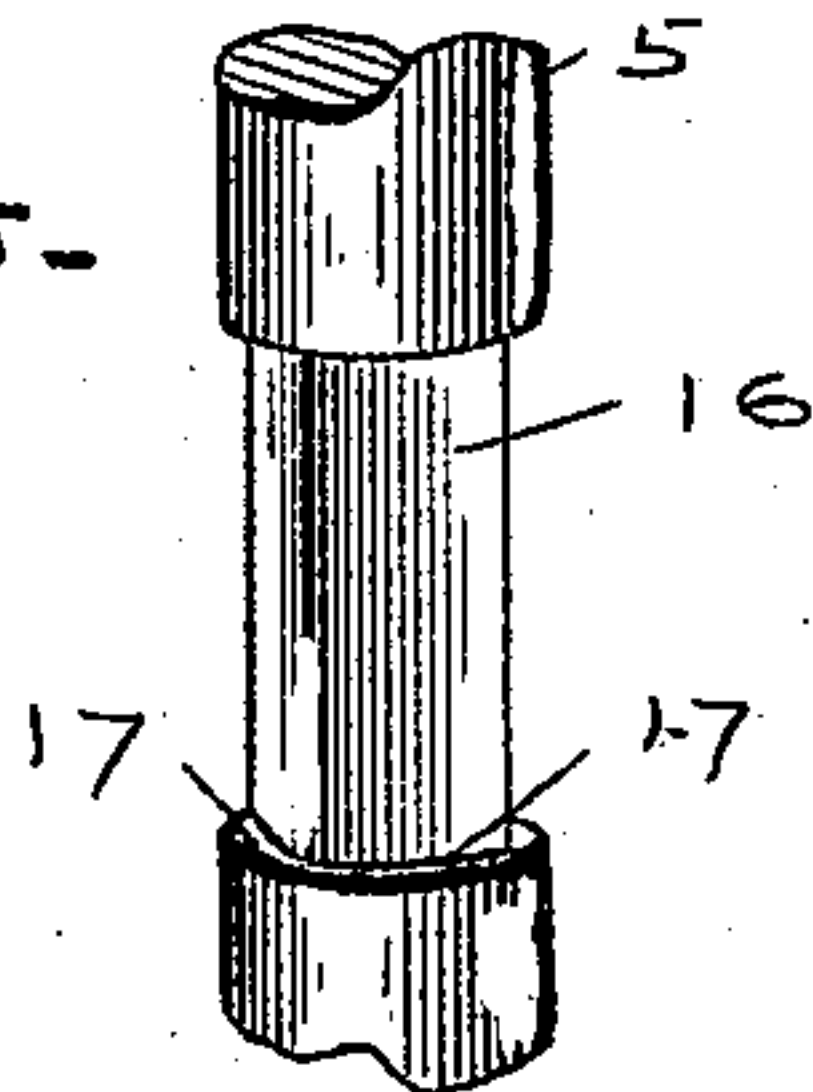


FIG. 6.



Witnesses

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# UNITED STATES PATENT OFFICE.

BENJAMIN F. VAN MATRE AND GEORGE H. VAN MATRE, OF NEW CASTLE,  
ASSIGNORS OF ONE-THIRD TO JAMES U. MILLER, OF INDIANAPOLIS,  
INDIANA.

## THROTTLE-VALVE.

SPECIFICATION forming part of Letters Patent No. 502,939, dated August 8, 1893.

Application filed April 7, 1893. Serial No. 469,489. (No model.)

*To all whom it may concern:*

Be it known that we, BENJAMIN F. VAN MATRE and GEORGE H. VAN MATRE, of New Castle, county of Henry, State of Indiana, have invented certain new and useful Improvements in Throttle-Valves; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like figures refer to like parts.

Our invention relates to new and useful improvements in valves, and the form we have shown and described is one that is especially adapted for steam connections, and it will be understood from the following description.

In the drawings, Figure 1 is an elevation of our improved valve. Fig. 2 is a central longitudinal section of the same. Fig. 3 is a top view. Fig. 4 is a cross section on the line  $x-x$ , Fig. 2. Fig. 5 is a detail view of the valve, and Fig. 6 is an enlarged detail view of a part of the valve stem.

In detail, 1 is the valve casing, 2 being the inlet into the valve chamber 3, and 4 the outlet. 5 is a valve stem which passes vertically through the valve chamber and casing, a stuffing box 6 being secured to the casing below through which the valve stem works. A similar stuffing box 7 is secured to the top of a screw cap 8 which closes the top of the valve chamber and the upper end of the valve rod works through this stuffing box also, a bracket 9 being screwed on its upper end, and this bracket is pivoted to a lever 10 for operating the valve stem, one end of the lever being pivoted to a link 11, which is in turn pivoted to any of the brackets 12 formed on the valve casing 1.

13 is a removable valve seat which is cylindrical in form and screws into the outlets side of the valve casing, and 14 is the valve itself, which is shown in detail in Fig. 5, its under side being curved in shape and it having two lugs or arms 15 on its back which fit loosely on the squared portion 16 of the valve rod, the lugs 15 resting on the base 17 of the squared part.

The face of the valve seat 18 against which the smooth face of the valve bears is ground off, and the valve is only held against such

seat by the steam pressure on the inlet side of the valve. Should the seat become worn it may be removed and reground, and after being screwed in place the steam pressure will cause the valve to bear closely against it as the valve is only held on the valve stem by the lugs 15 loosely fitting against the squared portion 16 of the valve stem and supported vertically by the lugs resting on the base 17 of the same.

As the curved base of the valve is not to be raised above the top of the valve seat, a lug 19 is formed on the top of the valve which controls its upward movement, it contacting with the top of the valve chamber when the bottom of the valve has reached a point near the top of the valve seat. The curved bottom of the valve is of such shape as to cause the opening of the port to be slow and the entrance of steam gradual, and at the same time the cutting off is steady and sure, the steam pressure from behind always holding the valve to its seat, whether it be partly or wholly closed.

Should it be desirable to remove the valve or its stem for any purpose, this can be readily accomplished by disconnecting the lever 10 and removing the screw cap 8 which closes the top of the valve chamber.

By having the valve stem 5 squared on four sides at its point of connection with the valve, it allows the link 11 to be pivoted to any of the brackets 12 on the valve casing, and so the operating lever may extend in any desired direction from the valve.

We do not wish to limit ourselves to the construction shown and described, as many modifications might be made without departing from the spirit of our invention.

What we claim, and desire to secure by Letters Patent of the United States, is—

1. In a valve, a vertical stem extending entirely through the valve chamber thereof, and its middle squared, a valve having a curved bottom, and a lug on its top to limit its upward movement, projections on the back of such valve engaging with the squared portion of the stem, such valve held against a removable seat by the steam pressure from behind, substantially as set forth.

2. In a valve, a casing inclosing a valve  
chamber, a valve therein mounted loosely on  
a vertical valve stem and held against a re-  
movable seat by the steam pressure from be-  
5 hind, a number of brackets formed on the  
sides of the valve casing, and a link con-  
nected to a lever pivoted to the valve stem  
for operating the same, such link adapted to  
be pivoted to any of such brackets, whereby

the lever may be set at any desired angle for 10  
working the valve, substantially as set forth.

In witness whereof we have hereunto set  
our hands this 20th day of March, 1893.

BENJAMIN F. VAN MATRE.

GEO. H. VAN MATRE.

Witnesses:

ROBERT H. COOPER,  
SOL. F. MYER.