

(No Model.)

J. TONGE.  
THROTTLE VALVE.

No. 397,672.

Patented Feb. 12, 1889.

Fig. 1.

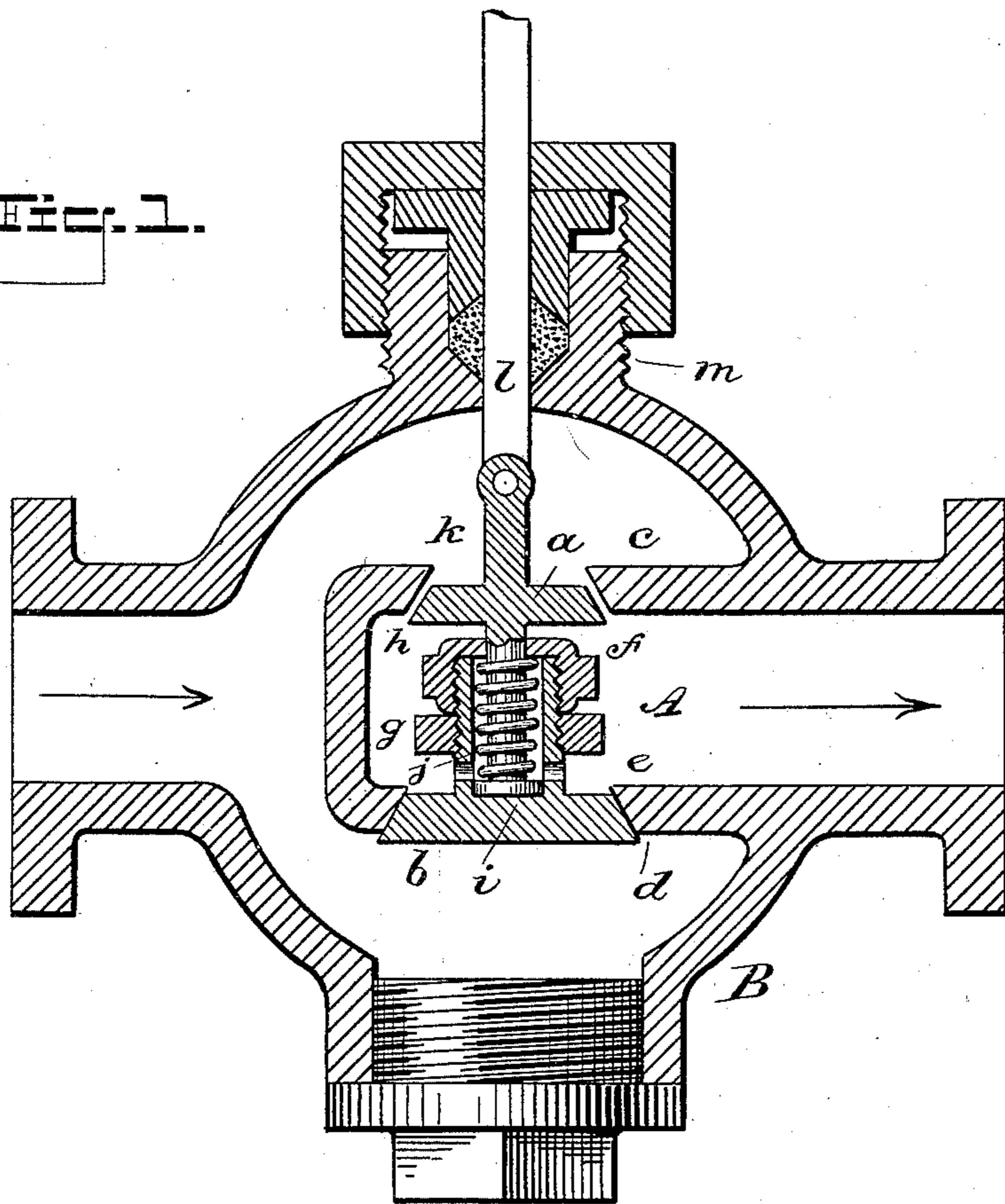
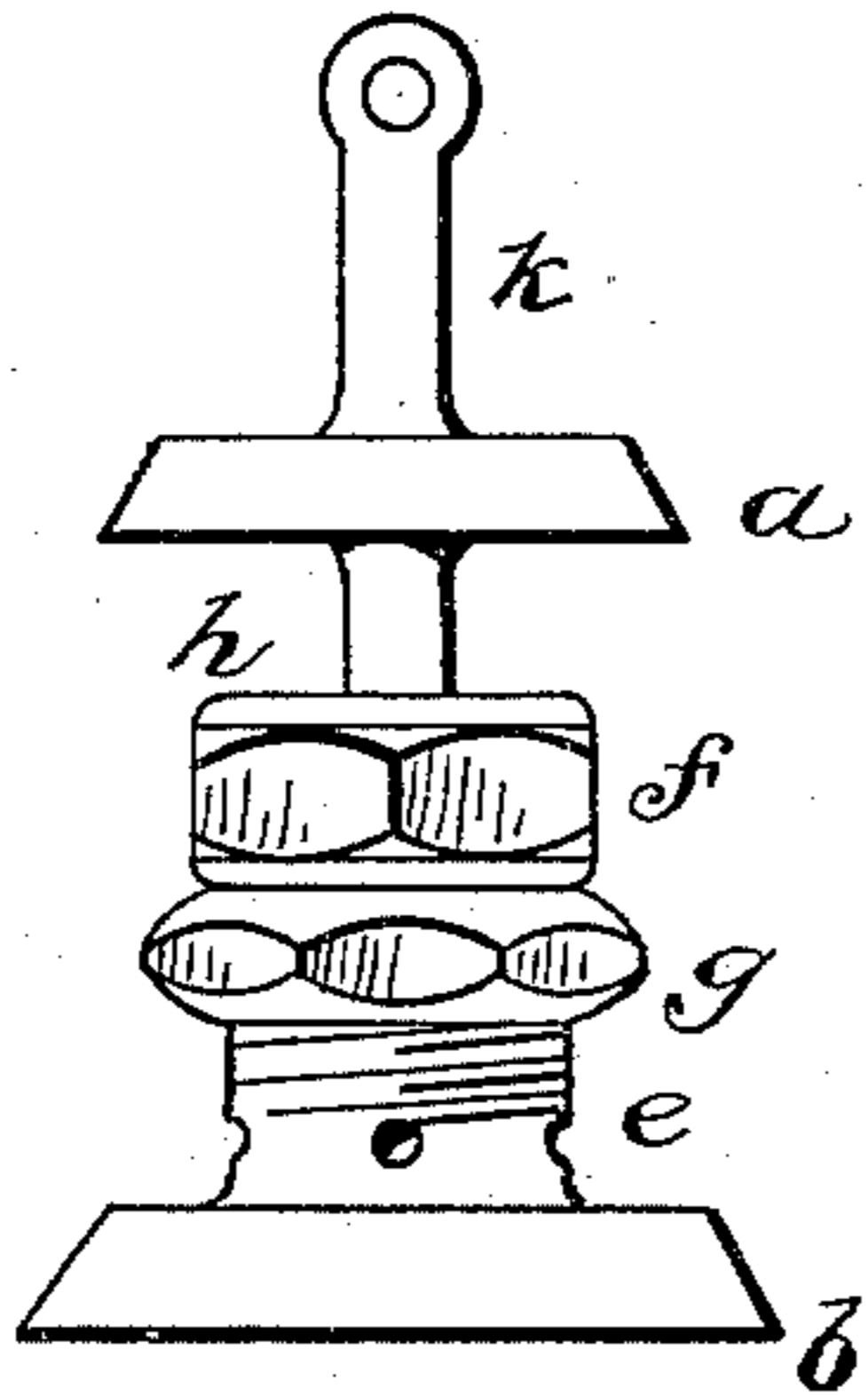


Fig. 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN TONGE, OF MINNEAPOLIS, MINNESOTA.

## THROTTLE-VALVE.

SPECIFICATION forming part of Letters Patent No. 397,672, dated February 12, 1889.

Application filed January 5, 1888. Serial No. 259,882. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN TONGE, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and useful  
5 Improvement in Throttle-Valves, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a longitudinal section of a valve  
10 embodying my improvement, and Fig. 2 is a detail side elevation of a valve detached from the casing.

Similar letters of reference indicate corresponding parts in both views.

15 My invention consists in a valve formed of two parts connected together by an adjustable connection.

The valve A is formed of two parts, *a b*, fitted to the valve-seats *c d*. These valve-  
20 seats in the present case are located in the globe-shell B in the usual way. The stem *e* of the valve *b* is made tubular and is externally threaded to receive the screw-cap *f* and the  
25 jam-nut *g*. The valve *a* is provided with a stem, *h*, having a flange, *i*, upon the extremity thereof. The valve-stem *h* extends into the tubular stem *e* of the valve *b*, and between the flange of the stem *e* and the screw-cap *f* is placed a spiral spring, *j*. The tubular stem  
30 *e* is perforated near its juncture with the valve *b* to allow steam to enter or escape, and thus allow the pressure within the tubular stem to become the same as that outside of the stem.

In the present case the valve *a* is provided  
35 with a stem, *k*, outside of the valve-seat *c*, which is jointed to a valve-rod, *l*, extending through a gland, *m*, on one side of the globe-casing B. It will be seen by this construction that the valve *b* may strike its seat  
40 slightly in advance of the valve *a*, and each valve will therefore be seated independently of the other.

When my improved valve is applied to locomotives to be used as a throttle-valve, the globe-casing B is dispensed with, and the  
45 valve-rod *l* is extended through the head of the boiler in the usual way.

One of the principal advantages claimed for my improvement is that when the valve is used as a throttle-valve on a locomotive the  
50 spring allows one-half of the valve to yield when the locomotive slide-valve is reversed, thus allowing the valve to act as a relief-valve for preventing the bursting of the steam-chest at the moment of the reversal of the link and  
55 valve and before the throttle-valve is opened to again admit steam to the engine-cylinder.

The boiler-pressure will hold the valve *b* closed, and the operating mechanism of the valve *a* will hold it closed against the boiler-  
60 pressure.

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

1. The combination, with the valve *b*, provided with the tubular stem *e*, of the screw-  
65 cap *f*, the valve *a*, provided with the stem *h*, and the spiral spring *j*, surrounding the tubular stem and compressed between the cap *f* and the flange *i* of the valve-stem, substantially as described.  
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2. As an improved article of manufacture, a valve formed of the valve-casing B, provided with the valve-seats *c d*, the valve *b*, having the perforated tubular stem *e*, the screw-  
75 cap *f*, fitted to the valve-stem *e*, the jam-nut *g*, the valve *a*, provided with the stem *h*, having the flange *i*, the spring *j*, interposed between the flange *i* and the screw-cap *f*, and the rod *l*, jointed to the valve-stem *k*, substantially as described.

JOHN TONGE.

Witnesses:

V. J. WELCH,  
GEO. H. HUTCHINS.