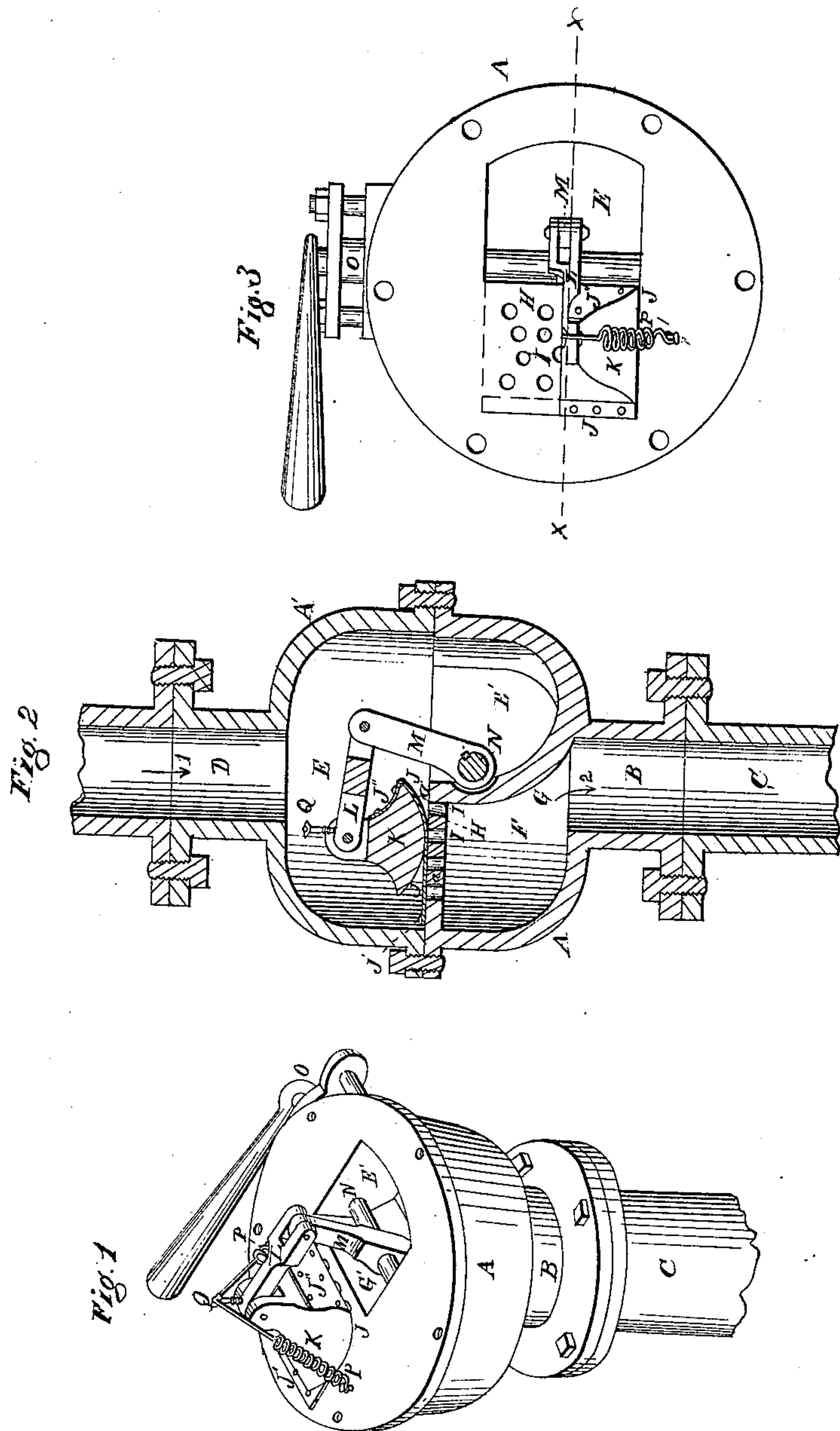


J. W. Osgood,
Rotary Steam Valve.
No 19,203. *Patented Jan. 26, 1858.*



UNITED STATES PATENT OFFICE.

JAMES W. OSGOOD, OF COLUMBUS, OHIO.

STEAM THROTTLE-VALVE.

Specification of Letters Patent No. 19,203, dated January 26, 1858.

To all whom it may concern:

Be it known that I, J. W. Osgood, of Columbus, in the county of Franklin and State of Ohio, have invented a new and useful Improvement in Steam-Valves; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the valve, the upper portion of the steam chest being removed. Fig. 2 a vertical section in the direction of the line X X Fig. 3, which figure represents a top view, the upper portion of the steam chest being removed, also a portion of the valve showing a part of the steam ports or passages, and valve seat.

Like letters denote like parts in the different views.

The steam chest is constructed in two sections A, and A', and to it may be attached the usual appendages, such as stuffing box, induction and supply pipes &c.

The nature of this invention is such that it is adapted to steam engines of any capacity, as a throttle or governor valve, and the steam chest with its devices, may be constructed of any desirable form or size, that the nature of the case may require. The lower section A of the steam chest, terminates in the throat or pipe B, to which is connected in the ordinary manner, the induction pipe C, Figs. 1 and 2, which pipe connects with the steam chest of the cylinder. The upper section A', also terminates in a pipe or throat D, to which is secured by the usual means, the steam supply pipe, which communicates with the boiler.

The chamber E, E', Fig. 2, is formed in the upper and lower sections of the chest, and the chamber F, is formed in the lower section; these two chambers are divided by the partition G, and the perforated valve seat H, in which are the steam ports or openings I; directly over the face of the valve seat, so as to cover all the openings, is placed a thin elastic metallic plate J, of copper, or other suitable metal. The back end J' of the plate is fastened to the valve seat by screws, or otherwise, and the front end J'', is in a similar manner secured to the rocker valve K. The upper end of the rocker valve terminates in two ears or lugs, to which is attached by a pin joint, or its equivalent, the connecting rod L, which rod is connected to the arm M, in a similar man-

ner; this arm M, is fastened to the rock shaft N, which extends through the stuffing box O, Figs. 1 and 3; to the outer end of the rod may be attached any suitable device for operating the valve either as a governor or throttle valve, or others analagous thereto.

The inside end of the rock shaft has a suitable bearing in the steam chest. On each side of the rocker K, is a spiral spring P, Figs. 1 and 3, the lower ends of which are fastened to the steam chest and the upper ends are united by a rod which passes over the adjusting screw Q, which screws into the connecting rod L, as seen in Fig. 1; by means of the screw, the degree of tension may be given to the springs, for the purpose of retaining the rocker in the desired position. In some cases the springs may be dispensed with. It will be noticed that by the action of the rock shaft, the rocker is operated, so as to open or close the steam passages or openings I. The steam passes into the chamber E, E', through the supply pipe, as indicated by the arrow 1 in Fig. 2. From the chamber E, E', the steam passes through the openings I, by permission of the rocker into the chamber F, as indicated by arrow 2, to the cylinder steam chest.

What distinguishes my invention from others, is, that by the peculiar construction and arrangement of the rocker K, and plate J, the steam acts upon each in such a manner as to keep them so perfectly balanced as to form a steam balanced valve, consequently working with but little friction, and the higher the pressure of steam the closer and more perfect will be the cut off. If the valve seat becomes worn by the action of steam, the operation of the rocker and plate is such that it works with the same perfection as before, requiring no adjusting devices or grinding of the valve seat, as is the case with the ordinary valves, to make them steam tight. The ordinary steam valves require much labor, in their first preparation for use such as fitting and grinding the valve and seat; this is not the case with the described improvement, as the rocker and valve only require an ordinary dressing without grinding. The face of the rocker K, it will be observed, forms a segment of a circle, which allows it to turn or rock upon the plate J, which is not attached to the face of the rocker, so that the rocker in turning forward, leaves the plate upon the valve seat, as indicated at a, Fig. 2. The pressure

of steam on the plate, effectually cuts off the steam from the passages. The elasticity of the plate enables it more readily to adapt itself to the valve seat, than the ordinary
5 rigid valve, and thereby makes a more perfect cut off. In turning the rocker, so as to open the steam passages, the plate J is raised in conformity to the rocker as indicated at *a'* Fig. 2. It has been found, by practical
10 tests, that a metallic plate, as shown at J, may be used for a long time without injuring its qualities for the purpose desired, and in case it should become injured by any means, it is more easily replaced, and with

less labor than the redressing and grinding 15 of the ordinary steam valve would require.

What I claim as my improvement, and desire to secure by Letters Patent, is,

The plate J, and rocker K, arranged in connection with the perforated valve seat 20 H, operated substantially as described, for the purpose of increasing or diminishing the area of the steam passages in the valve seat.

JAMES W. OSGOOD.

Witnesses:

I. BRAINERD,
S. B. HANNUM.