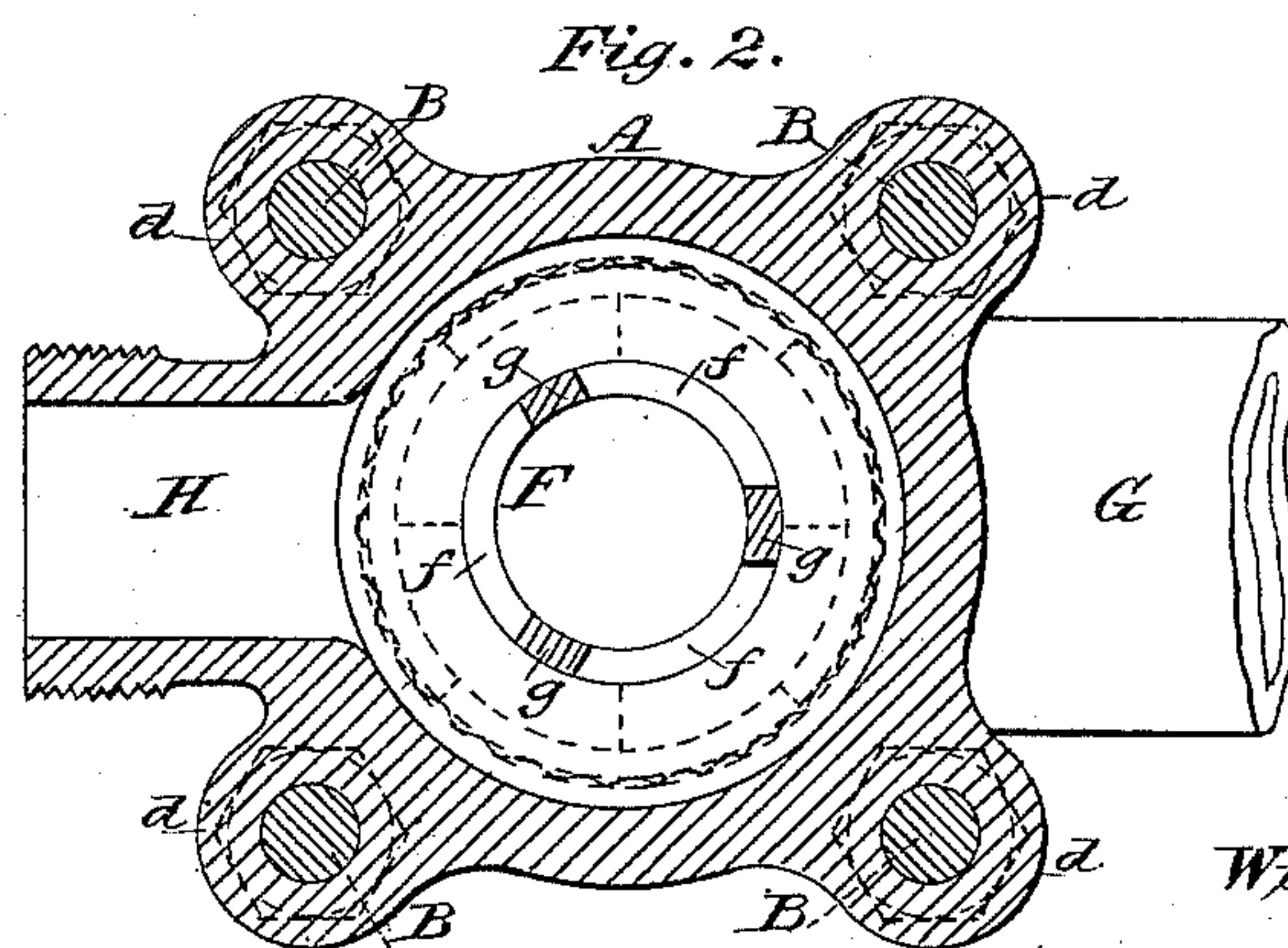
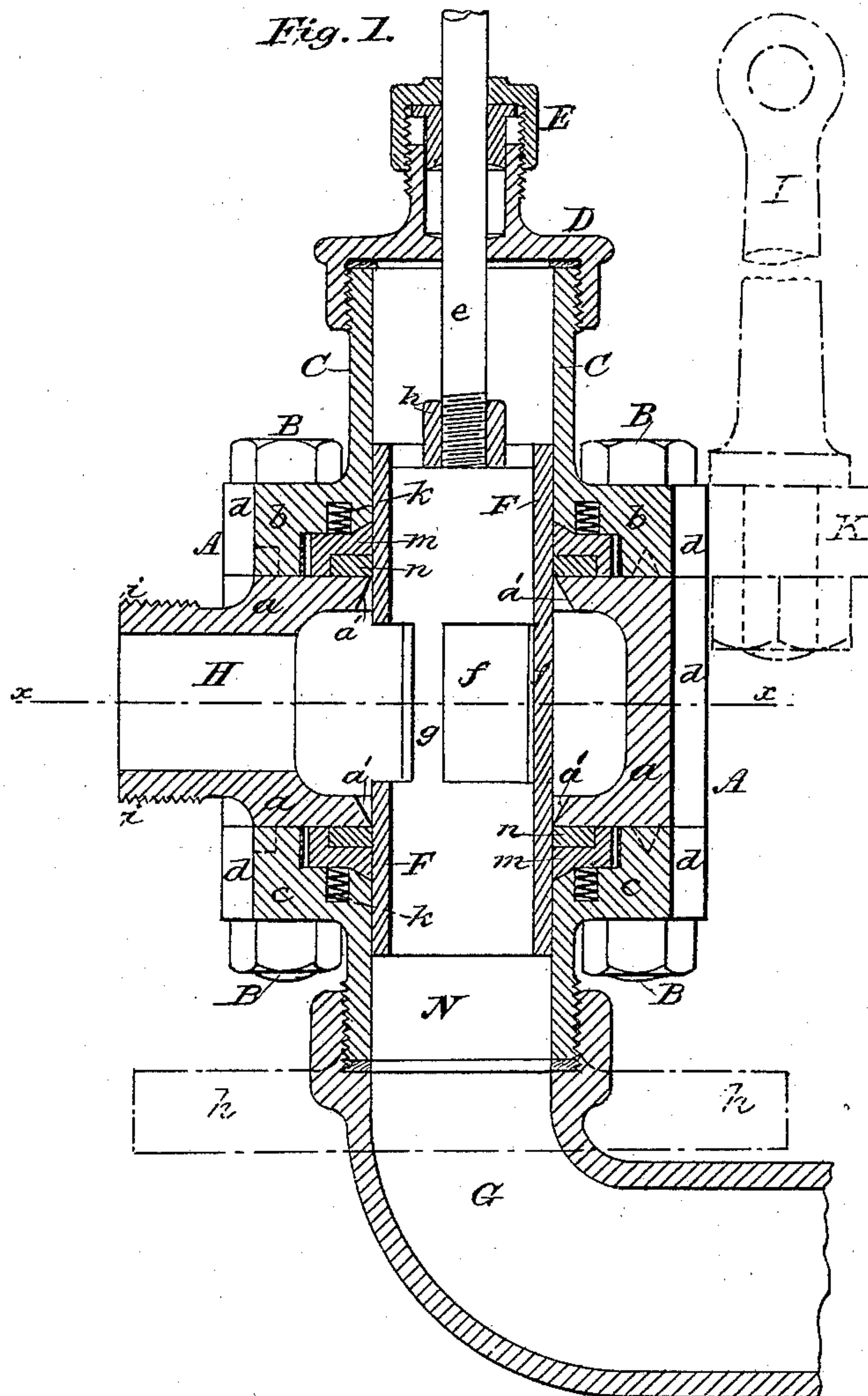


(No Model.)

W. W. ST. JOHN.  
THROTTLE VALVE.

No. 408,145.

Patented July 30, 1889.



*Witnesses:*

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# UNITED STATES PATENT OFFICE.

WILLIAM W. ST. JOHN, OF BROOKLYN, NEW YORK.

## THROTTLE-VALVE.

SPECIFICATION forming part of Letters Patent No. 408,145, dated July 30, 1889.

Application filed July 2, 1888. Serial No. 278,773. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM W. ST. JOHN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Throttle-Valves; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in throttle-valves for steam, gas, or other engines; and the objects of the invention are to construct a throttle-valve for engines of any kind, by which the flow of the steam, gas, or other fluid can be governed or regulated automatically, or by hand, in a more perfect manner than heretofore; also, to prevent any possible leakage of the steam, gas, &c., as the valve is kept tight by suitable packing-rings; also, to facilitate the operation of the throttle-valve in an easy and expeditious manner; furthermore, to greatly simplify the construction and operation of the valve, as well as the fitting together, and thereby the cost of manufacturing it, and, finally, to produce a balanced valve not liable to get out of order, and therefore easier operated.

With these objects in view my invention consists in the peculiar construction of the details and the arrangement of parts, as will be more fully described hereinafter, and specifically pointed out in the claims, reference being had to the accompanying drawings and the letters of reference marked thereon.

Like letters indicate similar parts in the different figures of the drawings, in which—

Figure 1 represents a vertical section of my improved throttle-valve opened full. Fig. 2 is a horizontal section of the same on line *x x*.

In the drawings, A represents the shell or main body of the valve, which is made of the middle or central part *a* and the two end pieces *b* and *c*, and said parts are accurately turned and fitted on their adjoining faces and securely bolted together by the bolts B, which pass through the lugs *d*. The central

or middle part *a* is cored out to facilitate the admission of the steam around the valve, and the edges of the contact-faces are beveled off, as shown at *a'*. The upper part *b* is provided with a neck C, to which the head D is secured, and it has a suitable stuffing-box E, through which the valve-stem *e* passes. The valve-stem is connected to the valve F, which is of cylindrical form, and is provided with the openings *f*, forming the bridges *g*. The upper end has a boss *h*, into which the valve-stem is screwed. The lower part *c* of the shell has a neck N, which is provided with a screw-thread for attachment to an elbow G; or it may have a flange, as shown in broken lines *h*, to secure it to the steam-pipe. The central part *a* is provided with a nozzle H for the outlet of the steam to the engine, and it may be fitted with a screw-thread *i*, or with a flange, for connecting it to the line-pipe. The valve F may be operated by a lever attached to the fulcrum I (shown in broken lines) and secured in a lug K; or it may be operated by a hand-wheel on the valve-stem, which is then provided with a screw-thread in the stuffing-box or neck. The faces of the parts *b* and *c* are recessed out for the reception of the packing-rings *m* and *n*, which bear with their inner peripheries against the outer face of the valve F. Said rings are forced against the valve by springs or steam, as desired, and they are forced against each other by a series of spiral springs *k*, placed in recesses in the parts *b* and *c*. Any other kind of packing-rings may, however, be employed, by which the cylindrical valve is thoroughly packed, to prevent leakage of steam, gas, &c.

If desired, the adjoining faces of the rings *a*, *b*, and *c* may be provided with V-shaped or other formed tongues and grooves, as shown in dotted lines in Fig. 1, and the joints may be ground to make them perfectly tight. The different parts of the throttle-valve may be made of cast-iron, composition, steel, or other suitable material, and the valves may be made larger or smaller, according to circumstances or the requirements of the case. If desired, flanges on the parts *a b c* may be employed, instead of the lugs *d*, and instead of the screw-threaded head D it may be provided with flanges, to which to bolt the stuffing-box E.

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

1. A throttle-valve consisting of a central part and two end parts secured together, as shown, in combination with a hollow piston-valve having openings for the passage of the fluid and its periphery packed by suitable packing-rings, arranged in the manner herein shown and set forth.

2. The throttle-valve herein described, consisting of the central part *a*, the end parts *b* and *c*, secured together by bolts *B*, in combination with the hollow piston-valve *F*, provided with openings *f*, and the packing-rings

*m* and *n*, arranged in the manner shown, and for the purpose set forth.

3. The combination of the parts *a b c*, forming the shell *A*, the part *b* having a stuffing-box *E*, and the part *c* having the neck *N*, for attachment with the piston-valve *F*, having openings through its periphery, which moves through packing-rings *m n*, placed in recesses in the shell, as herein shown and set forth.

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

WILLIAM W. ST. JOHN.

Witnesses:

T. C. BRECHT,

H. A. BRECHT.