

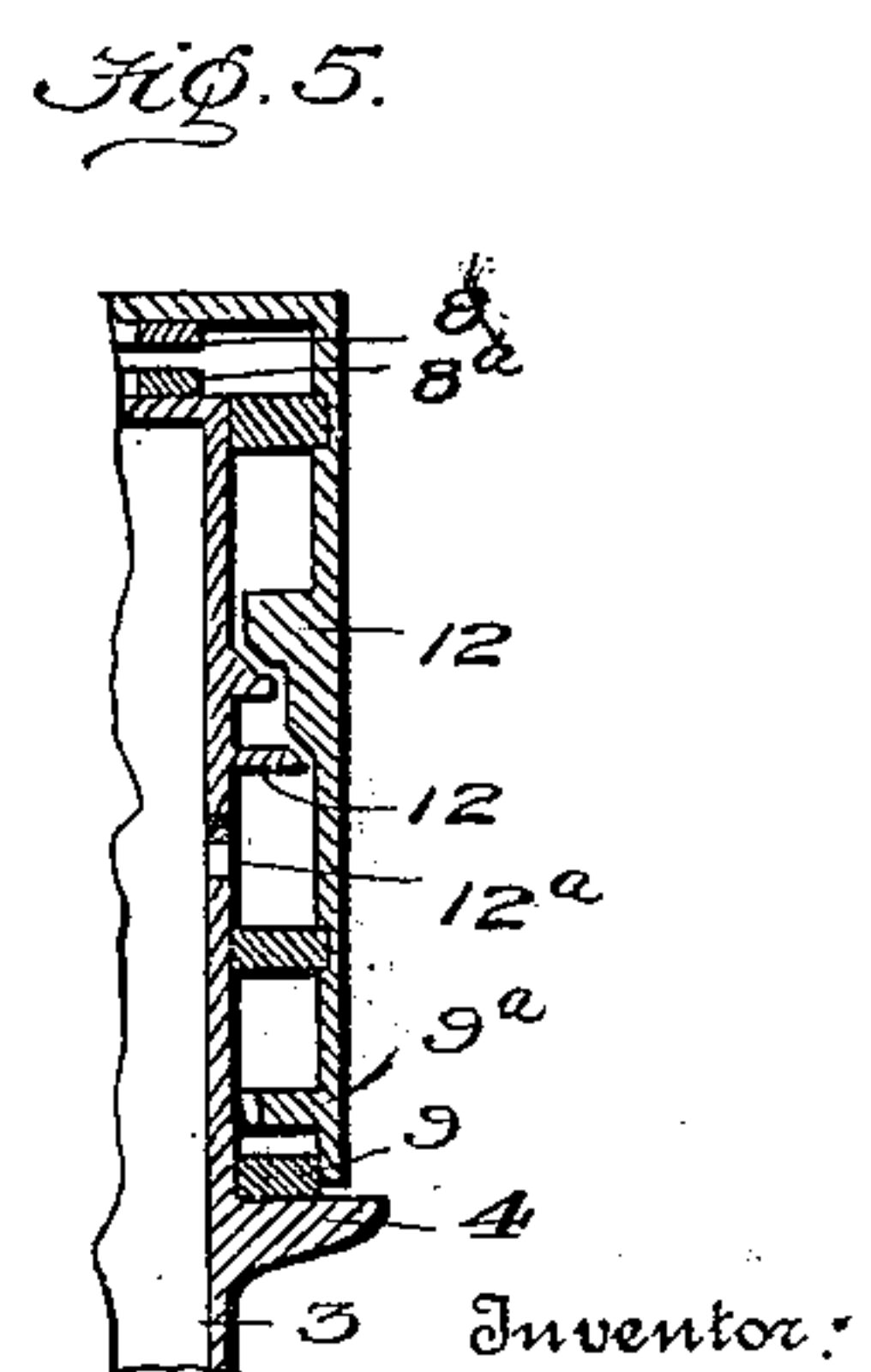
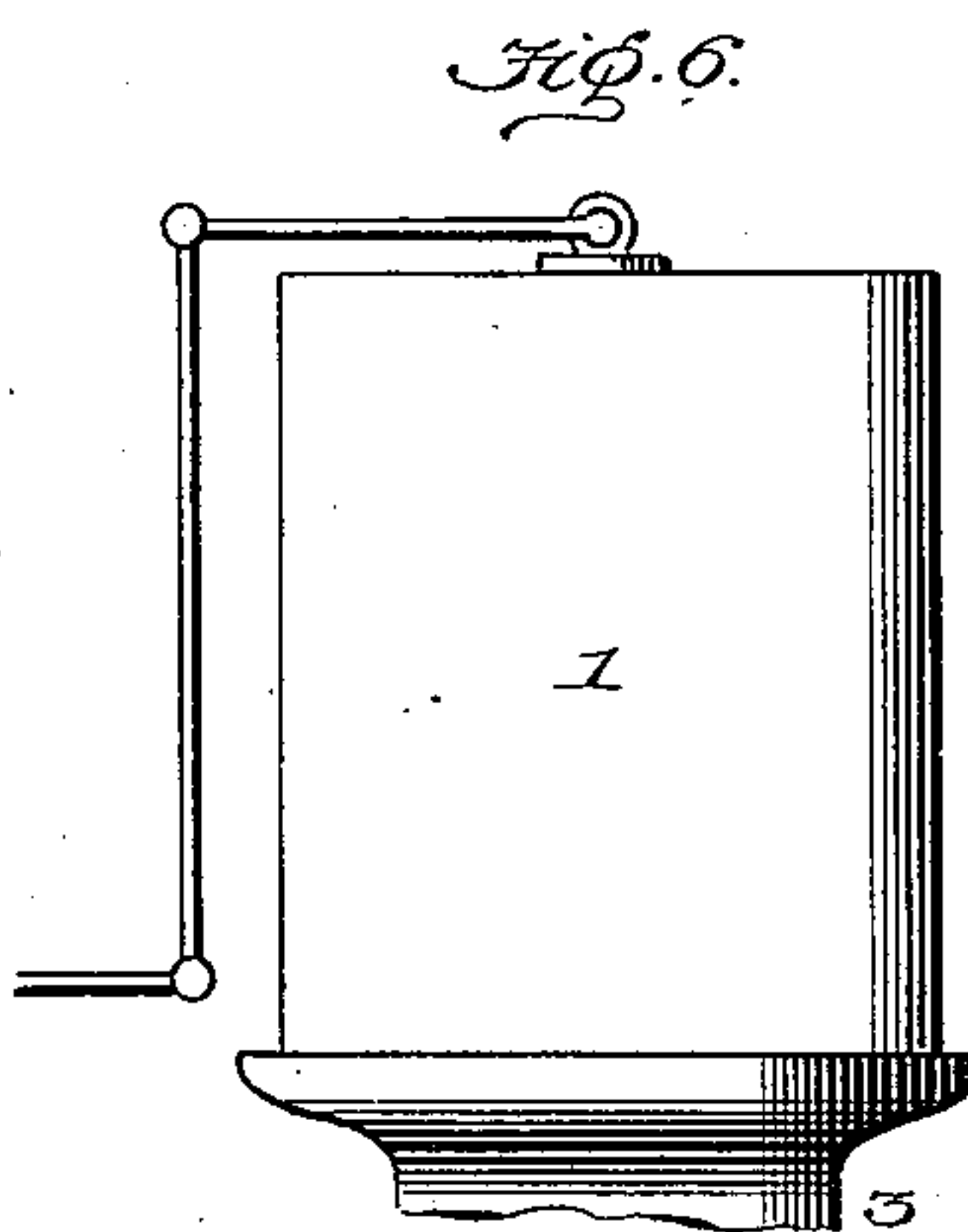
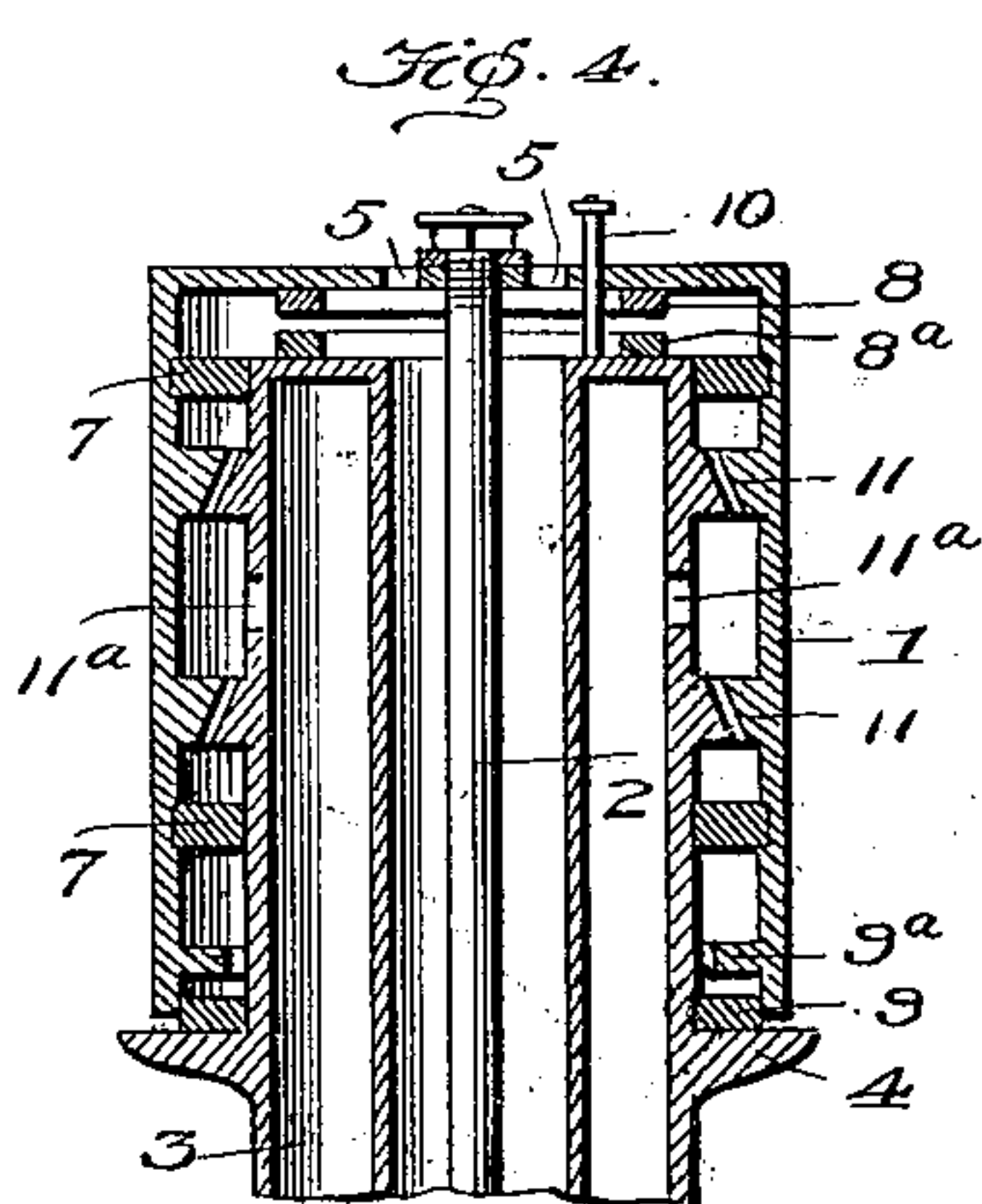
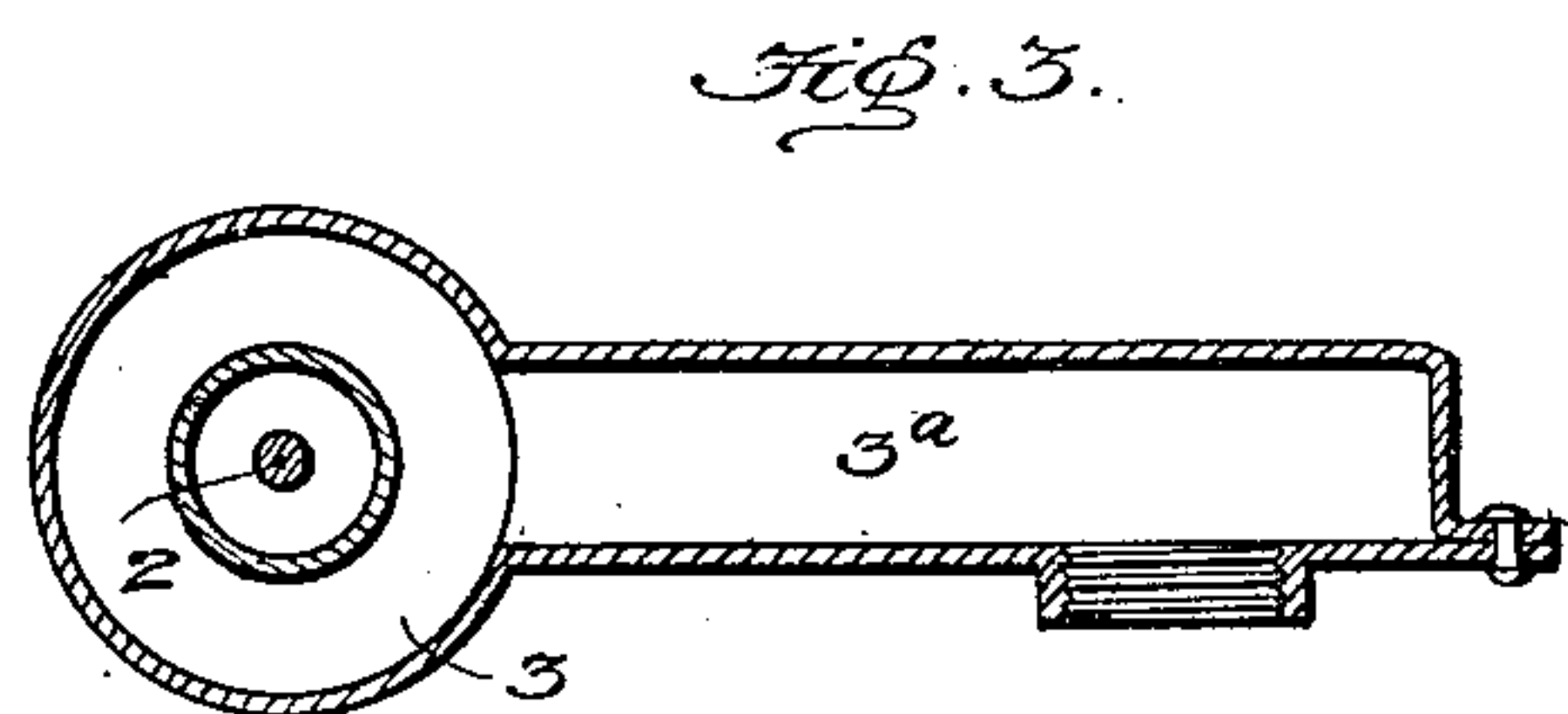
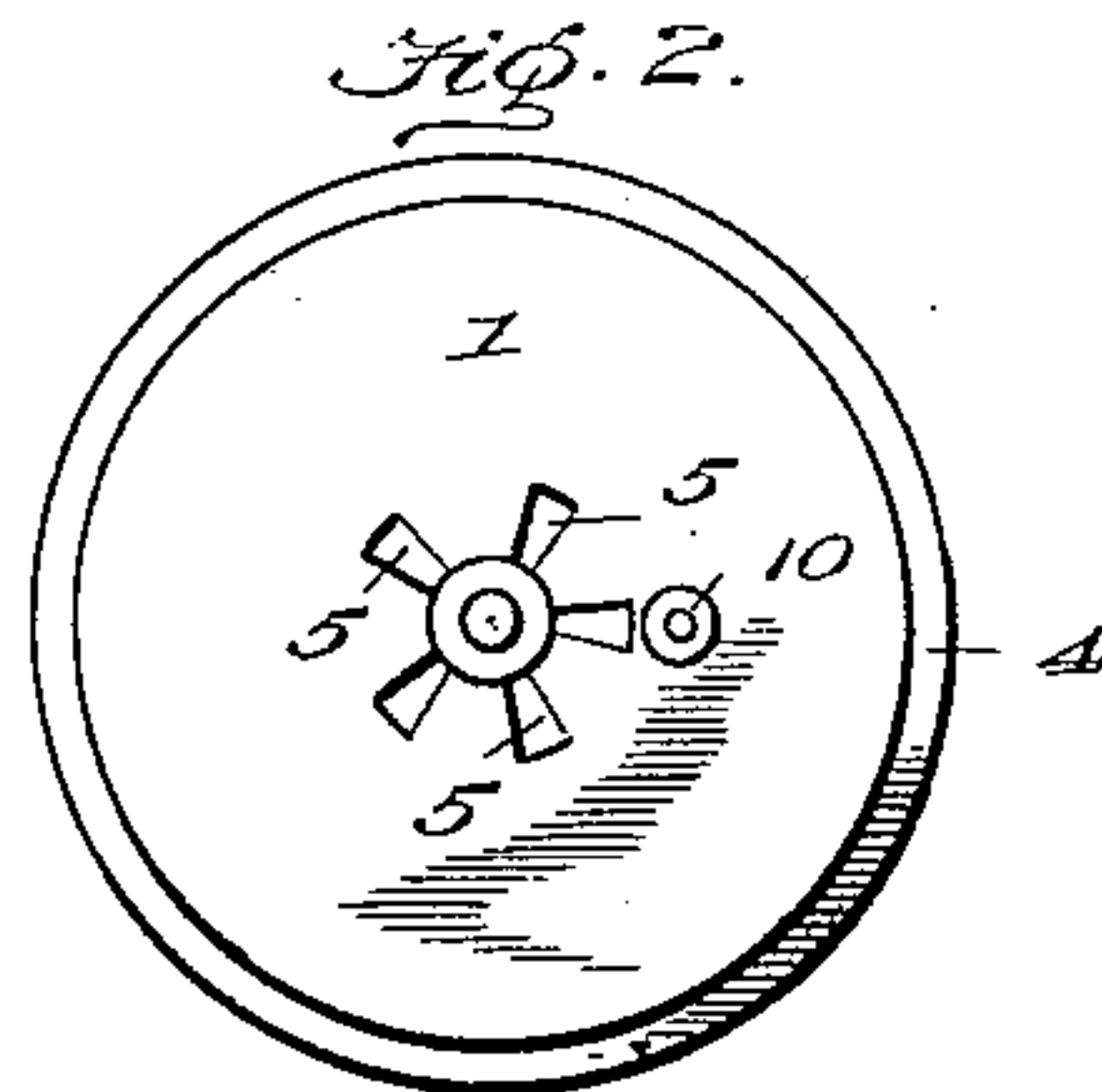
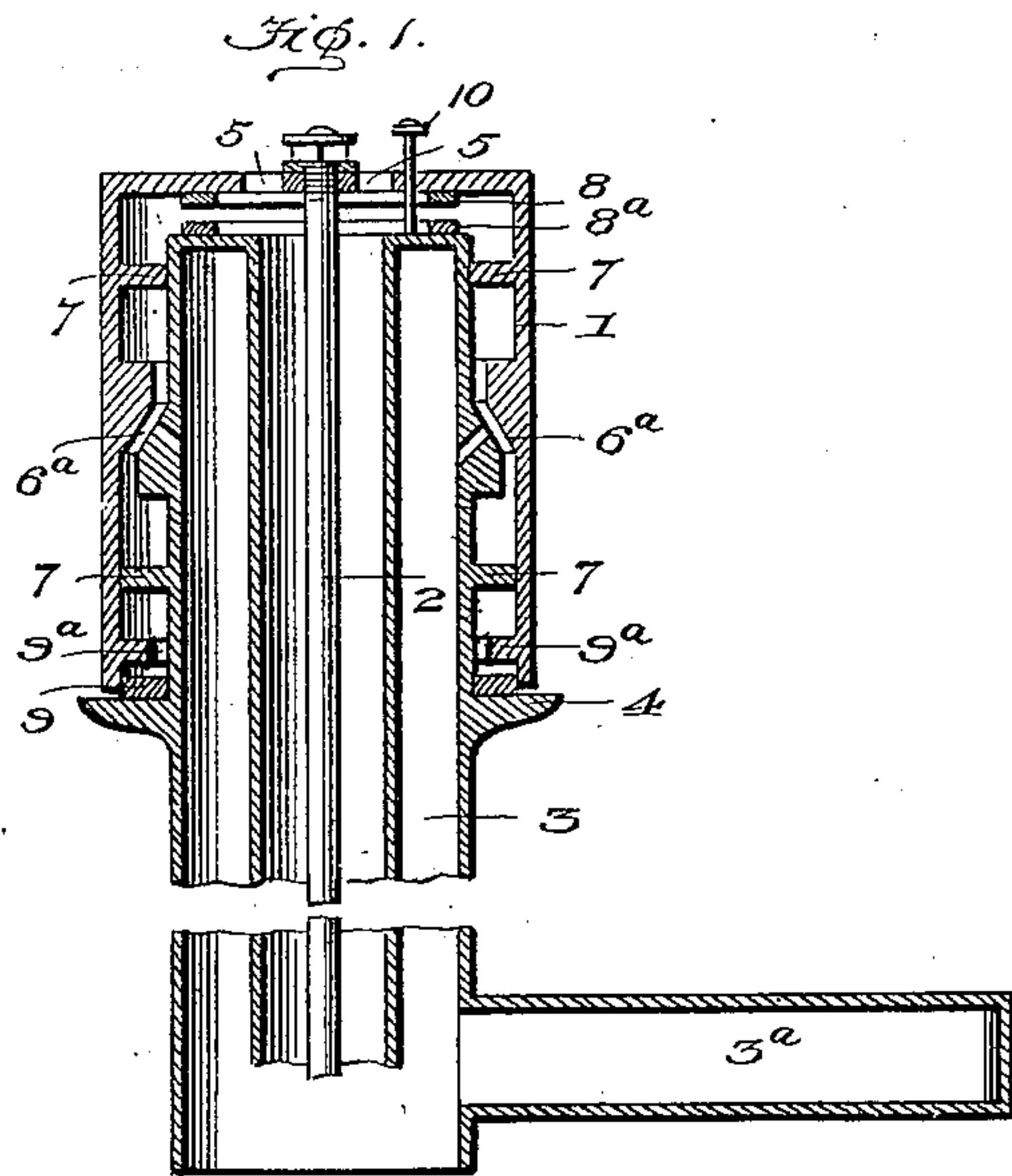
No. 653,596.

Patented July 10, 1900.

F. STRATTNER.  
THROTTLE VALVE.

(Application filed Feb. 5, 1900.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

FREDERICK STRATTNER, OF SALISBURY, MARYLAND.

## THROTTLE-VALVE.

SPECIFICATION forming part of Letters Patent No. 653,596, dated July 10, 1900.

Application filed February 5, 1900. Serial No. 4,130. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK STRATTNER, a citizen of the United States, residing at Salisbury, in the county of Wicomico and State of Maryland, have invented certain new and useful Improvements in Throttle-Valves; and I do hereby 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.

My invention relates to certain improvements in engine-valves, more particularly throttle-valves.

It has for its objects more especially to provide for the passage of the steam directly from the boiler into the "throttle-box" or pipe connecting with the delivery-pipe to admit the steam to the valve from both ends simultaneously and to otherwise promote simplicity of construction and utility and facility of the operation of the parts.

It consists of an open-ended cylinder with a centrally-connected stem adapted to be suitably actuated, said cylinder compassing or surrounding a throttle-box or annular chambered pipe having passages or ports therein and both said cylinder and throttle-box having facing abutments or seats, and of structural details of the aforesaid parts, all substantially as hereinafter more fully disclosed, and specifically pointed out in the claims.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a sectional elevation. Fig. 2 is a plan view thereof. Fig. 3 is a horizontal section taken through the right-angled extension of the throttle-box or pipe. Figs. 4 and 5 are views of modifications of the form of the invention as disclosed by the aforesaid figures or views. Fig. 6 is another modification which will be described in detail hereinafter.

It will be understood that latitude is allowed herein as to details, as they may be changed or varied according to circumstances without departing from the spirit of my invention and the same yet remain intact and be protected.

In carrying out my invention I employ and suitably arrange within a steam-boiler a cylinder or shell 1, with an open lower end, and

centrally to the top of said cylinder is secured a stem or rod 2, preferably depending there-through to a convenient point below. Here suitable means—as a lever, (not shown,) for instance—is connected to said stem or rod, properly fulcrumed in position and extending outward within convenient distance for ready manipulation. Arranged concentric-ally and interiorly of said cylinder 1 is a throttle-box or annular chambered pipe 3, extending downward and terminating in a right-angled or lateral extension 3<sup>a</sup>, adapted to permit of the attachment thereto of a pipe (not shown) for the suitable delivery of steam, as desired. Said annular chambered pipe or throttle-box has secured thereto, at a suitable point upon the outside, a bracket or shelf 4, which affords the means of support for the cylinder 1, and down through the central passage or opening of said pipe or throttle-box said valve stem or rod extends. The cylinder or shell 1 has ports 5 in its upper end or top for the admission of steam from that quarter. The annular chambered pipe and cylinder are provided with, preferably, a downward deflected or inclined passage or port 6<sup>a</sup> for the admission of steam to said annular chambered pipe. Also said cylinder and annular chambered pipe have upon opposing surfaces guides 7 to true the movement thereof. Also said parts are provided with contacting ground circular portions or rings 8 8<sup>a</sup> 9 9<sup>a</sup> to form steam-tight joints between them. Two of such rings are arranged—one at the bottom edge of said cylinder and one upon the bracket or shelf 4 of said chamber—directly opposite each other, and two are arranged—one upon the under side of the top of said cylinder and one upon the upper surface of said chamber—also directly opposite each other. The movement of the valve-cylinder 1 is regulated or limited by a headed rod or projection 10, connected to the upper end or top of the annular chambered pipe 3 and passing through an aperture in the top of the cylinder and extending some distance beyond the same.

In operation the valve stem or rod 2 is actuated so as to raise the valve-cylinder, opening both the ports 5 in the top thereof and in the pipe 3 and the ports 6<sup>a</sup> in the side of the latter, at the same time separating the ground rings 8 8<sup>a</sup> 9 9<sup>a</sup>, thus admitting steam to said



pipe, whence it passes down into the lateral extension of said pipe and out of the same into delivery-pipe, as well understood.

In Fig. 4 is shown another form of the invention, wherein I may employ two series of contacting abutments or offsets 11 11, with corresponding ports 11<sup>a</sup> 11<sup>a</sup>, arranged in opposite sides of the annular chambered pipe. These offsets or abutments may each have two contacting surfaces, with an intermediate space or chamber between them communicating with said pipe.

In Fig. 5 is shown still another form of the invention, wherein I may substitute for the contacting abutments or offsets and inclined or deflected ports, as aforesaid, rectangular or block-like offsets 12 12 and a series of perforations or ports 12<sup>a</sup> 12<sup>a</sup> in opposite sides of the annular chambered pipe. Said offsets are suitably applied to the valve-cylinder and each adapted to be moved past or uncover any one or more opposite ports, according to the extent of the movement of the valve-cylinder, as required. Suitable guide extensions 13 on the valve-cylinder serve to guide the upper series of offsets, as disclosed. Also in lieu of the valve-stem centrally arranged within said annular chambered pipe I may use a lever or arms laterally applied or connected to said valve-cylinder, suitably pivoted and arranged above said cylinder, or any other way of actuating said cylinder may be adopted found practicable.

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

1. A throttle-valve comprising a cylinder with an open lower end and an inner annular chambered pipe or "throttle-box," said cylinder and pipe having offsets and ports, respectively, and said ports being deflected or inclined and communicating with the interior of said pipe, and means adapted to actuate said cylinder, substantially as described.

2. A throttle-valve comprising a cylinder with an open lower end and having ports in its upper end or top, and offsets thereon and an inner annular chambered pipe having lateral ports, and means adapted to actuate said cylinder and move said offsets with relation to said ports, substantially as specified.

3. A throttle-valve comprising a cylinder with a lower open end and an inner annular chambered pipe having lateral ports, and said cylinder and pipe having contacting offsets or abutments, and means to actuate said cylinder, substantially as described.

4. A throttle-valve comprising a cylinder with a lower open end and an inner annular chambered pipe having ports, said cylinder

and pipe having contacting offsets or abutments, and a central stem or rod fixed to said cylinder and depending through said pipe, substantially as set forth.

5. A throttle-valve comprising a cylinder, with a lower open end and ports in its upper end, an inner annular chambered pipe having lateral ports and a lateral or right-angled extension at its lower end, said cylinder and pipe having incline-faced contacting abutments or offsets, and means to actuate said cylinder, substantially as set forth.

6. A throttle-valve comprising a cylinder open at its lower end and having ports in its upper end, an inner annular chambered pipe having lateral ports deflected or inclined downward and an incline-faced abutment or offset, said cylinder also having an incline-faced abutment or offset adapted to contact with the aforesaid abutment or offset, and a central stem or rod depending from said cylinder, and extending through the central passage of said annular chambered pipe, substantially as specified.

7. A throttle-valve comprising a cylinder having a lower open end and ports in its upper end or top, and offsets at its upper and lower ends, an inner annular chambered pipe having a lateral or right-angled discharge-extension, and lateral downward-inclined ports, said cylinder and pipe having incline-faced abutments or offsets, respectively, and means to actuate said cylinder, substantially as set forth.

8. A throttle-valve comprising a cylinder, with a lower open end and having ports in its top, a central stem or rod fixed to said cylinder, and an inner annular chambered pipe having lateral ports and incline-faced abutments or offsets, said cylinder also having incline-faced abutments or offsets adapted to contact with the aforesaid offsets, and a lateral or right-angled extension fixed to said annular chambered pipe at its lower end, and adapted to have connected thereto a delivery-pipe, substantially as specified.

9. A throttle-valve comprising a cylinder with a lower open end and having offsets upon its inside, and an annular chambered pipe having lateral ports and offsets adapted to contact with the aforesaid offsets, said cylinder and pipe also having ground steam-tight ring-joints between them, substantially as set forth.

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

FREDERICK STRATTNER.

Witnesses:

JEROME TUBBS,  
JAMES R. FARLON.