

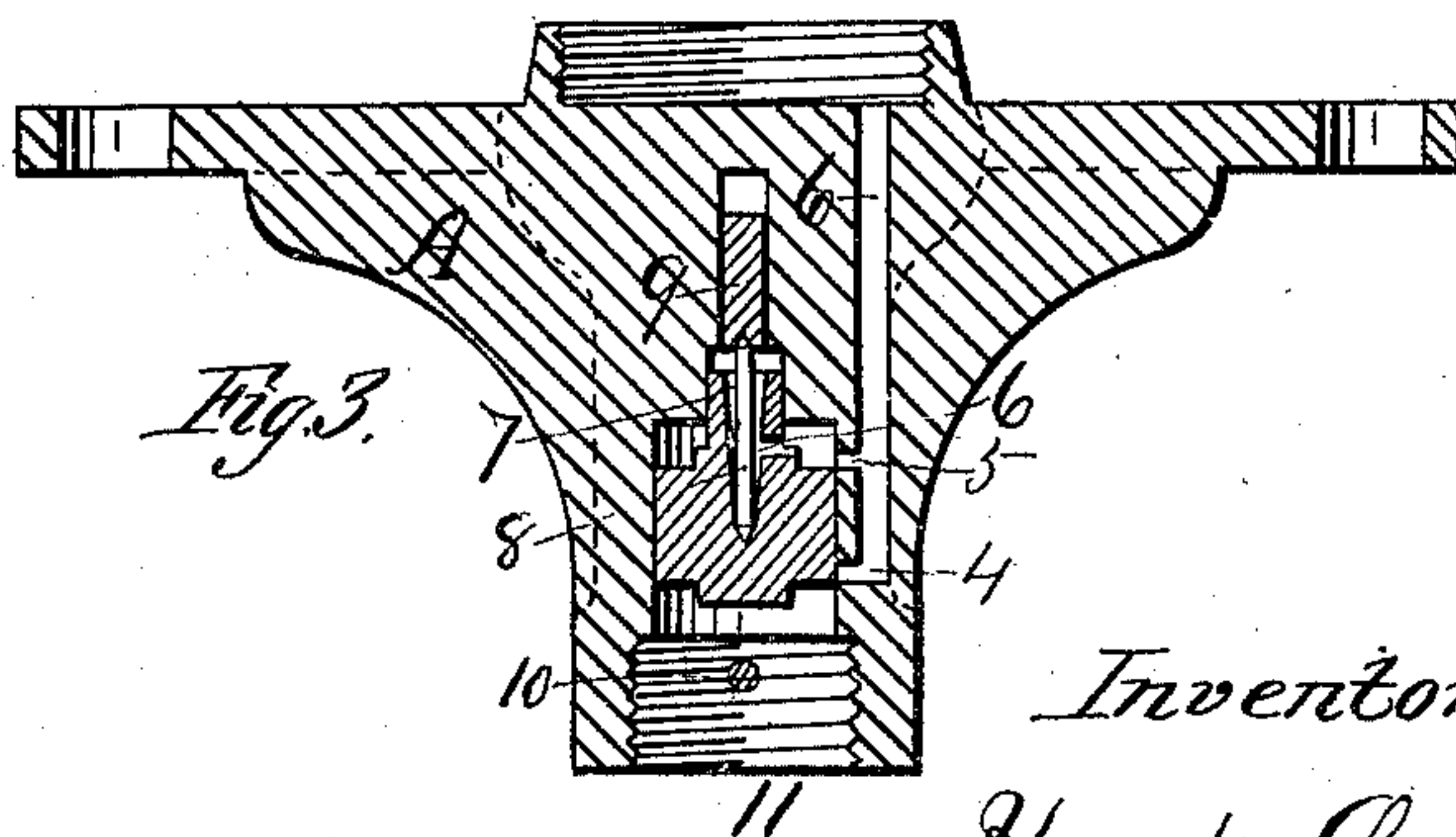
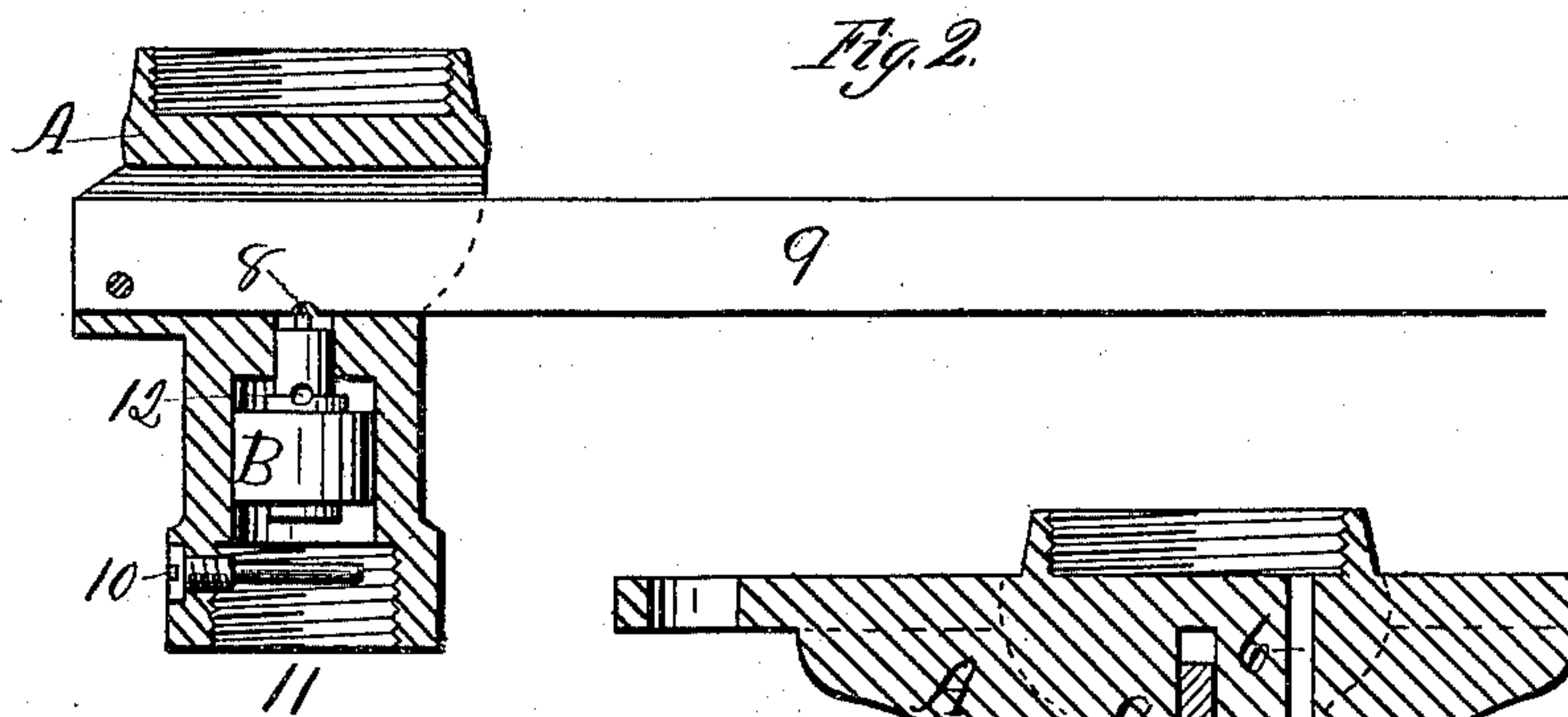
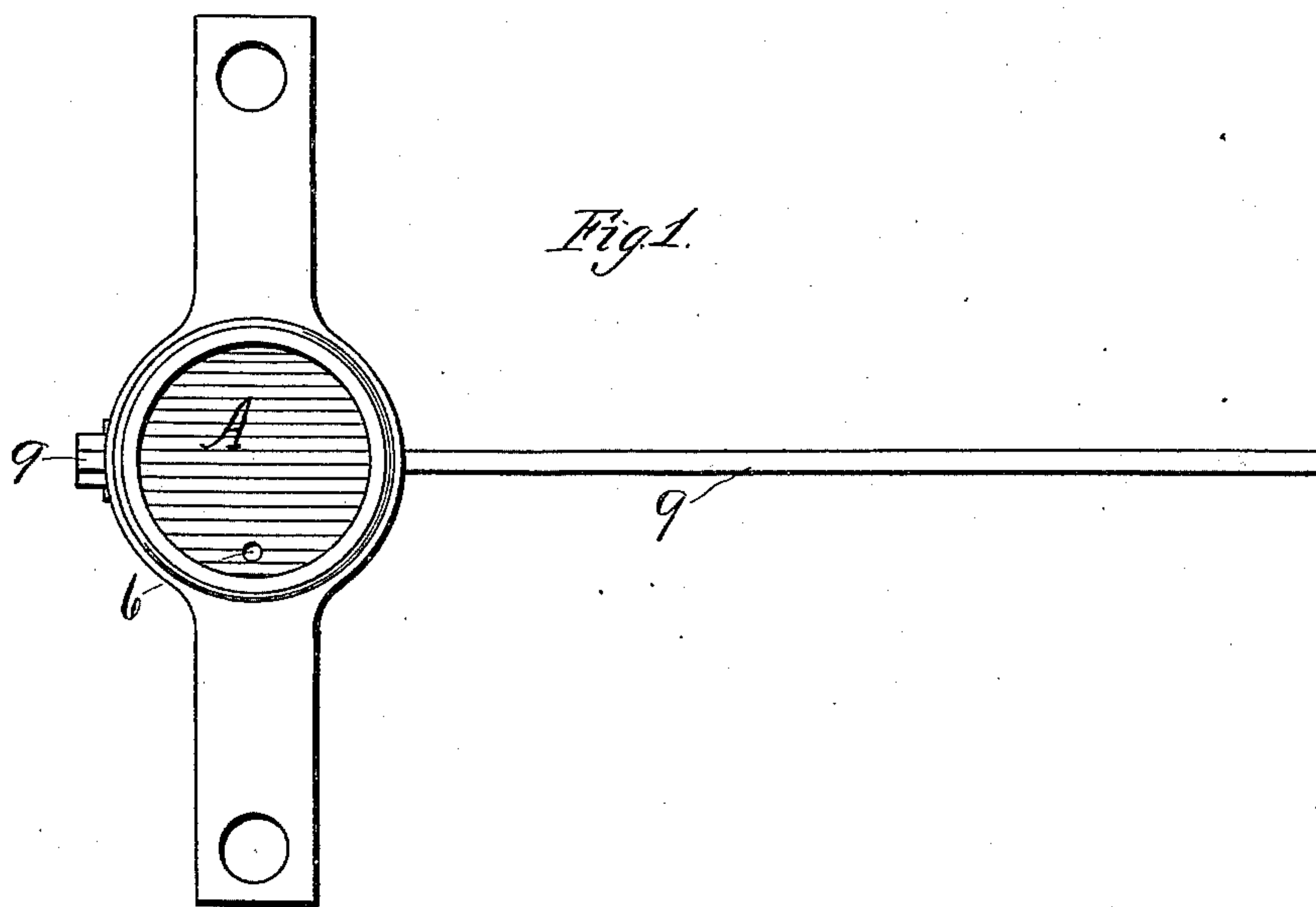
(No Model.)

H. LYONS.

Damper Regulator for Steam Boilers.

No. 232,994.

Patented Oct. 5, 1880.



Witnesses:
F. B. Townsend
W. A. Schonfeld.

Inventor:
Hugh Lyons,
per
S. B. Coupland & Co.,
Attorneys.

UNITED STATES PATENT OFFICE.

HUGH LYONS, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF OF HIS
RIGHT TO OLIVER MARBLE, OF SAME PLACE.

DAMPER-REGULATOR FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 232,994, dated October 5, 1880.

Application filed May 5, 1880. (No model.)

To all whom it may concern :

Be it known that I, HUGH LYONS, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in an Automatic Damper-Regulator for Steam-Boilers; and I do hereby declare the following to be a full, clear, and exact description of the invention, that will enable others skilled in the art to which it
10 appertains to construct and make use of the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, forming a part of this specification.

15 The nature of this invention relates to an improvement in a damper-regulator which shall be automatically operated by the action of the steam for the purpose of preserving a uniform pressure in the boiler.

20 Figure 1 is a plan view of the damper-regulator; Fig. 2, a vertical cross-section, and Fig. 3 a vertical longitudinal section, of the same.

This invention is an improvement on Letters Patent No. 220,004, issued September 23, 1879, for a similar purpose.

30 The upper lever, the supporting-standards for the same, and the steam cylinder and piston shown in the patent above referred to are herein omitted, but substantially the same arrangement is employed in connection with this improvement.

Referring to the drawings, A represents a casing of cast metal having a chamber in the
35 interior for the reception of the piston-valve B. This valve-chamber is provided with the receiving-port 4 and the exhaust-port 5, which communicate with the steam-passage 6, as shown in Fig. 3 of the drawings, leading to
40 the steam cylinder and piston operating the levers connected with the dampers. The body or bearing-surface of the valve B is cylindrical in form, has a close bearing on the walls inclosing the valve-chamber, and is substantially steam-tight.

45 The valve B is provided with the recess 7 for the reception of the loose stem 8 and for the escape of the exhaust-steam. The area of this recess is considerably larger than the diameter of the loose stem 8, which provides for a free escape of the steam and an accurate adjustment of the valve and stem relative to each other.

When working under a pressure the upper

end of the valve-stem 8 is in constant contact 55 with the under side of the lever 9; but when not under a steam-pressure the lower end of the valve B rests upon the tap-bolt 10, which prevents the valve from dropping out of its proper place.

60 The steam-connection for operating this device is made at 11, and the operation of the same is as follows: When the pressure of the steam becomes too heavy the piston-valve is forced upward, opening the lower or receiving steam-port 4, allowing the steam to enter 65 the passage 6, leading to the cylinder above, and forcing the piston in the same in an upward direction and closing the dampers by suitable intermediate connections. This movement of the valve B closes the upper or exhaust port 5. When the pressure of the steam in the boiler lowers, the weights on the levers force the valve B down, closing the receiving-port and opening the exhaust-port, 70 and allowing the steam to escape through the opening 12 into the recess 7, and out around the loose stem 8, and through the rectangular opening provided for the lever 9.

The operating-levers are provided with 80 weights and are properly graduated, so as to readily and conveniently admit of the device being adjusted to open and close the dampers at any desired pressure.

Having thus described my invention, what 85 I claim, and desire to secure by Letters Patent, is—

1. In an automatic damper-regulator, the combination, with the casing A, provided with an interior valve-chamber having the steam- 90 ports 4 and 5 and the steam-passage 6, of the piston-valve B and the loose stem 8, substantially as herein shown and described.

2. In an automatic steam damper-regulator of the character hereinbefore described, the 95 combination of the following elements: the casing A, provided with an interior valve-chamber, and having the steam-receiving port 4, the exhaust-port 5, and the steam-passage 6, the piston-valve B, provided with the aperture 12, and the recess 7, the loose stem 8, and the lever 9, all constructed, arranged, and operating as herein shown and described. 100

HUGH LYONS.

Witnesses:

L. B. COUPLAND,
O. MARBLE.