

(No Model.)

M. J. MCGINN.

BALANCED VALVE.

No. 307,485.

Patented Nov. 4, 1884.

Fig: 1.

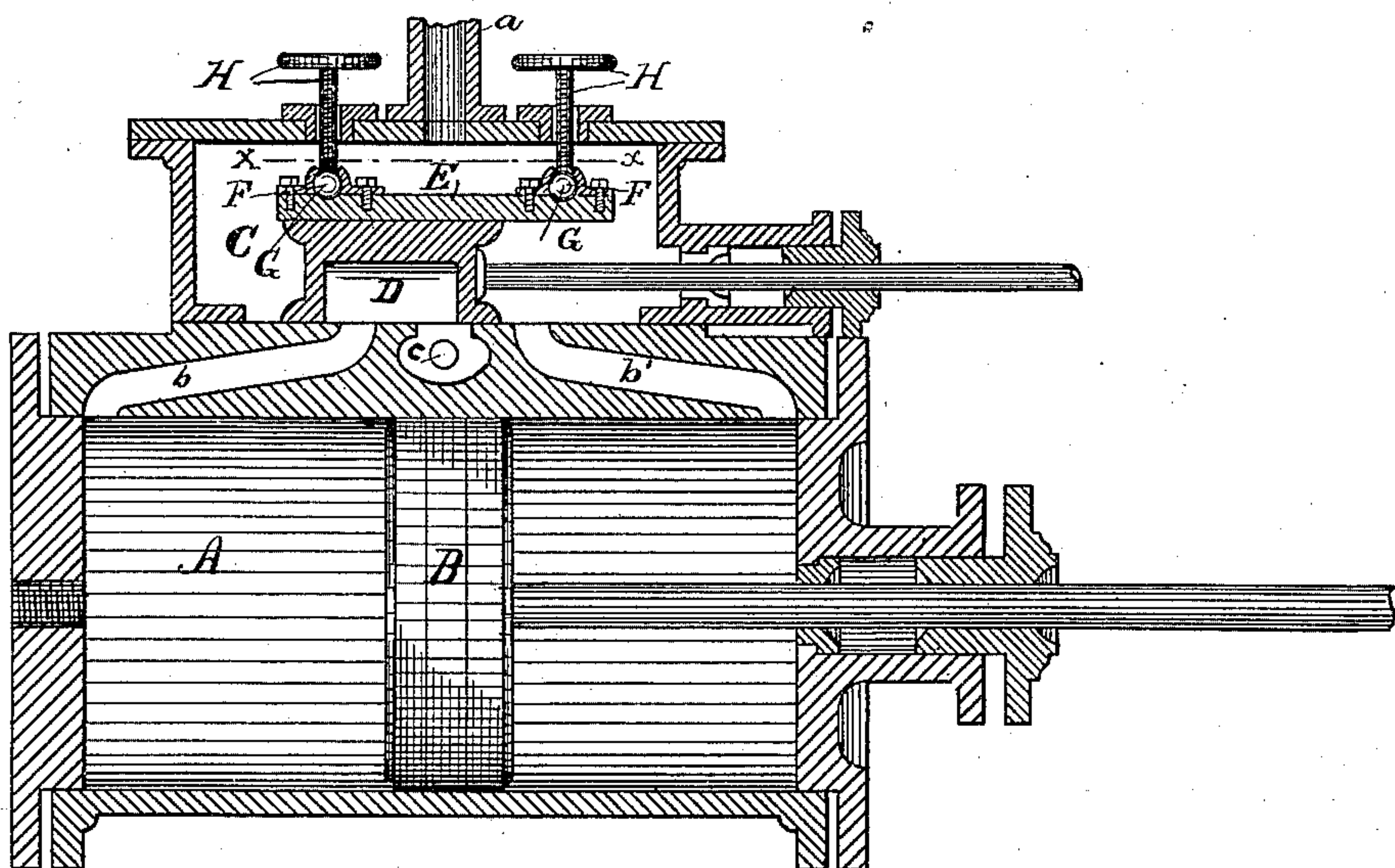
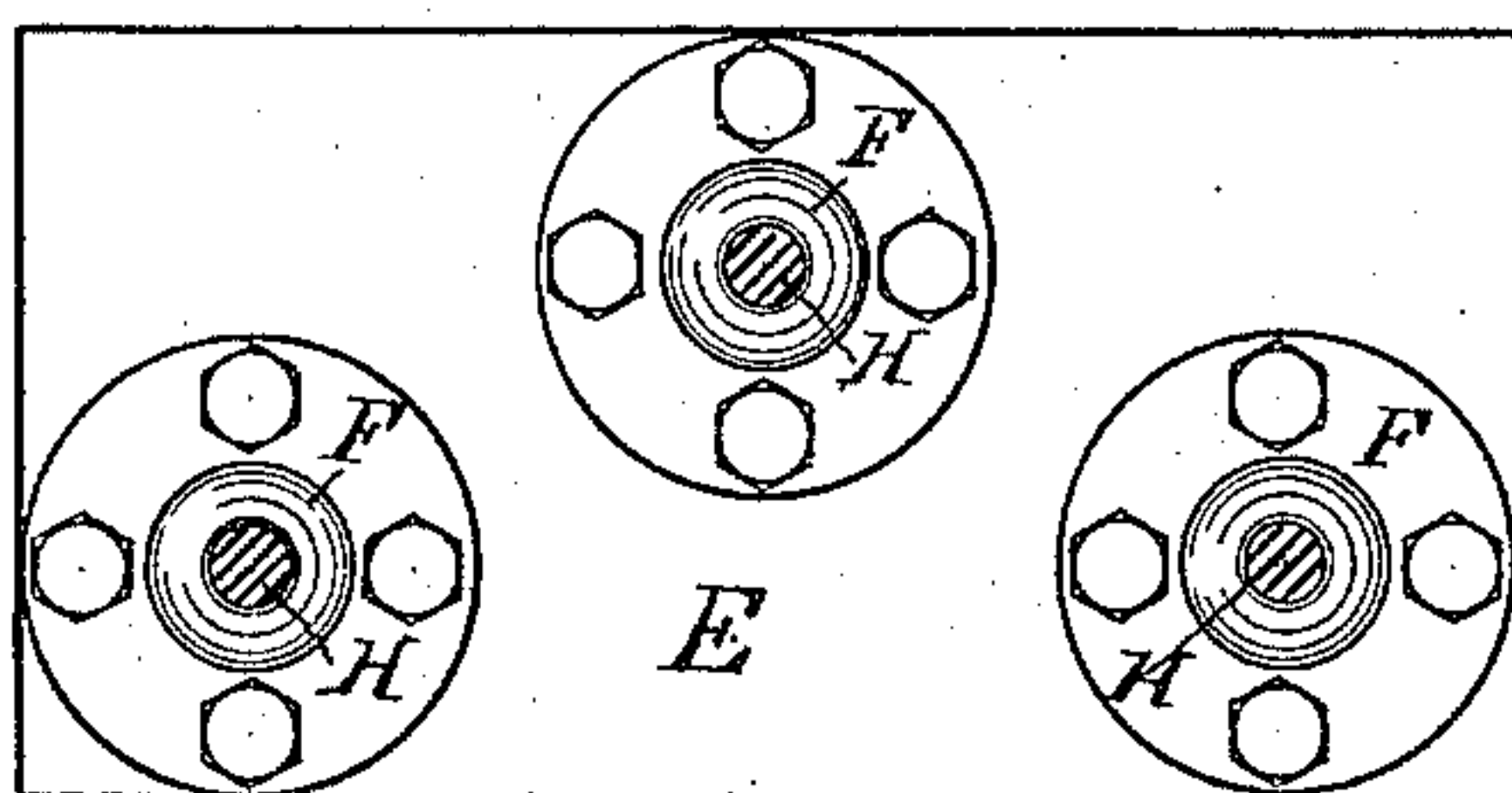


Fig: 2.



Witnesses:

R. F. Brandom

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Inventor.

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By A. Emory C. Whitney

Att'y

# UNITED STATES PATENT OFFICE.

MICHAEL J. MCGINN, OF SPRINGFIELD, OHIO

## BALANCED VALVE.

SPECIFICATION forming part of Letters Patent No. 307,485, dated November 4, 1884.

Application filed February 11, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL J. MCGINN, of the city of Springfield, county of Clark, and State of Ohio, have invented certain new and useful Improvements in Balance-Valves for Steam-Chests, of which the following is a specification.

This invention relates to improvements in balance-valves for steam-chests of engines.

Heretofore in engines of ordinary construction where common slide-valves are used much annoyance has been caused by the pressure of steam against the upper face of the valve, which caused great friction between the lower face and seat of the valve and necessitated an increased power to operate it.

The object of this invention is to provide a cheap and effective balance-plate to obviate the pressure of steam against the upper face of the valve.

The invention consists in the combination, with a valve, of a balance-plate located at a point above the said valve and provided with adjusting mechanism, whereby the said balance-plate may be raised or lowered with relation to the valve from the outside of the steam-chamber.

Figure 1 is a vertical section of the piston-chamber and steam-chest of ordinary construction, showing my invention as applied thereto. Fig. 2 is a detail view, partially in section, line of section *x x*, Fig. 1, of a balance-plate constructed in accordance with my invention, shown as provided with three adjusting-screws.

The piston-chamber A, piston B, steam-chest C, and slide-valve D are and may be of any ordinary construction, having the usual steam-pipe, *a*, inlet-ports *b b'*, and exhaust-port *c*. The balance-plate E, of suitable size and shape, having its lower face planed smooth, so as to contact with the planed upper face of the valve D, is preferably provided with one or more ball-sockets, F, which receive and hold the balls G of adjusting-screws H, which extend through the upper portion of the steam-chest C. At the upper end of the adjusting-

screws H are hand-wheels, by which the said screws are turned. The upper face of the balance-plate E, at the points where the ball-and-socket connections are made, is preferably recessed sufficiently to allow the balls G to rest therein, thereby lessening the amount of space which they would otherwise take up.

The object of providing a ball-and-socket connection between adjusting-screws H and balance-plate E is to allow a lateral play of the adjusting-screws H, in case of any variation from a smooth horizontal plane in the surface of the valve D, which is liable to occur from expansion or contraction.

It is desirable that the balance-plate E shall at all times contact closely with the valve D without "binding" so as to cause undue friction. To accomplish this, it is necessary to provide a means of adjustment, and, as it is desirable to alter the adjustment of said balance-plate E with relation to the valve D at times during the operation of the engine, I have provided for said adjustment from the outside of the steam-chest, which is greatly advantageous.

I claim—

1. In a steam-chest, the combination, with the balance-plate E, of sockets connected therewith, and adjusting-screws provided with a ball at one end to be engaged and held by the said sockets, all as and for the purpose set forth.

2. The combination, in a steam-chest, with the balance-plate E, and sockets F, attached thereto, of adjusting-screws provided with a ball at one end and a hand-wheel at the opposite end, and adapted to be adjusted from the outside of the steam-chest, substantially as described.

In witness whereof I have hereunto set my hand and seal, at Springfield, Ohio, this 5th day of February, A. D. 1884.

MICHAEL J. MCGINN. [L. S.]

In presence of—

CHAS. STEWART,  
N. E. C. WHITNEY.