

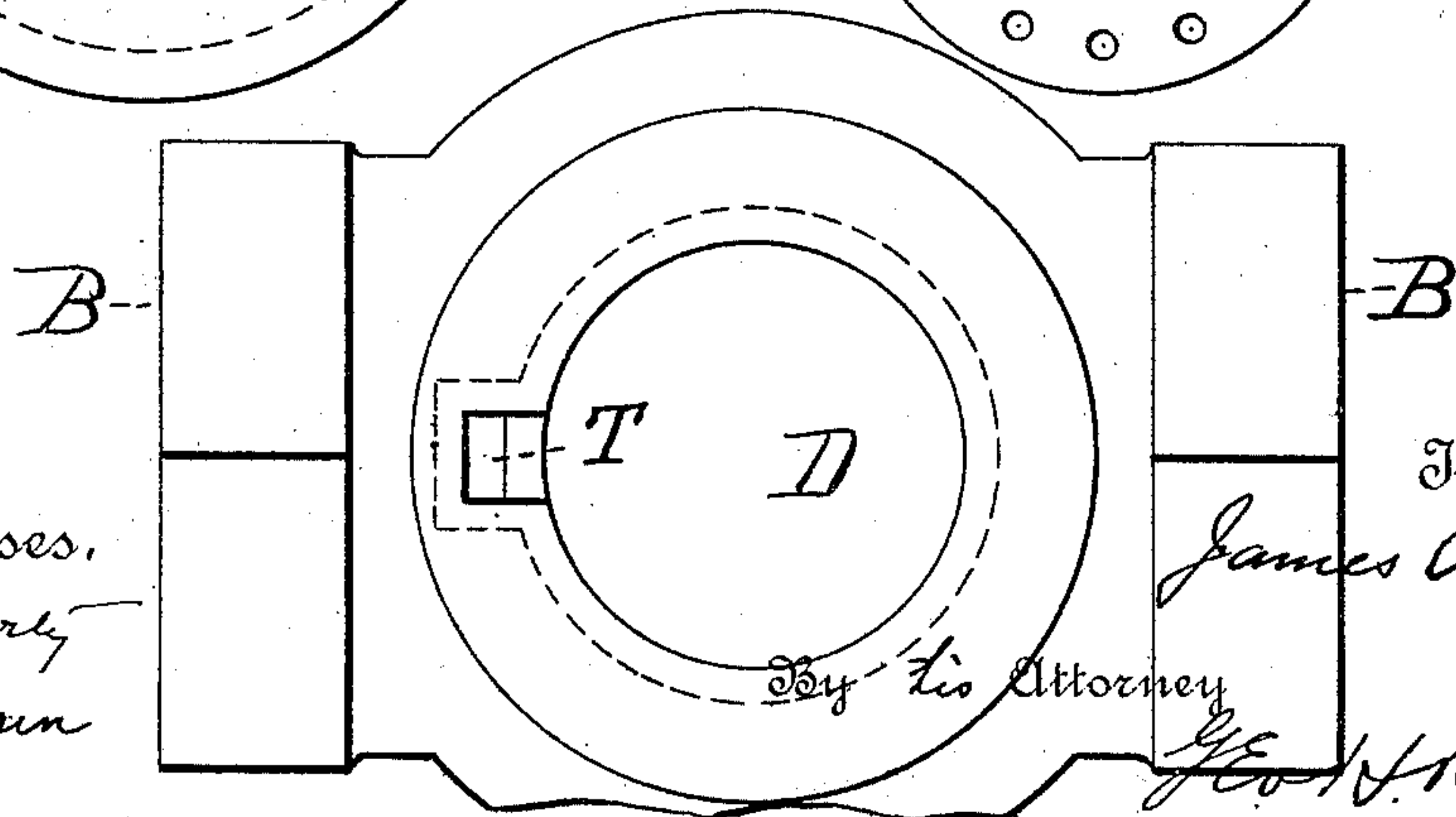
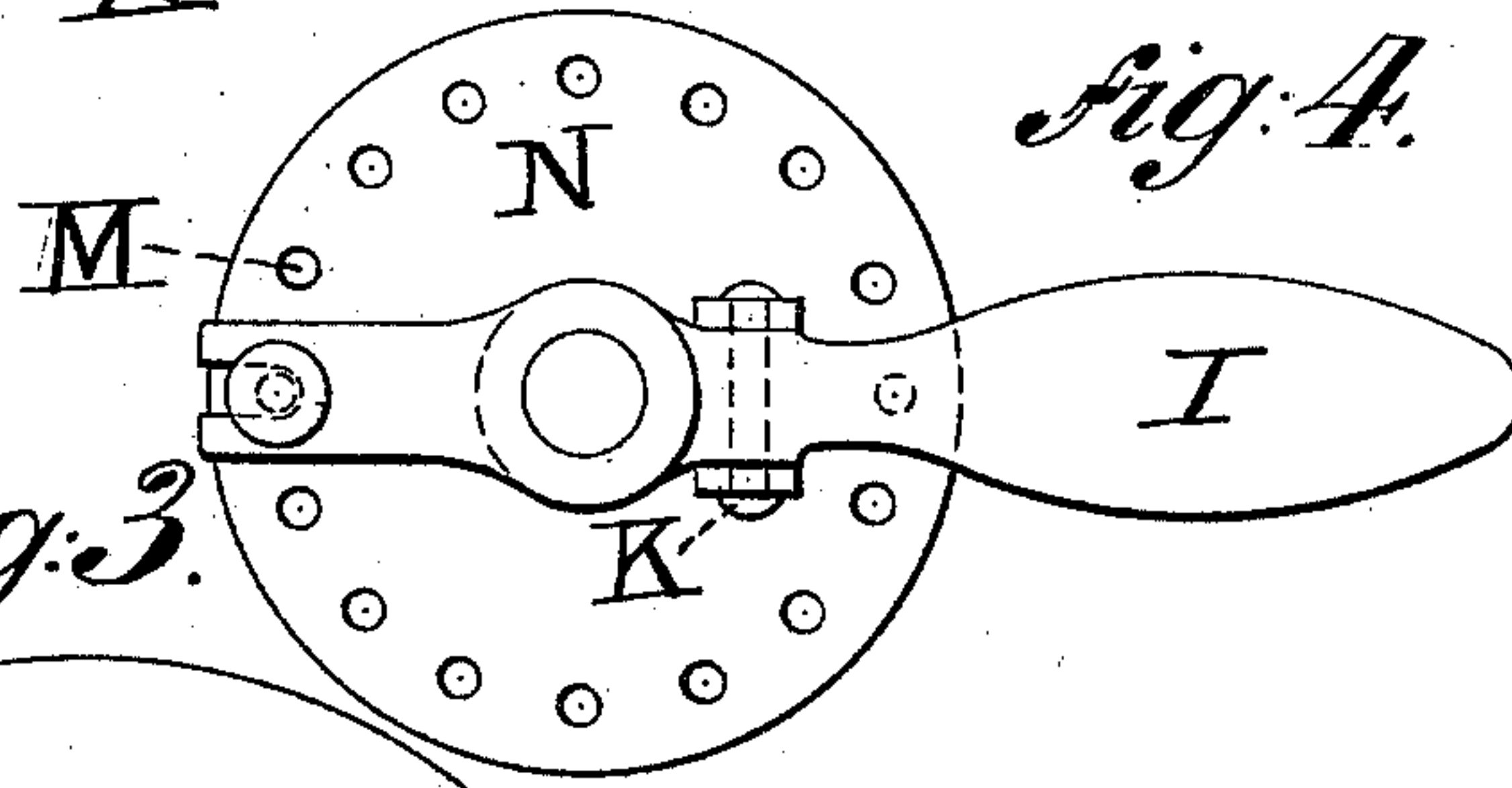
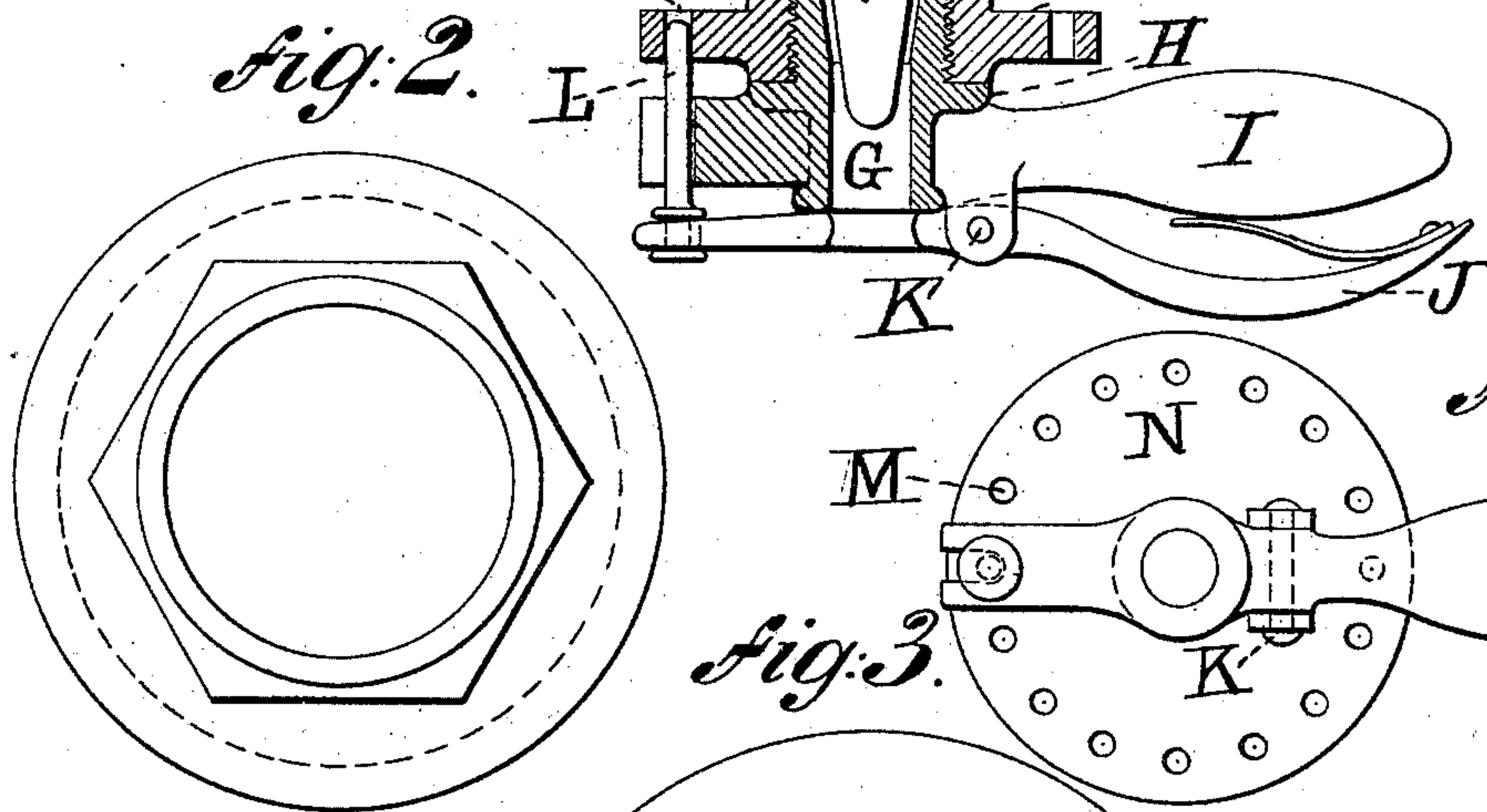
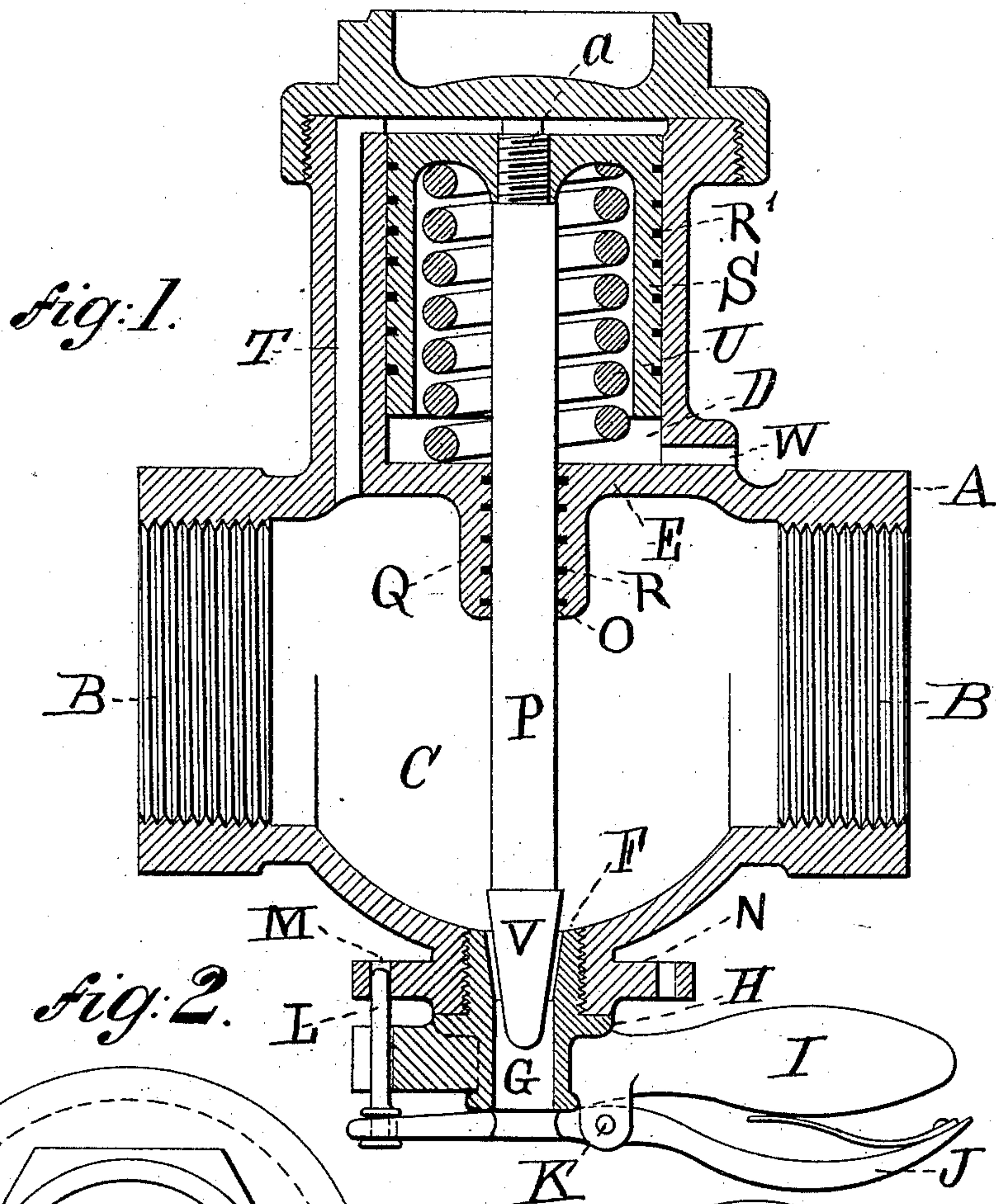
(No Model.)

J. C. BAYLES.

DRAIN VALVE FOR STEAM PIPES.

No. 395,607.

Patented Jan. 1, 1889.



Witnesses,  
Jas F. Fogarty  
David W. Brown

Inventor,

James C. Bayles

By His Attorney

Geo. H. Blum



# UNITED STATES PATENT OFFICE.

JAMES C. BAYLES, OF NEW YORK, N. Y.

## DRAIN-VALVE FOR STEAM-PIPES.

SPECIFICATION forming part of Letters Patent No. 395,607, dated January 1, 1889.

Application filed June 18, 1888. Serial No. 277,700. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES C. BAYLES, of the city, county, and State of New York, have invented certain new and useful Improvements in Drain-Valves for Steam-Pipes, of which the following is a specification.

My invention relates to a water-trap, and is designed to be employed with a pipe system conveying the heating medium to apparatus designed for heating railway-cars or buildings.

My invention consists in the combination of the various parts which go to make up my improved trap.

In the accompanying drawings, which illustrate my invention, similar letters of reference indicate like parts.

Figure 1 is a vertical section through my improved trap. Fig. 2 is a top view. Fig. 3 is a top view with the cover removed. Fig. 4 is a bottom view of bottom plate and outlet-adjusting device.

A represents the shell or body of the trap, provided with the lateral threaded openings B B. The interior of the shell is divided into two parts, C and D, by the diaphragm E, which forms a part of the casting of the shell. The part C forms the port for the passage of steam, and in the bottom thereof is an opening, F, threaded to receive the annular threaded thimble G, secured to which is a stop-collar, H, and adjusting-handle I.

J is a latch-lever, pivoted to the handle at K. At one end of the latch-lever is an adjustable pin, L, adapted to be inserted into any one of the holes M in the bottom plate, N.

O represents an opening in the diaphragm E for the passage of the stem P. The diaphragm at O is extended downward to form a guide, Q, for the stem, and in the guide are the usual slots, R, for a water-packing.

The stem P is provided with a screw, a, at its upper end, by which it is connected to the inverted-U-shaped piston S, which is also provided with slots R' for a water-packing. The piston S is guided on one side by the wall of the shell and on the other by the diaphragm E.

T is a steam-port between the diaphragm and shell-wall, and which opens above the top of the piston.

U is a helical spring arranged under the piston, and bearing at one end upon the under side of the piston and at the other end upon the inner wall of the diaphragm.

On the lower end of the stem P is a conical portion, V, which conforms in shape to the opening in the thimble G.

W is an opening in the casting, through which any steam which finds entrance under the piston may be emitted.

The operation of my device is as follows: The trap is adapted to be included in the pipe conveying the steam, or in a transfer-drum or other locality where it is necessary to trap off water condensed from the steam. By reason of the spring U the piston is lifted and the orifice in the thimble G opened to its full extent. This opening may be increased or diminished by depressing the latch-lever J and horizontally rotating the handle I. With no steam on the pipe the condensed water finds ready egress through the thimble G. When the steam is turned on, the piston S descends and the drip-opening through the thimble is diminished in accordance with the steam-pressure. It is my design never to wholly close the drip-opening, but to allow the water of condensation to flow slowly therefrom. It is of course obvious that there will be a slight escape of steam; but such is my intention, as by such means I prevent any accumulation of ice in cold weather.

By varying the opening between the thimble and the end V of the stem the condensation of steam occurring under any pressure of steam and external temperature may be provided for. It will be observed that by reason of this device the pipes will automatically free themselves of any condensed water when the steam is cut off, and I am thus enabled to control all the valves from a single point, which is of great practical utility.

I claim as my invention—

1. In a drain-valve for steam-pipes, the combination, with the shell A, provided with the port-openings B and waste-opening F, of the means for controlling the area of the waste-opening, consisting of the diaphragm E, piston S, spring U, and stem P, substantially as set forth.

2. The combination, in a drain-valve for steam-pipes, with the shell A, provided with the port-openings B B and waste-opening F, of the means for adjusting the area of the waste-  
5 opening, consisting of the adjustable thimble G.

3. A drain-valve for steam-pipes, consisting of a shell or body having opposite port-openings in the sides thereof, a drip-opening  
10 in the lower portion of the body of said valve, and a device for controlling the area of the

drip-opening actuated by the differential action of a spring and the pressure of the steam transmitted through the valve, substantially as described.

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In witness whereof I have hereunto set my hand this 13th day of June, 1888.

JAMES C. BAYLES.

Witnesses:

GEO. H. BENJAMIN,  
BYRON MORGAN.