

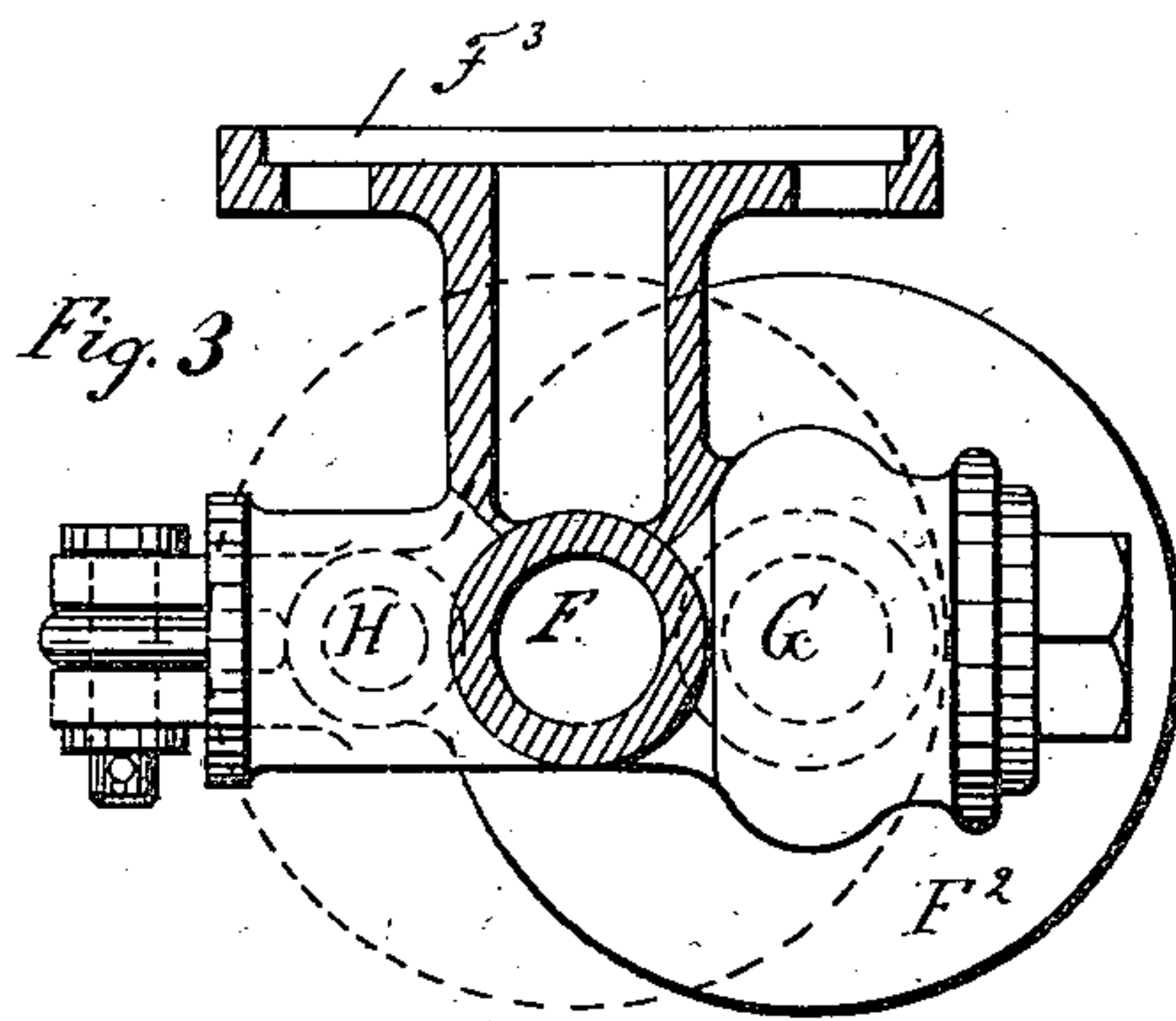
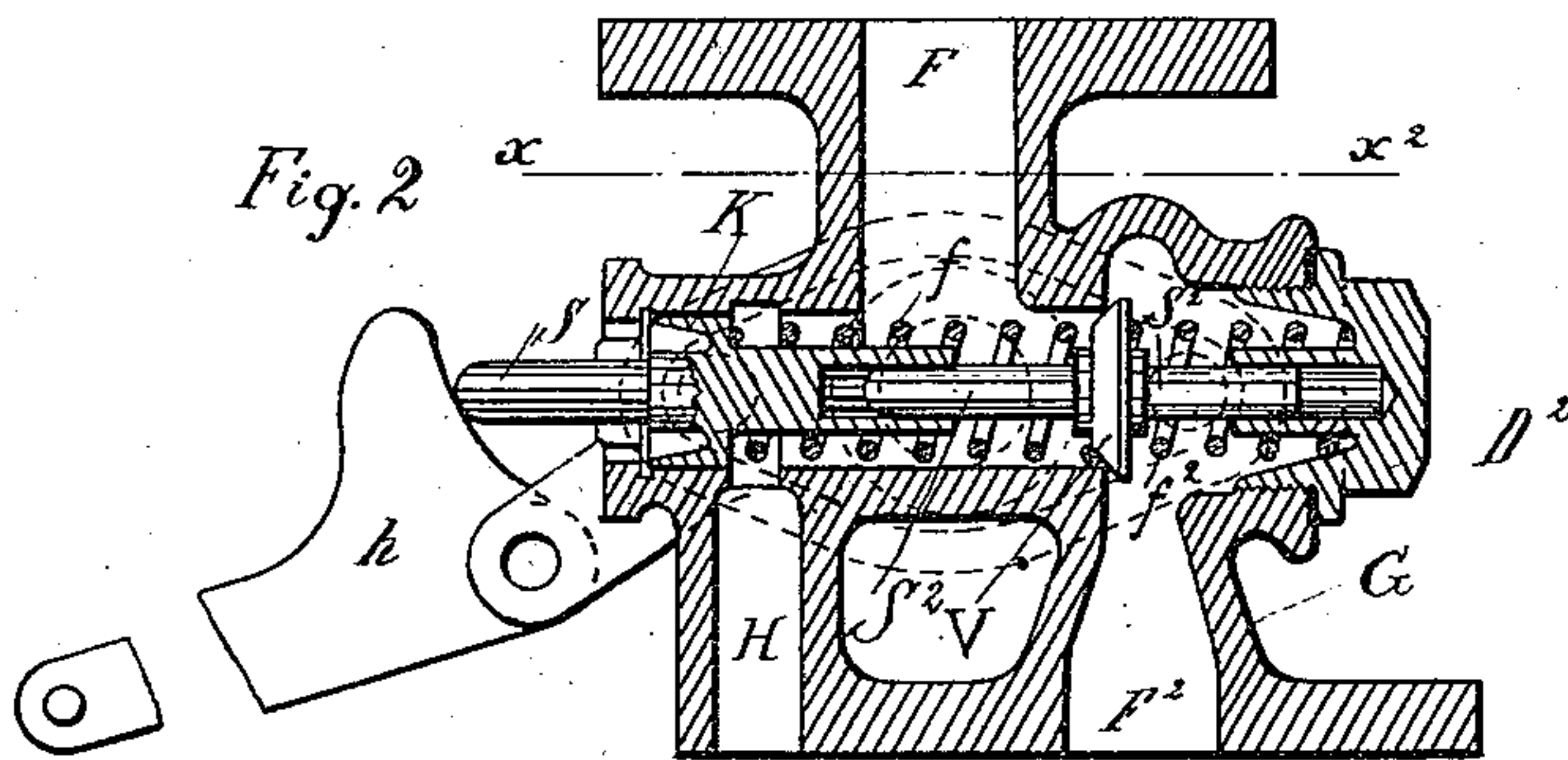
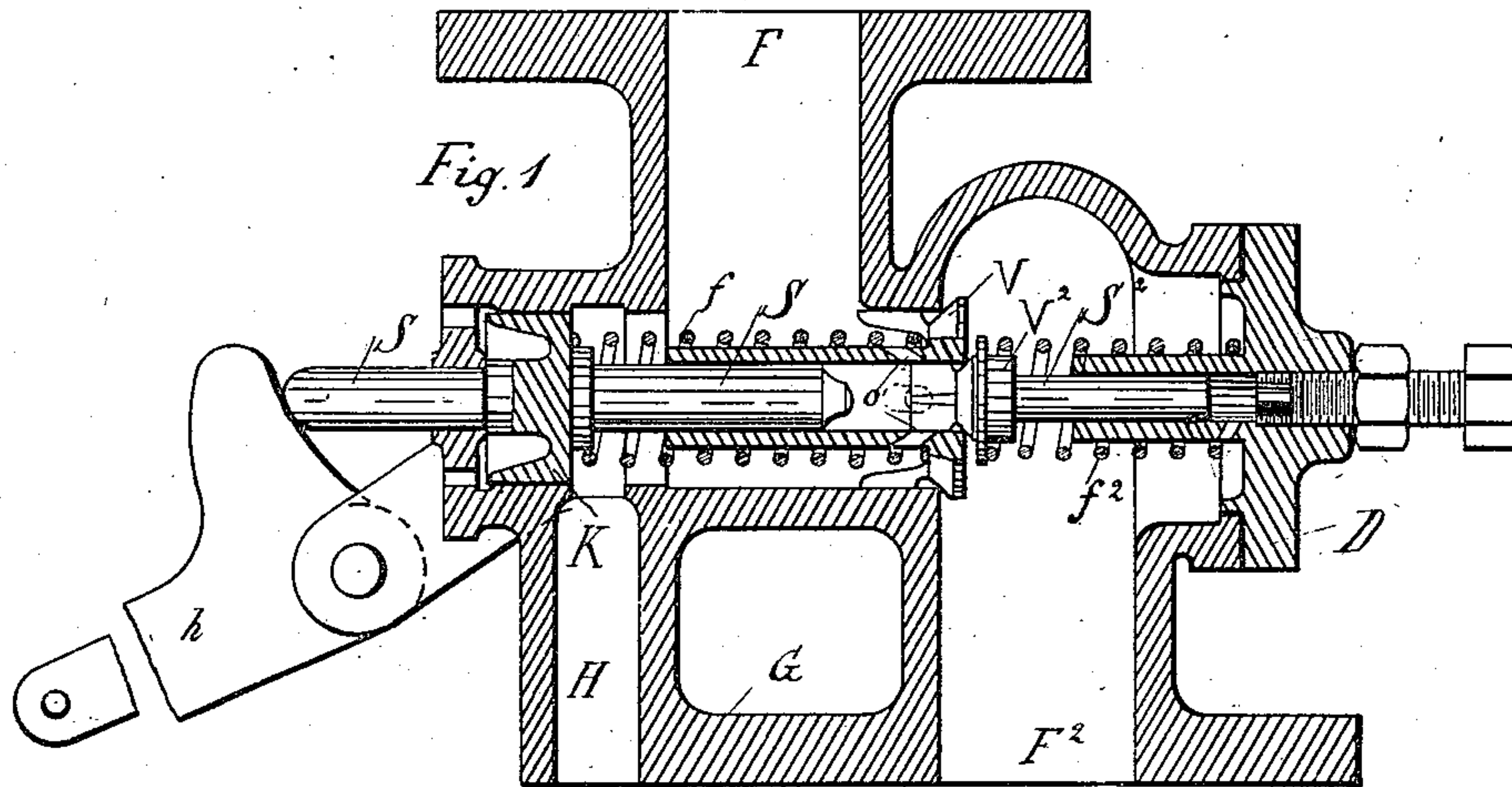
No. 616,197.

Patented Dec. 20, 1898.

W. MÖLLER.  
VALVE FOR STEAM WHISTLES.

(Application filed Feb. 19, 1896.)

(No Model.)



Witnesses:

Charles Durcker  
W. H. Möller

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per: Georg Ludwig  
Attorney.



# UNITED STATES PATENT OFFICE.

WILHELM MÖLLER, OF BREMERHAVEN, GERMANY.

## VALVE FOR STEAM-WHISTLES.

SPECIFICATION forming part of Letters Patent No. 616,197, dated December 20, 1898.

Application filed February 19, 1896. Serial No. 579,847. (No model.)

*To all whom it may concern:*

Be it known that I, WILHELM MÖLLER, a subject of the Emperor of Germany, residing at Bremerhaven, Germany, have invented certain new and useful Improvements in Valves for Steam-Whistles, (for which I have obtained a patent in Germany, No. 85,033, dated May 5, 1895, and in Great Britain, No. 17,361, dated September 17, 1895;) 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.

With steam-whistles it is often found that the sound does not come at once in its full strength and distinctness owing to the presence of water which collects in the valve-body and the tube-conductors through condensation of steam. This condensed water also freezes in very cold weather and prevents the whistle from acting properly.

This invention has for its object to so construct the valve for operating the whistle that water of condensation normally has a free egress, and after the operation of the valve any water is automatically discharged.

In the accompanying drawings, Figure 1 is a vertical section of a valve for a steam-whistle acting by high-pressure steam, and Fig. 2 is a vertical section of a valve for low-pressure steam. Fig. 3 is a top view and a section of the arrangement shown in Fig. 2 on the broken line  $x-x^2$ .

In Fig. 1 the steam-conducting pipe is connected to the valve-box G by the flange F<sup>2</sup> and the pipe for the whistle by the flange F. A third flange F<sup>3</sup> serves for affixing the valve-box. S is a plunger, fitted horizontally in the box, which carries a piston-disk K, fitting closely to the inner surface of one side of the valve-box. Over the inner end of the plunger S is placed the conical valve V, bored centrally and provided with holes o in its body, which serve as steam-passages. In the central bore of the big valve slides the small conical valve V<sup>2</sup> by means of a small projection extending from the plunger S<sup>2</sup>, on which the valve V<sup>2</sup> is fitted. The plunger S contacts with this projection for the purpose of opening the small valve. A spring f is arranged between the piston-disk K and the valve V

and a spring f<sup>2</sup> between the valve V<sup>2</sup> and the cover D of Fig. 1.

For the ejection of water of condensation and steam the channel H is provided, the lower end of which may be connected to a suitable receptacle, such as a collecting-tank. The lever for starting the valve is shown at h.

In Fig. 2 only a single conical valve V is used in lieu of the two valves shown in Fig. 1. The valve here is not provided with holes and will be opened by means of the plunger S if pressed against it. A spring f<sup>2</sup> is arranged between the cover D<sup>2</sup> and the conical valve V.

The action of the valve, Fig. 1, is as follows: In the normal position the piston K leaves the communication open between the steam-tube above the valve through the channel H to the collecting-tank, so that any condensed water is free to flow to the said collecting-tank. On actuating the plunger S by means of the lever h the water-discharge channel H is first closed by the movement of the piston K. During this movement when the opening is covered about one-eighth of an inch the cone-valve V<sup>2</sup> and after it V are opened by means of the plunger S, which first comes in contact with the valve V<sup>2</sup> and after that with V and allows steam to pass to the whistle to cause it to sound. After release of the starting-lever the cone-valves V V<sup>2</sup> close under the pressure of the springs f f<sup>2</sup> and steam, and the discharge of water from the tube commences automatically by the return of the piston-disk, owing to the small quantity of steam in front of the valve flowing naturally at first downward through the opened channel. In order to facilitate the discharge of condensed water out of the valve-chamber, it is preferable to flatten by means of a file the surface of the plungers S and S<sup>2</sup> and to mount the whole valve somewhat inclined toward the side of the exhaust or water discharge.

The action of the valve construction in Fig. 2 differs from that of Fig. 1 by lifting only one conical valve V, owing to the low pressure of steam for which this structure is destined. The amount of energy necessary for the opening of the valve V does not exceed the amount necessary for ordinary steam-

whistles and effects simultaneously the opening of the exhaust and water-discharge channel H.

I claim—

- 5 1. In a valve for steam-whistles, the combination of a valve-box having a steam-inlet, a steam-outlet and a condensed-water outlet, with a piston-valve that controls the passage between the steam-outlet and the condensed-  
10 water outlet, means for operating the piston-valve, and with a valve that controls the passage between the steam-inlet and the steam-outlet and which is adapted to move together with the piston-valve, substantially  
15 as specified.
2. In a valve for steam-whistles, the combination of a valve-box having a steam-inlet,

a steam-outlet and a condensed-water outlet, with a piston-valve that controls the passage between the steam-outlet and the condensed- 20 water outlet, means for operating the piston-valve, and with a pair of successively-movable valves, of which one is perforated, and which collectively control the passage between the steam-inlet and the steam-outlet, 25 substantially as specified.

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

WILHELM MÖLLER.

Witnesses:

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GEORG LUDWIG,  
CHARLES DUNCKER.