

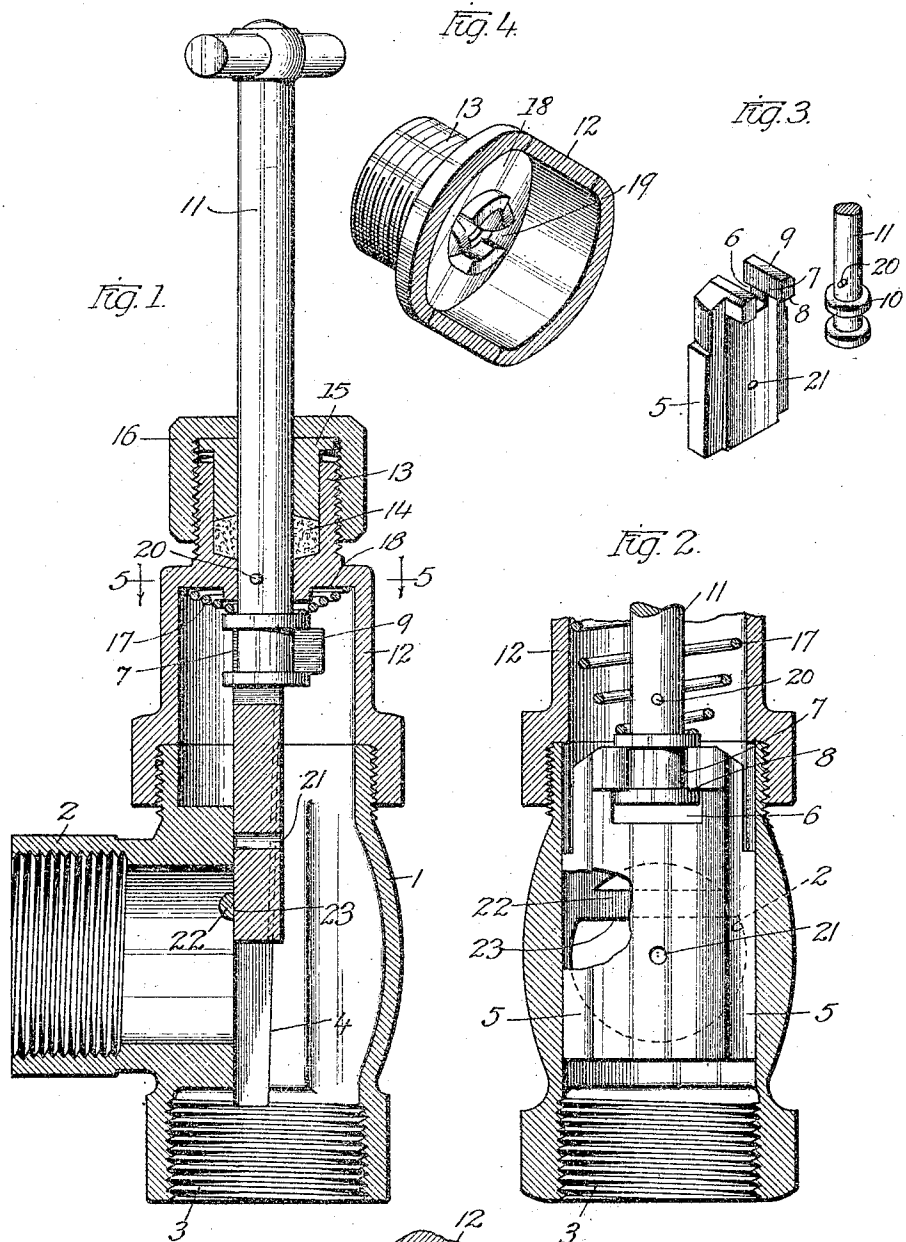
F. F. COLLINS.

VALVE.

APPLICATION FILED AUG. 22, 1918.

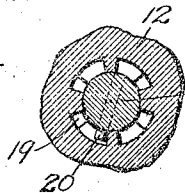
1,297,446.

Patented Mar. 18, 1919.



Witnesses:
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Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANK F. COLLINS, OF DANVILLE, ILLINOIS.

VALVE.

1,297,446.

Specification of Letters Patent.

Patented Mar. 18, 1919.

Application filed August 22, 1918. Serial No. 250,927.

To all whom it may concern:

Be it known that I, FRANK F. COLLINS, a citizen of the United States, residing at Danville, in the county of Vermilion and State of Illinois, have invented certain new and useful Improvements in Valves, of which the following is a specification.

My invention relates to improvements in valves and the principal object thereof is the provision of a valve for use in heating systems and the like, in which provision is made for "bleeding" by means of a restricted aperture, and for cleaning or keeping clear the bleeding aperture in the valve.

Another object of this invention is the provision of a slide or gate valve having means for locking the same in an open position.

Further objects include improvements in details of construction and arrangement whereby a simple and effectively operating valve of the type described is provided.

To the accomplishment of the foregoing and such other objects as may hereinafter appear, my invention consists in the construction, combination and arrangement of parts hereinafter described and then sought to be defined in the appended claims, reference being had to the accompanying drawings forming a part hereof and which shows, for the purpose of illustrative disclosure, a preferred embodiment of my invention, that being expressly understood, however, that various changes may be made in practice within the scope of the claims without digressing from my inventive idea.

In the drawings

Figure 1 represents a vertical longitudinal section of a valve constructed to embody my invention, the valve itself being shown held in open position.

Fig. 2 is a vertical sectional view of the lower part of the structure shown in Fig. 1, taken in a plane at right angles to the plane in which Fig. 1 is taken, part being shown broken away to facilitate the disclosure.

Fig. 3 is a perspective view showing the manner of connecting the valve to the valve stem.

Fig. 4 is a perspective view partially broken away to show the interior of the head or casing of the valve to illustrate the part of the means for locking the valve in open position.

Fig. 5 is a transverse section taken substantially on line 5—5 of Fig. 1.

In heating systems of various kinds, but particularly in vacuum heating systems, it is necessary to provide some means for "bleeding" the system or providing a slight leakage through the valve to permit the water of condensation to draw off and not interfere with the proper operation of the heating system, the valve itself normally being closed. It is also desirable to provide a valve structure which may be entirely opened in case of the necessity of draining the system to prevent freezing and the like. It is to accomplish these purposes and to provide a very simply constructed, assembled and operating valve that I have designed this invention.

Referring now to the drawings, the numeral 1 designates the body or casing of the valve provided with the screw threaded nipples 2 and 3, whereby the same is installed in the system. These nipples are connected by the passage through the valve as is well understood. Formed on the inside of the valve casing are the grooves 4 which are narrower at their lower ends than at their top ends, or rather gradually tapered downward. These grooves receive the side portions of the slide or gate valve 5, the edges of which are inclined toward their lower ends so as to correspond to the shape of the grooves 4. The top end of this valve is provided with the enlarged cut out portion 6 having the restricted opening 7 leading thereto, so as to provide shoulders 8, the extreme top end of the valve being extended, as at 9, to provide a pair of spaced guides which fit between the spaced annular members 10 formed on the lower end of the valve stem 11. The inner faces of the cut out portions 6 of the valve are slightly beveled, so as to limit the inward movement of the lower flange or annular member 10 to properly position the valve and valve stem relative to each other.

This valve stem 11 projects through a suitable opening in the head member 12 which is screwed to the main or body casing 1, as shown, and has the upwardly extending socket 13, to receive the packing 14, packing gland 15 and cap member 16, the valve stem passing through all of these parts, as is well understood. I also provide the conical spring 17 which bears against an inner shoulder 18 of the head member 12 and also against the upper flange or annular member 10 on the valve stem for the

purpose of normally forcing the valve downwardly and holding the same in that position, which is its closed position.

In order that the valve may be held or locked in open position, I provide in the shoulder portion 18 a plurality of bayonet slots 19, in which the pin 20 on the valve stem is adapted to fit and be turned, whereby the valve is held in locked position, as shown clearly in Fig. 1. It is seen by pulling the valve stem upwardly the pin will engage one of the slots 19 and then when the valve stem reaches the upward limit of its movement a turn of the same will lock the pin in the bayonet slot and hold the parts in their open position.

When in use in heating systems, as previously described, I provide the comparatively small "bleeding" aperture 21 through the valve which will permit the escape of any water of condensation and the like back into the system so that it will not interfere and prevent the proper operation of the system. Furthermore, in order to keep this small or restricted aperture open I provide the bar 22 extending across the inside of the body 1 and having a flat face 23 with comparative sharp edges which are in engagement with the face of the valve 5, so that as the valve is moved up and down any accumulation of material about the mouth of the aperture and tending to obstruct the same will be removed and scraped off by means of the bar 22.

It is, therefore, obvious that I have provided a valve which is simple in construction and effective in operation and easy to assemble, having means to permit "bleed-

ing" and to keep the "bleeding" aperture open to permit the proper operation of the device. The valve also has means for holding the same in open position when desired.

Having described my invention, what I claim is:—

1. A valve of the character described including in combination, a body, having a passage therethrough, a valve member slidably mounted therein and having a restricted opening therethrough for bleeding, means mounted in said body located at an intermediate point in said passage adapted to engage the face of said valve to remove any accumulated material from the mouth of the aperture, when the valve is moved.

2. A valve of the character described including in combination, a body having a passage therethrough, a valve slidably mounted within said valve body and having a restricted aperture therethrough for "bleeding", and a bar extending across the inside of said valve body and engaging the face of the valve and adapted to remove any accumulated material from the mouth of said aperture when the valve is moved.

3. A valve of the character including in combination a body having a passage therethrough, a valve member movably mounted in said body and adapted to close said passage, resilient means for holding the valve closed, said valve member having an opening therethrough and means connected to the body for cleaning the face of the valve member.

In testimony whereof I hereunto subscribe my name.

FRANK F. COLLINS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."