PATENT SPECIFICATION

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PROVISIONAL SPECIFICATION.

Improvements in Valves.

I, GEORGE CONSTANTINESCO, of "Carmen Sylva", Beechwood Avenue, Oatlands Park, Weybridge, in the County of Surrey, subject of the King of Great Britain and Ireland, do hereby declare the nature of this invention to be as follows:—

The present invention relates to valves for controlling the flow of elastic fluids or liquids.

The object of the invention is to provide a self aligning valve which will close tight on its seat irrespective of the alignment of the part which carries the valve itself and the part in which the valve seat is formed while the lift of the valve may at the same time be limited as desired.

The invention consists in a valve in which the head is of spherical form and is connected to the valve stem in such a manner as to allow angular and lateral freedom to the valve while the seat is of a form adapted to give a line contact.

The invention further consists in a valve of the type described having a spherical head connected by a link or links to the valve stem and pressed against its seat by a volute spring which serves as an elastic guide limiting the lateral movement and the lift.

The invention also consists in a valve of the type described having the valve stem guide formed in one member and the valve seat in another, the two members being assembled by screwing or otherwise or so connected that an angular or lateral relative movement is allowed between them.

The invention also consists in the improved valve hereinafter described.

In carrying the invention into effect according to one example as applied to sounding devices actuated from internal combustion engines as described in the Patent Specification No. 181,103 (7146 of 1921) the valve is employed to control the passage of air from a trumpet to the connector which is in communication with a point in the induction system of the engine. In this example, the guide in which the valve stem works is formed in a flanged member attached to the dashboard of the car on which the controlling device including the valve is supported. The valve seat *d* is formed in a connector which is screwed into the front of the controlling device and may be rigidly or otherwise connected to the induction pipe of the engine.

The valve head is of spherical form and is connected by a link or short chain with the end of the valve stem. Surrounding the end of the valve stem to which the link or chain is attached there is provided a light volute spring bearing at one end against the valve head which may be cut off along a diametrical plane to give a plane abutment for the spring and bearing at its other end against the diaphragm or other support in the controlling device.

With the above described arrangement, it will be evident that accurate alignment between the valve stem guide and the part carrying the valve seat is unnecessary since the valve head is allowed an angular and also lateral movement relatively to the valve seat and valve stem. The valve seat is so formed that a circular line contact is made between the valve head and its seat, the latter for this purpose having either a right angled circular edge or a slightly rounded off edge. By reason of this line contact there is no surface between the valve head and seat on which

particles of grit or other impurities can collect and interfere with the proper tight closing of the valve.

Further it will be seen that by the use of a volute spring surrounding the end of the spindle and the link or chain, the lateral movement of the chain is limited. Further the use of the volute spring instead of an ordinary spiral spring affords a ready means of limiting the lift of the valve should this be desired.

The valve is suitable also for other purposes than that described, for example, in air compressors, check valves, non-return valves, stop valves and the like.

Also the spindle may be arranged on the opposite side of the valve so that it passes through the valve seat.

Dated the 12th day of October, 1921.

W. GRYLLS ADAMS,
87, Victoria Street, London, S.W. 1,
Chartered Patent Agent.

COMPLETE SPECIFICATION.

Improvements in Valves.

I, GEORGE CONSTANTINESCO, of "Carmen Sylva", Beechwood Avenue, Oatlands Park, Weybridge, in the County of Surrey, a subject of the King of Great Britain and Ireland, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to valves for controlling the flow of elastic fluids or liquids.

The object of the invention is to provide a self aligning valve which will close tight on its seat irrespective of the alignment of the part which carries the valve itself and the part in which the valve seat is formed while the lift of the valve may at the same time be limited as desired.

The valves to which the invention relates are of the type in which a spherical head is connected to the valve stem in such a manner as to allow angular and lateral freedom to the valve while the seat is of a form adapted to give a line contact.

The invention consists in a valve of the type described having a spherical head connected by a link or links to the valve stem and pressed against its seat by a volute spring which serves as an elastic guide limiting the lateral movement and the lift.

The invention also consists in a valve according to the previous paragraph having the valve stem guide formed in one member and the valve seat in another, the two members being assembled by screwing or otherwise.

The invention also consists in the improved valve hereinafter described.

Referring to the accompanying drawings:—

Figure 1 is a part sectional elevation of the improved valve applied to an air controlling device.

Figure 2 shows the parts of the valve.

In the example illustrated as applied to sounding devices actuated from internal combustion engines as described in the Patent Specification Serial No. 181,103, the valve is employed to control the passage of air from a trumpet to the connector which is in communication with a point in the induction system of the engine. In this example, the guide in which the valve stem *a* works is formed in a flanged member *b* attached to the dashboard of the car on which the controlling device *c* including the valve is supported. The valve seat *d* is formed in a connector *e* which is screwed into the front of the controlling device and may be rigidly or otherwise connected to the induction pipe of the engine. The valve seat *d* and valve stem guide thus being situated in two members *b* and *c* which are assembled by screwing; other known method of assembly of these parts may obviously be employed. The valve head *f* is of spherical form and is connected by a link *g* or short chain with the end of the valve stem. Surrounding the end of the valve stem to which the link or chain is attached there is provided a light volute spring *h* bearing at one end against the valve head which may be cut off along a diametrical plane to give a plane abutment for the spring and bearing at its other end against the diaphragm *k* or other support in the controlling device.

With the above described arrange-

ment, it will be evident that accurate alignment between the valve stem guide and the part carrying the valve seat is unnecessary since an angular or lateral movement between the valve seat and valve stem will not interfere with the accurate seating. The valve seat is so formed that a circular line contact is made between the valve head and its seat, the latter for this purpose having either a right angled circular edge or a slightly rounded off edge. By reason of this line contact there is no surface between the valve head and seat on which particles of grit or other impurities can collect and interfere with the proper tight closing of the valve.

Further it will be seen that by the use of a volute spring surrounding the end of the spindle and the link or chain, the lateral movement of the chain is limited. Further the use of the volute spring instead of an ordinary spiral spring affords a ready means of limiting the lift of the valve should this be desired.

The valve is suitable also for other purposes than that described, for example, in air compressors, check valves, non-return valves, stop valves and the like.

Also the spindle may be arranged on the opposite side of the valve so that it passes through the valve seat.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A valve of the type described having a spherical head connected by a link or links to the valve stem and pressed against its seat by a volute spring which serves as an elastic guide limiting the lateral movement and the lift, substantially as described.

2. A valve as claimed in Claim 1 having the valve stem guide formed in one member and the valve seat in another, the two members being assembled by screwing or otherwise, substantially as described.

3. The improved valve hereinbefore described and illustrated.

Dated the 12th day of October, 1921.

W. GRYLLS ADAMS,
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Chartered Patent Agent.

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[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.

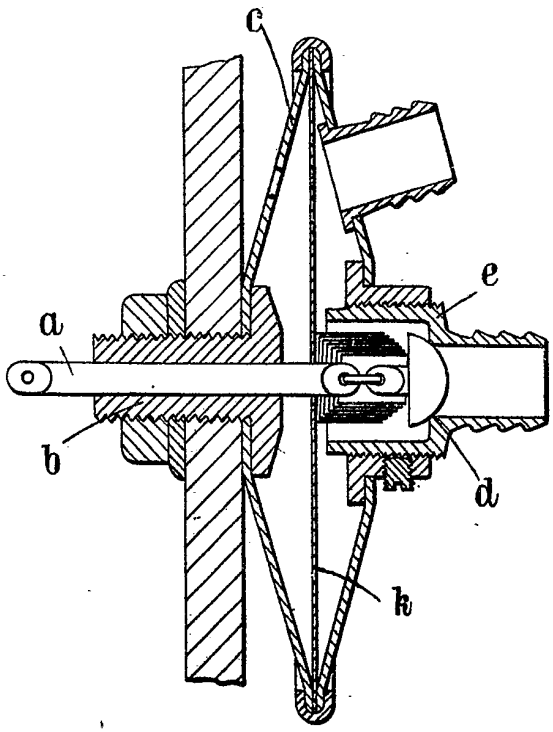
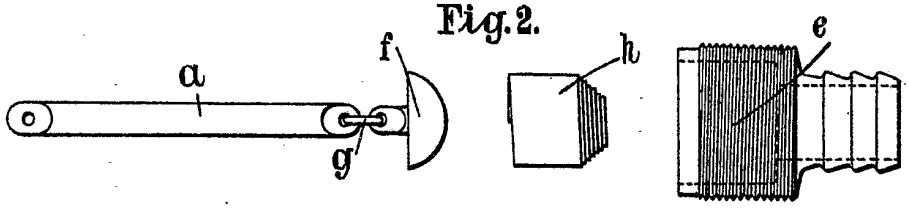


Fig. 2.



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