

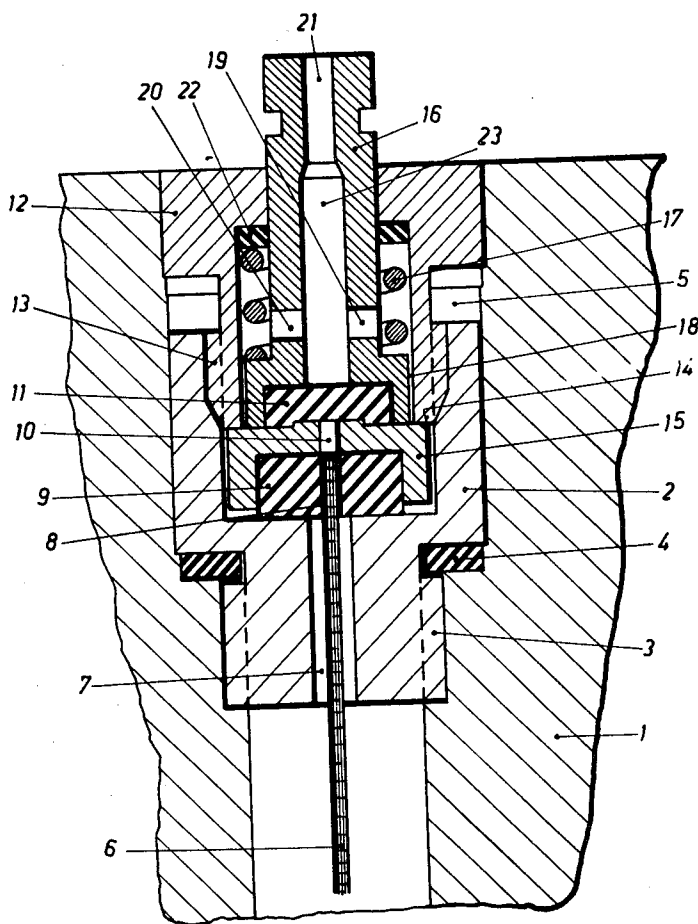
Sept. 21, 1965

M. ZOLL

3,206,949

VALVE FOR LIGHTERS

Filed June 11, 1963



1

2

3,206,949

VALVE FOR LIGHTERS

Manfred Zoll, Bienne, Bern, Switzerland, assignor to
Samao S.A., Bienne, Bern, Switzerland

Filed June 11, 1963, Ser. No. 287,063

Claims priority, application Switzerland, June 19, 1962,

7,323/62

3 Claims. (Cl. 67-7.1)

My invention has for its object a valve for lighters ensuring very simply the throttling and adjustment of the volume of gas flowing out of the container during use.

This lighter is particularly suitable for those lighters wherein a fraction of the lighter forms a container adapted to be filled with phials carrying a small amount of compressed liquefied gas. My improved valve is novel through the fact that it includes a first member adapted to be shifted axially of the lighter, a yielding packing provided with a bore and a second member coaxial with the first member and adapted to be shifted axially with reference to said first member, said second member closing the output of gas out of the container when in its inoperative position defined by suitable return means, while said second member allows the gas to pass out of the container when it is shifted against the action of said return means, the compression produced by the first-mentioned member in accordance with its axial position providing an adjustment of the compression of the yielding packing and consequently of the size of the diameter of its bore defining in its turn the output of gas.

Through this simple arrangement incorporating a yielding bored packing forming an adjustable valve opening, it is possible to provide a cheap and reliable valve which is not subjected in practice to any wear. A mere screwing down of the first member is adapted to provide a uniform height of the flame which is independent of the more or less considerable pressure of the gas in the container, which pressure varies with the outer temperature and the extent of filling of said container. In order to prevent any too large increase in the opening defined by the valve and thereby the feed of an unnecessarily large amount of gas mixture, the adjustment is limited by suitable means.

I will now describe a preferred embodiment of the valve according to my invention. In the single figure of the accompanying drawing is shown a container comprising a lighter body 1 carrying in a bore a cylindrical support 2 provided with an outer thread 3 to be screwed into said bore.

A yielding packing 4 prevents any outlet of gas between the support 2 and the body 1 of the lighter. In order that the support 2 may be screwed in a simple manner into the lighter, there is provided at its upper end a transverse slot 5. In a threaded portion 13 of a recess in the support 2 is screwed a hollow cylindrical member 12 the lower end 14 of which abuts against the transverse surface of an inverted cup-shaped member 15, while the axial bore of said hollow cylindrical member 12 receives a valve member 16 adapted to slide axially therein. Said valve member 16 is provided with a central channel 23 opening at its outer end into a burner nozzle 21, while its inner enlarged end projecting into the inside of the lighter is closed and is provided with a hollow cylindrical recess inside which is fitted a valve disc 11 of resilient material. The valve member 16 and the valve disc 11 are urged simultaneously by the spring 17 towards the transverse surface of the inverted cup-shaped member 15 extending coaxially inside the support 2, said cup-shaped member 16 surrounding in its turn a yielding packing disc 9. The latter shows a central bore 8 carrying the upper end of a wick 6 which is guided through

the axial bore 7 in the support 2 into the container formed in the lighter.

For the inoperative illustrated position of the valve, the admission of gas out of the container into the burner nozzle 21 is closed since the valve disc 11 is urged by the valve member 16 to the action of the spring 17 against the transverse surface of the cup-shaped member 15 and thereby the axial bore 10 in said member 15 is closed.

Now, if the valve member 16 is urged upwardly against the action of the spring 17 by means of the conventional mechanism of the lighter and is raised above the cup-shaped member 15, at such a moment, the gas may escape out of the lighter container through the bore 8 in the packing disc 9 and the bore 10 in the cup-shaped member 15 and then radially outwardly underneath the valve disc 11 into the annular transverse slot 18 between the two members 16 and 12 beyond which it escapes through the radial bores 19 and 20 formed in the valve member 16 and through the channel 23 into the burner nozzle 21.

For such a condition, the output of gas is defined however only through the diameter of the bore 8 in the yielding packing disc 9 of which latter the compression is governed by the axial position of the hollow cylindrical member 12 which engages through its lower end 14 the cup-shaped member 15. As the member 12 is screwed further into the lighter, the member 15 urges more energetically the yielding packing disc 9 so as to compress it in an axial direction while it is confined peripherally by the cup-shaped member and this provides a corresponding narrowing of the bore 8 of which the diameter defines the output of gas.

The fluidtight packing 22 serves for sealing to an improved extent, the joint between the members 12 and 13.

The principle underlying the invention and consisting in resorting to a yielding packing with a bore the size of which varies with the extent of compression of said packing to form an adjustable valve for a gas lighter is obviously not limited to the embodiment described and, in fact, it allows, within the scope of the accompanying claims, any desired modification in the execution of the different parts which may satisfy the various requirements which may have to be considered, according to the case.

What I claim is:

1. A gas lighter comprising a container for holding gaseous fuel under pressure, said container having a cylindrical opening with an inner threaded portion, a cylindrical support received in said opening and having a threaded portion screwed into said inner threaded portion of said opening, a small axial bore in its lower portion and a cylindrical recess with a larger diameter than said bore in its upper portion, said recess forming an annular radial face surrounding the upper end of said bore and having an inner thread spaced above said annular radial face, said axial bore affording communication between said recess and said container, a disc of yieldable packing disposed in said recess, resting on said radial face and having an axial bore registering with said axial bore of said support, the diameter of said disc being less than the diameter of said recess to provide an annular space therebetween, an inverted cup-shaped member overlying and surrounding said disc of yieldable packing and having an axial bore registering with the axial bore in said disc, a hollow cylindrical member adjustably mounted in said cylindrical opening and screwed into said inner thread of said support and abutting against said cup-shaped member to effect variable compression of the disc of yieldable packing in an axial direction while confining it peripherally and thereby reducing the diameter of said axial bore of said disc to the desired extent, a tubular valve member extending through said hollow cylindrical member and being axially movable with re-

3

spect thereto, said valve member being closed at its inner end and being provided with at least one radial bore affording communication between the recess and the interior of said valve member, and means normally preventing the flow of gaseous fuel from said container into said recess and out through said tubular valve member, valve means on the inner end of said valve member and adapted to close the bore in said cup-shaped member, and a spring urging said valve member toward said cup-shaped member to bring said valve means into engagement therewith.

2. A gas lighter according to claim 1, in which said valve member has an enlarged lower end with a recess therein and said valve means comprising a disc of resilient material in said recess.

3. A gas lighter according to claim 1, further comprising a wick extending from said container through the axial bore of said support and into the axial bore in said

4

disc of yieldable packing whereby an upper portion of said wick is constricted by reduction in diameter of said axial bore in said first mentioned disc.

References Cited by the Examiner

UNITED STATES PATENTS

2,737,037	3/56	Zellweger	67—7.1
3,048,991	8/62	Iketani	67—7.1
3,096,636	7/63	Newman	67—7.1
3,132,499	5/64	Rogers	67—7.1

FOREIGN PATENTS

591,200	1/60	Canada.
1,151,791	8/57	France.

FREDERICK L. MATTESON, JR., *Primary Examiner*.

EDWARD J. MICHAEL, *Examiner*.