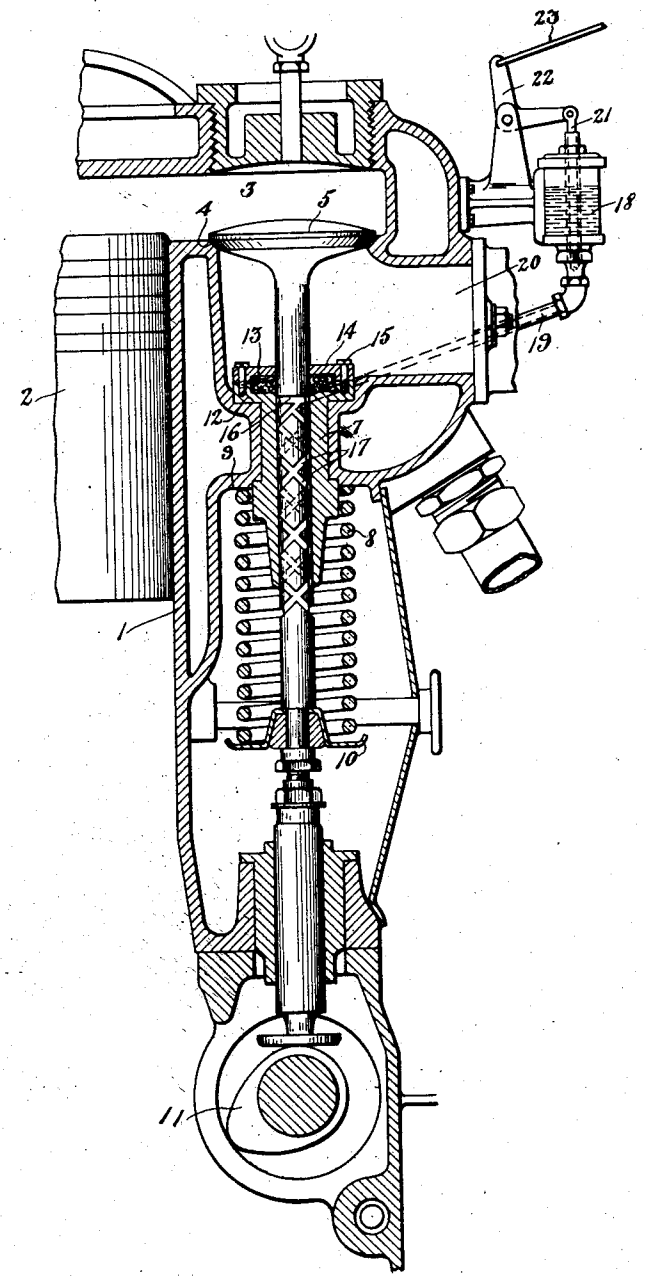
Jan. 12 , 1926.

1,569,455

J. B. BURWELL

VALVE

Filed Dec. 29, 1924



Inventor

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By Frease and Bond.

Attorneys

Patented Jan. 12, 1926. 1,569,455

UNITED STATES PATENT OFFICE.

JAMES B. BURWELL, OF CANTON, OHIO.

VALVE.

Application filed December 29, 1924. Serial No. 758,625.

To all whom it may concern:

Be it known that I, JAMES B. BURWELL, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Valves, of which the following is a specification.

This invention relates to valves and more particularly to the construction of valves used in valve-in-head motors.

It is well known that considerable difficulty has been experienced with valves of this character sticking and frequently remaining partly open. This is obviously caused by carbon deposit from the combustion chamber passing down the valve stem and into the valve guide, causing the same to stick, and since no lubrication is provided for the valve stem, this carbon deposit will harden and frequently hold the valve in open position.

The object of the present invention, is to overcome the above difficulties and to provide a construction of valve which will work easily and readily at all times and will not stick or hold open during the operation of the motor.

The above and other objects may be attained by providing a wiper of asbestos or the like around the valve stem at the upper end of the guide to prevent the greater part of the carbon deposit from passing down the valve stem into the guide, and to provide means for lubricating the entire portion of the valve stem which works within the guide, in order to provide for free movement of the valve stem and to dissolve any small portion of carbon deposit which may enter the guide.

An embodiment of the invention is illustrated in the accompanying drawing, in which—

The view is a vertical, sectional view through the exhaust side of an internal combustion motor of the valve-in-head type.

Similar numerals refer to similar parts throughout the drawing.

A portion of the cylinder is shown at 1 and the piston at 2, the exhaust passage 3 having the valve seat 4 upon which the exhaust valve 5 is normally seated.

The valve stem guide 7 is mounted in the casting and the central portion of the valve stem is arranged to reciprocate therethrough in usual manner, the spring 8 surrounding the valve stem being interposed between the shoulder 9 in the casting and the collar 10 upon the stem, to normally hold the valve in closed position, the usual cam 11 being provided for raising the valve at the proper time.

A flanged head 12 is provided upon the upper end of the valve stem guide and receives the wiper or washer 13 of asbestos or the like, which has a sliding fit upon the valve stem and is held in position by the cap 14 attached to the flanged head of the guide as by the screws 15.

An annular groove 16 may be formed in the valve stem adjacent the upper end portion of the guide, said groove communicating with the spiral grooves 17 which are provided around the valve stem to a point adjacent the lower end of the guide.

An oil receptacle 18 is mounted upon the adjacent side of the motor and connected by a tube 19 with the interior of the valve stem guide at a point adjacent the normal position of the annular groove 16 in the valve stem, said tube being located in juxtaposition to the exhaust port 20, whereby the lubricant is preheated and kept in proper condition to cause the same to flow freely.

A valve 21 may be provided in the oil receptacle controlling the flow of oil to the tube 19 and this valve may be connected to the bell crank lever 22, a rod or the like 23 leading from the bell crank to a suitable position upon the instrument board of the automobile, whereby the driver may control the flow of lubricant and cut off the same when the motor is not running.

From the above, it will be obvious that the greater portion of the carbon deposit which adheres to the valve stem will be wiped off by the asbestos wiper 13, preventing the same from passing down into the valve stem guide, while the lubricant continually passing around the spiral grooves in the valve stem, will dissolve any small portion of the carbon which may enter the guide and keep the valve stem properly lubricated at all times, to cause the valve to properly function during the operation of the motor.

As illustrated in the drawing, the oil groove 16 in the valve stem is normally located just below the asbestos wiper when the valve is closed, and it will be seen that when the valve is opened oil will be carried, by said groove, to the asbestos wiper, keeping the same properly lubricated and

providing a film of oil upon the valve stem, just above the oil groove, thus preventing the carbon deposit from the combustion chamber from forming a cake upon this portion of the valve stem.

I claim:—

1. A valve of the character described including a stem upon the valve, a guide for the valve stem, a wiper of asbestos at the upper end of the guide and having a sliding fit around the valve stem to prevent carbon from entering the guide, and a cap enclosing said asbestos wiper and detachably connected to the upper end of the guide.

2. A valve of the character described including a stem upon the valve, a guide for the valve stem, a wiper of asbestos at the upper end of the guide and having a sliding fit around the valve stem to prevent carbon from entering the guide, the portion of the valve stem within the guide being provided with spiral grooves, means for conveying lubricant to said grooves, and a cap enclosing said asbestos wiper and detachably connected to the upper end of the guide.

In testimony that I claim the above, I have hereunto subscribed my name.

JAMES B. BURWELL.