L. G. SABATHÉ.

MEANS FOR MOUNTING VALVES IN ENGINE CYLINDERS.

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929,886.

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Fig. 1.

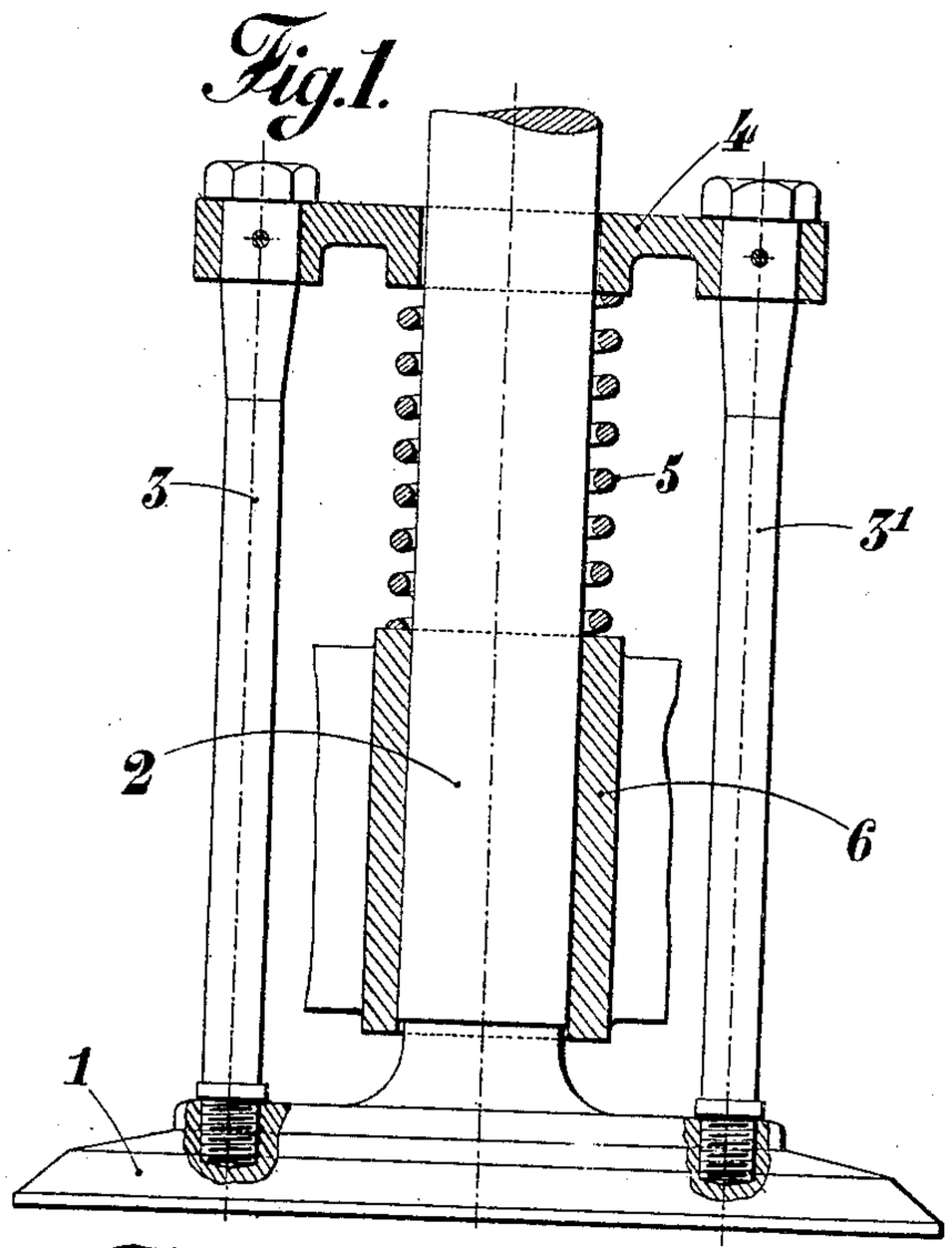
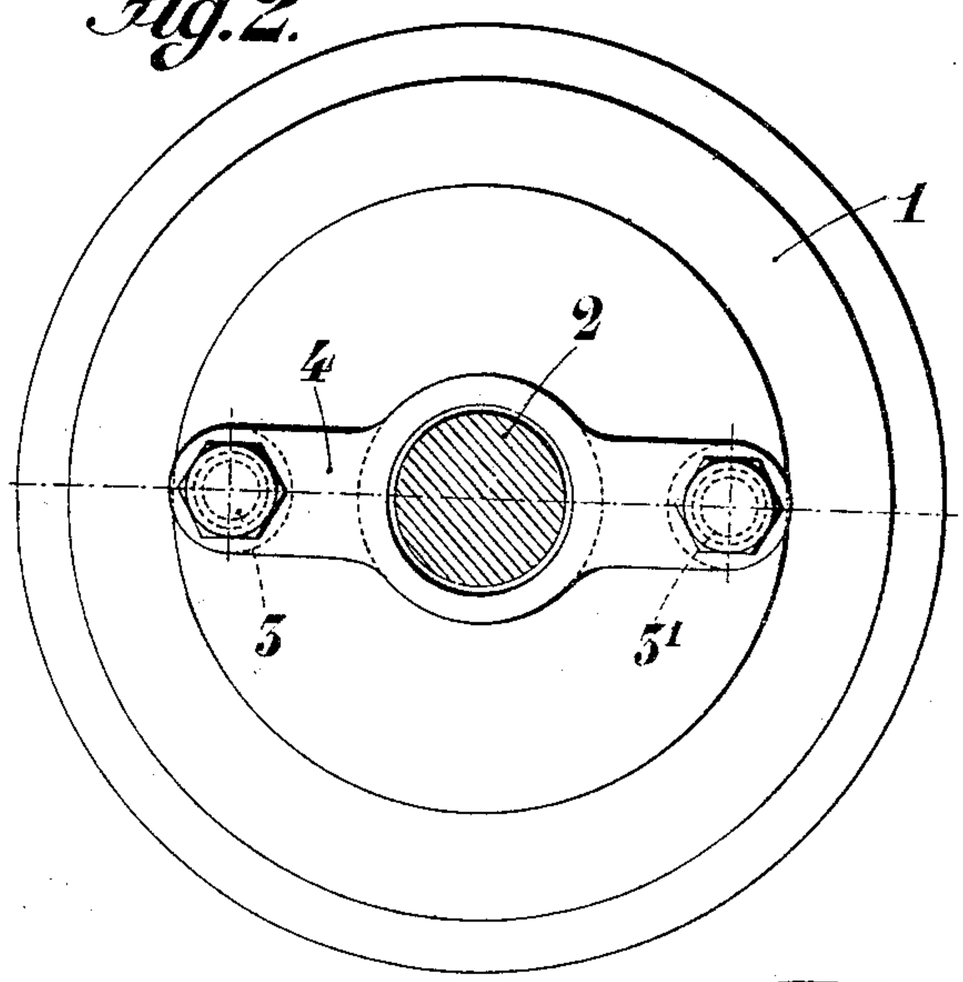


Fig. 2.



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UNITED STATES PATENT OFFICE.

LOUIS GASTON SABATHÉ, OF PARIS, FRANCE, ASSIGNOR TO THE SOCIETE DES MOTEURS SABATHE, OF SAINT-ETIENNE, LOIRE, FRANCE, A CORPORATION OF FRANCE.

MEANS FOR MOUNTING VALVES IN ENGINE-CYLINDERS.

No. 929,886. Specification of Letters Patent. Patented Aug. 3, 1909.

Application filed June 10, 1908. Serial No. 437,649.

To all whom it may concern:

Be it known that I, LOUIS GASTON SABATHÉ, of the French Republic, residing at Paris, Department of the Seine, in France, have invented certain new and useful Improvements in Means for Mounting Valves in Engine-Cylinders, of which the following is a specification.

My invention relates to cylinder valve structures and finds a most useful embodiment in an internal combustion engine employing cylinders having valves, and has for its object the provision of valve structures whereby the valves are prevented from falling into the cylinders when the valve stems are fractured.

In the accompanying drawing—Figure 1 illustrates a cylinder valve structure in sectional elevation; and Fig. 2 is a plan view of the structure illustrated in Fig. 1.

Like parts are indicated by similar characters of reference in both figures.

I have shown a valve 1 having a common form of valve stem 2 flanked on diametrically opposite sides by rods 3 3^1 which are connected at their lower ends with the valve 1 and are joined at their upper ends by a cross-head or stop 4. I provide an abutment which limits the movement of the valve toward the interior of the cylinder, this abutment in the embodiment of the invention illustrated, including a cushion element 5, desirably in the form of a coil spring, and a rigid element 6 fixed with respect to the valve seat and constituting a seat for the spring 5 which is interposed between the elements 4 and 6. Where the spring 5 is employed, it is preferably made very light, so that the normal operation of the valve is not interfered with, although such spring is made sufficiently heavy as to effect the elevation of the valve in case its stem should become broken, the lifting action being exerted upon the valve by reason of the pressure of said spring against the cross-head 4 which is connected with the valve 1 by the rods 3 3^1, as has been stated.

Hitherto when the valve stem 2 became broken, there was nothing to prevent the valve from dropping within the cylinder, which action cannot take place when the device of my invention is used.

I do not wish to be limited in all embodiments of my invention to the employment of an abutment that includes in its formation a spring element, for there are certain classes of engines in which the piston would not come violently against the valve even though the cross-head 4 were permitted to drop into contact with a rigid abutment.

In the normal operation of the valve as shown, the elements 1, 2, 3 and 4 constitute a unitary structure, which elements move in unison and which operate against the light force of the spring 5 when the valve is being unseated.

The rigid abutment element 6 desirably has a bore through which the valve stem 2 may reciprocate, while the yielding cushion or spring element 5 of the abutment surrounds the valve stem. The cross-head 4 may also be provided with an aperture through which the valve stem reciprocates.

It will be seen that I have provided a cylinder valve structure including a valve, a stem therefor, a stop carried by the valve independently of the stem, and an abutment for the stop to limit the movement of the valve within the cylinder to which it is adapted, said abutment including a rigid element and a spring element, the spring element being interposed between the stop and the rigid element.

While I have herein shown and particularly described the preferred embodiment of my invention, I do not wish to be limited to the precise construction shown, as changes may readily be made without departing from the spirit of the invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent the following:—

1. A cylinder valve structure including a valve, a stem therefor, a cross-head carried by the valve independently of its stem, and an abutment for the cross-head to limit the movement of the valve within the cylinder to which it is adapted and including a rigid element and a spring element, said rigid element having a bore within which the valve stem may reciprocate, the cross-head having an aperture through which the valve stem may reciprocate and the spring encircling the valve stem and being interposed between the cross-head and the rigid element of the abutment.

2. A cylinder valve structure including a valve, a stem therefor, a cross-head carried by the valve independently of its stem, and an abutment for the cross-head to limit

the movement of the valve within the cylinder to which it is adapted and including a rigid element and a spring element, the spring being interposed between the cross-head and the rigid element of the abutment.

3. A cylinder valve structure including a valve, a stem therefor, a cross-head carried by the valve independently of its stem, and an abutment for the cross-head to limit the movement of the valve within the cylinder to which it is adapted.

4. A cylinder valve structure including a valve, a stem therefor, a stop carried by the valve independently of the stem, and an abutment for the stop to limit the movement of the valve within the cylinder to which it is adapted, said abutment including a rigid element and a spring element, the spring element being interposed between the stop and the rigid element.

5. A cylinder valve structure including a valve, a stem therefor, a stop carried by the valve independently of the stem, and an abutment for the stop to limit the movement of the valve within the cylinder to which it is adapted.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LOUIS GASTON SABATHÉ.

Witnesses:
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J. BERNARD.