E. SCHNEIDER.

APPARATUS FOR OPERATING VALVES OF ENGINES AND THE LIKE.

APPLICATION FILED: FEB. 14, 1918.

Patented Jan. 7, 1919.

2 SHEETS—SHEET 1.

[Diagram of engine valve mechanism]
To whom it may concern:

Be it known that I, Eugène Schneider, a citizen of the French Republic, and a resident of 42 Rue d'Anjou, Paris, France, have invented and useful Improvements in Apparatus for Operating Valves of Engines and the like, which invention is fully set forth in the following specification.

This invention has for its object to provide an improved apparatus for operating a plurality of valves (such as the valves of engines and the like) by a common member, such as for instance a lever or a rocking beam.

The improved apparatus in operating all the valves simultaneously, assures a uniformly equal distribution of the lift, and avoids all jamming of the valve stems in their guides.

For this purpose, according to this invention, the mechanism connecting the valves to be operated and the common operating member, comprises a part which has, according to the number of valves to be operated, for instance the shape of a crosshead, carrying in all cases for each valve a projecting supporting finger which is adjustable and centered in the corresponding valve stem. This finger carrier is suitably guided by two axial projections in a box or fixed on or fixed to the valve box, which limits its movements. Between these guiding projections, abutments are provided for the support of the end of the actuating rocking beam.

According to one embodiment of this invention the lower bearing or abutment of the rocking beam upon the finger carrier is provided by means of a block that is jointed to the end of the lever and has its underside adapted to be supported and to slide upon the faced surface of a bearing piece fixed in an axial lodgment in the said finger carrier.

This constructional form of the improved apparatus is illustrated in detail in the accompanying drawings in which:

Fig. 1 is a vertical section partly in elevation,
Fig. 2 is a horizontal section on the line II—II of Fig. 1, and
Fig. 3 is a partial cross section on the line III—III of Fig. 1, of the said constructional form applied for the simultaneous operation of two valves by means of a common rocking beam.

Fig. 4 is a diagrammatic plan of a modification of the above form for operating simultaneously four valves having their axes arranged symmetrically in pairs in two planes at right angles to each other.

Any person desiring to use the invention for the purpose of and limited to the manner and use described in the specification, must obtain a license from Eugène Schneider, Of Paris, France. A. Schneider, Of Paris, France, A. Schneider, Of Paris, France, A Schneider, Of Paris, France.
be opened by the fingers $f_1-f_3$ bearing upon their stems. In the rocking movement of the rocking beam $C-C^1$ in the opposite direction, the action of the said rocking beam upon the finger carrier $F$ and the valves does not take place. The valves are returned on to their seats by their springs which moves at the same time the finger carrier back into its initial position.

The finger carrier $F$ is accurately centered in its guide $G-H$ by the projections $F_1, F_2$, and will therefore execute a perfectly rectilinear movement and will produce in its turn a strictly rectilinear motion of the valve stems.

In the example shown in Fig. 4, the part $F$ has four arms the free ends of which carry the bearing fingers $f$ projecting to an adjustable amount, each finger being centered by means of a nipple $f_1$ in its respective valve stem.

What I claim is:

1. In an apparatus for operating a plurality of valves, such as engine valves and others, by means of a common operating member, such as a rocking beam, the combination with said common operating member, of means constituting a connection between the latter and the stems of the valves to be operated, comprising a finger-carrier, a plurality of adjustable fingers on said carrier equal to the number of valves to be operated, means for adjusting the projection of said fingers, a centering member on each of said fingers engaging in and centering the respective valve stem, guides on the valve boxes, oppositely located axial projecting members on said carrier working in said guides, a bearing surface on said carrier between said guides, and a cooperating pressing surface on the end of the rocking beam, whereby said carrier is actuated to operate the valves by the movement of the rocking beam.

2. In an apparatus for operating a plurality of valves, such as engine valves and others, by means of a common operating member, such as a rocking beam, the combination with said common operating member, of means constituting a connection between the latter and the stems of the valves to be operated, comprising a finger-carrier, a plurality of adjustable fingers on said carrier equal to the number of valves to be operated, means for adjusting the projection of said fingers, a centering member on each of said fingers engaging in and centering the respective valve stem, guides on the valve boxes, oppositely located axial projecting members on said carrier working in said guides, a block pivoted on the end of the rocking beam, having a faced bearing surface, and a bearing member in said carrier, having a faced pressing surface cooperating with said faced bearing surface, whereby said carrier is actuated to operate the valves by the sliding pressure of said faced pressing surface on said faced bearing surface.

In testimony whereof I have signed this specification.

EUGÈNE SCHNEIDER.

Witnesses:

ANDRÉ MOSTICKER,
CHAS. P. PRESSLY.

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