

G. A. BREEZE.
SHIM HOLDER FOR VALVE TAPPETS.
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1,340,211.

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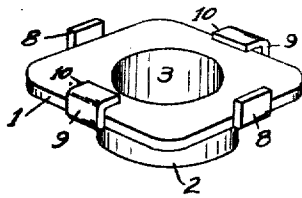


Fig. 1

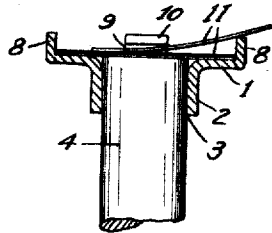


Fig. 3.

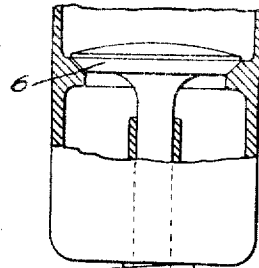
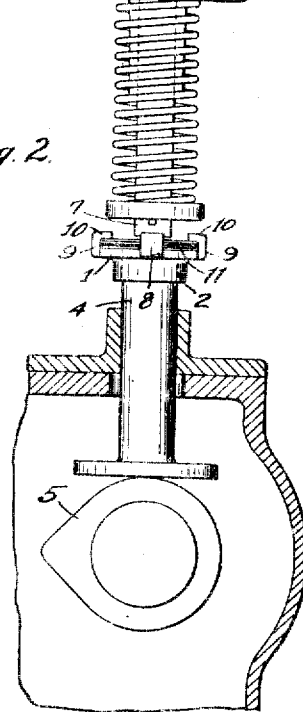


Fig. 2.



WITNESSES:

L. S. Woodhull

E. Broesamle

INVENTOR

George A. Breeze

B. T. Merler
ATTORNEY

UNITED STATES PATENT OFFICE.

GEORGE A. BREEZE, OF DETROIT, MICHIGAN.

SHIM-HOLDER FOR VALVE-TAPPETS.

1,340,211.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE A. BREEZE, a subject of the Kingdom of Great Britain, residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Shim-Holder for Valve-Tappets, of which the following is a specification.

This invention relates to shim holders for valve tappets, and it consists in the novel features of construction and association of parts as hereinafter set forth and claimed.

The invention has for its object the provision of simple and efficient means for use in connection with the valve tappets of internal explosive engines and the like, whereby adjustments may be readily made between the engaging ends of the valve stem and its actuating tappet to compensate for wear and maintain a proper clearance or working relation between the operating parts.

In attaining the object the invention contemplates, briefly stated, the employment of an attachable head or holder having an opening for the reception of the end of the tappet for actuating the valve stem and valve of an internal combustion engine, which is provided upon diametrically opposite edges with pairs of laterally projecting stops and inwardly hooked tongues adapted to receive and retain thereon against displacement one or more sheet metal shims by engagement with the edges thereof, and which, when inserted in position interposed between the adjacent ends of the valve stem and tappet, serve to retain said head against axial displacement therewith and to provide for regulating the space or clearance between the ends of said valve stem and tappet, in a manner to enable adjustments to be made from time to time to overcome undue lost motion resulting from wear upon the operating parts.

In the accompanying drawings a preferred structural formation of the invention is illustrated, and in which,

Figure 1 is a perspective view of the head or shim holder detached.

Fig. 2 is a sectional elevation of a common form of cam actuated valve, showing the holder mounted upon the valve tappet and carrying a plurality of shims interposed between the adjacent ends of the tappet and valve stem in position as when in operation.

Fig. 3 is a detail sectional elevation of the

tappet with the holder thereon, and showing one of the shims in position as when inserting or withdrawing it from the holder.

Referring to the parts of the device by the characters of reference marked on the drawings, the holder, which is preferably formed by stamping from sheet metal, consists of a rectangular plate 1 having struck centrally from the body to project laterally from one face thereof a tubular boss or hub 2, the bore 3 of which extends axially therethrough and through the body of the plate and is of suitable diameter to freely receive the working end of a valve tappet upon which it is adapted to be mounted. The tappet 4 and its actuating cam 5, together with a valve 6 having a spring pressed stem 7 engageable with the end of the tappet and by which the valve is reciprocated, as is common, for controlling the port of an engine cylinder, is shown in Fig. 2.

Formed centrally upon and integral with opposite edges of the plate 1 of the holder, are diametrically opposed pairs of laterally extending lugs or stops 8 and laterally and inwardly extending right-angled hooks or flanged tongues 9. The under faces of the flanges 10 of said tongues are spaced from and extend over the upper face of the plate 1 in a plane parallel therewith below the upper or free ends of the stops 8, and said flanged tongues and stops are adapted to receive and engage respectively corresponding edges of thin rectangular sheet metal shims 11 which are preferably of varying thicknesses, and of such size as to occupy the area between the stops and tongues by which they will be retained against displacement when superimposed upon the face of the plate of the holder, as shown in Fig. 2.

The shims may be inserted into position upon the holder or withdrawn therefrom individually by deflecting the body of the shim sufficiently to permit it to pass over one of the stops and enable the edges to enter or withdraw from beneath the flanges of the tongues with a bodily movement of the shim transversely of the holder, as shown in Fig. 2.

When the holder is placed upon the tappet with the shims in position thereon, as shown in Fig. 2, the holder will be retained against axial movement in one direction by the engagement of the shims with the end of the tappet and in the opposite direction

by the engagement of the shims with the end of the valve stem, while the shims will be retained against lateral movement with the holder by contact with the stops and tongues, and against bodily displacement by the engagement of the flanges of the tongues with the marginal edges of the uppermost shim of the holder. Thus the holder and shims are rendered self-attaching and interlocking, enabling the shims to be readily interposed or withdrawn from between the working ends of the tappet and valve stem to provide means for adjustment to overcome wear and maintain the parts in normal working relation.

It is obvious that minor changes may be made in the structural formation of the device without departing from the essential

features herein disclosed, and the invention is presented as including all such changes and modifications as properly come within the scope of the following claim.

I claim:

In combination with a valve tappet, a plate having a transverse aperture formed therethrough for the reception of the end of said tappet, opposed pairs of laterally projecting stops and hooked tongues formed integral with said plate at its edges, and a shim mounted over the aperture of said plate and detachably retained thereon by engagement with said stops and hooked tongues.

In testimony whereof I sign this specification.

GEORGE A. BREEZE