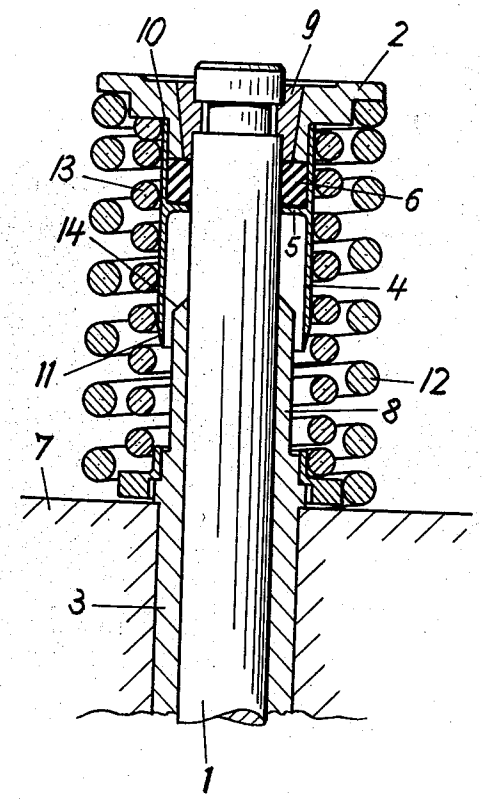
Feb. 11, 1958 A. NIESS 2,822,796

PACKING FOR VALVES OF INTERNAL COMBUSTION ENGINES

Filed Oct. 8, 1953



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United States Patent Office

2,822,796

Patented Feb. 11, 1958

2,822,796

PACKING FOR VALVES OF INTERNAL COMBUSTION ENGINES

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Application October 8, 1953, Serial No. 384,947

Claims priority, application Germany October 10, 1952

2 Claims. (Cl. 123—188)

The present invention relates to a packing for the valves of internal combustion engines. Such a packing, first of all, has the purpose to prevent lubricants from travelling along the valve stem out of the valve operating chamber into the intake or the exhaust port.

An object of the present invention is to obtain a simple packing, which is as insensitive as possible to heat and wearing off, particularly also to avoid that the valve stem is sprinkled from the outside by oil, etc., and to prevent oil getting on the valve head from getting into the valve port or the combustion chamber of the engine respectively, between the stem and its guide.

An essential feature of the present invention consists in a packing being combined by a packing ring at the valve spring retainer, and a packing by a covering sleeve at the valve stem guide, preferably not only functionally by a simultaneous application, but also constructionally by the covering sleeve simultaneously serving as a fastening for the packing ring.

Further objects and features will be seen in the following description of an embodiment of construction according to the present invention. In the drawing the valve stem 1 of an inverted poppet valve of an internal combustion engine is guided in the valve guiding bushing 3, which is inserted into the cylinder block 7 of the internal combustion engine, for instance, of its cylinder head, so that it projects beyond the top over the cylinder block by means of an extension 8. Between the valve spring retainer 2, which is fastened in a well known manner, by way of example, on the top end of the valve stem by a split conical insert 9, and the cylinder block 7, the two valve springs 12 and 13 are arranged; within them there is a covering sleeve 4 which moves in unison with the valve spring retainer 2 and extends when the valve is closed and in the top position, beyond the top end 14 of the valve guiding bushing 3.

The outside diameter of the covering sleeve 4 has the same dimension everywhere as is generally known. The covering sleeve 4 has a flange 5 projecting inwardly, keeping the packing 6 clamped to the valve spring retainer 2, and having a hole in the center for slipping the sleeve 4 on the valve stem. Appropriately the sleeve is undetachably connected with the valve spring retainer 2 in a well known way, particularly by soldering, for example, under the application of an inert gas. In that case, it is appropriate that the face 10 of the covering sleeve 4 exposed to the valve spring retainer 2 is substantially perpendicular to the valve axis, whereas the face 11 exposed towards the valve guide bushing 3 is advantageously constructed as an outer cone with an acute tapering. Owing to this different construction of the two sleeve ends a soldering of the sleeve 4 with the valve spring retainer 2 at the wrong end thereof is avoided. Moreover, the oil which may collect at the bottom of the valve housing and which may reach a substantial depth, for example, which may reach up to a point indicated by the lead line of numeral 8, is subjected to a force tending to displace the oil radially outwardly as a result of the conically tapered end 11 of the sleeve 4 every time the latter dips into the oil when the valve is opened.

The invention is not restricted to the described embodiment of construction but may at will be varied within the scope of the single features of the invention.

What I claim is:

1. Packing for valves of internal combustion engines, comprising a poppet valve with a valve stem, a valve guide member, a valve spring retainer, a split conical insert securing said valve spring retainer to the end of said valve stem, a valve spring, a cylindrical covering sleeve attached to said valve spring retainer to form an integral part therewith, said covering sleeve enclosing the end of said valve stem within said spring in spaced relationship to said valve guide member and being provided with a flange extending inwardly to said valve stem and spaced from said retainer to form a groove of permanent width therewith, an elastic packing member inserted into said groove for sealing the gap between said valve stem and the split conical insert, said packing member being held in position by said flange, said sleeve being in the form of a cylindrical tube, and said flange being in the shape of a plain disk fixedly connected to said sleeve and closely surrounding said valve stem.

2. A packing according to claim 1, wherein the end of said sleeve opposite said valve spring retainer is conical at its outer side.

References Cited in the file of this patent

UNITED STATES PATENTS

1,711,267	Hutt	Apr. 30, 1929
2,124,702	Jacoby	July 26, 1938