Feb. 10, 1925. 1,525,894

A. B. SEPPMANN

VALVE CAGE REMOVER

Original Filed May 5, 1921

Fig. 1.

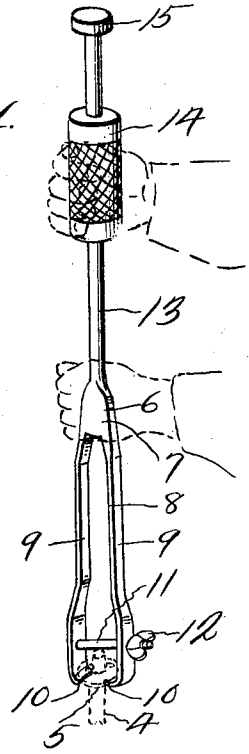
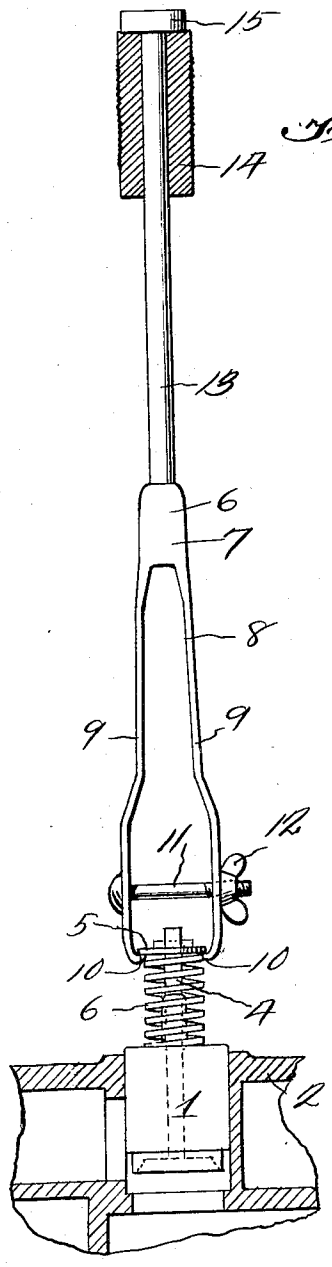


Fig. 2.



Inventor

A. B. Seppmann

By

Attorney

Patented Feb. 10, 1925. 1,525,894

UNITED STATES PATENT OFFICE.

ALFRED BRUNO SEPPMANN, OF LAKE CRYSTAL, MINNESOTA.

VALVE-CAGE REMOVER.

Application filed May 5, 1921, Serial No. 467,163. Renewed March 8, 1923.

To all whom it may concern:

Be it known that I, ALFRED BRUNO SEPPMANN, a citizen of the United States, residing at Lake Crystal, in the county of Blue Earth, State of Minnesota, have invented a new and useful Valve-Cage Remover; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to valve cage removers and particularly to a remover particularly adapted for use in removing valve cages from Buick engines.

A further object is to provide a valve cage removing tool, said tool comprising a headed handle member on which is slidably mounted a hammering element, with which hammering element an upward forcing of the tool as a whole may be accomplished by a hammering action on the headed end of the handle. Also to provide the tool with downwardly extending spring arms having inturned flanges adapted to engage under the washer on the valve stem and be clamped in engagement with said washer, thereby providing gripping means for holding the cage and valve when the same is being removed.

With the above and other objects in view, the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawings, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:

Figure 1 is a perspective view of the tool, showing the same in position for use.

Figure 2 is a side elevation of the tool, showing the same in engagement with the washer of the valve stem and the reciprocating hammer in sections.

Referring to the drawings, the numeral 1 designates a conventional form of valve cage and 2 a cylinder head of an internal combustion engine. Disposed within the valve cage 1 is a valve 3, having a valve stem 4 and interposed bewteen the upper end of the valve cage 1 and the washer 5 carried by the valve stem, is a corded spring 6, which normally maintains the valve 3 closed. The valve cage and valve structure is a common one now in use in various types of engines, wherein they are closely fitted and become stuck incident to carbon and corrosion. When it is desired to regrind or clean the valve, it is necessary to remove the valve cage. Heretofore in removing the valve cage it has been extremely difficult for a mechanic to remove the same without damaging the cage, bending the valve stem, or injuring the coiled spring 6. To overcome these difficulties the cage removing tool 6 is provided.

The cage removing tool comprises an elongated body member 7, which body member is bifurcated as at 8, thereby providing spaced spring arms 9. The lower ends of the spring arms 9 are provided with inturned flanges 10, which flanges engage under the washer 5 and are held thereunder by the bolt 11 which passes through the arms 9 and has threaded on one end thereof a thumb nut 12. It will be seen that when the thumb nut 12 is tightened that the washer 5 will be securely grasped between the spring arms 9.

The upper end of the body member 7 is provided with a cylindrical portion 13, on which cylindrical portion a reciprocating hammer member 14 is slidably mounted. The upper end of the cylindrical portion 13 terminates in an enlargement 15, with which enlargement a reciprocating hammer 14 engages during a valve cage removing operation. It will be seen that with the tool applied to the washer 5 as shown in Figure 2 that said tool is in axial alignment with the valve stem 4 during a valve cage removing operation, therefore, said stem will not be bent. To operate the device, the operator grasps the tool with both hands as shown in Figure 1 and with the upper hand reciprocates the hammer member 14 in such a manner as to impart percussive blows on the enlargement 15, the operation being repeated until the valve cage and valve are removed from the cylinder head 2.

From the above it will be seen that a valve cage removing tool is provided which tool is positive in its operation and one wherein an axial pull may be imparted on the cage and valve stem for removing the cage and at the same time preventing damage to the valve parts, such for instance as bending of the valve stem 4.

The invention having been set forth what is claimed as new and useful is:

A valve and valve cage remover, said remover comprising an elongated member, a reduced portion carried by the elongated member, an enlargement carried by the upper end of the reduced portion, an enlargement carried by the lower end of the reduced portion, a hammering element slidably mounted on the reduced portion of said member and cooperating with the enlargements, the lower end of the elongated member being provided with spaced spring arms, inturned flanges carried by the lower ends of the spring arms and adapted to underlie a washer carried by a valve spring, the ends of said spring means being offset outwardly and in parallel relation to each other and a bolt extending through said spring arms adjacent their ends and forming means whereby a washer may be securely grasped between the spring arms.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALFRED BRUNO SEPPMANN.

Witnesses:
T. K. MEOGHEN,
R. E. QUIMBY.