April 19. 1932. R. M. OLMSTED 1,854,558

MACHINE FOR REFACING ROCKER ARMS

Filed Feb. 3, 1928

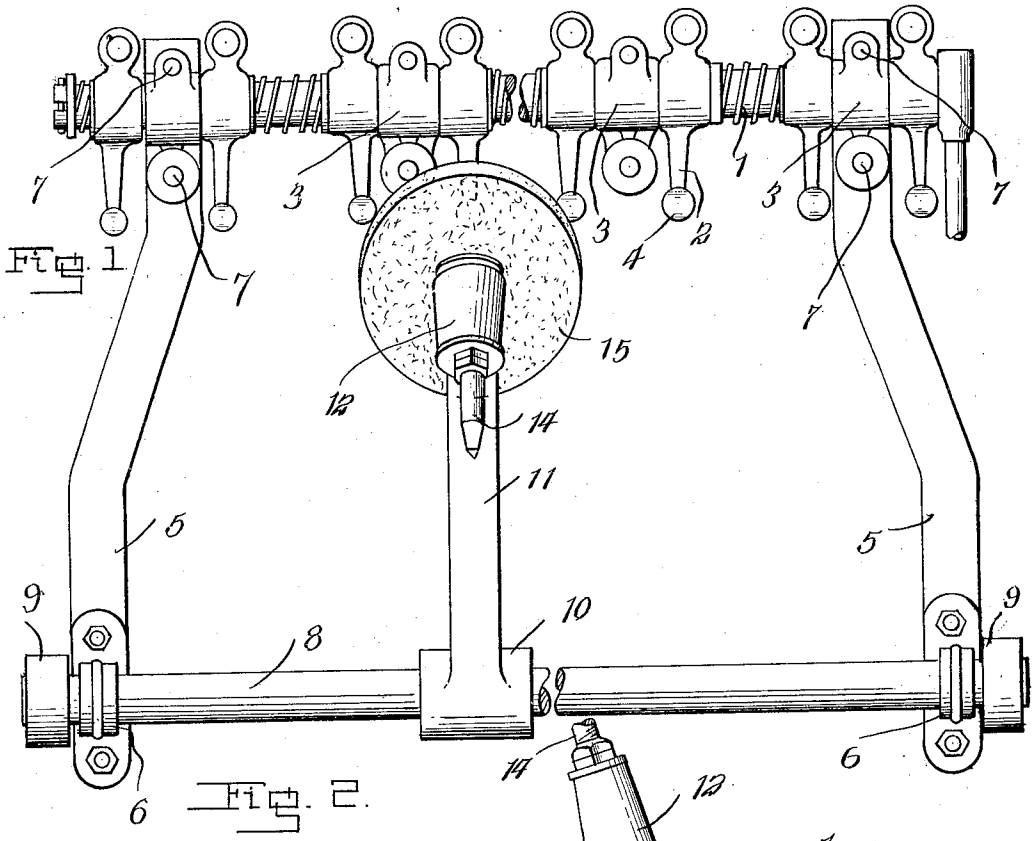

Fig. 1.

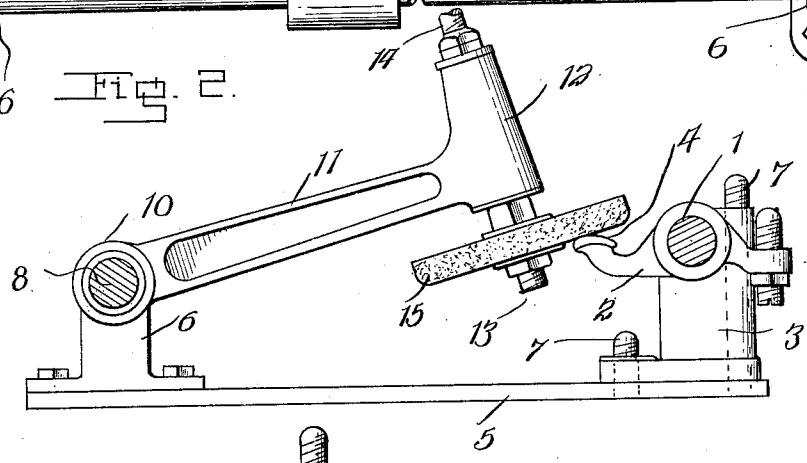

Fig. 2.

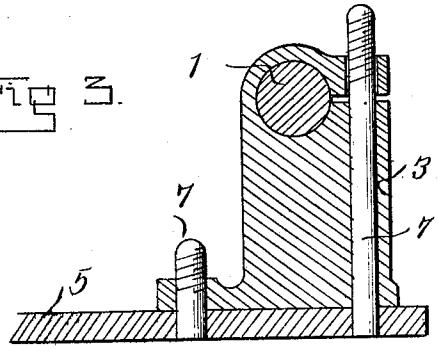

Fig. 3.

Inventor

R.M. Olmsted

By Lacey & Lacey, Attorney.

Patented Apr. 19, 1932 1,854,558

UNITED STATES PATENT OFFICE

RALPH M. OLMSTED, OF WAUSAU, WISCONSIN

MACHINE FOR REFACING ROCKER ARMS

Application filed February 3, 1928. Serial No. 251,624.

The object of this invention is to provide a simple and easily controlled means for refinishing the working faces of the rocker arms which control the valves of internal combustion engines. The invention is intended more particularly for refacing the working surfaces of the rocker arms of the valve-in-head type of internal combustion engines, although it may be advantageously employed in other fields. The rocker arms of valve-in-head motors are mounted upon a rod extending from end to end of the motor and bear upon valve stems, being actuated at proper intervals to depress the valve stems so that the valves will be unseated and then permitted to reseat. The working faces of the rocker arms have sliding contact with the ends of the valve stems and in course of time become scored or grooved so that they fail to work easily and tend to bind against the valve stems. The particular object of my invention, therefore, is to provide a simple inexpensive and easily controlled device whereby the working faces of the rocker arms may be efficiently and economically rendered smooth so as to operate freely when replaced in the motor. The invention is illustrated in the accompanying drawings and will be hereinafter fully set forth.

In the drawings:

Figure 1 is a plan view of an apparatus embodying the invention and showing it in its operative position;

Fig. 2 is a sectional elevation, and

Fig. 3 is a detail section of one end portion of the device.

In the drawings, the reference numeral 1 indicates the rod upon which the several rocker arms 2 are mounted so as to rock freely thereon in the operation of the motor. This rod is mounted in posts 3 which are bolted to the engine block so that the rod will extend longitudinally of the block across the several valves and the rocker arms will have their working convex end faces 4 presented to and in contact with the respective valve stems.

In carrying out my invention, there is provided a base frame consisting of two bars 5 having posts 6 secured thereon at their rear ends and provided at their front ends with studs 7 arranged in proper spaced relation to engage the bolt holes through the end brackets or bearings or posts 3 which carry the rocker arm rod 1. Fitted through the upper ends of the posts 6 is a rod or bar 8 which is preferably held against endwise movement by stop collars 9, and slidably mounted upon this rod 8 between the posts 6 is a hub 10 from which extends an arm 11 having a bearing member 12 at its free end. The hub 10 is slidably and rotatably fitted upon the rod 8 so that the arm 11 may be moved longitudinally of the rod and also rocked about the same while the device is in use. Fitted through the bearing 12 is a shaft 14 and secured in any convenient manner upon the lower end 13 of the shaft, below the arm 11, is an abrading disk 15. The shaft 14 is shown as having a non-circular upper end whereby it may be secured in the chuck of an electric drill but it may, of course, be driven from any convenient source of energy.

When the rocker arms are to be refaced, the posts 3 are released from the engine block and the entire assembly including the posts, the rod 1 and the rocker arms is removed. The base members 5 rest upon the work bench and the end posts 3 are fitted over the studs 7, as shown in Fig. 3, the weight of the assembly then serving to hold the base members to the bench without any other fastenings, and the rod 1 being disposed parallel with the rod 8. The workman then grasps the arm 11 in one hand and the drill in the other hand and manually guides the device so that the under face of the abrading disk 15 will be brought into contact with the working end face of one rocker arm, as shown in Fig. 2. The abrading disk will, of course, rotate with the shaft 14 and, playing upon the working face of the rocker arm, will quickly remove the scoring so that it will be again in an operative condition, and the disk is moved successively to position over the several rocker arms so that they will all be treated. The device is obviously very simple in construction and arrangement and is, therefore, not apt to get out of order. It may be easily placed in

position upon a work bench and the working faces of the several rocker arms may be quickly reground so that they will have the desired easy working contact with the respective valve stems.

Having thus described the invention, I claim:

An apparatus for the purpose set forth comprising a base, a horizontal rod supported in fixed position by the base in vertical spaced relation thereto, a hub slidably and rotatably mounted on said rod, an arm fixed to the hub and projecting forwardly therefrom, a bearing at the free end of the arm extending vertically across the same, a shaft journaled in and extending through said bearing and having its upper end adapted to be connected to a driving medium, an abrading disk on the lower end of the shaft under the arm, and studs rising from the base in fixed spaced relation to the rod and to each other to be engaged through end bearings of a rocker arm assembly whereby said assembly will be held on the base with its rod parallel with the first-mentioned rod and the rocker arms projecting under the abrading disk, the weight of the assembly holding the base to a support.

In testimony whereof I affix my signature.

RALPH M. OLMSTED. [L. S.]