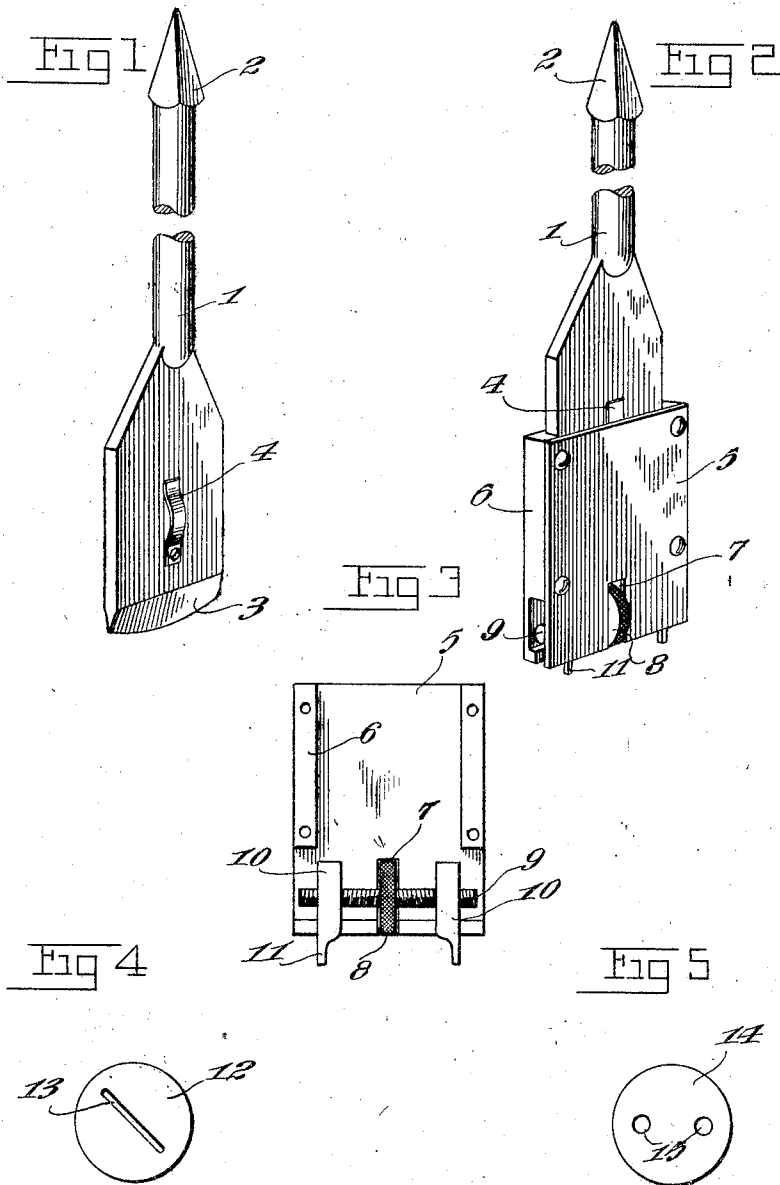


H. METCALF.
VALVE GRINDING TOOL.
APPLICATION FILED NOV. 18, 1911.

1,063,717.

Patented June 3, 1913.



Witnesses

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UNITED STATES PATENT OFFICE.

HOWARD METCALF, OF TAMPICO, ILLINOIS.

VALVE-GRINDING TOOL.

1,063,717.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed November 18, 1911. Serial No. 661,003.

To all whom it may concern:

Be it known that I, HOWARD METCALF, a citizen of the United States, residing at Tampico, in the county of Whiteside and State of Illinois, have invented new and useful Improvements in Valve-Grinding Tools, of which the following is a specification.

This invention relates to tools and more particularly to valve grinding tools.

10 The object of the invention is the provision of a simple and efficient device which may be readily attached in an ordinary brace and which is adapted to connect any type of engine valve.

15 Further objects of the invention will appear as the following specific description is read in connection with the accompanying drawing, which forms a part of this application, and in which:—

20 Figure 1 is a perspective view of the bit shank. Fig. 2 is a similar view showing the attachment thereon. Fig. 3 is an elevation of the attachment with one of the side plates removed. Fig. 4 is a top plan view of one of the forms of valves now in use. Fig. 5 is a similar view of another form.

Referring more particularly to the drawing, 1 represents an ordinary bit shank having a squared and tapered end 2 adapted to enter an ordinary chuck and having its opposite end widened and provided with a tapered and rounded slot engaging portion 3. Arranged upon opposite sides of the widest portion of the shank are leaf springs, 4, the purpose of which will be set forth hereinafter. The attachment adapted to be held on the bit shank comprises a casing formed of side plates 5 secured together and

spaced apart by the spacing members 6, each side member being provided with a slot 7 40 extending up from one end and adapted to receive and prevent lateral movement of a regulating nut 8. This nut 8 is secured in the center of a right and left hand screw 9 which is threaded into blocks 10 having projecting fingers 11.

When the device is used upon valves such as is shown in Fig. 4 at 12 with the bit receiving slot 13, the attachment is removed and the rounded tapering portion 3 inserted 50 in the slot and the bit rotated in any suitable manner. When the device is used upon the type of valve shown in Fig. 5 at 14 with separated holes 15 therein, the attachment is forced upon the broader portion of the bit 55 and held in position thereon by the friction of the leaf springs 4. The knurled nut is operated so as to adjust the blocks 10 whereby the fingers 11 may properly enter the holes 15 and the tool be rotated as before. 60

What is claimed is:—

The combination with a flat support adapted to be received in a chuck of an attachment therefor comprising a casing, slidably mounted blocks arranged in the casing 65 and having hole engaging fingers, means to adjust the relative position of said blocks, and springs carried by the support for frictionally engaging the casing to hold the same against accidental disengagement. 70

In testimony whereof I affix my signature in presence of two witnesses.

HOWARD METCALF.

Witnesses:

JNO. H. DALEY,
THOS. WHITING.

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