

(No Model.)

M. BOCK.

DEVICE FOR HOLDING GRAVERS OR OTHER TOOLS FOR SHARPENING THEM.

No. 494,504.

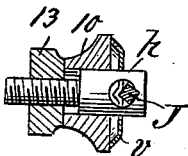
Patented Mar. 28, 1893.

Fig. 1.

Fig. 1.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR HOLDING GRAVERS' OR OTHER TOOLS FOR SHARPENING THEM.

SPECIFICATION forming part of Letters Patent No. 494,504, dated March 28, 1893.

Application filed September 19, 1892. Serial No. 446,283. (No model.)

To all whom it may concern:

Be it known that I, MARTIN BOCK, a citizen of the United States, residing at Hazelton, in the county of Luzerne and State of Pennsylvania, have invented new and useful Improvements in Devices for Holding Gravers' or other Tools for Sharpening Them, of which the following is a specification.

This invention relates to apparatus to be used in sharpening gravers' drills, and other tools, the object being to provide an improved device for holding said tools while applying the same to a grinding or sharpening wheel or stone, whereby an accurate ground form of the cutting end of the tool is secured, and the invention consists in the peculiar construction of said tool-holder, all as hereinafter fully described, and more particularly pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a perspective view of a holder for holding tools while sharpening the latter, embodying my invention, said figure showing a sharpening stone and a graver secured in said holder and having its cutting end bearing on said stone. Fig. 2 is a front elevation of said holder and tool, and Fig. 3 is a side elevation thereof, partly in section. Fig. 4 is a sectional view of a part of said holder on line 4-4, Fig. 3.

The device herein described in which to hold small tools while sharpening their points, is adapted to so hold said tools, and to permit of adjusting them to such vertical or inclined positions relative to the surface of the sharpening or grinding element to which they may be applied, as will impart to the sharpened portion thereof such various forms as may be desired. Furthermore the said tool-holding device possesses the requisite graduated gaging scales which enable the operator, by using the requisite care, to grind the cutting point of a tool which may be employed for a particular operation, always to the same form, by setting the tool-holding devices, each time the tool is sharpened, at the same graduating marks of the gaging scales. This provision of the said tool-holder is particularly valuable in sharpening engravers' tools, drills, and other similar tools, in which a particular pitch

of incline or shape of the sharpened parts thereof is essential to their proper operation.

In the drawing Fig. 1, the said tool-holder is illustrated in operative position on an oil-stone, K, or similar sharpening element, be it either flat or circular, and having a graver secured thereto in the ordinary position which such tool would be held to sharpen the point thereof. In Figs. 2 and 3 the line, o, indicates the surface line of said stone, K, to which the point of the tool to be sharpened is applied.

A indicates the main frame of the tool-holding device which, together with certain other main parts thereof, is preferably made from suitable brass castings. The said frame A, is provided with a gaging scale, preferably in the form of an arch, 2, in which are formed a series of graduating notches, 5, opposite certain of which are placed scale-indicating figures, as shown in Fig. 1. Said frame, A, is provided with a centrally located screw-hub, 3, which is connected with the main part of the frame by the curved arms, 6, this hub being perforated and tapped to receive a screw, below referred to. A metallic roll, 4, is suitably hung to rotate in said frame, A, and constitutes the supporting element of the frame, when the device is placed on the stone, K, as above described. It is obvious, however, that the frame A may be arranged to have its lower end rest directly on the oil-stone and slide thereon, and thus the roll, 4, may be dispensed with, if preferred. A finger-screw, D, is fitted to engage with the screw-thread in said hub, 3, of frame A, under the head of which is a metallic washer, 12. A tool-bracket, B, having the perforated hub, 7, is attached to the hub, 3, of frame, A, by said finger screw, D, which passes through hub, 7, and screws into hub, 3, of the frame. Thus said bracket is secured to frame, A, in a position at right angles to one side thereof. The said tool-bracket has an upwardly extending gaging-arm, 8, whose extremity is adapted to engage with either one of the graduating notches, 5, in the gaging-arch, 2, on the frame, A, and when so engaged it is there held by tightening up said screw D. The said bracket, B, is provided at its free end with a perforated hub,

10, in which is loosely placed a transversely perforated tool-clamping bolt, *h*, and on said bolt is a clamping-nut, 13. Above said hub, 10, said bracket is provided with a gaging-arch 9, in which are, as in said arch 2, a series of graduating notches, *x*, certain of which are indicated by convenient figures, as are those on the said arch 2, of the frame, A. On said tool-clamping bolt, *h*, in such position that its spring washer, *v*, on its lower end will be clamped between the graver, J, and the adjoining side of the hub, 10, is supported the gage-arm, 14, which is made preferably of sheet brass so that it may have the requisite spring engagement with the gaging-arch, 9, of the bracket, said arm having a suitably raised portion on its side adjoining the last named arch to engage with the notches, *x*, therein, and on the lower end of said arm is formed the said spring washer which has a transverse depression thereon to receive an edge, or a portion of the adjoining side of a graver, or other tool which may be clamped thereagainst whereby the tool has such an engagement with said washer that upon seizing the free end of the arm, 14 the clamping bolt and the tool (when said bolt is sufficiently free) may be turned to bring the point of the tool to such a position against the sharpening stone, K, as may be desired, and as may be indicated on the gage-marks or notches, *x*. And in connection with the aforesaid adjusting capabilities of the tool-holding devices it may be here explained that by properly loosening the above mentioned finger-screw, D, so as to free the end of the arm, 8, from the gage-notches, 5, in the arch, 2, the bracket, B, may be swung laterally, that is to say, toward either edge of the stone, K, for the purpose of so holding the tool as to grind it to any desired shape, after which the finger-screw, D, is tightened to hold the tool firmly in position where it can be operated upon.

The operation of the aforesaid tool-holding devices in grinding tools is as follows:—The nut, 13, on the clamping-bolt, *h*, is unscrewed sufficiently to free said bolt and permit the tool to be operated upon, to be passed there-through, as shown in the drawings, and to be then turned to proper position, and there se-

cured by partially screwing up said nut. The arm, 14, is then pressed out of engagement with the gage-notches on the arch, 9, and the tool is swung to the desired inclined position after which the arm, 14, is permitted to engage with the proper notch to so retain the tool, and said nut, 13, is tightly screwed against the side of the bracket. If it be a graver that shall have been so secured in the holder, such adjustment will be sufficient for that tool, but should it be a drill having, as usual, laterally extending cutting lips at its point, then, in order to grind the drill to give its cutting lips the proper clearance in drilling, the finger-screws, D, is turned sufficiently to release the bracket, B, slightly, and disengage its arm, 8, from the gage-marks in the arch 2, and then the bracket is swung laterally in either direction, as may be desired, and is then secured in such position, and after so adjusting the tool-holder either for the graver or for the drill the device is placed on the sharpening stone in the position shown in Fig. 1, and pressing the tool against the stone the latter and the holder are given the requisite to and fro movements to effect the sharpening of the tool.

I claim—

The within described tool-holding device consisting of a frame on which is a gaging scale and a screw-hub and in which is hung a bearing roll rotating freely therein, combined with a tool-holding bracket having an arm thereon extending to said gaging scale and having a screw connection with said hub on the frame whereby said bracket is adjustable from a vertical to laterally-inclined positions and vice versa and having a gaging scale thereon, the transversely perforated tool-clamping bolt, *h*, passing loosely through the hub, 10, on said bracket, a nut operating on said bolt, and the gage-arm, 14, for engagement with the bracket gaging-scale and having on its lower end a spring-washer encircling the perforated end of said clamping bolt, substantially as set forth.

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Witnesses:

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