

*W. H. Strahan,
Edge-Tool Grinder.*

N^o 58,504.

Patented Oct. 2, 1866.

FIG. 1.

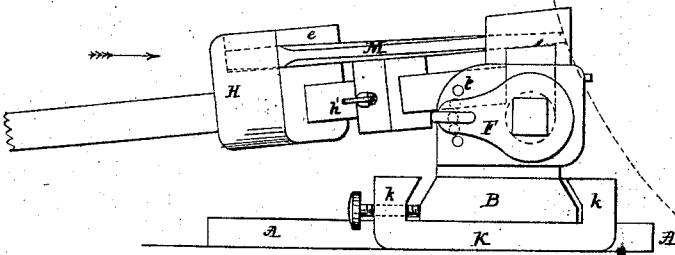


Fig. 5.

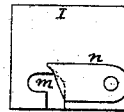


Fig. 2.

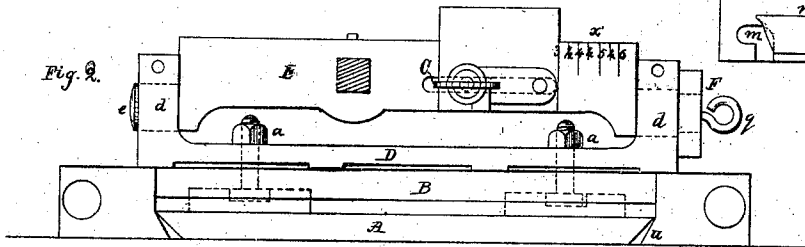


Fig. 3.

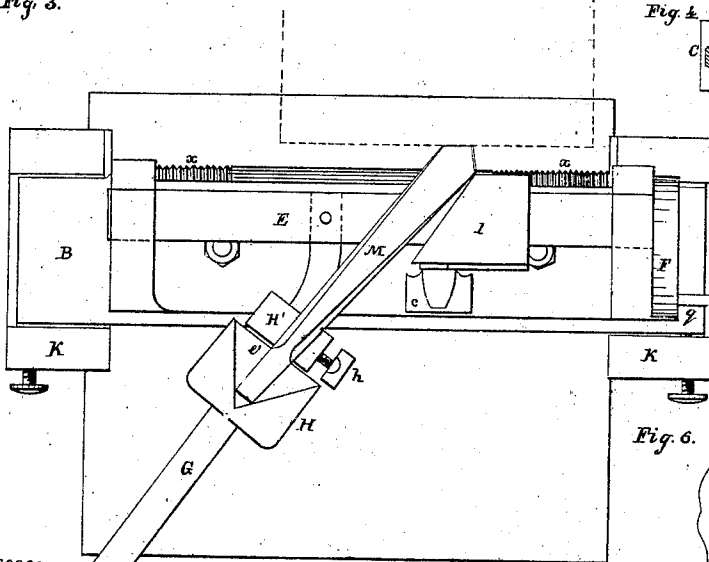


Fig. 4.

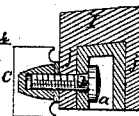
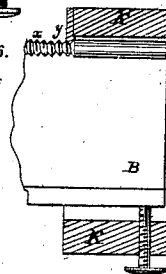


Fig. 6.



Witnesses.

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W. H. STRAHAN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVED TOOL-REST FOR GRINDSTONES.

Specification forming part of Letters Patent No. 58,504, dated October 2, 1896.

To all whom it may concern:

Be it known that I, W. H. STRAHAN, of Philadelphia, Pennsylvania, have invented an Improved Grindstone-Rest; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of a rest constructed and secured in front of a grindstone substantially in the manner described hereinafter, so as to afford facilities for grinding tools and other objects, and especially for the grinding of drilling-tools, which can be accomplished with the greatest accuracy by the aid of my invention.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a side view of my improved grindstone-rest; Fig. 2, an end view, looking in the direction of the arrow, Fig. 1; Fig. 3, a plan view; and Figs. 4, 5, and 6, portions of the apparatus.

Similar letters refer to similar parts throughout the several views.

A is a foundation-plate secured to the trough of a grindstone, or to any stationary object in front of the same, and to this plate is secured an adjustable plate, B, in the peculiar manner described hereinafter. A third plate, D, is secured by bolts *a* to the plate B, in which are elongated openings for admitting the heads and stems of the said bolts, the latter serving as guides for and permitting (when the nuts are loose) the free lateral adjustment only of the plate D.

E is a bar, at each end of which is a journal, *e*, adapted to a suitable box, *d*, the boxes being attached to or forming a part of the plate D, and one of the journals of this bar projecting beyond its box for the purpose of receiving an arm, F, the object of which will be rendered apparent hereinafter. To the bar E is secured an oblique arm, G, to which a block, H, is fitted snugly, but so as to move to and fro freely, and on the same arm a collar, H', can be moved to and fro freely, and secured, after adjustment, by a set-screw, *h*.

I is a guard having a beveled edge, *i*, and two flanges, *j j*, the latter embracing the bar

E, on which the said plate can be moved to and fro, there being in the under side of the bar an elongated recess, *a*, (see Fig. 4,) for the reception of the head of a bolt, *b*, the stem of which projects through an oblong slot in the bar, and through an opening in the flange *j* of the guard, the end of the bolt being furnished with a suitable nut, *c*.

It will be seen that the opening *m* in the flange, through which the stem of the bolt passes, is partly horizontal and partly vertical, and that a dog, *n*, is hung to the side of the flange, this dog being the means, when depressed, of maintaining the stem of the bolt in the horizontal portion of the opening *m*, and, when elevated, permitting the bolt to be so moved that its stem will coincide with the vertical portion of the opening, when the guard I may be removed from the bar E.

Through the arm F, previously alluded to, passes a pin, *q*, into one or other of the holes *t*, Fig. 3, in the end of the plate D, so that the bar can be adjusted to different inclinations.

The mode of adjusting the apparatus on and securing it to the foundation-plate A is as follows: It will be observed that the plate B is beveled at its opposite edges, and that a clamping-plate, K, having beveled ribs *k*, Fig. 1, is adjusted to each end of the said plate, each clamping-plate having a beveled rib, *u*, Fig. 2, adapted to the beveled edge of the foundation-plate A. In portions *x* of one of the beveled edges of the plate are cut a series of notches for the reception of a projection, *y*, Fig. 6, on one of the beveled ribs *k* of each clamping-plate K, the other rib of which is furnished with a set-screw, *p*, to bear against the edge of the plate B. The two clamping-plates having been so adjusted that their beveled edges *u* shall bear, that of one plate against one beveled edge and that of the other clamping-plate against the opposite beveled edge of the foundation-plate A, and the projection *y* of the clamping-plates fitting in the notches *x* of the plate B, the set-screws *p* are turned so as to force one end of each clamping-plate inward in the direction of the arrow, Fig. 6; for this movement of the clamping-plate must be the result of tightening the screw, owing to its position in relation to that of the projection *y*. The tightening of the two screws will consequently result in the foundation-plate being securely em-

braced by and between the two clamping-plates, which, at the same time, secure the plate B to the foundation-plate A.

After loosening the screws *p*, the entire rest may be adjusted to and from the grindstone, as well as laterally, at pleasure.

In the present instance the rest is arranged for grinding an ordinary drilling-tool, *M*, the square end of the drill resting in the angular recess *e'* of the sliding block *H*, and the cutting end resting on the bar *E*, one corner of the cutting-edge bearing against the inclined edge of the adjustable guard *I*. Necessary force is applied to the block *H* to push the drill forward against the stone, which is shown by red lines, and during the grinding of the first cutting-edge of the drill the collar *H'* must remain loose on the oblique arm *G*, and when the first edge has been ground to the extent desired, the collar must be so adjusted as to bear against the face of the block *H*, and there secured by the set-screw *h*. After this the drill is reversed, its square end adjusted to the angle of the recess *e'*, as before, and the block *H* pushed forward, bringing the second cutting-edge against the grindstone, care being taken to maintain the corner of the tool in contact with the inclined edge *i* of the adjustable guard *I*. When the drill has been pushed forward so that the sliding block *H* is in contact with the collar *H'*, the grinding of the drill is complete, and its point is certain to be central with the square end. The importance of this feature of my invention will be readily understood by those familiar with drilling-tools, which have hitherto been ground without the aid of any appliances to insure a central cutting-point.

As the arm *G* may be elevated and lowered at pleasure, and the bar *E* turned in its bearings and secured, after adjustment, by means of the pin *q*, it will be evident that both arm

and bar may be arranged at such an angle that the proper bevel will be imparted to the cutting-edges of the drill.

It will be seen, on reference to Fig. 2, that the bar *E* is graduated at the point *x'*. These graduations are such in respect to the guard *I* that on adjusting the latter to a given mark it will indicate the proper position of the guard for grinding a drill of a given size.

After raising the dog *n*, Figs. 2 and 5, the adjustable guard *I* may be removed from the bar *E*, and the oblique arm may be detached from the latter, when the said bar *E* affords a suitable rest in grinding chisels and other tools and objects.

If desired, the bar *E* may be made permanent and the arm *G* may be hinged to the said bar, so as to be raised or lowered at pleasure.

I claim as my invention and desire to secure by Letters Patent—

1. The combination of the adjustable foundation-plate *A*, plate *B*, the adjustable plate *D*, and bar *E*.

2. The combination of the bar *E*, its adjustable guard *I*, arm *G*, movable block *H*, and adjustable collar *H'*, the whole being arranged substantially as set forth, for the purpose specified.

3. The guard *I*, constructed for adjustability and retention on and removal from the bar *E*, substantially as described.

4. The clamping-pieces *K*, constructed and adapted to the plate *B*, with serrated edge, and to the foundation-plate *A*, substantially as and for the purpose herein set forth.

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

W. H. STRAHAN.

Witnesses:

C. B. PRICE,
H. HOWSON.