(No Model.)

A. A. REED.

TOOL FOR DRESSING EMERY WHEELS.

No. 442,782. Patented Dec. 16. 1890.

Fig. 1.

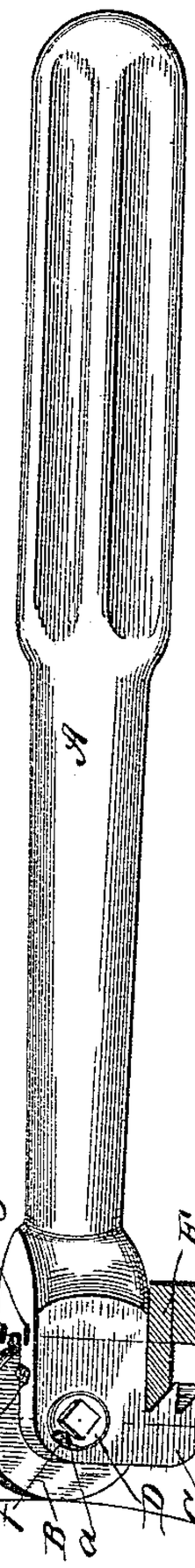


Fig. 2.

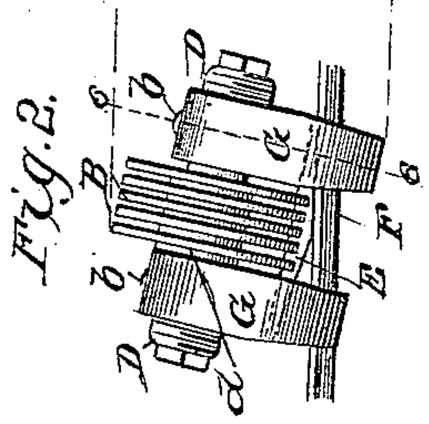


Fig. 3.

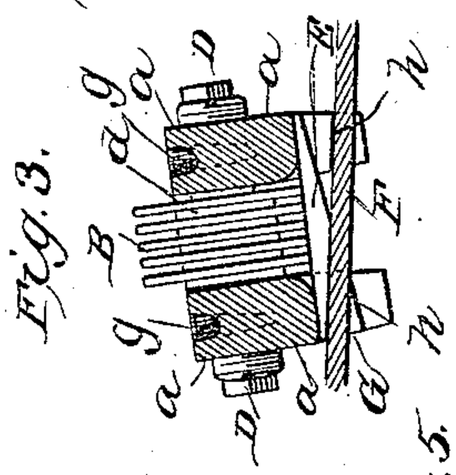


Fig. 4.

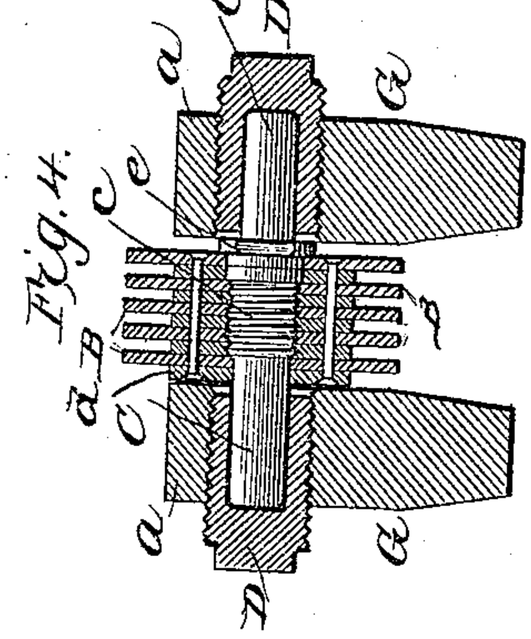


Fig. 5.

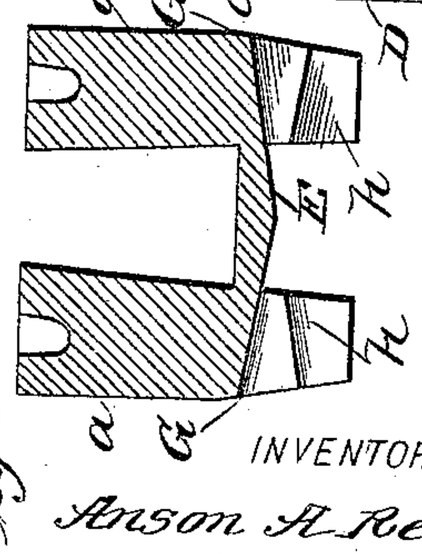


Fig. 6.

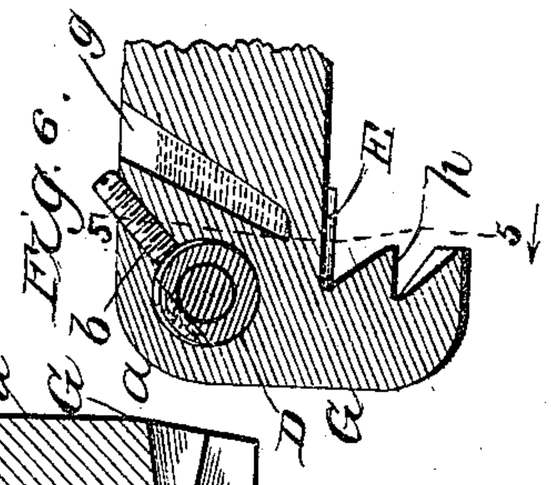


Fig. 7.

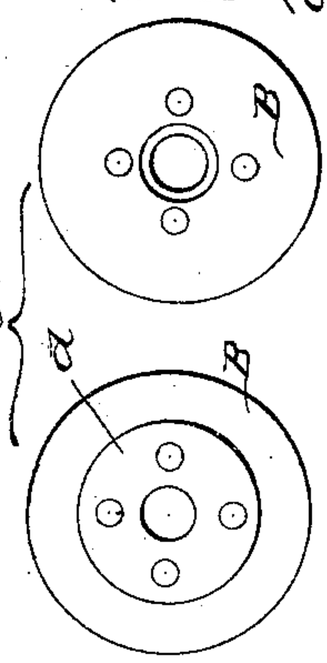


Fig. 8.

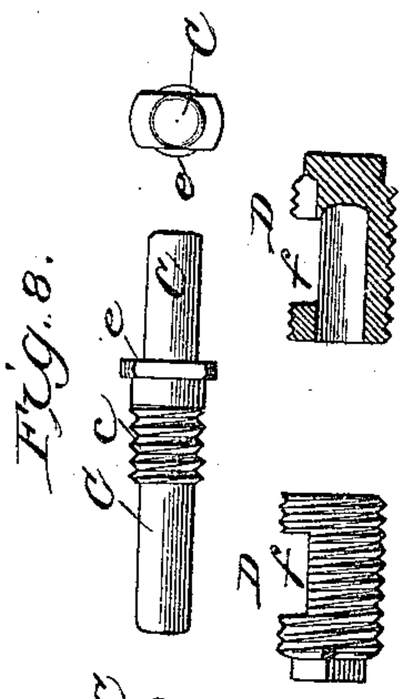
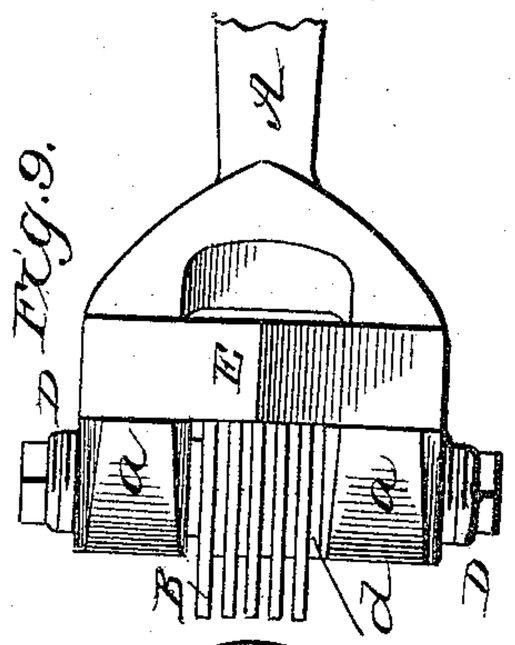


Fig. 9.



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TOOL FOR DRESSING EMERY-WHEELS.

SPECIFICATION forming part of Letters Patent No. 442,782, dated December 16, 1890.

Application filed April 30, 1890. Serial No. 350,042. (No model.)

To all whom it may concern:

Be it known that I, ANSON A. REED, of Worcester, in the county of Worcester and State of Massachusetts, have invented a new and Improved Tool for Dressing Emery-Wheels and Grindstones, of which the following is a specification.

My invention is an improvement in that class of tools for dressing and turning emery-wheels and grindstones which are composed mainly of a suitable handle and one or more rotatable steel cutting-disks mounted on one end of said handle in a manner which adapts them for use against the face of the emery-wheel or grindstone to be dressed.

My improvement includes several novel features, as hereinafter described, and more definitely indicated in the claims.

In the accompanying drawings, Figure 1 is a side perspective view of the tool, showing it supported upon a fixed rest and inclined laterally, as shown in use against the face of a wheel or grindstone. Fig. 2 is an end view of the same. Fig. 3 is a vertical section on line 3 3, Fig. 1. Fig. 4 is a vertical section, enlarged, on line 4 4, Fig. 1. Fig. 5 is a cross-section of the tool-handle on line 5 5, Fig. 6. Fig. 6 is a longitudinal section, enlarged, on line 6 6 of Fig. 2. Fig. 7 exhibits views of the opposite sides of the series of connected cutting-disks. Fig. 8 exhibits a side and end view of the shaft or axle of the cutting-disks and a side view and longitudinal section of the boxes in which such shaft is journaled. Fig. 9 is a bottom plan view of the head of the tool.

A indicates the handle, which is formed of malleable cast-iron (or any other suitable metal) and bifurcated at one end. The steel cutting-disks B are arranged between the arms *a a* (formed by the bifurcation) and mounted on a transverse shaft C, which is journaled in boxes D D, removably secured in transverse bores in arms *a*. The said bores are screw-threaded interiorly, and the boxes D correspondingly threaded exteriorly, and also provided with polygonal ends to adapt them for application of a wrench or analogous tool for the purpose of screwing the boxes into or out of the bores in arms *a*. For securing the boxes in the required position I employ clamp-screws *b*, as shown best in Fig. 6, which are inserted in threaded sockets in the upper side of the arms *a*. The journal-boxes take the wear (incident to rotation of the shaft C) to which the bores in the arms *a* would otherwise be subjected, and when worn out new boxes can be readily substituted.

In close proximity to the journal-boxes D bores or chambers *g* are formed in the upper sides of the arms *a* for holding water for the purpose of cooling the journals when the tool is in use.

The shaft C has an enlarged central portion *c*, which is screw-threaded and provided with a collar *e* at one end. The series of cutting-disks B are screwed on this enlarged portion *c*, and thus detachably connected with the shaft. Annular collars are placed between the disks B, and one *d* is also applied on one of the outer sides of the series, and all—to wit, disks and collars—are rigidly secured together by means of bolts or rivets, as shown in Fig. 4. The aforesaid outer collar *d* has a bore in which the smooth reduced portion of the shaft C fits snugly, and the disk on the other side of the series has a larger bore to receive the smooth enlarged portion of the shaft, while the intervening portion of the bore in the series of disks and collars is screw-threaded to adapt them to be screwed on the threaded portion of the shaft, as shown in Fig. 4. This construction insures a much firmer bearing than if the bore were threaded its entire length, since the smooth parts fit closer than the threaded ones.

The boxes D are cut away at one side, Figs. 4, 6, and 8, to form a cavity *f*, for cotton waste or other suitable fibrous material, which serves to hold the oil employed for lubricating the journals and also to wipe grit from the latter. The oil may be introduced through holes formed in the outer ends of the boxes, Figs. 1 and 8.

To put the parts together, as shown in Fig. 1, the series of connected disks B are placed between the arms *a* of the handle A and the shaft C inserted from the left, Fig. 1, through the bore in the left arm *a*, then screwed through the bore in the disks D, and next projected into the bore in the right-hand arm *a*. A suitable pipe-wrench is then applied to

one end of the shaft C, the collar *e* being cut away, Fig. 8, on opposite sides to form plane surfaces to which the wrench conforms, and, while the disks B are held from rotating, the shaft is turned until they are screwed firmly against said collar *e*, as shown in Fig. 4. Then the boxes D are screwed into the threaded bores in the arms *a* by means of a suitable tool, and when properly adjusted, as in Fig. 4, they are secured by the clamp-screws *b*. A rest for the tool when in use is formed by the bar E, which connects the arms *a* on the under side at a point in rear of the disks B. The lower side of this bar (see Fig. 9) is beveled each way from the center toward the arms *a*, and each of the beveled or inclined surfaces thus formed serves as a point of rest or support for the tool when being used against the face of a wheel or stone—that is to say, the tool is in practice supported on a fixed rest F, (which may be a wooden bar, but is preferably a wooden bar having a sharp-edged metal strip on its working-edge,) and by reason of the incline of bar E the disks B are caused to assume an angle to the axis of the wheel or stone which is necessary to attainment of the desired result. A prong G projects from the end of each arm *a* at a right angle thereto, and each prong is provided on its rear side, Figs. 6 and 9, with notches, which form shoulders *h*. These shoulders are inclined at an angle of about forty-five degrees, or correspondingly to the one or the other of the inclines of the rest-bar E, and serve to receive the sharp edge of the fixed rest F, so that the tool may be held steady with comparatively little effort.

It will be noted that the fixed rest engages the upper shoulder or notch *g* of one prong G and the lower one of the other prong and is intermediately in contact with that one of the inclines of the rest E whose angle corresponds to that of the notches. (See Figs. 2 and 3.)

Although the tool is shown adapted for use by hand, it may be used in the tool-post of a lathe or other analogous machine.

What I claim is—

1. In a tool for dressing emery-wheels, &c., the combination of the shaft screw-threaded between the journals and having a collar adjacent to the inner end of one of said journals with the cutter-head comprising a series of cutters and spacing-collars clamped together by means of rivets or bolts and screw-threaded interiorly to fit said shaft, substantially as shown and described.

2. In a tool for dressing emery-wheels, &c., the shaft on which the cutter-head is mounted, in combination with the bifurcated handle, each arm of which is bored and screw-threaded to receive the bored journal-boxes, which are screw-threaded to fit the threaded holes in the arms, said boxes being cut away on one side for a portion of their length intermediate the ends to form an oil and waste chamber and provided with a passage for oil leading from the outside to said oil and waste chamber, all substantially as and for the purpose set forth.

3. In a tool for dressing emery-wheels, &c., the handle in which the cutter is mounted, provided with chambers for water, said chambers being located in close proximity to the boxes of said shaft, all substantially as and for the purpose set forth.

4. In a tool for dressing emery-wheels, the combination, with the cutting-disks, the arms *a*, and double-beveled rest attached to the latter, of the prongs G G, having notches adapted to receive the edge of a fixed rest-bar, as shown and described.

5. In a tool for dressing emery-wheels, &c., the combination of the double-beveled rest with the arms *a* and prongs G, having shoulders, each of which is beveled laterally on the same plane as one side of said rest, as shown and described.

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CHARLES B. PERRY.