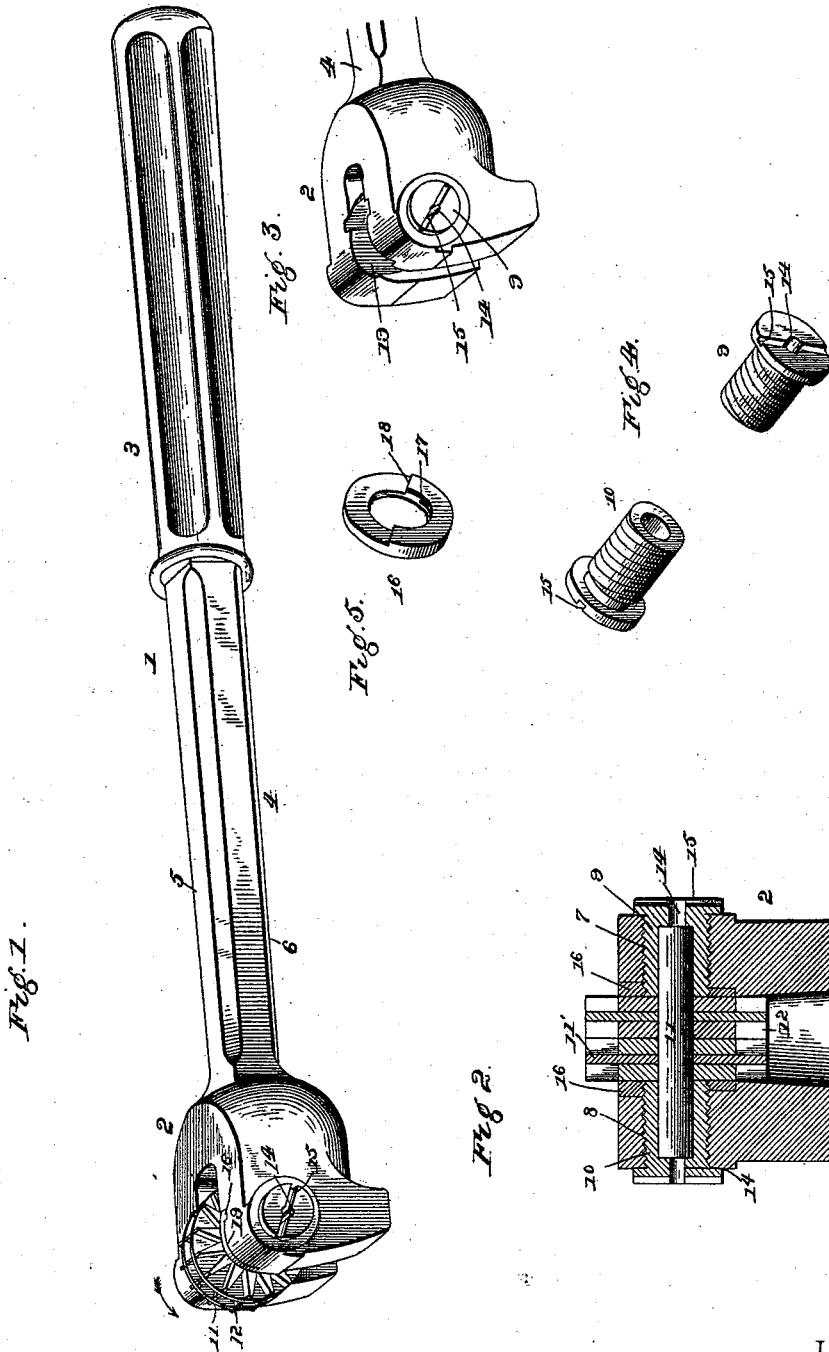


(No Model.)

W. P. ALGER.  
TOOL FOR DRESSING EMERY WHEELS.

No. 498,220.

Patented May 30, 1893.



Witnesses

*F. M. Johnson*  
*J. H. Riley*

Inventor

*William P. Alger*

By his Attorneys,

*Chas. H. ...*

# UNITED STATES PATENT OFFICE.

WILLIAM P. ALGER, OF WEST TROY, NEW YORK, ASSIGNOR TO CHARLES C. KELLY, OF SAME PLACE.

## TOOL FOR DRESSING EMERY-WHEELS.

SPECIFICATION forming part of Letters Patent No. 498,220, dated May 30, 1893.

Application filed August 18, 1892. Serial No. 443,433. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM P. ALGER, a citizen of the United States, residing at West Troy, in the county of Albany and State of New York, have invented a new and useful Tool for Dressing Emery-Wheels, of which the following is a specification.

The invention relates to improvements in tools for dressing emery wheels.

The object of the present invention is to provide for dressing emery wheels, a tool adapted to be used by hand or in a lathe or tool post, and capable of being readily clamped back of the head to hold it in position for dressing.

A further object of the invention is to provide removable and replaceable bushings adapted to be held tight under all conditions of service and be prevented from becoming loose so that they will always remain in one position, and this without the employment of set-screws or other securing means whereby the mandrel at all times will find equal bearing on the bushings, and thereby prevent any possibility of the tool to be used against the emery wheel from being turned from one side or the other, and preventing the wearing or enlarging of the opening or bifurcation in the head of the handle.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended.

In the drawings—Figure 1 is a perspective view of a tool constructed in accordance with this invention, the arrow indicating the direction of rotation. Fig. 2 is a transverse sectional view. Fig. 3 is a detail perspective view of the head of the shank, the cutter disks being removed. Fig. 4 is a detail perspective view of the right and left hand threaded bushings. Fig. 5 is a detail perspective view of one of the wear plates.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a shank provided at one end with a bifurcated head 2 and having at the other end a handle portion 3, and provided between the head and the handle portion with

an intermediate polygonal portion 4 which is preferably substantially octagonal in cross-section with enlarged upper and lower faces 5 and 6 adapted to be readily engaged by a suitable clamp, whereby the tool may be either held in a machine by a clamp or held in the hand. The sides of the bifurcated head are provided with transversely disposed bores 7 and 8, which are interiorly threaded and are adapted for the reception of tubular bushings 9 and 10, which are provided at their outer ends with grooved heads. The tubular bushings receive a spindle 11, and are right and left hand threaded, and the bores 8 and 9 are correspondingly threaded. The bushing 9 has a left hand thread, and the other one has a right hand thread, and the rotation of the mandrel in the direction of the arrow, in Fig. 1, will cause the tubular bushings to be held tight and be prevented from unscrewing, whereby the bushings are automatically held tightly in one position to present the same equal bearing and wearing surface to the mandrel, to prevent unequal wear which would cause the cutter disks 11 and 12 to cant to one side or the other of the head and get out of true, and at the same time wear and enlarge the bifurcation of the head. This construction also renders it unnecessary to employ any special fastening devices for holding the sleeves or tubular bushings from unscrewing and it enables them to be readily removed when desired. The grooves in the heads of the bushing enables them to be removed by means of an ordinary screw-driver, and these grooved heads form abutting shoulders which prevent the bushings from being screwed in beyond a certain point.

The tubular bushings are constructed of hardened steel and are provided with horizontal perforations of a diameter less than the diameter of the bores of the bushings, said perforations communicating with the said bores to form oil cups 14 into which oil is introduced through openings 15 in the groove of the head of each bushing, the groove in the head of the bushings serving as a conduit for the oil and directing the same into the oil-cup.

Each side of the bifurcated head is provided on its inner face with a circular wear

plate 16 which is constructed of steel and is provided with a threaded opening 17 conforming to the bore, and having threads corresponding to and receiving the threads of the adjacent bushing. The wear plate 16 is arranged in a recess in the side of the head, and is provided at its outer end with a shoulder 18 which is received in an enlarged portion of the recess 19 and which prevents the wear plate turning while the bushings are being screwed in place; and these wear plates, which are readily removable, receive the wear occasioned by the cutter disks, and after being worn may be replaced by new ones, thereby increasing the durability of the shank of the tool, and preventing the same being rendered useless by the usual wear on the inner faces of the sides of its head. The spindle 11 revolves in the bushings, and the slight friction exerted by the spindle on the interior of the bushings tends toward a screwing up of the bushings, instead of unscrewing them, as would be the case if both bushings had the same pitch in their threads, as has been the case heretofore. In this prior construction, it has been found necessary to employ set-screws for the purpose of securing the bushings in their required position, but by providing the right and left screw-threads, as heretofore described, the necessity of having set-screws or other additional securing means is entirely obviated.

It will be seen that the tool is simple and comparatively inexpensive in construction, that it is adapted to be either held in the hand or clamped in the proper position, that its bushings are prevented unscrewing and are automatically held in one position to avoid unequal wear which would cant the cutter disks to one side or the other and render the tool useless, and that all wear is readily taken up and borne by parts which may be removed and replaced by new parts from time to time. The cutter disks 11 and 12 are loosely mounted on the spindle, and are of ordinary construction, and operate against the face of an emery wheel in the usual well-known manner.

What I claim is—

1. In a tool for dressing emery wheels, the combination of a shank having a bifurcated head and provided in opposite sides of the latter with bores, one of which is provided with right-hand threads and the other with

left hand threads a mandrel, and tubular bushings arranged in the bores and having right and left hand threads to correspond and engage with the threads of the bores and loosely receiving the mandrel, substantially as described.

2. In a tool for dressing emery wheels, the combination of a shank having a bifurcated head and provided in opposite sides of the same with threaded bores, one of which is provided with right-hand threads and the other with left hand threads, the right and left hand threaded tubular bushings arranged in the bores and provided at their outer ends with heads forming annular shoulders and limiting the inward screwing of the bushings, a spindle having its ends loosely journaled in the bushings, and cutter disks mounted on the spindle, substantially as described.

3. In a tool for dressing emery wheels, the combination of a shank having a bifurcated head provided with threaded bores, one of which has right-hand threads and the other left hand threads the right and left hand threaded tubular bushings arranged in the bores and provided at their outer ends with grooved heads and horizontal perforations extending from the grooved heads inward and communicating with the tubular portion of the bushings and thereby forming oil cups or chambers, and a mandrel having its ends loosely journaled in the tubular bushings, and closing the inner ends of the oil-cups substantially as described.

4. In a tool for dressing emery wheels, the combination of a shank provided with a bifurcated head and having threaded bores in the sides thereof and provided with recesses in their inner faces, the threaded bushings arranged in the bores, the wear plates provided with shoulders and arranged in the recesses and having threaded openings receiving the inner extremities of the bushings, the mandrel journaled in the bushings, and cutter disks mounted on the mandrel, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WM. P. ALGER.

Witnesses:

JNO. H. SIGGERS,  
BERNICE A. WOOD.