

J. C. SMITH.
CUTTING AND ABRASIVE IMPLEMENT.
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1,269,653.

Patented June 18, 1918.

Fig. 1.

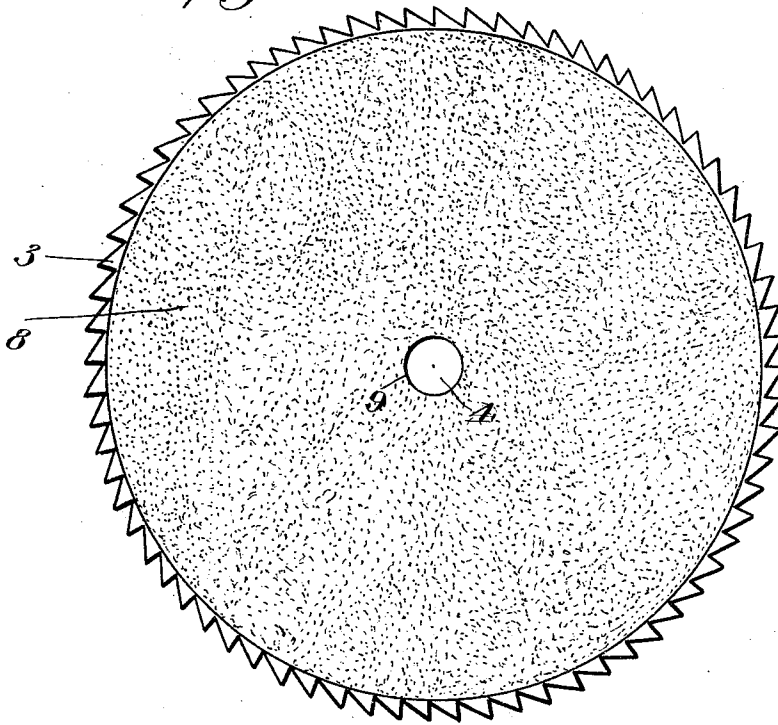
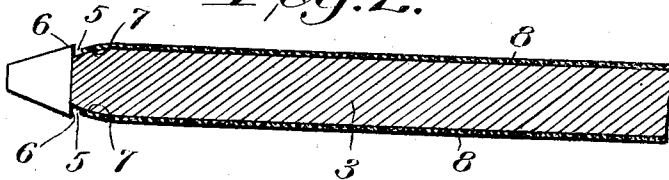


Fig. 2.



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1,269,653.

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To all whom it may concern:

Be it known that I, JAMES C. SMITH, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Cutting and Abrasive Implements, of which the following is a specification.

This invention relates to cutting and abrasive implements.

The possibility of successful commercial introduction of many articles which consist wholly or in part of bars, sticks or plates, and especially those formed of wood, often depends upon the magnitude of the original cost of production. In manufacturing such articles, the bars, sticks or plates have to be first formed of the required size and later their surfaces are smoothed or finished. When several separate operations and the intermediate handling of the articles are required in the manufacture of the articles, one for cutting out the bar, stick or plate, and the others for smoothing or finishing its surfaces, the cost of production is often practically prohibitive.

It is therefore one object of the present invention to provide means whereby the surfaces of the bars, sticks or plates can be smoothed or finished at the same time that they are cut out, thereby avoiding a double operation and the intermediate handling.

Another object is to provide an implement of the nature stated embodying among other characteristics a circular cutting element provided on one or both sides with an annular abrasive disk of suitable material whose edges are confined within the outer faces of the cutting element and thereby shielded from danger of being torn or stripped from the cutting element as the material being cut passes from the cutting element onto the abrasive material.

With the above and other objects in view, the present invention consists in the combination and arrangement herein illustrated, described and claimed, and while the disclosure herein shows one embodiment of the invention, it is to be understood that changes may be made in the form, proportion, size, materials and minor details without departing from the spirit of the invention or sacrificing any of the advantages thereof so long

as departure is not made from the scope of the appended claims.

In the drawings:

Figure 1 is a side elevation of the invention.

Fig. 2 is a cross-sectional view thereof on a slightly enlarged scale.

Referring now more particularly to the accompanying drawings, the reference character 3 indicates a metallic cutting disk, saw or the like, having a central opening 4, so that it may be readily secured to a rotatable or other shaft (not shown).

An annular groove 5 is formed on each side of the cutting element 3 and each has its outer wall formed to provide what may be termed a pronounced annular shoulder 6 with the opposite or inner wall 7 of each groove 5 gradually merging into the bottom of the groove. The disk 3, beyond the grooves, preferably has its side faces beveled, as shown.

A disk 8 of abrasive material, such as sandpaper, emery cloth or the like is secured in any suitable manner to each side of the cutting element 3. Each abrasive disk has a central opening 9 to coincide with the central opening 4 in the cutting element 3. The outer edges of the abrasive disks 8 are disposed in the aforesaid grooves 5 of the cutting element 3 so that the peripheries of the abrasive disks are shielded or protected by the aforesaid annular shoulders or outer walls of the said annular grooves whereby the material being cut may pass off of the disk or cutting element 3 onto the abrasive disks 8 without danger of tearing or stripping off the abrasive material from the metallic cutting element 3.

An implement of the present character may be composed of the cutting element having only one side provided with abrasive material in which event but one side only of the cutting element would be necessarily provided with the annular groove to receive the periphery of the abrasive disk.

What is claimed is:

1. A cutting and abrasive implement comprising a cutting element provided with an annular groove on each side slightly spaced from the periphery of the cutting element, and an abrasive disk secured to each side of the cutting element and having its periph-

ery confined within the respective annular groove of the cutting element.

2. A cutting and abrasive implement comprising a metallic cutting element provided on each side with an annular groove, the inner wall of each groove gradually merging into the bottom of the groove and the outer wall of each groove forming a pronounced annular shoulder, and an abrasive disk secured to each side of the cutting element and having its edges lying within the respective annular groove of the cutting element with its periphery adjacent the respective annular shoulder and protected and shielded by the latter.

3. A cutting and abrasive implement comprising a metallic cutting element of disk-like shape and provided with an annular groove spaced from the periphery thereof, and an abrasive disk secured to the metallic cutting element and having its edge fitted in said groove and protected thereby from being torn when the material being cut passes from the cutting element onto the abrasive disk.

4. A cutting and abrasive implement comprising a metallic cutting disk provided with an annular groove on one side slightly spaced from the periphery thereof, the edge of said disk beyond said groove being beveled, and an abrasive disk secured to one side of the cutting disk and having its peripheral edge fitted in the annular groove of the cutting disk and shielded thereby.

5. A cutting and abrasive implement comprising a metallic cutting element provided on one side with an annular groove, and an

abrasive disk secured to the grooved side of the cutting element and having its periphery confined within said groove.

6. A cutting and abrasive implement comprising a disk reduced in thickness adjacent its periphery whereby to produce on each face of the same a groove having a gradual tapered wall and a wall substantially at right angles to the disk and sheets of abrading material applied to the faces of the disk and having their edge portions disposed within the grooves formed by reducing the disk, whereby said edge portions are protected from contact with the work to which either the abrading disks or the periphery of the cutting disk is active.

7. A cutting and abrasive implement comprising a cutting disk having saw teeth at its periphery, the disk being reduced in thickness at the point where said teeth join the same whereby to produce grooves on the faces of the disk adjacent its periphery, said grooves gradually increasing in depth as they approach the periphery of the disk and terminating in an abrupt end wall and sheets of abrading material secured to the faces of the disk, the edge portions of said sheets projecting within the grooves whereby the same are disposed out of contact with the work to which either the abrading disks or the saw teeth are active.

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

JAMES C. SMITH.

Witnesses:

PETER SCHELLBERG,
MANUEL NEILAN.

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