

G. N. WILLIAMS, JR.
 STONEWORKING TOOL.
 APPLICATION FILED JULY 16, 1908.

925,546.

Patented June 22, 1909.

Fig. 1

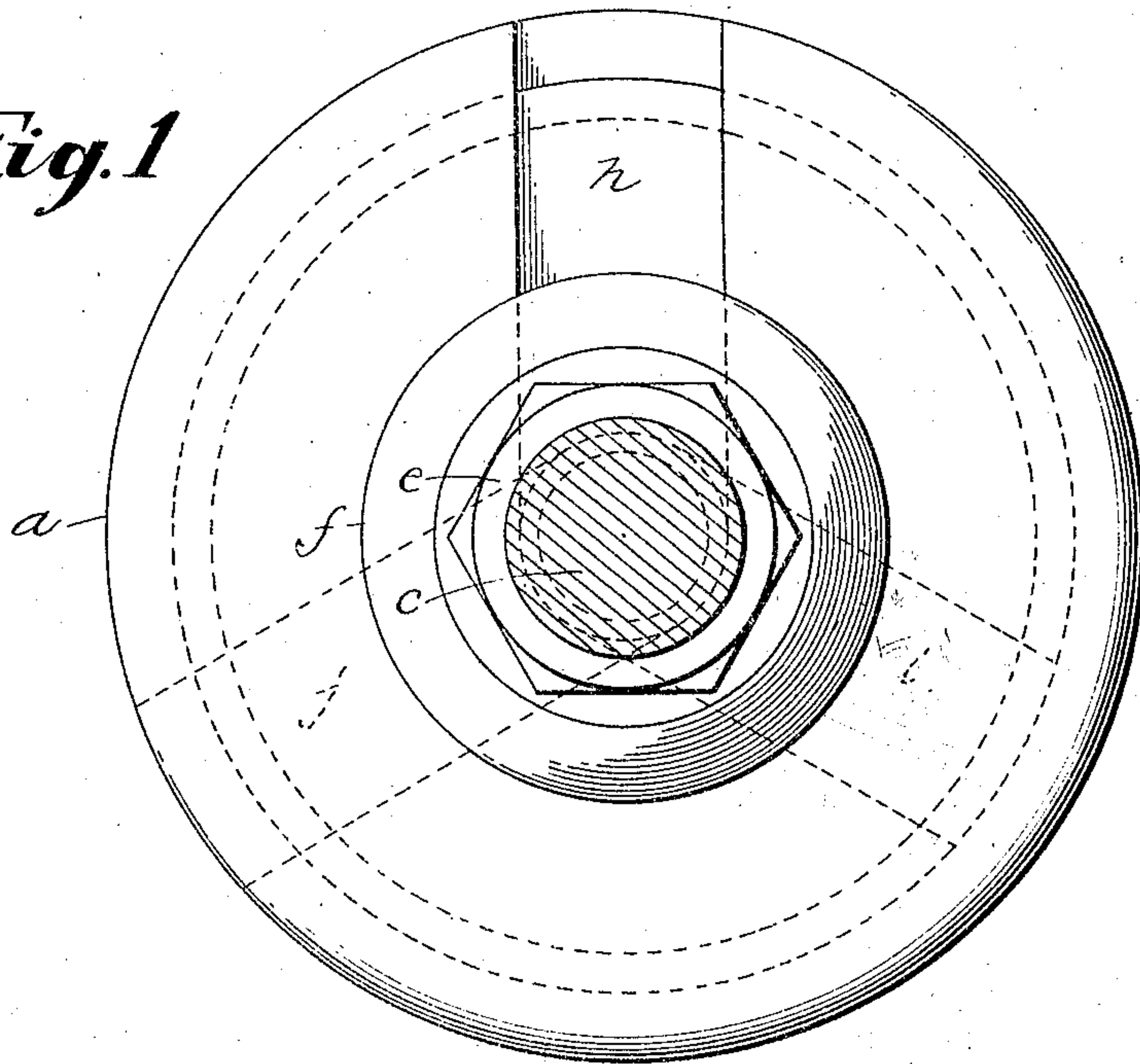
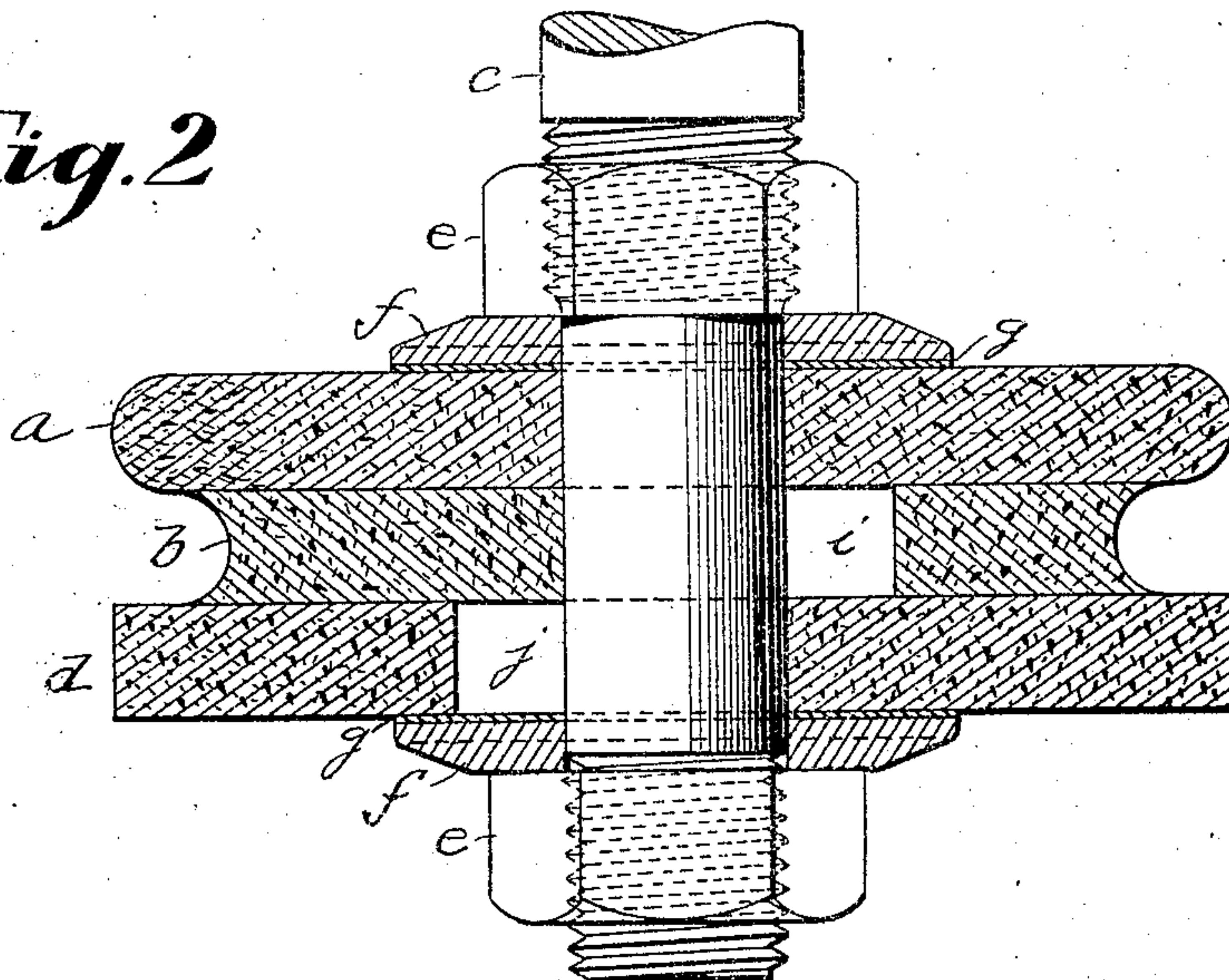


Fig. 2



WITNESSES:

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STONEWORKING-TOOL.

No. 925,543.

Specification of Letters Patent.

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Application filed July 15, 1908. Serial No. 443,839.

To all whom it may concern:

Be it known that I, GEORGE NELSON WILLIAMS, Jr., a citizen of the United States, residing at New York city, in the county and State of New York, have invented certain new and useful Improvements in Stone-working-Tools; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in stone-working tools of the kind wherein the cutting or abrasion is effected by means of a disk of carborundum, or other like material, mounted upon a suitable shaft or spindle.

The main object or purpose of the invention is to provide for the ready removal of the disk from the shaft, without the necessity of shifting it longitudinally thereof, and also to provide for the effective lubrication and cooling of the tool and its work during the cutting operation and to facilitate the clearing of the kerf from debris. In carrying out this purpose, I have made up the tool by assembling upon the shaft or spindle a plurality of individual disks or laminations arranged side by side to form a composite abrader, the individual elements having a peripheral contour appropriate to the character of the proposed cut or kerf. Each of the individual disks or laminations is provided with a radial slot, the inner surface of which fits the shaft or spindle and which extends outwardly to the opposite periphery of the disk, so that the several individual disks or laminations may be readily slipped over the shaft or spindle laterally and may then be clamped together, and so that they may be either separately or collectively removed and replaced in like manner. The radial slots of the several individual disks or laminations are preferably disposed at equal distances apart with respect to the circumference of the composite disk as a whole so as to balance the tool, and the slot of each disk is covered by a solid portion of its neighbor in the series. The radial slots, extending as they do to the outer periphery of the composite disks permit full access of the water or other lubricant employed in the cutting or abrading operation, to the innermost surfaces of the kerf, and by the cooling effect incident thereto, not only safeguard

the tool and the stone from over-heating, but allow the tool to be run at a higher speed than would otherwise be feasible. The radial slots also tend to clear the kerf from the debris of the cutting or abrading operation, and may be kept clean by a jet or jets of water directed upon the tool should the debris, in any particular instance, not clear itself readily from the slots as they rise out of the kerf.

In the accompanying drawing, Figure 1 represents a side elevation of a stone-working tool embodying my improvements: Fig. 2 represents a sectional view thereof, partly in plan.

Similar letters of reference indicate similar parts throughout the several views.

Referring to the drawing, *c* indicates the tool shaft or spindle, and *a*, *b*, *d*, indicate a plurality of individual disks or laminations of carborundum or other cutting or abrading material, arranged side by side on the said shaft or spindle. Each of these individual disks or laminations is provided with a radial slot *h*, *i*, *j*, respectively, which, at its inner end, is of a contour adapted to closely fit the shaft or spindle and which at its outer end extends to the disk edge or periphery.

As indicated, the outer peripheries of the several individual disks or laminations may be of different contour, appropriate to the character of the cut or kerf they are designed to make, and it is evident that any individual lamination or laminations may be replaced by others of different contour or thickness, or that they may be removed and replaced in their entirety.

The individual disks or laminations are so disposed about the shaft *c* that the radial slot of each of them is covered by a solid portion of its neighbor or neighbors in the series, and, in order to assist in maintaining this relationship they may be cemented together along their abutting faces by a cement weaker than the carborundum or other material of which the laminations are composed, so that the cement joints will not prevent their separation from each other when it is desired to remove them from the shaft.

The means for releasably clamping the composite disk upon the shaft may be of any suitable kind. In the drawing I have shown one appropriate form, consisting of cheek pieces *f*, held in place by faceted clamping nuts *e* engaging screw threaded portions of

the shaft or spindle. Chattering of the tool may be avoided by interposing between the cheek pieces *f* and the composite disk, washers *g*, of semielastic material, such as cork, paper or the like.

The invention is of particular advantage where, as is frequently required in practice, a number of the composite disks are arranged at intervals upon a common shaft, or where in building up a composite forming or abrading tool such a number of individual laminations (either of the same or varying thickness, or of the same thickness and varying diameter) are employed as to make the tool of relatively great length with respect to its diameter. In the latter case, especially, the gaps formed by the slotted sections contribute notably to the abrading capacity of the tool both because of the cooling and clearing function incident to their use, and because of the efficient lubrication throughout the entire length of the kerf.

Having thus described my invention, what I claim is:

1. A stone-working tool, consisting of a tool shaft, and a composite disk made up of a plurality of individual disks or laminations of abrading material and arranged side by side on the shaft, said individual disks or laminations being provided with radial slots to permit them to be readily assembled, re-

moved, or replaced; substantially as described.

2. A stone-working tool, consisting of a tool shaft, and a composite disk made up of a plurality of individual disks or laminations of abrading material and arranged side by side on the shaft, said individual disks or laminations being provided with radial slots to permit them to be readily assembled, removed, or replaced, the radial slot of each individual disk being opposite a solid portion of its neighbor; substantially as described.

3. A stone-working tool, consisting of a tool shaft, and a composite disk made up of a plurality of individual disks or laminations of abrading material and arranged side by side on the shaft, said individual disks or laminations being provided with radial slots to permit them to be readily assembled, removed, or replaced, the radial slot of each individual disk being opposite a solid portion of its neighbor, and said slots being disposed at equal distances apart so as to balance the tool; substantially as described.

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

GEORGE NELSON WILLIAMS, JR.

Witnesses:

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