W. A. Wilson,

Saw.

No. 23,330. Patented Mar. 22, 1859.

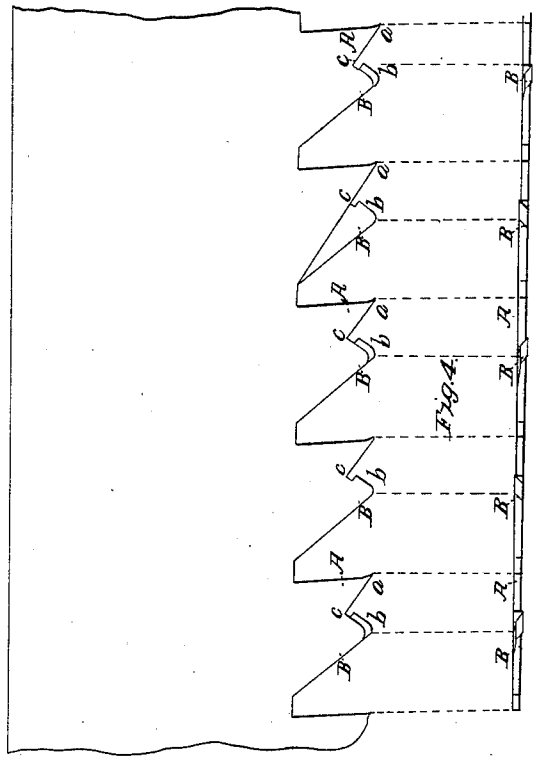

Fig. 4.

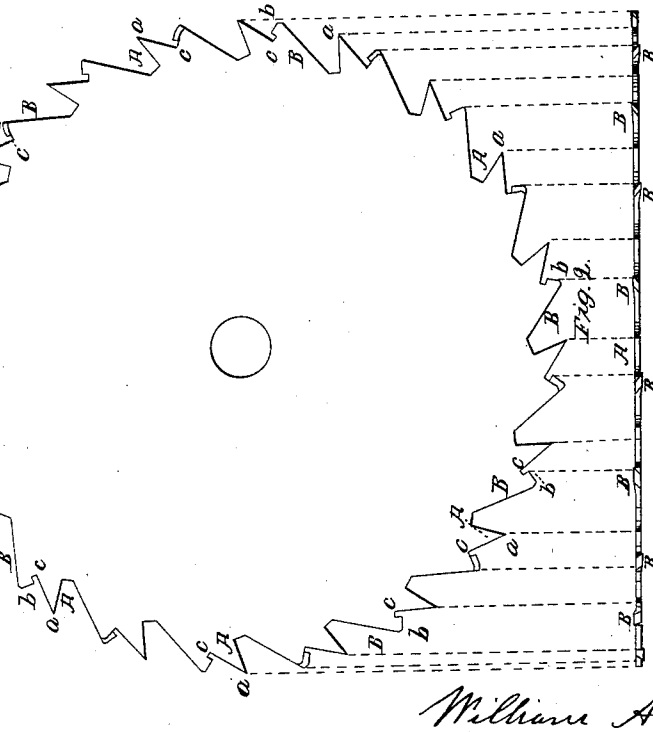

Fig. 2.

Fig. 1.

Witnesses:
Geo. H. Shaw.
A. F. Moulden.

Inventor:
William A. Wilson.

UNITED STATES PATENT OFFICE.

WILLIAM A. WILSON, OF BERLIN FALLS, NEW HAMPSHIRE.

IMPROVED CONSTRUCTION OF SAW-TEETH.

Specification forming part of Letters Patent No. **23,330**, dated March 22, 1859.

To all whom it may concern:

Be it known that I, WILLIAM A. WILSON, of Berlin Falls, in the county of Coos, in the State of New Hampshire, have invented certain new and useful Improvements in the Construction of Saws, by adapting them to the purpose of sawing and planing lumber of every description by one and the same operation, constituting what I denominate the "planing-saw;" and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 represents a side and Fig. 2 an edge view showing my improved form of teeth as applied to circular saws. Fig. 3 represents a side and Fig. 4 an edge view of a fragment of a plate, showing the adaptation of my improvement to reciprocating saws.

I am aware that attempts have been made to construct the teeth of saws for the purpose of sawing and planing boards simultaneously; but by reason of defects both in the construction and arrangement of the teeth they have proved entire failures. After much experimenting I have discovered that the particular form and construction of teeth shown in the drawings is best adapted to the purpose, especially in relation to the facility with which they clear themselves in the kerf, and also because such arrangement and construction of teeth do not impede the operation of the saw-teeth, and as the sawing-teeth have no lateral set they necessarily make less kerf than ordinary saws, thereby effecting a saving of timber.

In the drawings, A represents the sawing-teeth, having their front cutting-edges made in the usual form. The back of each tooth, however, does not extend to the throat of the adjacent one, but terminates at about one-third the distance of its length from the point *a*. At this point a planer-tooth B is raised or formed at nearly right angles upon the back of each saw-tooth, by which means the planer passes into the material at an angle of about forty-five degrees and planes cross-grained wood nearly or quite as smooth as any other. These sawing and planing teeth are formed upon one and the same projection, thereby making a double tooth of superior strength and combining the saw-tooth and planer in one. The planing-teeth being thus located in the rear of the sawing-teeth, are for the purpose of planing at one and the same motion of the saw. Their points are chisel-shaped, with their apices slightly rounded. The object of thus rounding the tips of the planers is for the purpose of allowing the bevel to extend regularly back from its point; otherwise it would be prevented from passing freely and easily through the material. These planes have a planing-surface sufficient to plane and smooth the portion cut by the preceeding saw-tooth. The planing-edge being set at about right angles to the saw-tooth, the back of said planer terminates in the throat of said saw-tooth. The angles at which the planing-edges are set, it will be seen, also form a tangent to a circle about two-thirds of the diameter of the saw and cause the said planing-edges to act upon the grain of the material with a draw-knife stroke during the entire revolution of the saw. These planing-teeth are beveled alternately on opposite sides of the saw, and they also have a lateral set suited to their bevel. Each planing-tooth extends to the circle formed by the saw-teeth and is constructed with a throat *c*, which intersects the back of each saw-tooth and separates it therefrom, so as to form a space directly beneath the edge of the planing-point for the several purposes of enabling the cutting and planing edges of the teeth to be set parallel to the face of the saw from the base to their apices, and to make the space between the apex of the sawing-tooth and the planer sufficiently large to receive the shaving cut by the planing-tooth and let it pass off without choking, and also to facilitate the filing of the saw-teeth.

The planing-teeth of this saw may also be set toward one side for the purpose of planing or smoothing one or both sides of such boards or material (by reversing the same) as have been sawed in the ordinary way. It is obvious, too, that by this arrangement in sawing timber the material being sawed may be planed on one side only.

The teeth of the circular saw may be sharpened from time to time, as required, by a new method that I have discovered, and which consists in mounting a hard or turkey bone in a suitable adjusting device in such a man-

ner as to be brought in contact with the teeth of the saw while in motion at an angle of about forty-five degrees, which has the effect to keep the teeth of equal length, thereby preserving a true circle and producing a keen edge by giving to the tip of each sawing-tooth a slight bevel square with the point. By this method of sharpening saws while in motion it will be seen that I am enabled to save expense in labor, files, and saws.

Having thus described my improvements, I claim—

Combining the planing with the sawing tooth so that the cutting-edge of the former shall be in rear of and at about right angles to the back of the latter, having the throat between, as set forth and shown hereinbefore.

In testimony whereof I hereunto subscribe my name.

WILLIAM A. WILSON.

Witnesses:
GEO. K. SHAW,
MOSES KELLY.