J. E. Emerson,

Saw.

No. 112,569. Patented Mar. 14. 1871.

Fig. 2.

Fig. 1.

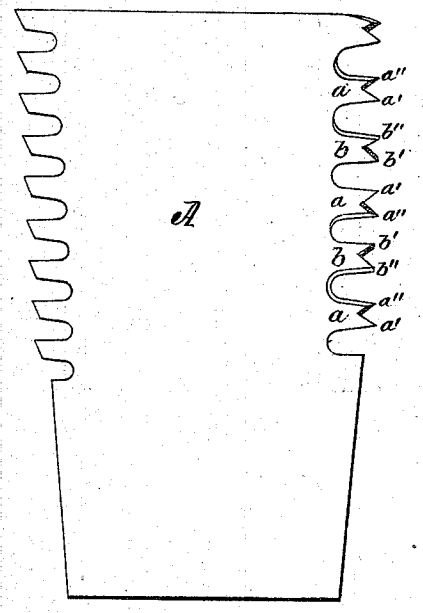

Fig. 3.

Fig. 4.

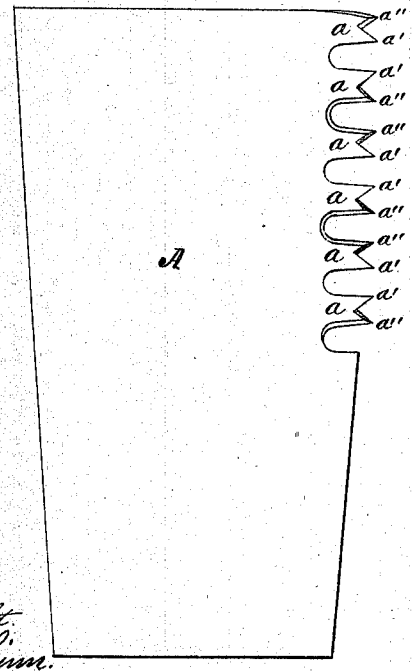

Fig. 5.

Witnesses:
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JAMES E. EMERSON, OF TRENTON, NEW JERSEY.

Letters Patent No. 112,569, dated March 14, 1871.

IMPROVEMENT IN SAWS.

The Schedule referred to in these Letters Patent and making part of the same.

I, JAMES E. EMERSON, of Trenton, in the county of Mercer in the State of New Jersey, have invented certain Improvements in Saws, of which the following is a specification.

The invention consists in the form that some of the teeth on the saw are made to have, the kind of set given to the teeth, and the arrangement of such teeth in such manner as to form the saw.

In the drawing—

Figure 1 is a section of a saw-blade, showing two different kinds of teeth on the same blade;

Figure 2 is an edge view of one edge of the saw, having teeth with single points; and

Figure 3 is an edge view of the other edge, both showing the set of the teeth.

Figure 4 is a section of a saw-blade with the twin teeth only.

Figure 5 is an edge view of the same, showing the set of the teeth.

A is a saw-blade of a common cross-cut saw, and has the twin teeth *a a a*, and filed so that the points *a'* shall score the wood on one side of the kerf, while the points *a''* will in like manner score the wood on the opposite side of the kerf.

These teeth *a a a* are set in such manner as that the points *a'* will project the proper distance from the side of the saw-blade, and the points *a''* in like manner project from the opposite side of the saw-blade and keep the saw-blade from binding in its kerf.

Teeth *b b* are twin clearer-teeth, and do not project as far as the scoring points of the teeth *a*.

Teeth *b* have no set in them, and are used for planing or clearing out the wood that teeth *a* score off at the sides of the kerf, and differ in form from teeth *a* only in their being shorter, having no set, and being filed to have a different shape of the clearing or planing-edge at the points *b'* and *b''*, as seen in figs. 1 and 3 of the twin teeth, and so that the cutting-edge shall be on askew, and on or nearly on a horizontal line when the blade is perpendicular.

This form of clearer or planing-tooth is given by filing, as the angle at which the file is held is the same or nearly the same, and in the same direction across the edge of the saw, whether filing point *b'* or *b''*, as will be readily seen by viewing the teeth *b* in fig. 1.

By this form of clearer or planing-teeth the cut of the tooth is similar in its action on the wood to that of a skew-rabbet plane, as one side of the cutting-edge of the tooth is in advance of the other, and takes hold of and removes the wood from the kerf with less effort from the operator than if the cutting-edge took hold of the wood at right angles with the direction of the saw in the operation of sawing.

The teeth *a* are set by twisting them in pairs across the line of the saw, in contradistinction to setting or bending to the sides, which gives the set as seen in edge views in figs. 2, 3, and 5.

By this twisting of the teeth to give to them the necessary set there is no danger of breaking them, as saw-blades that are so hard and brittle that it is impossible to set the teeth by the ordinary saw-sets now in use can be twisted to have all the set required, and no danger of breaking or cracking; and further, the tooth that is twisted to have the necessary set is stronger, and has a better position with relation to the scoring off the fibers of the wood, than if set by bending to one side as is ordinarily done.

The teeth are arranged in alternate pairs, that is, clearer or planer twin teeth *b* alternate with scoring twin teeth *a* the entire length of the saw; or there may be two twin teeth *a* alternated by one twin tooth *b*, and not depart from my invention.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. The clearer twin tooth *b*, having cutting-edges *b'* and *b''*, constructed in the manner herein described.

2. The saw-tooth *a*, having the points *a'* and *a''* set to the opposite sides of the blade by twisting them at an angle with the sides of the blade of the saw, in the manner shown.

3. The combination, in a saw, of the twin teeth *a*, having scoring-points *a'* and *a''* set to cut the width by twisting, as herein shown, and twin clearer-teeth *b*, having the planing-edges *b'* and *b''*, to cut on askew, in the manner and for the purpose described.

JAMES E. EMERSON.

Witnesses:

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