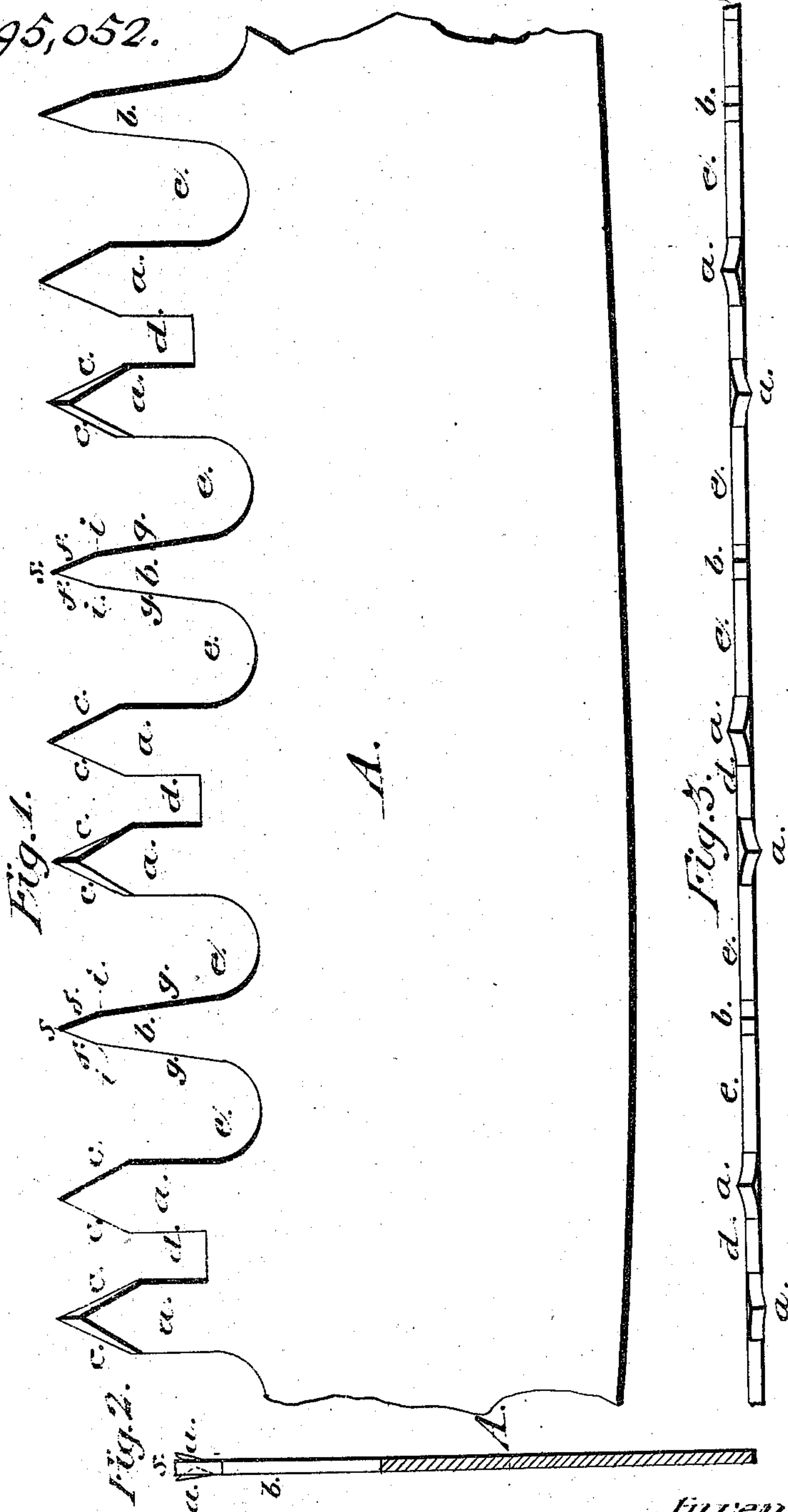


J. H. Smith and E. G. Peckham,

Saws. Patented Sep. 21. 1869.

No 95,052.



Witnesses:  
R. V. Campbell  
Julius Hirsch

Inventors:  
J. H. Smith  
E. G. Peckham  
by  
Marion Rawick & Son

Sheet 2 of 2 Sheets.

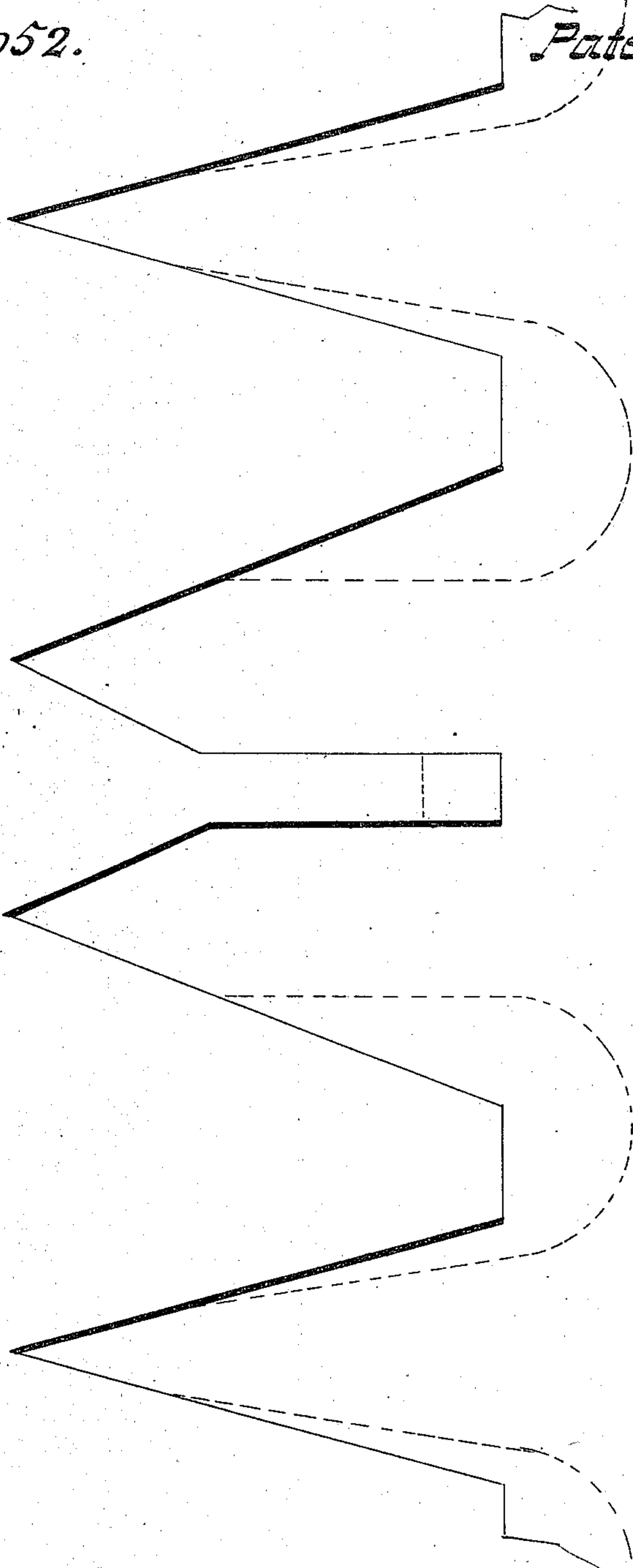
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Fig. 1.



Witnesses:

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# United States Patent Office.

JOSEPH H. SMITH AND ELIJAH G. PECKHAM, OF TOLEDO, OHIO.

Letters Patent No. 95,052, dated September 21, 1869.

## IMPROVEMENT IN SAWS.

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

To all whom it may concern:

Be it known that we, JOSEPH H. SMITH and ELIJAH G. PECKHAM, of Toledo, in the county of Lucas, and State of Ohio, have invented a new and useful Improvement on Saw-Teeth; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, plate 1, is a side view of a portion of a saw-blade having the improved saw-teeth formed on it.

Figure 2 is an end view of fig. 1.

Figure 3 is an edge view of the saw-teeth.

Figure 4, plate 2, is a diagram illustrating an old form of saw-teeth, in full lines, and showing, by the aid of dotted lines, the manner of producing our improved teeth.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to an improvement on the construction of teeth for cross-cut saws; and consists in alternate pairs of straight cutting-teeth, which are separated individually by a narrow straight slit, and which terminate at their ends in double-bevelled cutting-edges, in combination with an intermediate single raker or clearing-tooth, which has obtuse angles on opposite edges, and a central acute clearing-point, as will be hereinafter explained.

We are aware that cross-cut saws have been made before our invention with single clearing-teeth arranged between pairs of cutting set-teeth, the latter teeth being separated individually by narrow slits extending into the saw-blade only as far as the bases of the clearers, and we do not claim, broadly, such an arrangement of set-teeth and clearers as our invention.

The following description of our improved saw-teeth will enable others skilled in the art to understand their construction and operation.

In the accompanying drawings, figs. 1 and 3, we have represented a portion of a saw-blade having formed upon one edge three pairs of cutting set-teeth and three intermediate single rakers or clearing-teeth.

The set-teeth cut down the sides of the kerf, while the clearers remove the ridge left between the two parallel cuts made by the set-teeth.

In the construction of this class of cross-cut saws, it is important—

First, to provide free clearance for the dust, to prevent it accumulating between the teeth and about their cutting-edges;

Second, to prevent gumming, by cutting narrow slits into the blade at those points where the gumming would be produced if the slits were not made;

Third, to have the cutting or set-teeth work in pairs, succeeded by clearers, so that both sides of the

kerf will be cut before the clearers scrape or cut off the ridge;

Fourth, to employ clearers which will not collect the dust, nor interfere with the cutting of the set-teeth;

Fifth, to obtain as much space as possible between a given number of teeth in a given length of blade, without weakening the teeth; and

Sixth, to so shape the teeth that they can be sharpened and kept sharp with the least amount of labor and removal of metal.

*a a* represent the cutting or set-teeth, which are spaced in pairs, with a narrow parallel slit, *d*, between the teeth of each pair.

These teeth *a a* are straight, that is to say, their edges are parallel, and terminate in double-bevelled or angular cutting-points, which are sharpened and set as shown in the drawings.

By making the edges of the teeth *a a* parallel or perpendicular to the length of the saw-blade *A*, and producing the cutting-edges of bevelling each tooth equally on each edge *c*, triangular cutting-points are formed, which can be regularly sharpened.

Between every two pairs of cutting-teeth *a a*, and equidistant from the centres of the slits *d*, is a tooth, *b*, on each side of which a space, *e*, is formed, which is carried further into the saw-blade than the slits *d*.

The spaces *e e* terminate, along their edges next the back of the saw-blade, in semicircles, which, as they do not present angles, will prevent an accumulation of sawdust in said spaces.

Each clearing-tooth *b* is tapered from its base to the points *i i*, and from these points or to the acute angle *s*, the edges *f f* are abruptly bevelled, so as to leave obtuse angles at the junction of the edges *f g*, on each side of the tooth.

The teeth *b*, thus constructed, will cut or clear in the forward as well as backward movements of the saw, and they will not clog with sawdust, like the double-edge clearers hitherto used in combination with pairs of set-teeth.

In sharpening the clearers *b*, the file is applied upon the short bevelled edges *f*; and a very small amount of the metal is required to be removed to effect the sharpening, while, at the same time, the tooth is not weakened, nor can gumming be produced.

In fig. 4, plate 2, we have represented a portion of an old form of cross-cut saw-blade in full black lines, and, by the aid of dotted lines, shown how the teeth can be improved according to our invention. The full black lines show a pair of set-teeth separated by a slit, which leaves one edge of each set-tooth perpendicular to the length of the saw-blade, while the opposite edge of each set-tooth is bevelled from its cutting-point to its base.

The clearers, which are between the pairs of set-



teeth, are of a V or acute angular shape. In filing these teeth, gumming cannot be prevented, and a comparatively large amount of metal must be removed by the file to keep the teeth sharp.

By removing the metal as indicated by the dotted lines, we form set-teeth with parallel edges, we round out and deepen the spaces on the opposite sides of the clearers, and we reduce the width of the clearers, so that the most inexperienced hand can sharpen the teeth without gumming.

As a greater amount of space is required between the clearers and set-teeth than is required between each pair of set-teeth to prevent clogging, it will be seen that we do not cut the slits *d* into the blade as far as the spaces *e* extend, but leave such an amount of

metal at the bases of the set-teeth as will afford them all the strength required.

Having described our invention,

What we claim as new, and desire to secure by Letters Patent, is—

The saw-blade, which combines in its construction pairs of teeth, separated below their cutting or sharpening-bevel, and an intermediate single clearing-tooth, which has an angle, *i*, on each of its sides, substantially as described.

JOSEPH H. SMITH.  
ELIJAH G. PECKHAM.

Witnesses:

AVERY S. HILL,  
JAMES BADDELY.