2 Sheets—Sheet 1.

# J. A. MILLER.

## Circular-Saw.

No. 212,813. Patented Mar. 4, 1879.

Fig 1

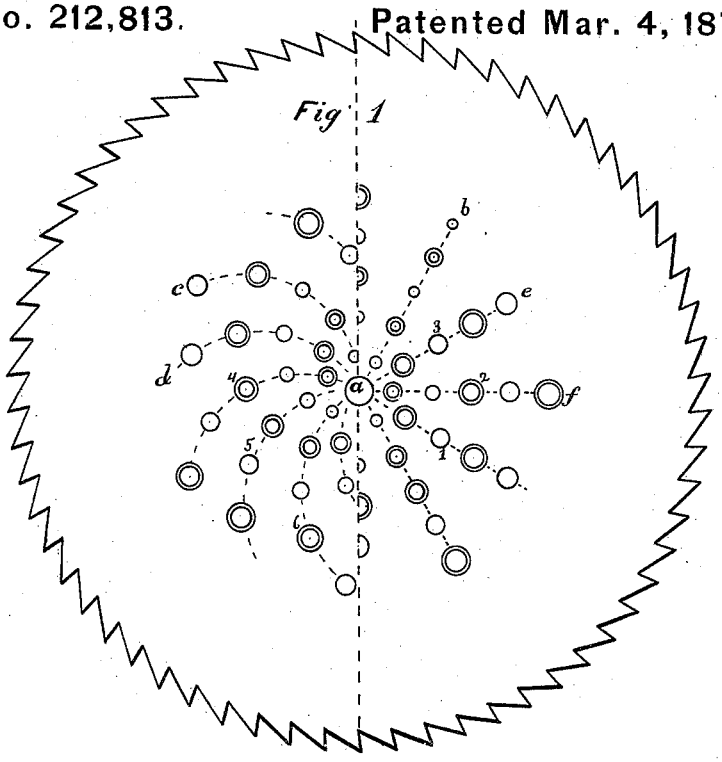



Fig 2

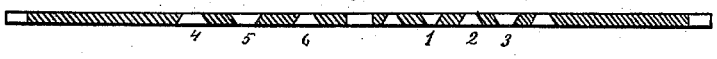
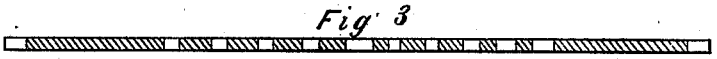



Fig 3



C. Palmer
A. Konrad Jr
Witnesses

John A. Miller
Inventor

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## Circular-Saw.

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Fig. 4

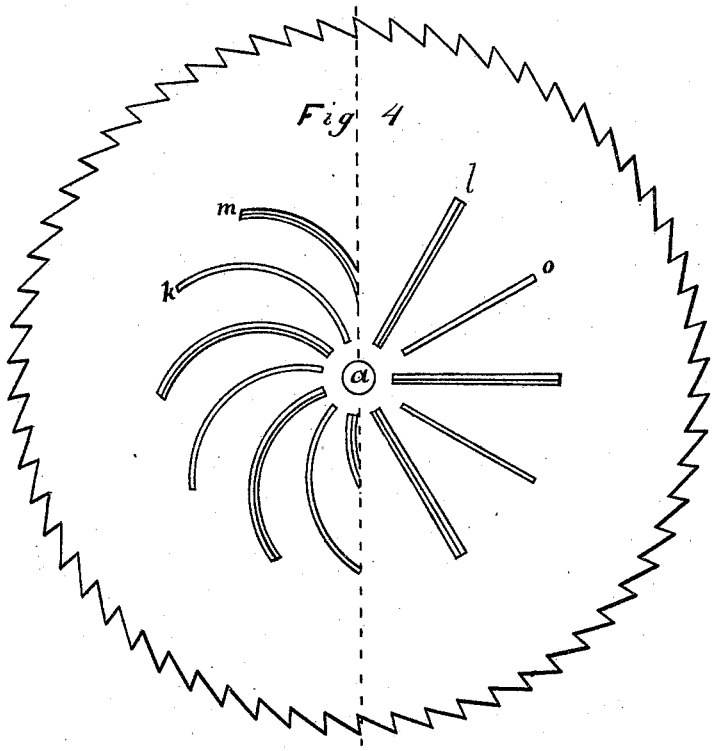
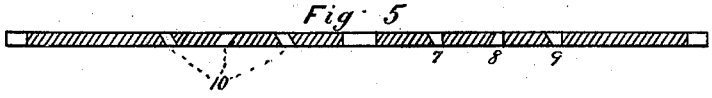



Fig. 5

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Witnesses

John A. Miller
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# UNITED STATES PATENT OFFICE.

JOHN A. MILLER, OF OSHKOSH, WISCONSIN, ASSIGNOR TO WARREN P. MILLER, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN CIRCULAR SAWS.

Specification forming part of Letters Patent No. **212,813**, dated March 4, 1879; application filed December 26, 1877.

*To all whom it may concern:*

Be it known that I, JOHN A. MILLER, of the city of Oshkosh, county of Winnebago, and State of Wisconsin, have invented certain Improvements in Circular Saws, of which the following is a specification:

The nature of my invention relates to the use of perforations through the saw, for the purpose of securing a circulation of air through the disk of the saw to prevent its becoming hot; also, to the form of the perforations or slots, which reduces their liability to become clogged with sawdust, &c.

When slots are employed the rear edge only need be sharpened or beveled, though there is no objection to beveling the front edge, and may be an advantage in doing so in a direction parallel with the bevel of the rear side.

It is not absolutely essential, but is preferable, that the sharpened edges of the slots should alternate—that is, each alternate slot should present its sharp edge from opposite sides of the saw.

The perforations should extend from near the center about two-thirds or more of the distance to the circumference of the saw.

The perforations may extend in curved lines or be irregularly placed. It is desirable to have them beveled from opposite sides of the saw alternately, so that the air will be drawn through alternate perforations in opposite directions, thus creating a circulation by which the saw will be kept cool and expansion avoided.

It will be observed that the beveled edges of the perforations prevent clogging.

Figure 1 is an elevation of the saw, showing perforations. Fig. 2 is a section of the same. Fig. 3 is a section, showing the perforations direct through the saw. Fig. 4 is an elevation, showing the beveled slots. Fig. 5 is a section of the same.

To illustrate the different methods of carrying out my invention, I have shown in the drawings one-half of the saw devoted to each method.

In Fig. 1, to the right of the dotted vertical line, the perforations are arranged, as shown, from *a b*, *a e*, &c., and on the left in curved lines *a c*, *a d*, &c., the perforations being beveled from opposite sides alternately, as seen at 1 2 3 4 5 6, &c.; but it is to be understood that I claim perforations generally, whether beveled or direct, as shown in Fig. 3.

The size and number of the perforations are varied and determined by the size of the saw.

In Fig. 4, to the right of the vertical dotted line, the beveled slots extend in radial lines, and on the left in curved lines.

Fig. 5 shows the beveled edges of the slots in section, as 7, 8, and 9; or they may be made as seen in the same figure at 10.

It is understood that I do not claim herein a saw such as is described and claimed in Letters Patent of the United States granted to E. W. Tilton and J. W. Branch, May 22, 1877, No. 191,198; but

What I do claim as my invention is—

1. A circular saw provided with perforations between near the center or eye of the saw and its circumference, distributed in curved lines or irregularly, substantially as shown and described.

2. A circular saw pierced with beveled or sharpened perforations between the eye and periphery, substantially as shown and described.

3. A circular saw having sharp or beveled edge slots, substantially as shown and described, for the purpose specified.

JOHN A. MILLER.

Witnesses:

E. PALMER,

R. P. EIGHONE.