

No. 655,059.

Patented July 31, 1900.

J. I. CARUTHERS.
SAW.

(Application filed Nov. 3, 1899.)

(No Model.)

Fig. 1.

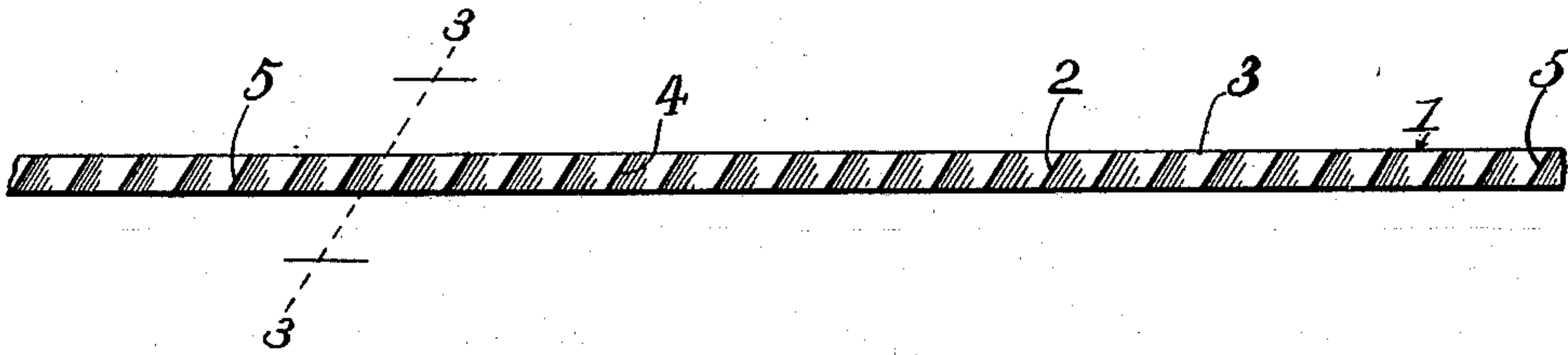


Fig. 2.

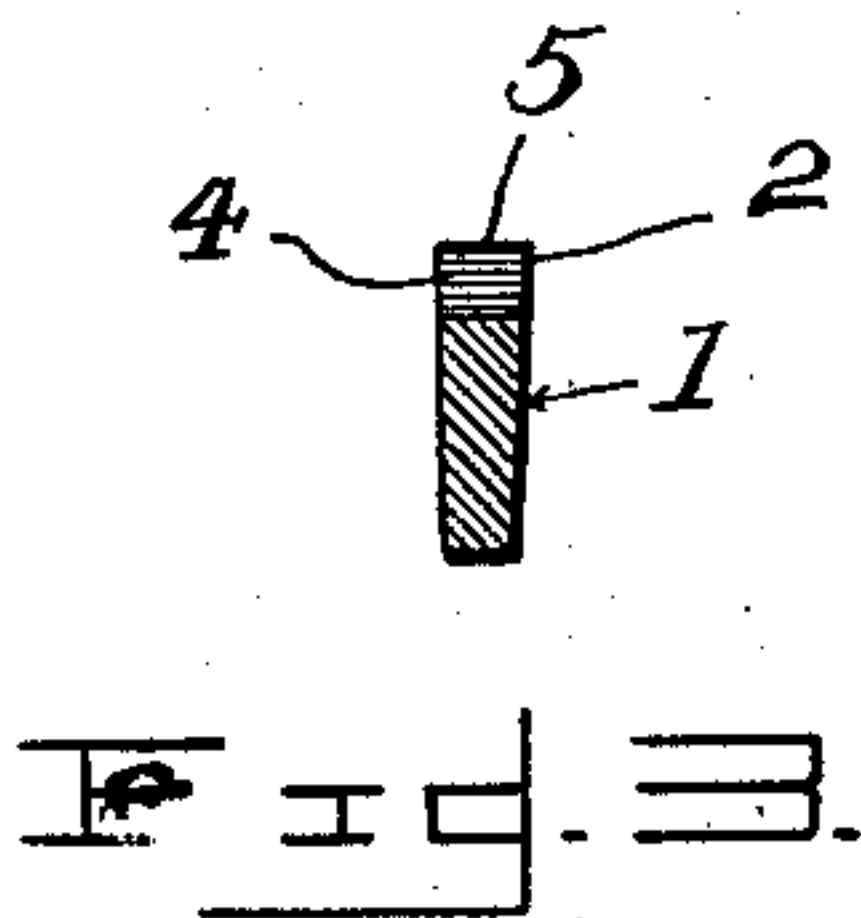
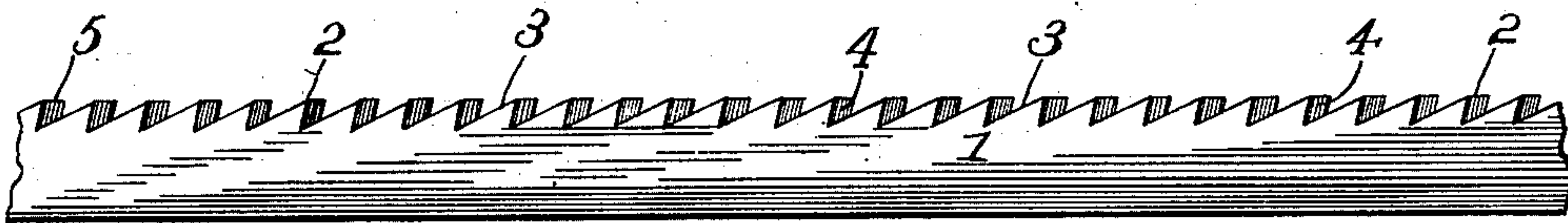


Fig. 3.

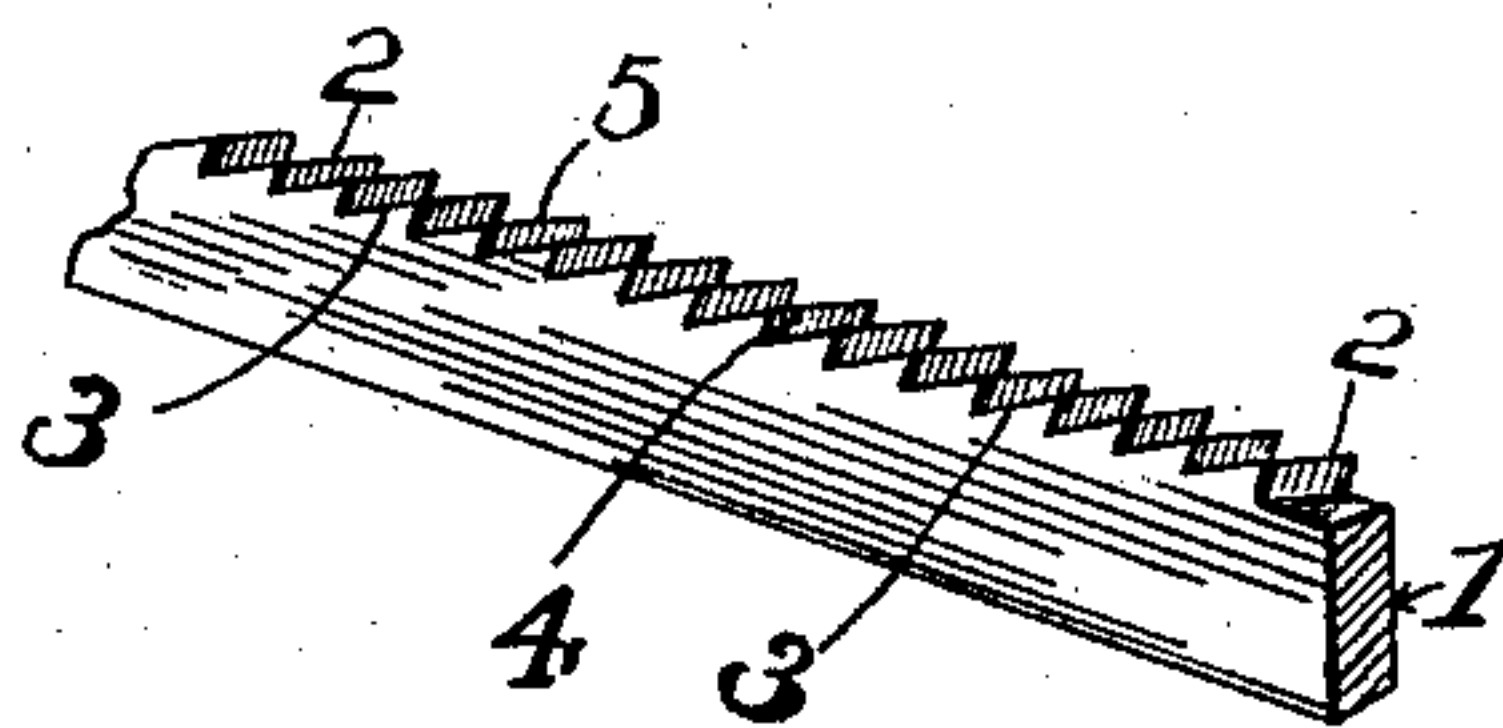


Fig. 4.

Witnesses
Frank Campbell.

J. J. Riley

John I. Caruthers. Inventor.
By his Attorneys.

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JOHN I. CARUTHERS, OF SAN ANTONIO, TEXAS.

SAW.

SPECIFICATION forming part of Letters Patent No. 655,059, dated July 31, 1900.

Application filed November 3, 1899. Serial No. 735,699. (No model.)

To all whom it may concern:

Be it known that I, JOHN I. CARUTHERS, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented a new and useful Saw, of which the following is a specification.

The invention relates to improvements in saw-blades.

One object of the present invention is to improve the construction of saw-blades and to provide a simple, inexpensive, and efficient one designed to be constructed for operating on both wood and metal and adapted to run smoothly through the material without binding or choking.

A further object of the invention is to provide a saw-blade of this character which will require no setting and which may be driven through the material with less force, whereby it will be enabled to cut more rapidly.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended.

In the drawings, Figure 1 is an enlarged plan view of a portion of a saw-blade constructed in accordance with this invention. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse sectional view on line 3 3 of Fig. 1. Fig. 4 is a detail perspective view of a portion of the saw-blade on a smaller scale.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a hack-saw blade provided with teeth 2, arranged at regular intervals, and each tooth is provided with a straight inclined rear face or back 3 and has a straight slightly-inclined front face 4 extending from the outer cutting edge or top 5 of the tooth to the inner end of the inclined rear face 3 of the adjacent tooth. The teeth 2, which are disposed transversely of the saw-blade, have their outer ends or cutting edges 5 extending entirely across the same, and they are arranged diagonally of the saw-blade, as clearly illustrated in Fig. 1 of the accompanying drawings, in order that one end of each of the teeth may enter the material in advance of the other, whereby the teeth have

a shear-like action on the material and are enabled to cut smoothly without binding or choking.

The diagonal arrangement of the cutting-teeth throws one end of the teeth in advance of the other; but although in the accompanying drawings the right-hand end of the teeth is illustrated in advance of the other, yet it will be readily apparent that the diagonal arrangement of the teeth may be reversed to throw the left-hand end of each tooth in advance. The teeth incline forward, as clearly illustrated in Fig. 2 of the accompanying drawings, and their cutting edges are arranged in the same plane, each end of each tooth being of the same length or having the same height.

The teeth by being disposed diagonally of the saw-blade require no setting, and in order to prevent the saw-blade from binding it is provided with a slight taper, its cutting edge being wider than its back or rear edge, as clearly illustrated in Fig. 3, whereby the saw is enabled to cut a kerf of sufficient width to enable it to pass freely through the material without choking or binding. The saw is also adapted to clear itself of dust, as the lateral pressure exerted by the teeth on the dust discharges the latter from the recesses between the teeth as soon as the teeth leave the kerf. This obviates the necessity of removing the saw from the kerf to clean the teeth.

The invention has the following advantages: The improvements are applicable to all narrow-bladed saws, both wood and metal. The teeth of the saw-blade require no setting, and their cutting edges extend diagonally entirely across the saw-blade and exert a shear or knife like action on the material, and they enter the latter sloping and require less force to actuate the saw and enable the same to run smoothly through the material without binding or choking, and it leaves a smooth kerf. It will not become dull in a short time, and it may be readily sharpened by filing the flat or straight front faces of the teeth. Also the straight front and rear faces, together with the diagonal or angular arrangement of the teeth, form straight front cutting edges, which greatly contribute to the effi-

ciency of the saw and which may be located at either side of the blade.

What is claimed is—

5 A saw-blade tapered from the front edge to the back and provided with cutting-teeth extending diagonally entirely across it, each tooth being provided with a front side cutting edge and having, at its point, a transverse cutting edge extending entirely across
10 the saw-blade, every point of which trans-

verse cutting edge is equally distant from the base of the tooth, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 15 the presence of two witnesses.

JOHN I. CARUTHERS.

Witnesses:

GEO. A. CLAVIN,
WM. BOLTZ.