

(No Model.)

J. LEDWARD.

SAW.

No. 325,679.

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Fig. 1.

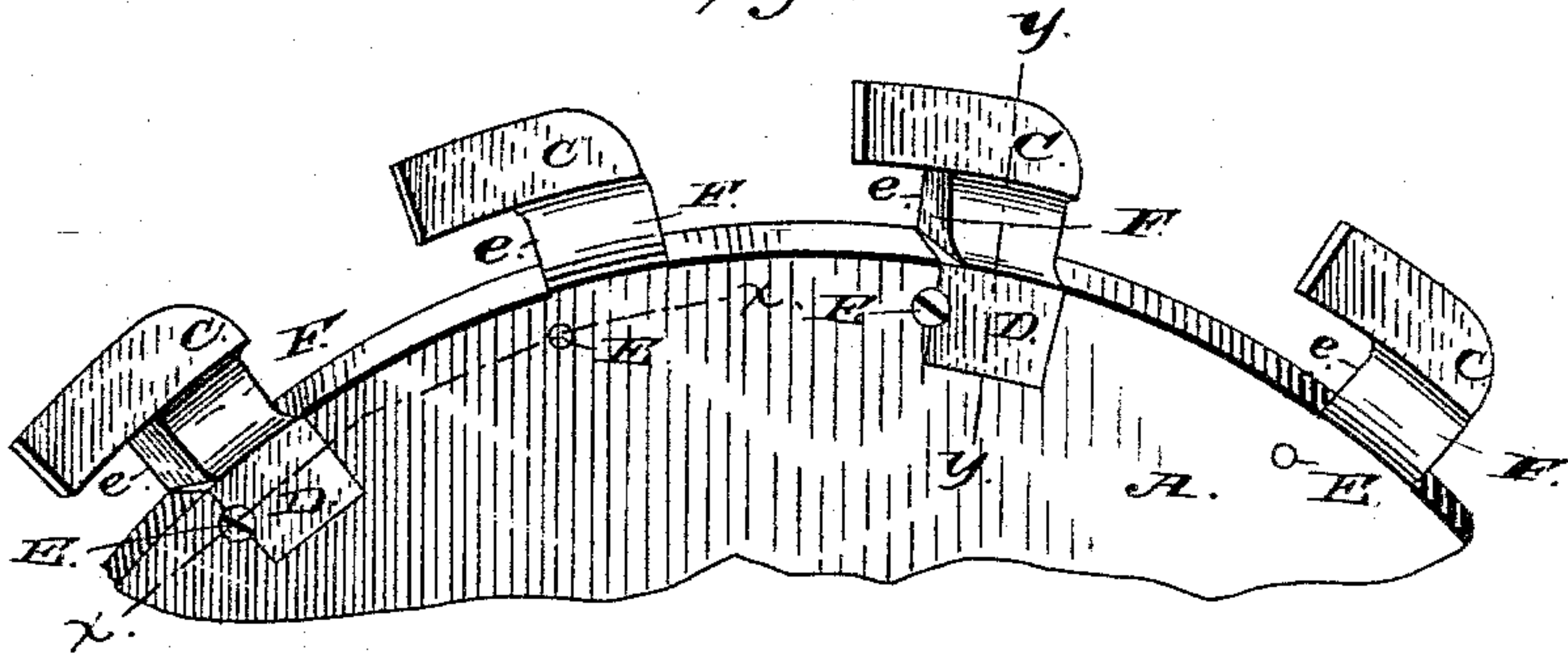


Fig. 2.

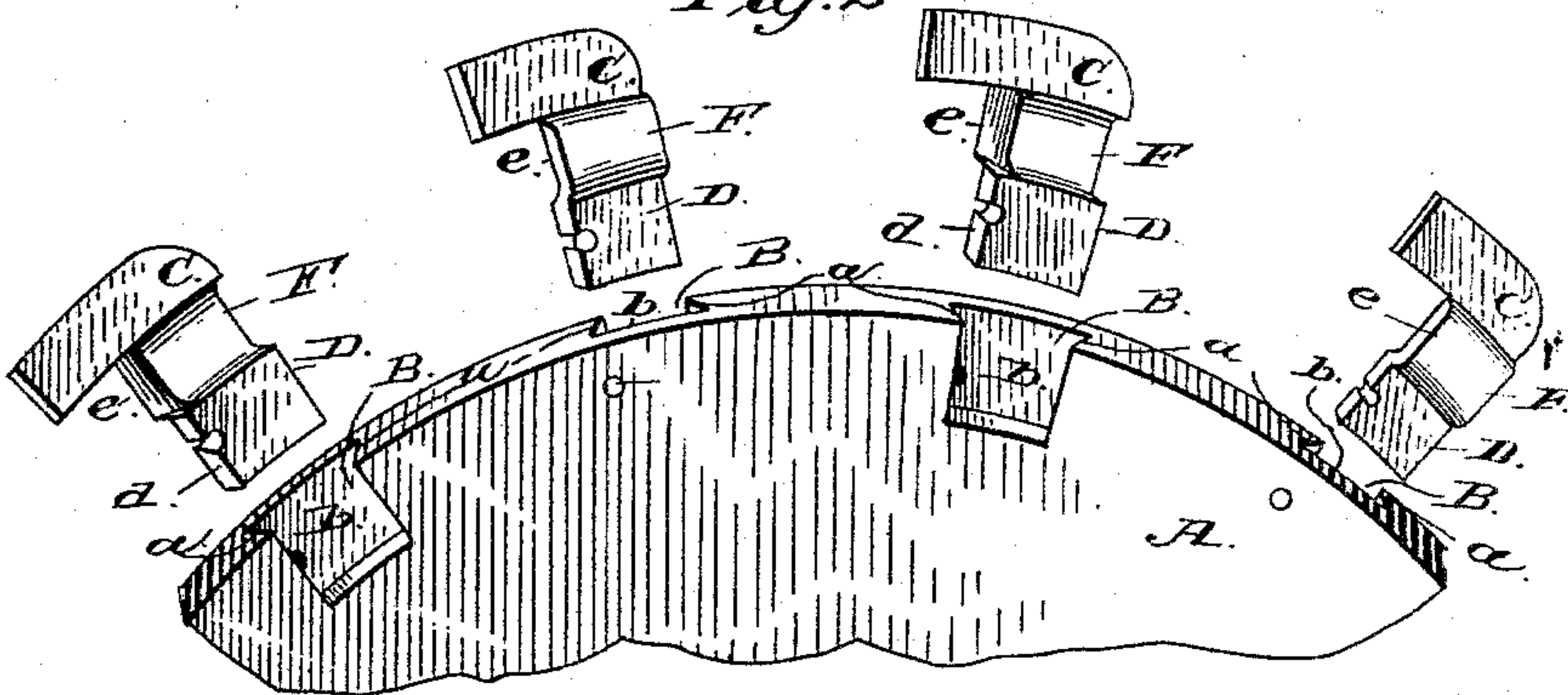
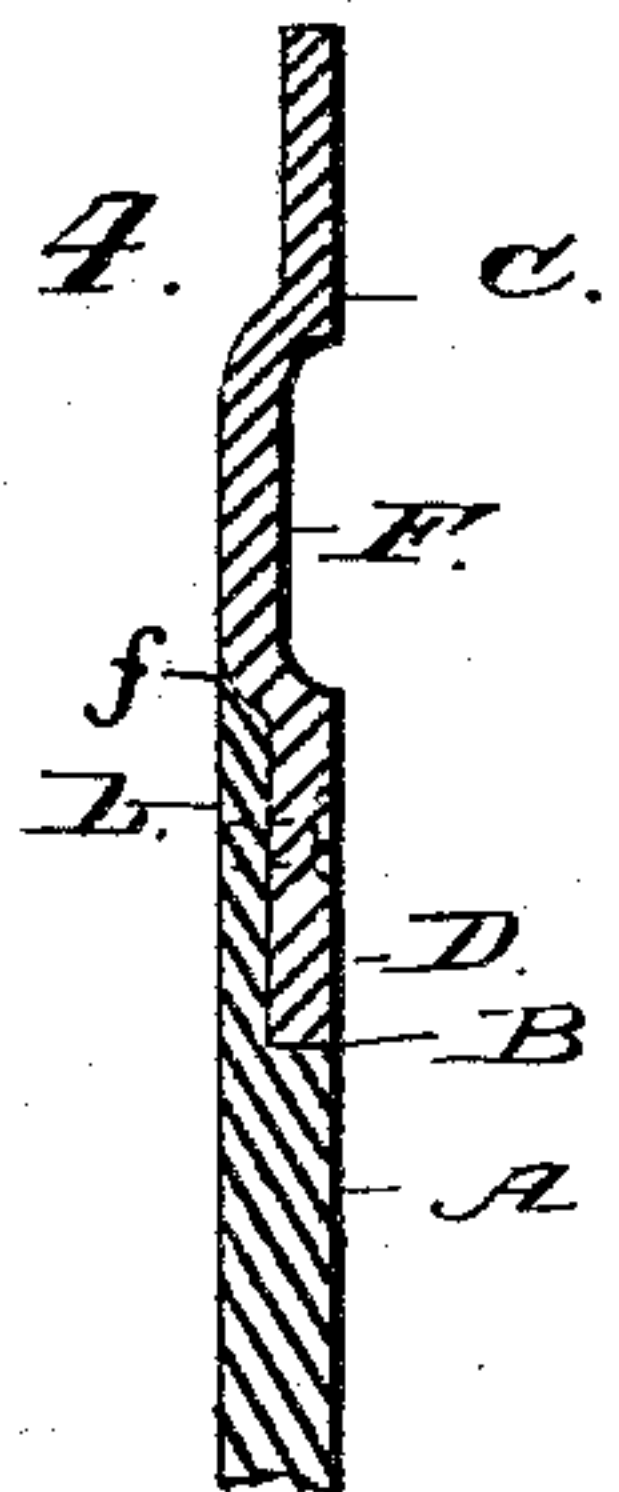


Fig. 3.



Fig. 4.



WITNESSES.

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JOSEPH LEDWARD, OF WESTERLY, RHODE ISLAND.

SAW.

SPECIFICATION forming part of Letters Patent No. 325,679, dated September 8, 1885.

Application filed January 29, 1885. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH LEDWARD, a citizen of the United States, residing at Westerly, in the county of Washington and State of Rhode Island, have invented a new and useful Improvement in Saws, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to saws, and is specially designed as an improvement on the construction shown, described, and claimed in an application for Letters Patent, Serial No. 133,082, filed by me May 27, 1884, and allowed August 12, 1884.

In this application the improvement consists in forming the planing-irons integral with the teeth of an ordinary saw, said irons projecting out from the face of the tooth beyond the line of the blade. In all of the planing-saws which have come to my notice the planing-iron projects out either from the blade or from the teeth beyond the line of the blade, and thus the kerf made will be greater than it is desired.

The object of the present invention is to obviate this objection; and it consists in forming the planing-irons with the teeth by pressing out one side of the latter, said teeth being of thinner steel than the blade, and the cutting-edge of the planing-iron being on a line with the face or side of the blade, whereby I am enabled to provide a planing saw which will make about the same kerf or slit as the ordinary saw.

A further object of the present improvement is to provide an improved manner of constructing the removable saw-tooth, so that the possibility of displacement will be lessened to a considerable degree, and simplifying the attachment in many respects.

With these objects in view the said invention consists in the improved construction and combination of parts, as hereinafter set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a portion of a circular saw-blade with my improvement applied thereto. Fig. 2 is a similar view, showing the teeth with the planing-iron detached from their seats. Fig. 3 is a horizontal section on

the line *x x*, Fig. 1. Fig. 4 is a vertical section on the line *y y*, Fig. 1.

Like letters are used to indicate corresponding parts in the several figures.

Referring to the drawings, A designates a portion of a saw-blade having recesses B formed therein at the outer edge or periphery to provide seats for the teeth. These recesses are formed alternately on opposite sides of the blade, and at such intervals apart as to correspond with the arrangement and number of the teeth. The shape of the recesses is preferably square, having the opposite sides dovetailed, as at *a a*, the bottom wall being flat and the top wall being open to allow the introduction of the shank of the tooth. As will be seen, the recesses do not extend entirely through the blade, but provide a closed wall, *b*, against which the shank of the tooth rests when adjusted in position.

C designates the teeth, made of thinner steel than the blade, and having their shanks D dovetailed or beveled on their sides *d d*, so as to be slid downward into the seats provided by the recesses B, the dovetailed or beveled sides of the shanks fitting neatly the dovetailed sides of the recesses, and thus providing a simple, durable, and efficient connection between the teeth and the blade, and entirely avoiding any sidewise or lateral movement of the teeth. A screw, E, (one or more,) is passed through the shank D at the sides *d* into the wall *b* of the recess B, to strengthen the attachment or connection and provide against outward or upward movement of the teeth.

The teeth C are pressed out on one side, between the shanks D and the projecting cutting-edge of the tooth proper, to provide a planing-iron, F, substantially oblong in form, and having its forward end beveled and sharpened to provide a cutting-edge, *e*. The cutting-edge of the planing-iron is thus in rear of the cutting-edge of the tooth, and also extends or projects laterally from the tooth for the purpose of planing the kerf or slit made by the usual operation of the saw.

It will be seen that by constructing the teeth of thinner steel than the blade the planing-irons formed on the teeth will have their cutting-edges directly on a line with the face or side of said blade, and although the planing-

iron will widen or increase the width or size of the kerf made by the teeth, yet the kerf or slit made in or through the wood by both the teeth and the planing-irons will be no larger
 5 than the kerf made by the saw without the planing attachment. I am not aware that such a saw has heretofore been constructed to produce this effect, and I therefore wish to have it understood that I claim, broadly, this
 10 feature of the present improvement. It will also be seen that by forming the planing-irons with the teeth of the saw (which, however, I do not claim, broadly) I am enabled to sharpen the planing-irons and teeth together, thus
 15 avoiding the trouble and saving the time employed in detaching the parts when the irons and teeth are formed separate and independent of each other.

The top edge of the recesses B is cut off at
 20 *f* in an inclined direction to provide a seat for the base of the planing-iron when the parts are fitted together.

The operation and advantages of my invention will be readily understood from the foregoing description, taken in connection with
 25 the annexed drawings.

The planing-iron and tooth being formed together, are inserted in place and detached at the same time. When they are in proper position, the planing-iron of one tooth projecting
 30 or extending out from one side and the planing-iron of the next tooth projecting out from the opposite side, and so on alternately around the periphery or edge of the saw-blade, it will
 35 be seen that said irons will plane or smooth both sides of the kerf or slit made by the teeth of the saw. Should it be desired to plane only one side or wall of the kerf or slit, this can be
 40 effected by changing the teeth so as to have all the planing-irons extend out from that side of the teeth.

I would have it understood that I do not limit myself to mere details of construction, as such may be varied at pleasure without departing
 45 from the spirit and scope of the present invention.

The improved form of teeth, made of thinner

steel than the blade, may be used on a saw without the planing-irons, if so desired, and I would therefore wish to include the improvement in either connection. 50

Having described my invention, I claim—

1. In a saw, the blade having recesses formed therein at the outer edge or periphery, which recesses do not extend entirely through the
 55 blade, but form a closed wall, in combination with the teeth having their shanks fitted within the recesses against the closed wall, said teeth being pressed out on the same side as the closed wall to provide planing-irons which
 60 have their cutting-edges on a line with the face of the blade, as and for the purpose set forth.

2. In a saw, the teeth pressed out on one side to provide a planing-iron the cutting-edge of which is on a direct line with the face of the
 65 saw-blade, as and for the purpose set forth.

3. In a saw, the combination, with the blade, of the planing-irons having their cutting-edges on a direct line with the face of the blade, as
 70 and for the purpose set forth.

4. In a saw, the combination, with the blade, of the herein-described detachable tooth, made of the same thickness throughout, which thickness is less than that of the blade, as and for
 75 the purpose set forth.

5. In a saw, the herein-described tooth, having its shank, body, and cutting-edge of the same thickness and of thinner steel than the blade, a portion of the tooth being pressed out on one side to provide a planing-iron which has
 80 its cutting-edge on a line with the face of the blade, as set forth.

6. In a saw, the herein-described teeth, constructed of thinner metal than the blade, and carrying planing-irons which have their cutting-edges on a line with the face of the blade,
 85 as and for the purpose set forth.

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

JOSEPH LEDWARD.

Witnesses:

EVERETT BARNES,
 LYNDON TAYLOR.