T. TAYLOR.

Circular Saw.

No. 101,942. Patented April 12, 1870.

FIG. 1.

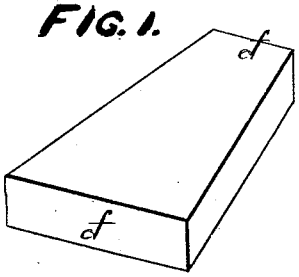


FIG. 2.

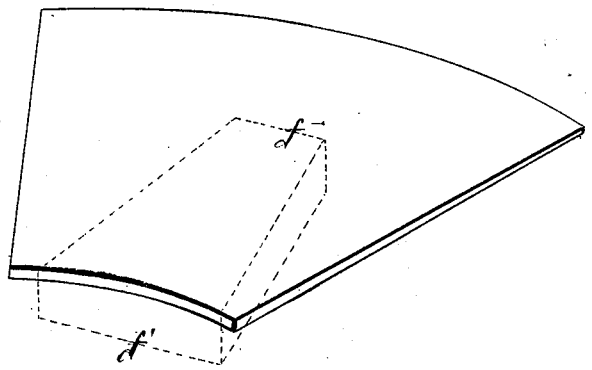


FIG. 3.

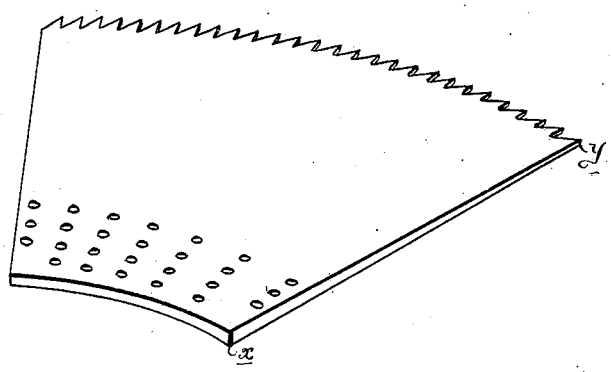
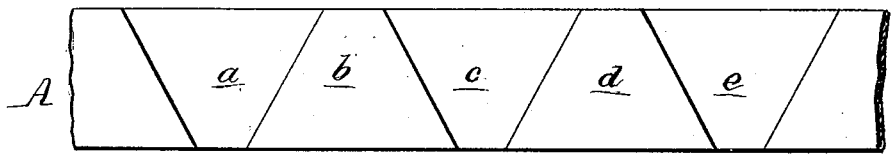


FIG. 4.



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THOMAS TAYLOR, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HENRY DISSTON AND SON.

Letters Patent No. 101,942, *dated April* 12, 1870.

IMPROVED METHOD OF MANUFACTURING CIRCULAR SAWS.

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

I, THOMAS TAYLOR, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improvement in the Manufacture of Sectional Circular Saws, of which the following is a specification.

Nature and Object of the Invention.

My invention consists in the manufacture of segmental tapering plates, from which to form the segments of circular saw-blades, by so rolling tapering slabs of steel that the narrow ends of said slabs shall become, after being rolled, the widest, as fully described hereafter; this method having the advantage of condensing and most thoroughly working that portion of the slab which is to form the cutting edge of the segment, and at the same time of beveling or tapering the said segment toward its cutting edge in the same manner as by the usual tedious grinding process.

My invention further consists of the rolled blades or blanks from which to form the segments.

Description of the Accompanying Drawing.

Figure 1 is a perspective view of the tapering slab of steel from which the segment is to be formed;

Figure 2, a perspective view of the improved plate or blank formed by passing the tapering slab through the rolls;

Figure 3, a perspective view of a finished segment; and

Figure 4, a diagram showing the usual method of cutting the segments from a flat plate of steel.

General Description.

In forming sections or segments of circular saw-blades, such as represented in fig. 3, it has been usual to take a flat plate of steel, A, (fig. 4,) of an even thickness, and to cut it, in such a manner as to avoid waste, into a number of triangular pieces, *a*, *b*, *c*, *d*, &c., corresponding in size and shape to the required segments.

These triangular pieces are trimmed to the exact curve and angle required, and the bolt-holes and teeth formed as shown in fig. 3, and the operation is completed by so grinding the plates on both sides that the segments shall be regularly beveled or tapered from *x* to *y*; in other words, so that the saw-blade, when the segments are joined together, shall be two and a half or three times as thick at the center as at the cutting edge.

This grinding operation requires the attention of a skilled workman for from three to four hours for each segment, wastes more than a third of the metal, and speedily wears away the stone; another objection being that it cuts away the hardened surface of the steel, leaving that portion of the metal which is to form the cutting edge comparatively soft.

All of the above objections I have effectually overcome by forming each segment from a solid block or slab of steel, instead of cutting it from a plate, and by substituting a rolling process for the grinding, my method being as follows:

I take a block or slab of steel which, although it can be made in other ways, I prefer should be reduced to a tapering form, from a cast ingot, under the hammer, as the hammering condenses and toughens the metal, rendering it most suitable for the purpose.

This tapering slab (see fig. 1) I pass between inclined or beveled rolls in such a manner that it shall be spread out to the desired segmental shape, and shall at the same time be beveled on both sides, as by the usual grinding process.

The peculiarity of this rolling, however, as will be observed in fig. 2, is that the narrowest end *f* of the slab is spread by the rolls until it forms the widest, but at the same time the thinnest portion of the segment, while the wide end *f'* of the slab forms the narrowest but thickest portion of the segment.

By this method of rolling, that end of the slab which is to form the cutting edge of the segment is more thoroughly worked and condensed than any other portion, and is at the same time beveled or reduced in thickness as effectually as by the grinding-process, but much more rapidly, and without any of the waste of metal incident to the latter.

The blade or blank, in its rolled but unground and unfinished state, constitutes a new manufacture, which may be disposed of to those who subsequently produce from it the finished segment, the said blank differing from tapering plates produced in the ordinary way in having rolled instead of ground surfaces.

Claims.

1. As an improvement in the manufacture of segmental plates for circular saws, the method hereinbefore described.

2. The segmental tapering plates or blanks, (from which to form segments of circular saws,) having unground rolled surfaces, as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

his
THOMAS + TAYLOR.
mark.

Witnesses:
A. H. SHOEMAKER,
WM. ROWLAND.