JOHN RICHARDS.

Improvement in Band-Sawing Machines.

No. 114,710. Patented May 9, 1871.

FIG. 1.

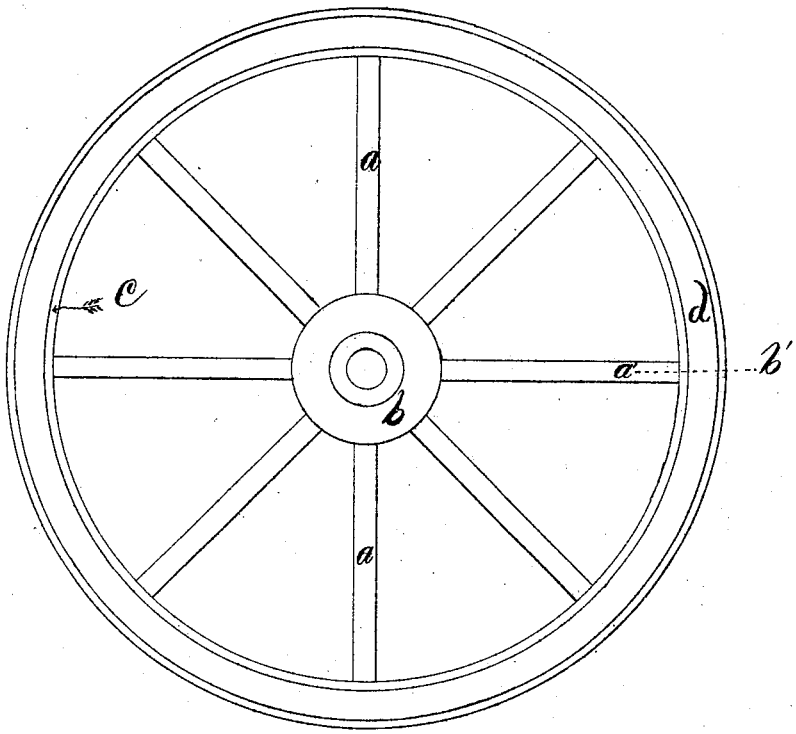
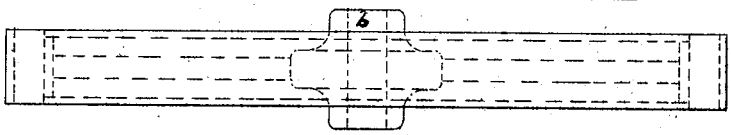


FIG. 2.



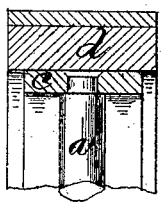


FIG. 3.

WITNESSES

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

JOHN RICHARDS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN BAND SAWING-MACHINES.

Specification forming part of Letters Patent No. 114,710, *dated May* 9, 1871.

To all whom it may concern:

Be it known that I, JOHN RICHARDS, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in the Wheels of Band Sawing-Machines, of which the following is a specification:

This invention relates to the wheels of machines for operating band or endless saw-blades, and to a new and improved method of constructing the same; its objects being to more effectually guard against the breaking of the saw-blades by securing a greater degree of elasticity than in such wheels as hitherto constructed, and a sufficient strength with much less weight and material.

The invention consists, first, in constructing such wheels with inserted spokes of malleable metal of a light cross-section, secured to a central hub and to a bent rim, as hereinafter described; secondly, it consists in a bent metallic rim in combination with the inserted spokes, as hereinafter more fully shown; and, thirdly, it consists in the combination of a bent metallic rim with a second rim of wood and an elastic covering of gum or leather, as shown and hereinafter described.

Figure 1 is a side view of a band saw-wheel constructed on my improved method. Fig. 2 is an edge view of Fig. 1; and Fig. 3 is an enlarged section through Fig. 1, on line *a' b'*.

Similar letters of reference on the different figures indicate corresponding parts of the wheel.

The wheels of band sawing-machines require two important conditions to guard against the danger of breaking the blades—first, perfect elasticity; second, light weight.

The first condition is attained in a measure by suspending the top wheel of such machines on an elastic base, consisting of springs or weighted levers; but as such devices must of necessity be some distance from the line of the saw, and have intervening parts to move, the action is not instantaneous nor effectual.

The second condition of light weight is important in operating narrow blades.

The power being applied to one wheel only, it follows that when started instantly it induces a severe strain on the blade to overcome the inertia and start the top wheel. This resistance to the blade is of course directly as the weight of the wheel, which should be as light as consistent with the strength required.

The wheels forming the subject of this invention are constructed with a hub of cast-iron or brass, bored to receive inserted spokes, which are, by preference, made of rods of iron, as shown in the drawing. These spokes *a a* are driven or screwed into the hub *b*, sufficient in number to sustain the rim and the strain of the same. To the outer end of these spokes *a a* is attached a light metallic rim, *c*, bent to a true circle, and fastened to the spokes in a secure manner. Around this rim is an annular ring of wood, *d*, which is attached to the metallic rim in a manner to sustain and stiffen it. Over this again is a covering of some suitable elastic material, on which the saw runs—leather or gum by preference.

The proportions of these several parts in their cross-section must of course be governed by the width and consequent strain of the saw-blade.

The whole, when completed, forms reliable joints, and obviates the uncertain joint of gluing the elastic covering to iron, the wood being fastened by screws and rivets to the metallic rim, and the outer covering being glued to the wood, as shown.

I do not claim, broadly, a wheel constructed, as herein shown, with inserted spokes, such wheels being well known and used; but

What I claim, and desire to secure by Letters Patent, is—

A wheel composed of a metallic hub, spokes, and rim, the latter surrounded by a layer of wood, which is itself covered by an elastic layer of leather, rubber, or similar material, the whole being constructed as and for the purpose herein shown and described.

JOHN RICHARDS.

Witnesses:

WM. S. KELLEY,

GEO. RICHARDS.