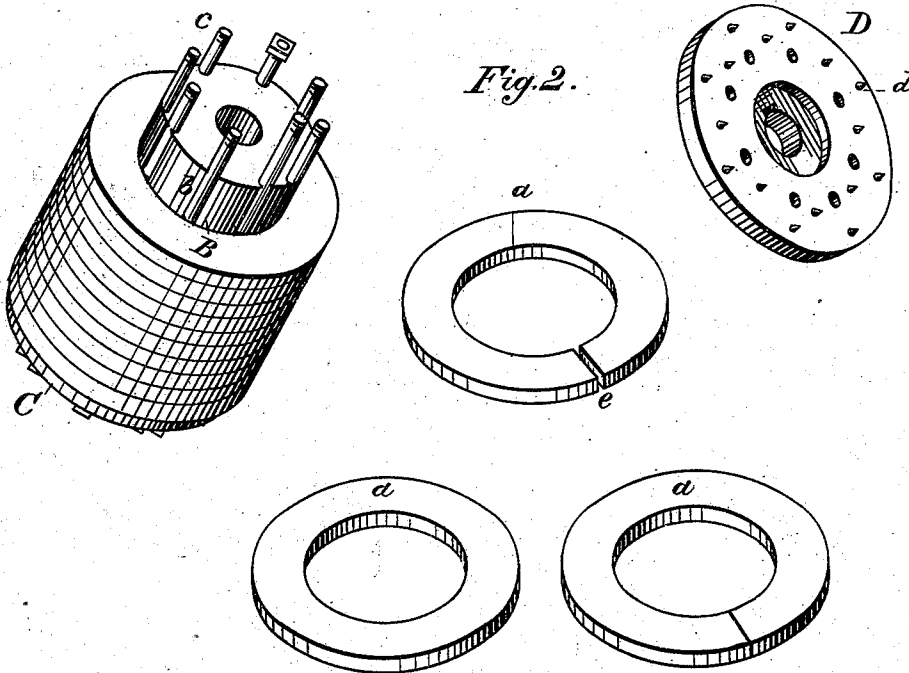
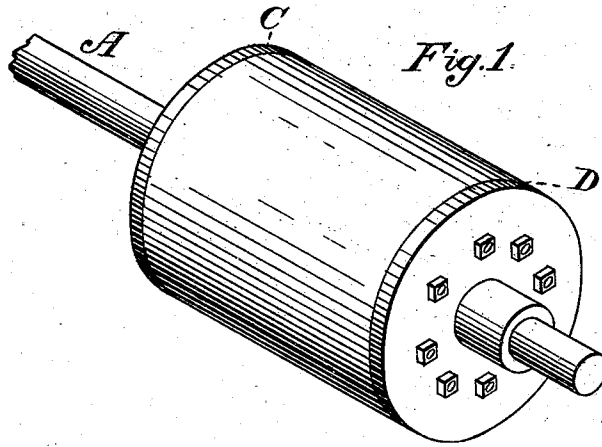


A. RODGERS.

FRICTION-WHEELS FOR SAW-MILLS.

No. 192,016.

Patented June 12, 1877.



Attest:
J. H. Schott.
M. Meyers

Inventor:
Alexander Rodgers.

UNITED STATES PATENT OFFICE.

ALEXANDER RODGERS, OF MUSKEGON, MICHIGAN.

IMPROVEMENT IN FRICTION-WHEELS FOR SAW-MILLS.

Specification forming part of Letters Patent No. **192,016**, dated June 12, 1877; application filed December 28, 1876.

To all whom it may concern:

Be it known that I, ALEXANDER RODGERS, of the city of Muskegon, county of Muskegon, and State of Michigan, have invented certain new and useful Improvements in Friction-Wheels for Saw-Mills, of which the following is such a full, clear, and exact description as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Similar letters indicate corresponding parts in the different figures.

The object of this invention is to obviate the difficulty experienced by mill men and manufacturers of saw-mill machinery arising from the frequent renewals required of the paper rings forming their working surface. These rings, owing to the great heat engendered by the slipping of the paper surface upon a metal-faced pulley, are frequently destroyed, and, owing to the fact that the bolts passing through the metal sides of the wheel for holding it together also pass through the paper rings, causing much time to be wasted in boring them, as well as loss of material from the great width of the rings, made necessary by the boring of the bolt-holes through them; and, further, that it is necessary to remove the whole wheel from the machine in which it works in order to make these changes. All of these difficulties are overcome by my improved method of constructing the wheels; and my invention consists, therefore, in the construction and arrangement of the different parts of the wheel, as will be hereinafter fully set forth, and then specifically pointed out in the claim.

Figure 1 of the drawings shows the wheel in working order upon its shaft. Fig. 2 exhibits the same removed from the shaft and partly taken to pieces.

In constructing this device the hub B is formed in one piece with the flange C, the hub being bored out to suit the diameter of the shaft A, upon which it is to be placed. A series of grooves, *b*, are then formed in the hub of sufficient depth to receive the bolts *c*, so that they shall not project beyond its periphery. These grooves are extended by orifices

which pierce the flange C and allow the passage of the bolts *c* through them, and also through the grooves.

An additional flange or follower, D, is provided, pierced with holes corresponding to those in the flange C and the grooves in the hub, so that the bolts may pass without interruption through both flanges and the grooves in the hub. This follower is further pierced with an orifice of the same size as the shaft upon which the friction-wheel is to be placed, thus giving it support directly therefrom, and is not, as is the common practice, bored to fit the hub B, upon which the frictional surfaces are supported. Both the flange and follower are provided on their inner surface with a series of projecting points, *d*, which enter into and assist in holding the rings *a* in place. Between the two flanges and surrounding the hub are placed a series of concentric rings, *a*, formed of thick paper, or what is commonly termed "mill-board." This is impregnated with emery, ground glass, or other similar material, by mixing it with the pulp of which the paper is made; or the same result may be produced by placing a layer of these materials between the layers of paper in making up the wheel, experience having demonstrated that the application of abrading substances in this manner causes the friction-wheels to catch quickly and drive steady, with a great decrease in the amount of slip as well as heat.

In applying a new set of rings to the wheel without removing it from its shaft or from the machine, the nuts upon the bolts *c* are removed, so as to allow the follower D to be slipped back upon the shaft. The old rings are then removed and the new ones put in their places, by cutting them, as shown at *e*, at Fig. 2, springing the cut ends apart sideways, so that it may be slipped over the shaft, then turning it and putting it in its proper place upon the hub. After the hub is filled with rings, the follower is put in place and the nuts upon the bolts *c* screwed up tightly, which operation is several times repeated, being rendered necessary by the shrinkage of the paper under the heat and pressure to which it is exposed when in use.

It will be obvious that in the first application of the rings, or in renewing them when

the wheel is removed from the machine, the cutting would be unnecessary, as they can be put on over the end of the shaft and hub.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent of the United States, the following:

1. The hub B, provided with the flange C and grooves *b* for the reception of the bolts *c*, as and for the purpose shown and described.

2. The hub B, provided with the flange C and grooves *b*, in combination with the rings *a*, follower D, and bolts *b*, substantially as and for the purpose specified.

3. In a friction-wheel, as described, the rings *a*, impregnated or interleaved with emery or other abrading material, as and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature this 17th day of November, 1876.

ALEXANDER RODGERS.

Witnesses:

M. F. E. CHANDLER,
E. S. LATIMER.