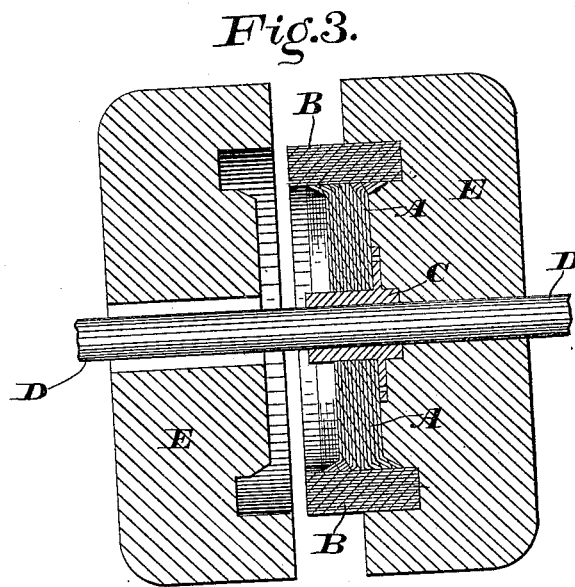
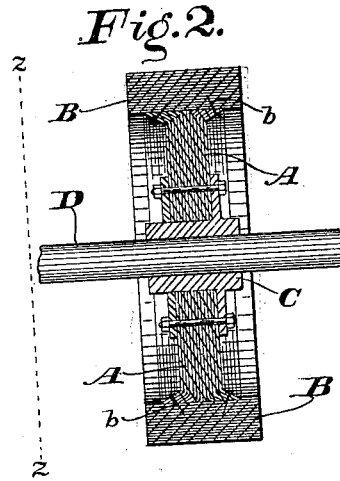
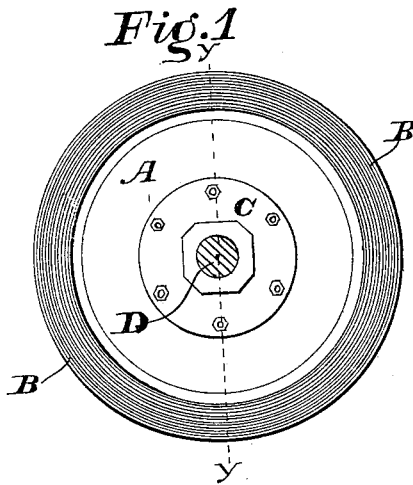


(No Model.)

E. B. MARTINDALE.  
WHEEL OR PULLEY.

No. 266,708.

Patented Oct. 31, 1882.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

ELIJAH B. MARTINDALE, OF INDIANAPOLIS, INDIANA.

## WHEEL OR PULLEY.

SPECIFICATION forming part of Letters Patent No. 266,708, dated October 31, 1882.

Application filed August 21, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ELIJAH B. MARTINDALE, of the city of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Wheels or Pulleys, of which the following is a specification.

The object of my said invention is to produce an improved pulley or wheel which shall be adapted to be used as a belt or friction pulley for machinery, as the body of an emery-wheel, and for various other purposes. This object is accomplished by placing layers or disks of paper or pasteboard together to form the web of the wheel, and surrounding the same by other layers to form the rim thereof, and subjecting the whole to pressure, as will be hereinafter more particularly described.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a side elevation, as seen from the dotted line *z z* in Fig. 2, of a pulley embodying my said invention; Fig. 2, a central vertical section thereof longitudinally of its axis on the dotted line *y y* in Fig. 1, and Fig. 3 a view showing the pulley and the die which surrounds it in section on the same line as Fig. 2.

In said drawings, the portions marked A represent the web of my improved wheel or pulley; B, the rim thereof; C, the hub; D, the shaft on which the same is mounted, and E the dies for pressing the same.

The web A is composed of a number of layers of pasteboard or paper cut in circular form, with a hole for the hub through the center, and are preferably of somewhat greater diameter than the finished web is to be, so that the ends may be spread out when subjected to pressure, and thus form a broader connection with the rim, as shown most plainly in Figs. 2 and 3.

The rim B is formed of sheets of the desired width of said rim, wound around those forming the web until the required thickness is obtained, as shown. The sheets in both the web A and rim B are moistened, and an adhesive substance spread over them before being laid together, so that when pressure is applied they may be made more compact and caused to adhere together better than they otherwise would.

Wires or staple-fastenings may also be used to bind the several sheets together.

The hub C is preferably octagonal or square, or some other form not round, in order that the body of the pulley, when completed and placed thereon, shall the better maintain its position. The flanges of the hub are secured to the web of the pulley by bolts, as shown. The hub proper and the flange which is constructed integral therewith are placed in the die before the pressure is applied, as shown. The loose flange is applied afterward.

The shaft D is simply an ordinary shaft for such purposes.

The dies E are adapted, when brought together, to force the layers of paper into a compact mass.

My said invention is practiced in the following manner: The several sheets of paper or pasteboard necessary to form the pulley are dampened, pasted, and placed in proper position upon the hub. Said hub and the sheets thereon are then placed in the dies, and said dies are then brought together by heavy pressure, a hydrostatic press being preferred. This forces the sheets together in a solid mass having a grain which corresponds to the position of the sheets as originally placed, except that the top of the web is pressed out somewhat, as shown in Fig. 2, in order to give a better connection between it and the rim. If it is found desirable, staples, wires, or nails *b* may be inserted to more securely hold the web and rim together, as also shown in Fig. 2. It is desirable during this operation of pressing that heat should be applied in order to more thoroughly dry out the moisture from the material of which the pulley is composed.

To make an emery-wheel of this pulley it is only necessary to apply the emery to the outside of the wheel in the ordinary well-known manner.

I am aware of the constructions used in paper car-wheels, and therefore disclaim all such constructions. I am also aware that a patent has been issued for a pulley formed from pulp, and disclaim it also, my invention being simply as stated—a wheel the hub of which is formed of sheets of paper or pasteboard with their edges toward the periphery of the wheel, and the rim of which is formed of similar sheets

wound around the same, whereby the grain of the several parts of the pulley, when completed, is in the direction to best resist the working strain.

5 In constructing this wheel, instead of using dies or molds, as has been hereinbefore described, there may be used calendering-rolls, which will press the sheets successively upon one another, and thus build up a wheel by degrees, instead of pressing it altogether. I do  
10 not therefore confine myself to means for producing the wheel, but only to the wheel as produced.

15 Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A pulley or wheel constructed of layers or disks of paper or pasteboard forming the web, and other layers surrounding the web to form  
20 the rim, the whole being solidified by pressing, substantially as set forth.

2. The process of forming a pulley or wheel, which consists in laying up a web of sheets of

pasteboard or paper, surrounding said web with a rim composed of other sheets, placing the whole in dies, and subjecting the same to pressure, substantially as set forth. 25

3. A wheel or pulley the web of which is constructed of sheets of paper or pasteboard which extend from the hub toward the periphery of the wheel, and the rim of which is constructed of other sheets wound around the outer edges of the web, in combination with said hub, and means for attaching said web to said hub, substantially as set forth. 30

4. The combination of the web A, rim B, and hub C, said several parts being constructed and arranged substantially as set forth. 35

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 17th day of August, A. D. 1882. 40

E. B. MARTINDALE. [L. S.]

In presence of—

C. BRADFORD,

E. W. BRADFORD.