

(No Model.)

W. J. INNIS.
WHEEL AND PULLEY.

No. 283,397.

Patented Aug. 21, 1883.

Fig. 1.

Fig. 2.

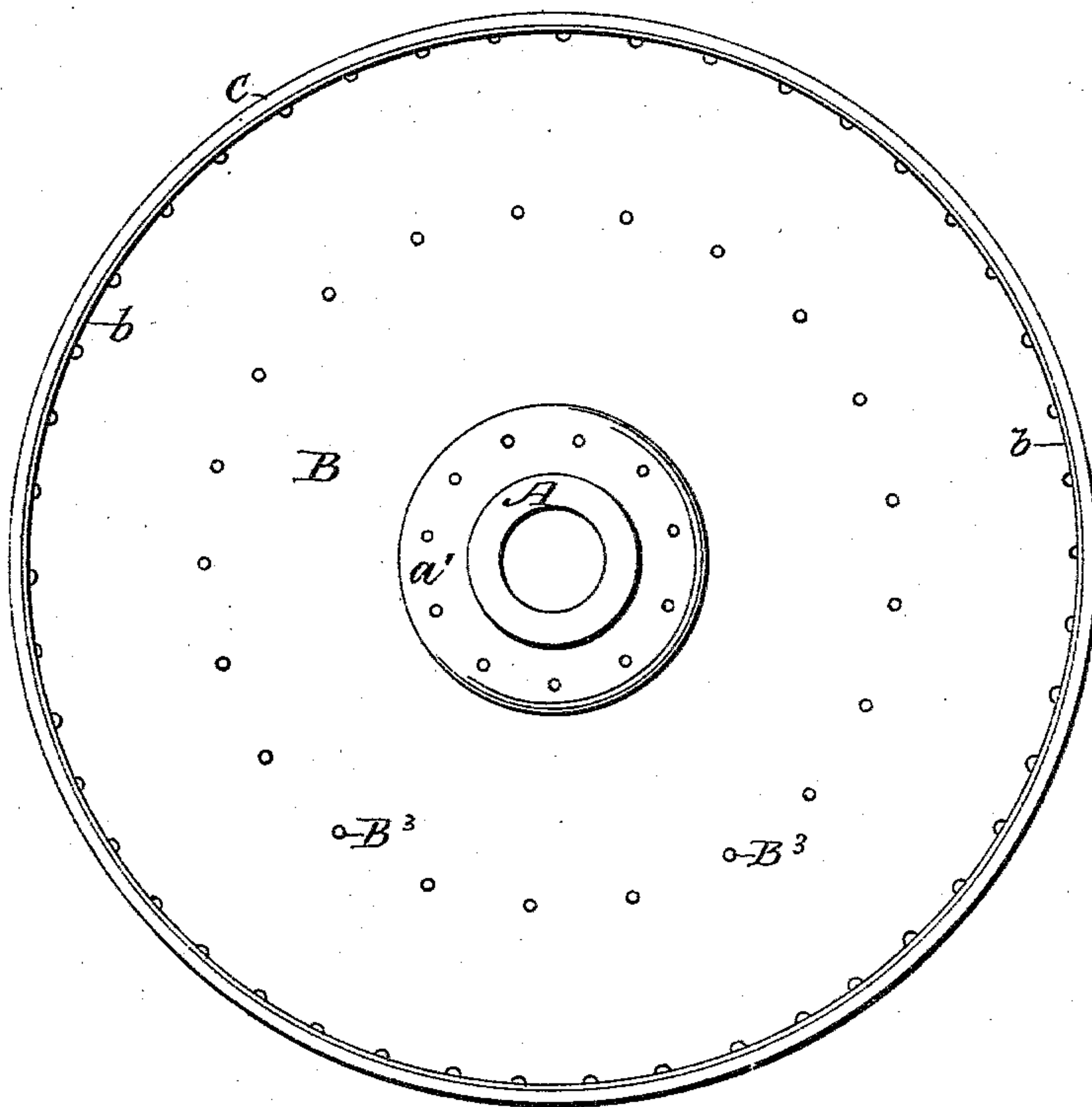
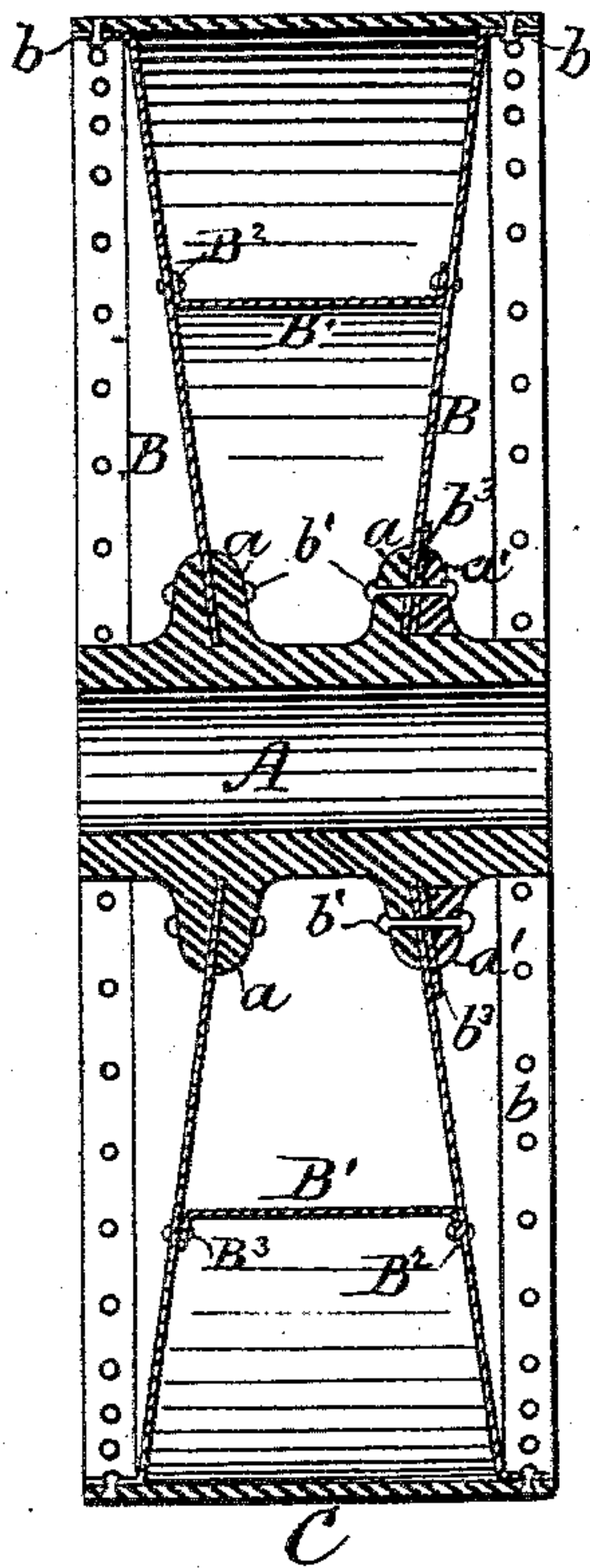
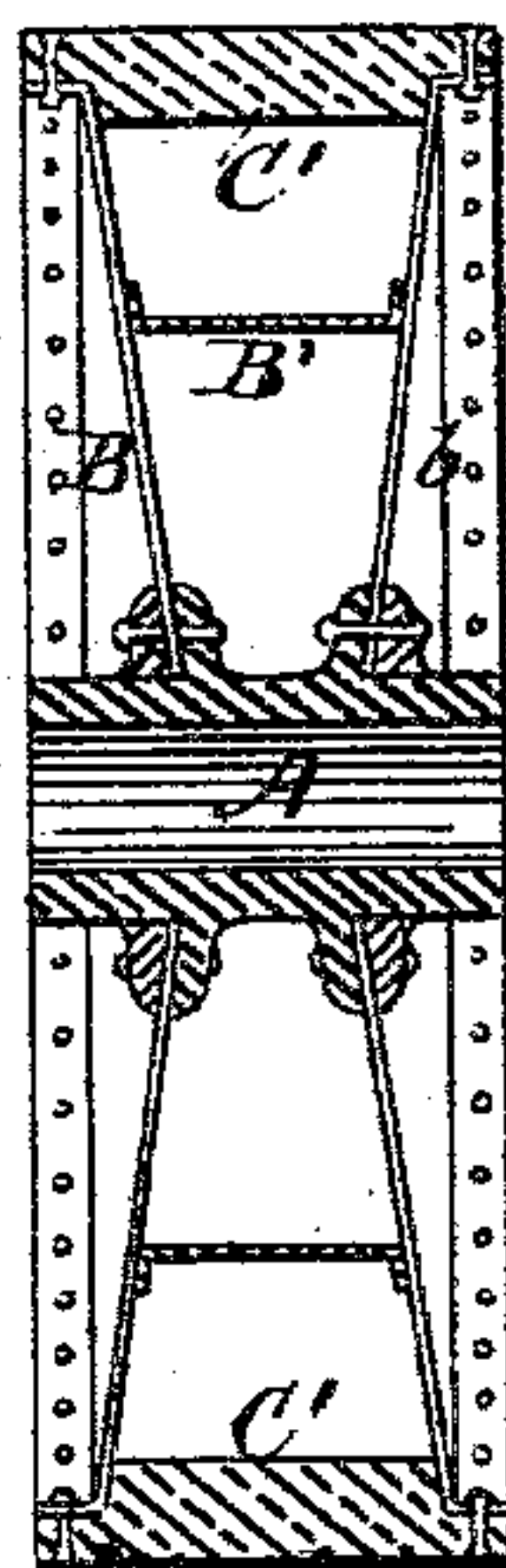
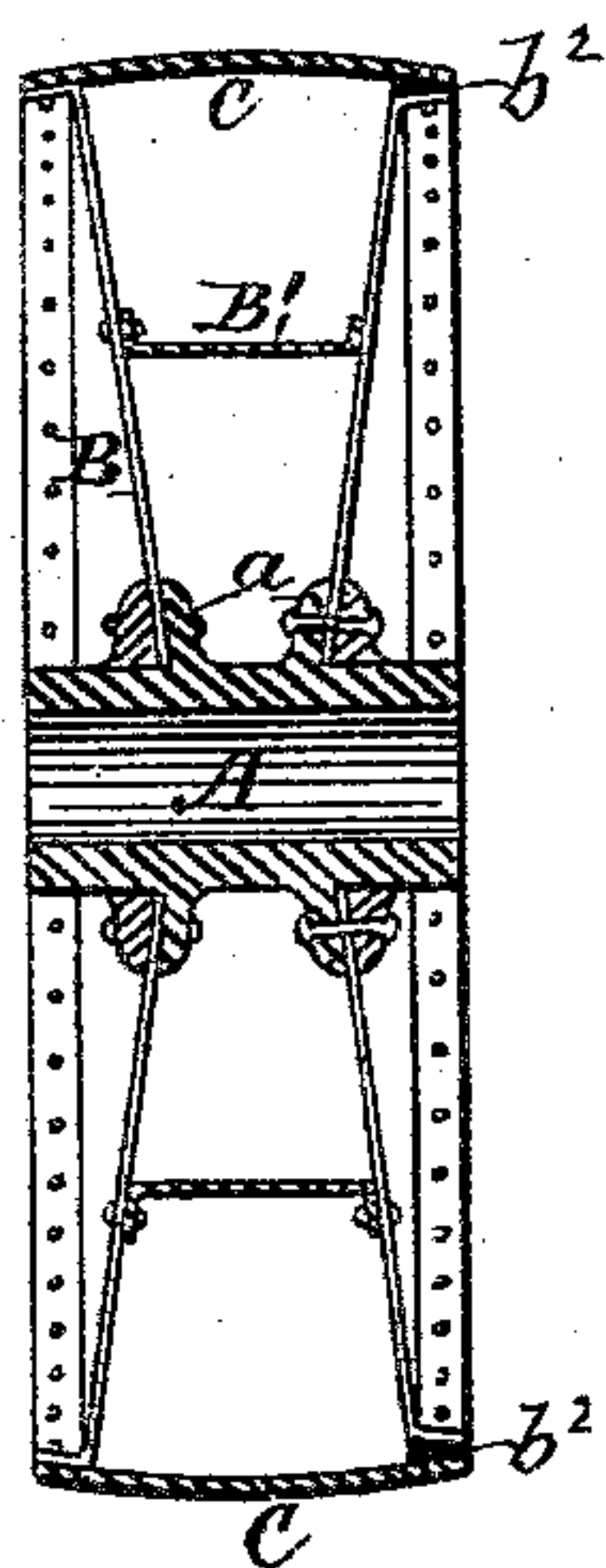


Fig. 3.

Fig. 4.



Witnesses

W. B. Masson

L. C. Hills

Inventor:

William J. Innis

by E. E. Masson
att'y

UNITED STATES PATENT OFFICE.

WILLIAM J. INNIS, OF OIL CITY, PENNSYLVANIA.

WHEEL AND PULLEY.

SPECIFICATION forming part of Letters Patent No. 283,397, dated August 21, 1883.

Application filed March 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. INNIS, a citizen of the United States, residing at Oil City, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Wheels and Pulleys, of which the following is a specification.

My invention relates to wheels and pulleys used for belting for machinery and for other mechanical purposes, the object being to construct such pulleys and wheels of thin metal and in such a manner that they shall not only be light, but strong and serviceable; and my invention consists in certain features of construction, hereinafter described, and specifically set forth in the claims.

Referring to the accompanying drawings, forming a part hereof, Figure 1 is a vertical section; Fig. 2 a side elevation, and Figs. 3 and 4 modifications of a wheel or pulley constructed in accordance with my invention,

Like letters refer to like parts in all the figures.

The hub A consists of a casting suitably bored to fit a shaft. Upon the outer surface of the hub and cast integral therewith are two ribs or flanges, *a*, which extend completely around. These flanges have their outer face dressed to receive two disks, B, which are dished or concaved, and provided with circumferential flanges *b*, turned outwardly. The outer face of the ribs or flanges upon the hub A are concaved to conform to the dish shape of the disks B. These disks may be secured to the hub by placing them in a suitable mold and casting the metal intended for said hub in contact with the central portion of said disks; or they may be secured to the ribs or flanges *a* by rivets or bolts *b'*, passing transversely through said ribs *a*. The disk B and clamping-rings *a'* upon the hub, and the inner ribs, which, in such a case, would be formed integral with the hub, may be screw-threaded, and bolts inserted from the outside of the rings *a'* through the same into the screw-threaded ribs.

B' is a hoop of sheet metal having circumferential flanges *B'*, extending outwardly to conform to the flare or dish shape of the disks B. This hoop B' is secured to the disks B by rivets *B'*. The face plate or rim C of the pulley is secured to the outer faces of the flanges *b* by shrinking on or by rivets, as clearly shown,

and as the edge of the flanges extend flush with the end of the rim the latter is well supported, and the edge of the pulley is made to appear thicker. The rim C may be flat, as shown in Fig. 1, or crowning, as shown in Fig. 3, the flanges on the disks B being conformed thereto on the left side of said figure, while on the right side a beveled ring, *b'*, having one edge thicker than the other, is used between the flange of the disk and the face plate or rim C.

If desired to produce a pulley having a face of wood laggings, or a cast-metal face, or any face thicker than those shown in Figs. 1 and 3, such face may be provided with an inwardly-projecting shoulder, C', adapted to fit the flare and flanges of the disks B.

By the construction thus far described it will be seen that the interior hoop, B', greatly strengthens the structure of the wheel, as it acts as a tie-rod and brace between the disks B. Therefore it is apparent that various modifications may be made in the details of construction without departing from my invention. For example, instead of making the hoop B' continuous, it may be made in detached sections having flanges or angle-irons, said sections extending a quarter (more or less) around the hub A, and braces made of bar-iron may be used for the same purpose. In case the flanges are dispensed with upon the hoop or sections thereof, perforations may be made through the disks B to receive lugs or projections formed on the hoop or hoop-sections. This construction would resist pressure exerted inwardly against or by the disks. To resist pressure exerted outwardly the lugs formed upon the hoop-sections may be turned against the outer surface of the disks, or headed or upset in the perforations therein. These disks may also be provided with hand-holes or other perforations to facilitate their construction, or for the purpose of lightening the disks, as they are intended to be of light sheet-metal, they may also be strengthened by having flat rings or large washers *b''*, of a diameter not less than the flanges *a* and *b* of the hub, soldered around their inner edge to resist the tension of the rivets. The outer periphery of the hub should also be turned true, so that the eye of the disk will fit closely thereon.

I am aware that pulleys have been made

with a cast-metal hub, a sheet-metal rim, and disks of sheet metal having their outer edge flanged over the rim thereof; but their construction differs from mine.

5 Having described my invention, what I claim is—

1. In a wheel or pulley, the combination of a hub, disks secured to the same, and intermediate bracing or strengthening hoop, or
10 its described equivalent, and a rim or face, the whole being secured together, substantially as specified.

2. The hub A, provided with the ribs *a*, the disks B, the hoop or braces B', secured to and
15 between the disks and the face C, substantially as specified.

3. In combination with the rim of a pulley, concaved disks, having circumferential flanges turned outwardly and extending flush with
20 the edge of said rim, whereby the edge of the pulley is increased in thickness and is supported, substantially as described.

4. In a crown-faced pulley, the combination of a rim and disks with the ring or hoop *b*², placed between the flange of the disks and the
25 rim of the pulley, and having its inner edge thicker than its outer edge to conform to the crown of the rim or the face of the pulley, substantially as described.

5. The disks of a pulley thickened around
30 the eye or center hole by means of washers soldered or brazed, in combination with a hub, substantially as specified.

6. A pulley constructed with a cast hub, wrought-metal disks, and wood rim, substan-
35 tially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WM. J. INNIS.

Witnesses:

R. D. O. SMITH,
E. E. MASSON.