

D. G. LANGLANDS.
PULLEY.
APPLICATION FILED DEC. 16, 1908.

1,009,535.

Patented Nov. 21, 1911.

2 SHEETS—SHEET 1.

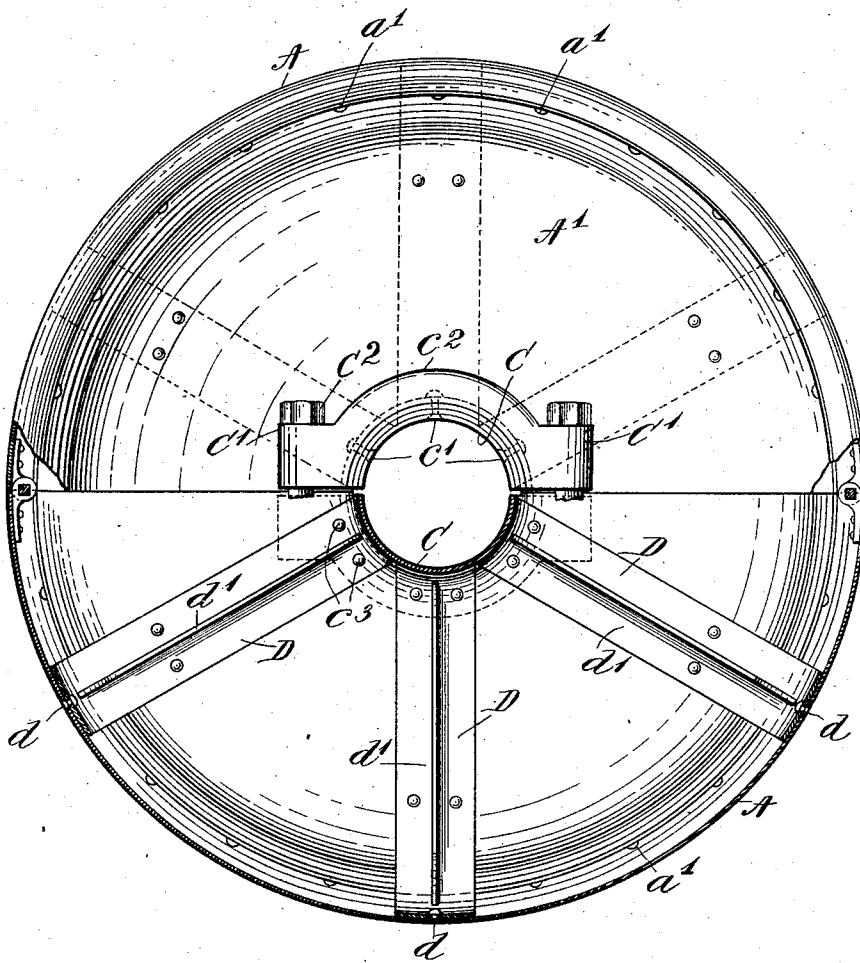


FIG. 1.

WITNESSES:

M. E. Flaherty.
W. P. O'Brien.

INVENTOR:

Daniel G. Langlands
By *Charles E. Langlands*
his atty.

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2 SHEETS-SHEET 2.

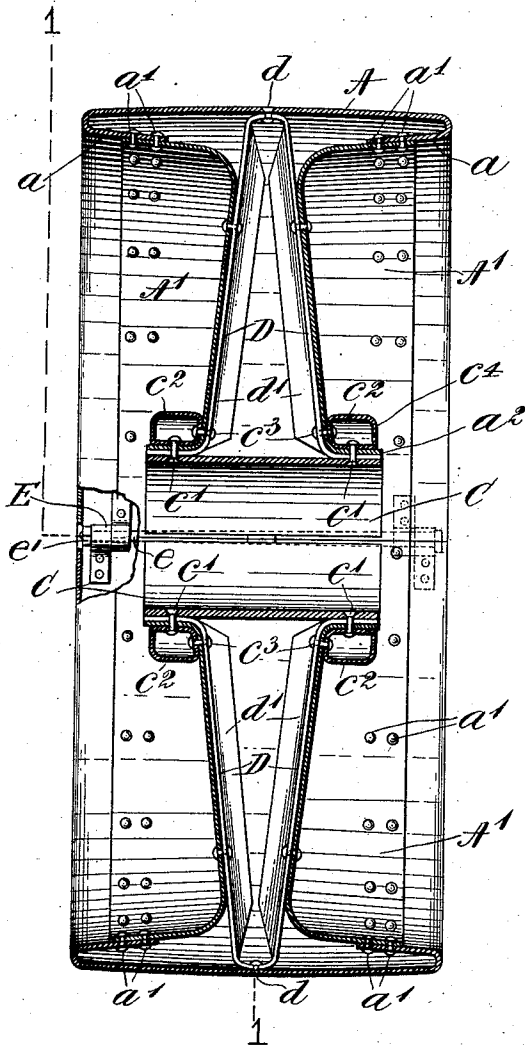


FIG. 2.

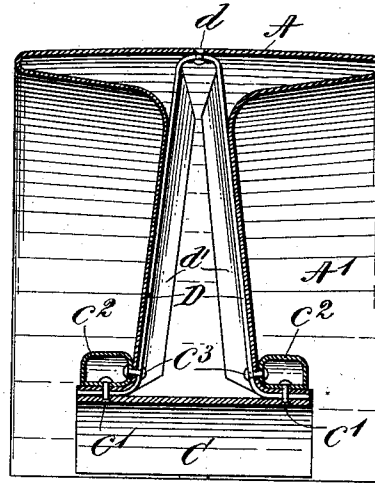


FIG. 3.

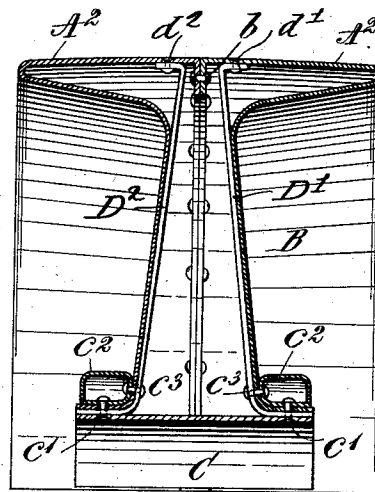


FIG. 4.

WITNESSES:

M. E. Mahony
W. P. O'Brien

INVENTOR:

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UNITED STATES PATENT OFFICE.

DANIEL G. LANGLANDS, OF MELROSE, MASSACHUSETTS, ASSIGNOR TO WORCESTER PRESSED STEEL PULLEY COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

PULLEY.

1,009,535.

Specification of Letters Patent.

Patented Nov. 21, 1911.

Application filed December 16, 1908. Serial No. 467,763.

To all whom it may concern:

Be it known that I, DANIEL G. LANGLANDS, of Melrose, in the county of Middlesex and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Pulleys, of which the following is a specification.

My invention relates to pulleys pressed or otherwise shaped from sheet metal. Such pulleys have been stiffened at their edges by tubular flanges sometimes strengthened by a rod or wire, spokes being provided to support the rim about the hub. This construction is more or less objectionable because it provides a pocket formed by the inner surface of the rim of the pulley between the flanges into which dust and lint are drawn and which therefore requires quite frequent cleaning, the spokes aiding in that they suck in the air carrying dust and lint. Moreover the spokes afford serious danger to careless mechanics working about such pulleys.

My invention is intended to overcome these faults and at the same time produce a pulley which is easier and cheaper to construct than those now in general use.

It consists in a pulley in which the parts may be struck from sheet metal and provided with spokes or braces of suitable shape between the hub and the rim.

My invention will be understood by reference to the drawings in which my invention is shown embodied in various forms.

Figure 1 is a side view partly in section of such a wheel, the view being taken on line 1—1 of Fig. 2. Fig. 2 is a diametrical section of the same wheel. Figs. 3 and 4 show modified forms of construction.

The face of a wheel embodying my invention may be made of two parts or of one part according to the size of the wheel or any other controlling factor which may appeal to the maker.

In Figs. 1, 2 and 3 the face or rim of the wheel comprises one piece which in Figs. 1, 2 and 3 is lettered A. Referring to Figs. 1 and 2 this piece A is bent inward as at a to form the width of the rim of the wheel and its edge is riveted as at a^1 to the edge of a web A^1 which in turn is riveted to the hub C. The hub as well as the wheel as a whole is made in two sections, each section of the wheel being riveted or otherwise attached to its own section of the hub, and

the two sections of the wheel as well as the hub being similar in structure. Each section of the hub carries projections C^1 which are opposite each other when the hub is put together. Each projection is provided with an opening to receive a screw or bolt C^2 by which the hub as a whole is clamped about a shaft and hence the parts made into a complete wheel or pulley.

In Figs. 3 and 4 the web is made in one piece with the adjacent portion of the rim and in any case is approximately semi-saucer-shaped, fitted at the center for attachment to a section of the hub. For this purpose in the various forms of my invention shown the edge of the web which is to engage the hub, is bent outwardly as at a^2 and is then riveted to the hub by rivets c^1 . I prefer to provide a strip of sheet metal c^2 through which the rivets c^1 pass and which is riveted to the web by rivets c^3 . This strip c^2 is bent over after riveting as at c^4 so as to cover the rivet heads and prevent any collection of dust and lint thereon.

D, D, Figs. 1, 2, and 3, are strengthening ribs or spokes which are preferably made as shown in the drawing though I do not limit myself to that exact construction. As shown in said figures each rib is U-shaped, the loop of the U being riveted as at d to the rim of the wheel, its ends passing down and under the edges a^2 of the web, being riveted to the hub by the rivets c^1 as shown in Figs. 1, 2 and 3. Each rib D is preferably strengthened by a web d^1 .

As will be obvious the strengthening ribs or spokes may be of any suitable shape other than that specifically described, and may be constructed as separate parts or united together to form one or more integral strengthening members as preferred.

Instead of making the rim and web in two parts as shown in Figs. 1 and 2 they may be made integral as shown in Fig. 3 in which the other details of construction are as shown in Figs. 1 and 2.

If desired the wheel may be made with a divided rim as shown in Fig. 4 where each web A is bent outward and backward upon itself as at A^2 and is provided with a flange B. In assembling the parts of this wheel the two flanges B are riveted together by rivets b , attachment to the hub being afterward effected. As shown in this figure the

strengthening ribs or spokes are formed in two parts, D^1 and D^2 , secured respectively to the rim by rivets d^1 and d^2 and to the hub C by rivets c^1 in substantially the same manner as the ribs or spokes D above described.

The details of my wheels may be varied somewhat without departing from my invention. Such a construction makes it possible to die out the various parts of the wheel and rivet them together with comparatively little labor and at the same time to make a wheel or pulley which is light and yet sufficiently strong for all ordinary purposes.

I prefer to hold the sections of the rim by lugs E having eyes arranged preferably two at each edge of the rim, one being on one section and the other on the other section. These lugs overlap and are bored to form eyes each of which is slightly smaller than the one next it to form a graduated passage smaller at one end than at the other. A tapering key e is drawn through these eyes and locked in place by a nut e^1 which screws onto the threaded end of the key.

I have herein shown several forms in which my invention may be embodied, but it will be observed that in each form shown each section of the wheel is constructed of a substantially unitary sheet of metal, which may be either a single, integral sheet or may be built up of a plurality of pieces permanently, rigidly, and positively secured together, as by riveting or welding, to form in effect an integral sheet, whereby slipping or separation of the parts is prevented. Said sheet is preferably continuous or unbroken throughout, but it will be obvious that the strength and utility of the wheel will not be seriously impaired by cutting out certain

parts thereof should the conditions of use or the fancy of the maker so require.

What I claim as my invention is:—

1. The wheel above described comprising a hub, a portion constructed of a substantially continuous sheet of metal including a rim and webs supporting said rim on said hub, and radial supporting ribs engaging said rim and connecting with said hub and serving to brace the center of said wheel as described.

2. The wheel above described comprising a hub, a rim, webs supporting said rim on said hub and radial strengthening ribs, the outer ends of said ribs engaging said rim midway between its edges and the inner ends of said ribs being connected to the hub near its outer edges as set forth.

3. The wheel above described comprising a hub, a rim, webs supporting said rim on said hub and radial, U-shaped strengthening ribs, the loop of each rib engaging said rim and the legs thereof spreading and being connected to said hub near its edges as set forth.

4. The wheel above described comprising a hub, a rim, means for supporting said rim extending from the edge thereof inwardly to approach each other and then outwardly to meet the outer edges of the hub forming an inclosed chamber becoming gradually larger as it approaches the hub and radial strengthening ribs engaging said rim, said rim supporting means and said hub as described.

DANIEL G. LANGLANDS.

Witnesses:

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W. P. O'BRIEN.