(No Model.)

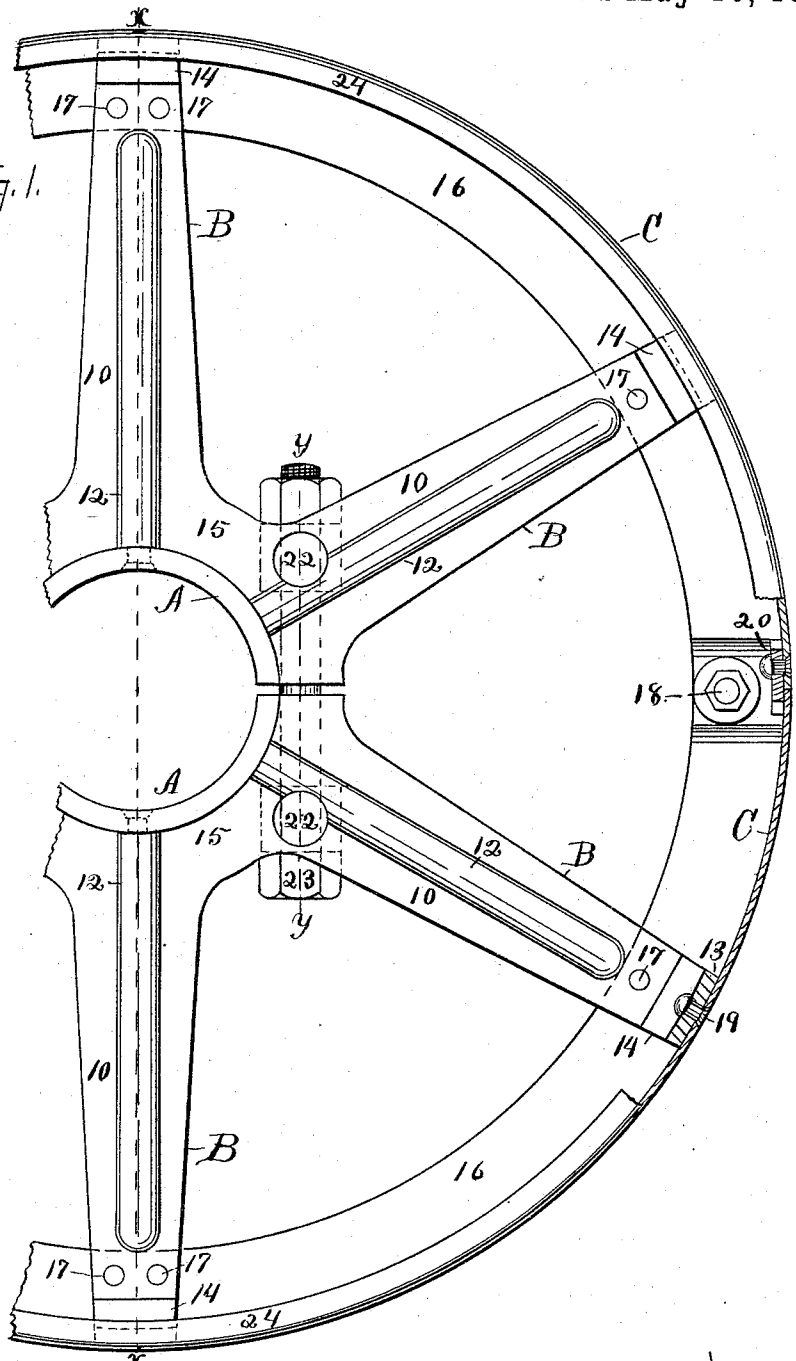
2 Sheets—Sheet 1.

T. CORSCADEN.

SHEET METAL PULLEY.

No. 474,546. Patented May 10, 1892.

Fig. 1.



Witnesses.
Hilmer Svenson.
John Edwards Jr.

Inventor.
Thomas Corscaden.
By. James Shepard
Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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No. 474,546. Patented May 10, 1892.

Fig. 2.

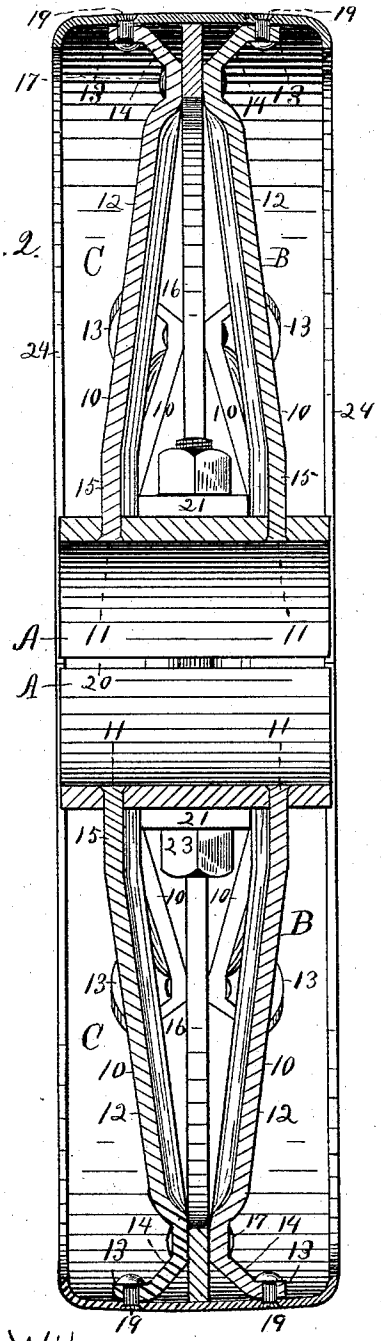


Fig. 3.

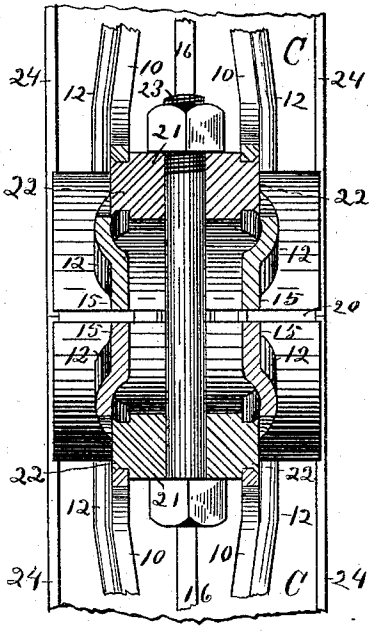
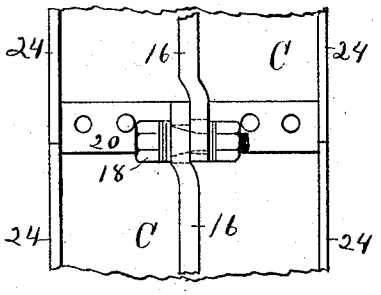


Fig. 4.



Witnesses.
Hilmer Svenson.
C. Darwin Loomis Jr.

Inventor.
Thomas Corscaden.
By. James Shepard
Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS CORSCADEN, OF NEW BRITAIN, CONNECTICUT.

SHEET-METAL PULLEY.

SPECIFICATION forming part of Letters Patent No. 474,546, dated May 10, 1892.

Application filed August 11, 1891. Serial No. 402,337. (No model.)

To all whom it may concern:

Be it known that I, THOMAS CORSCADEN, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Sheet-Metal Pulleys, of which the following is a specification.

My invention relates to improvements in sheet-metal pulleys; and the objects of my improvements are simplicity and cheapness in construction and convenience and efficiency of the article, particularly in fastening the pulley to a shaft.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of the major portion of one of my pulleys. Fig. 2 is a sectional view of the same on the line *x x* of Fig. 1. Fig. 3 is a sectional view of the middle portion of the same on the line *y y* of Fig. 1, and Fig. 4 is an inside view of the rim portion at the lap.

I prefer to make my pulley in separate parts or halves, whereby it may be attached to a shaft at any desired point without taking down the shaft or removing any of the pulleys therefrom. A A designate half-shells of semicylindrical form, which constitute the central portion of my pulley. They may rest directly upon the shaft or upon a solid or split bushing on the shaft. I form sets of three single arms 10 of the compound spokes B and a connecting-web 15 at their inner ends, all of one piece of sheet metal. These may be blanked out by cutting the same from a flat piece of sheet metal, with the single arms radiating and separated in substantially the form shown in Fig. 1. This view, however, shows only the central arm and one on the right, but the arm on the left is a duplicate of that on the right. If desired, the spoke-arms and connecting-web may be formed partly by cutting and partly by bending. In all cases the connecting-web is less than a complete disk, so as to have two ends, and the spoke-arms project from one edge thereof at points between said ends. The inner edge of the connecting-web of the spoke-arms may be provided with one or more lugs, as at 11, Fig. 2, and, as indicated by broken lines in Fig. 1, for securing the half-shell thereto. If desired, the single arms of the spokes may be provided with a longitudinal strengthening-bead 12. The outer end of each single spoke-arm is bent laterally at about right angles to its flat sides to form fastening-lugs 13, from which lugs the metal extends obliquely in the form of a short brace 14, then radially a short distance in a flat form, and then slightly obliquely toward the same side that its lug 13 is bent until it nearly or quite meets the connecting-web 15 at the inner end, said web standing in a radial position. These spoke-arms are placed face to face, with the two-part arched strengthening-rib 16 of flat sheet metal placed between their outer ends and secured together by rivets 17, that pass through said arms and rib, as best shown in Fig. 2. The strengthening-rib may be cut out from sheet metal in its curved form or be bent into form from a flat bar. I offset their ends a little, so that they may lap and be secured together by the bolt 18, as shown in Figs. 1 and 4.

I form the rim C of two flat pieces of sheet metal bent into semicircular form, with the edges turned in to form inwardly-projecting side flanges 24, and I secure the same to the spokes by rivets 19, passing through said rim and the lugs 13 of the spokes. The middle portion of the rim C rests upon the outer edge of the strengthening-rib. The confronting ends of the rim C are made to abut squarely against each other, and as devices for holding said ends in their proper position I prefer to provide one of said abutting ends with a rabbet strip or plate 20, secured thereto by rivets and extending over their meeting edges on the inside, as shown in Figs. 1 and 4.

The compound spokes and their connecting-webs, together with the thin half-shells, are of a construction that makes the central portion of the pulley yielding, whereby the arc of the inner circle on each half of the pulley may be changed to make it fit shafts of varying diameter. On each side of each half of the pulley I place bolt-blocks 21, the same having suitable bearings in the pulley-halves—as, for instance, trunnions 22, resting in holes at the junction of the spoke-arms and connecting-webs. Bolts 23 extend through the bolt-blocks on the opposite halves of the pulley, whereby when the pulley is seated on the shaft it may be secured thereon by tightening said bolts. If the circumference of the shaft is of a radius somewhat greater or less

than that of the inner surface of the shells, the middle portion of the pulley will yield under the pressure of the bolts and cause the curvature of the shells to correspond with that of the shaft.

In another application of even date herewith, filed August 11, 1891, Serial No. 402,336, I have shown a pulley embodying the yielding central portion and clamping-bolts and with spokes and rim having the general features of construction herein shown, but with modifications in detail. It is evident that many of the details may be changed without departing from the spirit of my invention or even changing in the least the construction of the other parts.

While I have shown and described half-shells A A on the inside of the connecting-webs, it is evident that said shells can be omitted and the connecting-web itself rest directly upon the shaft by merely omitting to form or cutting off the lugs 11 by which said shells are secured. While I prefer to employ the two-part strengthening-ribs and secure their ends, as described, it is evident that the manner of securing their ends is not essential to all parts of my invention, nor even the presence of the rib itself. Neither is the manner of lapping or joining the ends of the rim C essential, nor the number of clamping-bolts, nor the compound spokes.

I claim as my invention—

1. A pulley having two sets of diametrically-opposing spokes, a radially-yielding connecting-web for each of said sets formed of one and the same piece of sheet metal with its spokes, and clamping-bolts for drawing together said webs, substantially as described, and for the purpose specified.

2. A rim-pulley provided with compound spokes formed of two arms having braces and lugs 13 at their outer ends by which they are secured to the rim, the connecting-rivets 17 at the inner ends of said braces, and the two arms of the hub being separated and spread apart at their inner ends, substantially as described, and for the purpose specified.

3. In a pulley, the radially-connecting web having two ends and a set of spoke-arms projecting from one edge of said web at points between said two ends, all formed of a single piece of sheet metal, substantially as described, and for the purpose specified.

4. In a pulley, the compound spokes and yielding connecting-webs and the bolt-blocks having trunnions by which they are supported between the spoke-arms and the clamping-bolts, substantially as described, and for the purpose specified.

5. The herein-described sheet-metal pulley, consisting of the two-part rim, the compound spokes secured by their outer ends to said rim, the yielding central portion, the bolt-blocks, and bolts, substantially as described, and for the purpose specified.

6. In a pulley, the two sets of compound spokes and connecting-webs and the half-shells at the inner edge thereof, substantially as described, and for the purpose specified.

THOMAS CORSCADEN.

Witnesses:
JAMES SHEPARD,
HILMER SVENSON.