

(No Model.)

W. PAINTER.
PULLEY COVERING.

No. 283,356.

Patented Aug. 14, 1883.

Fig. 1

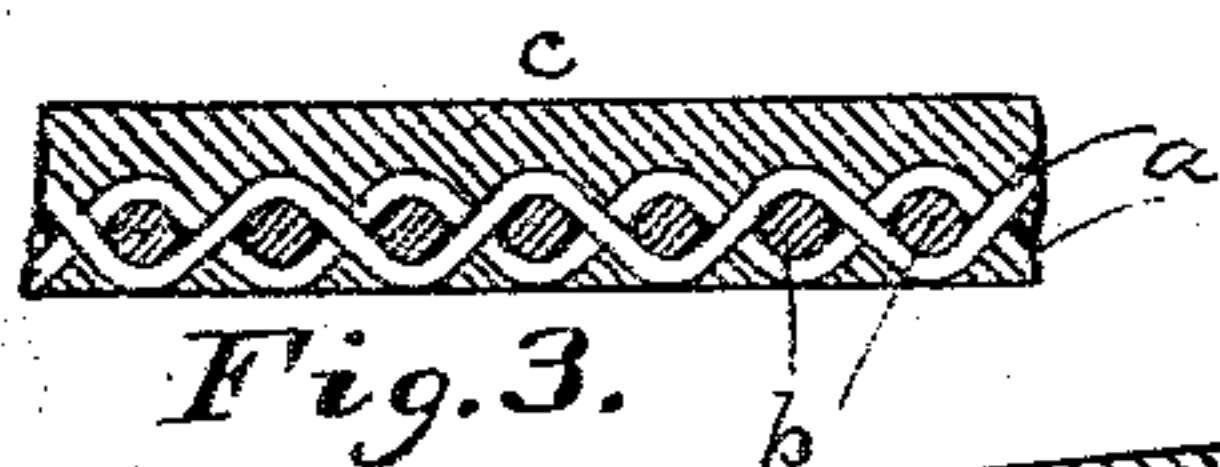
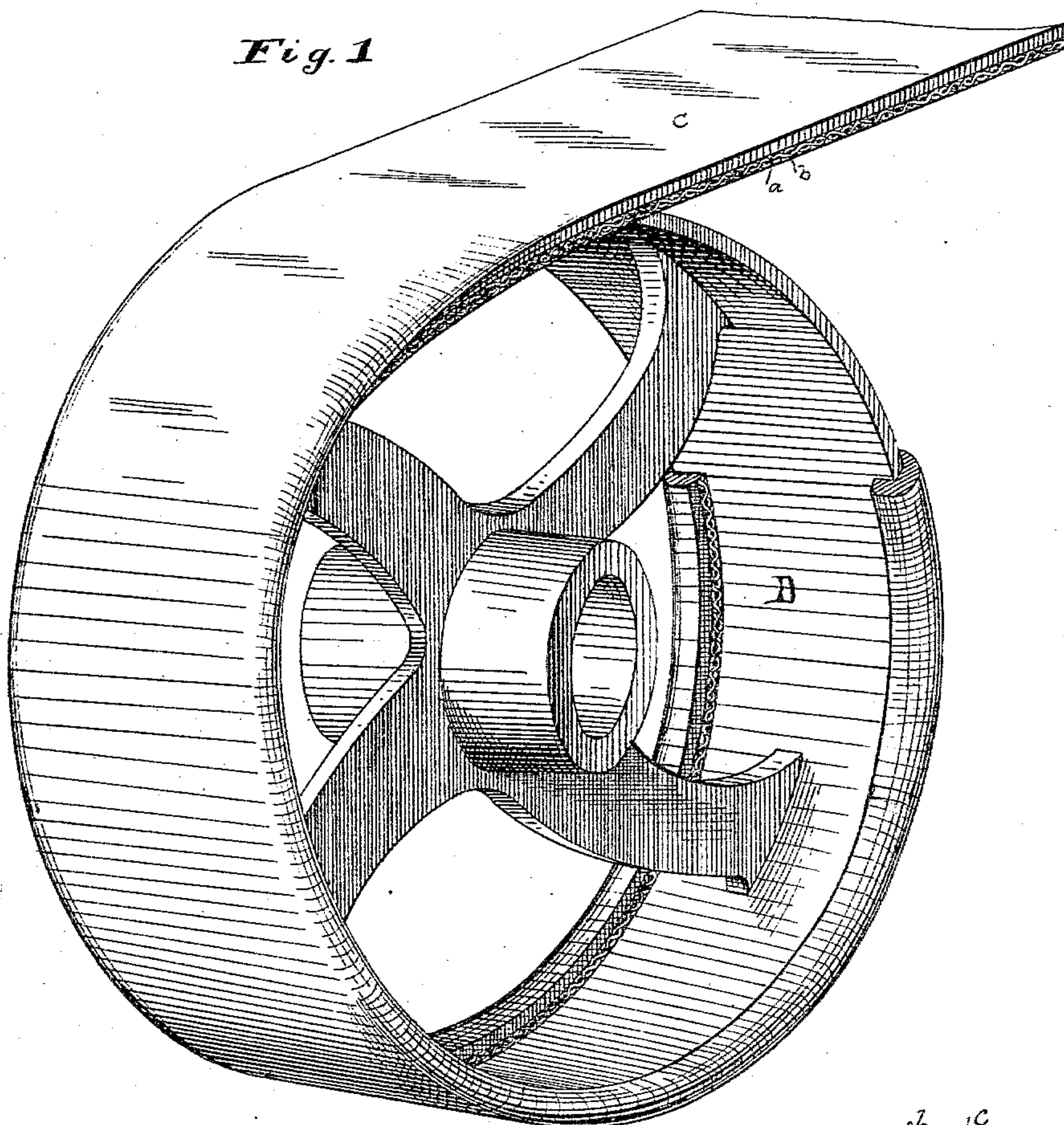


Fig. 3.

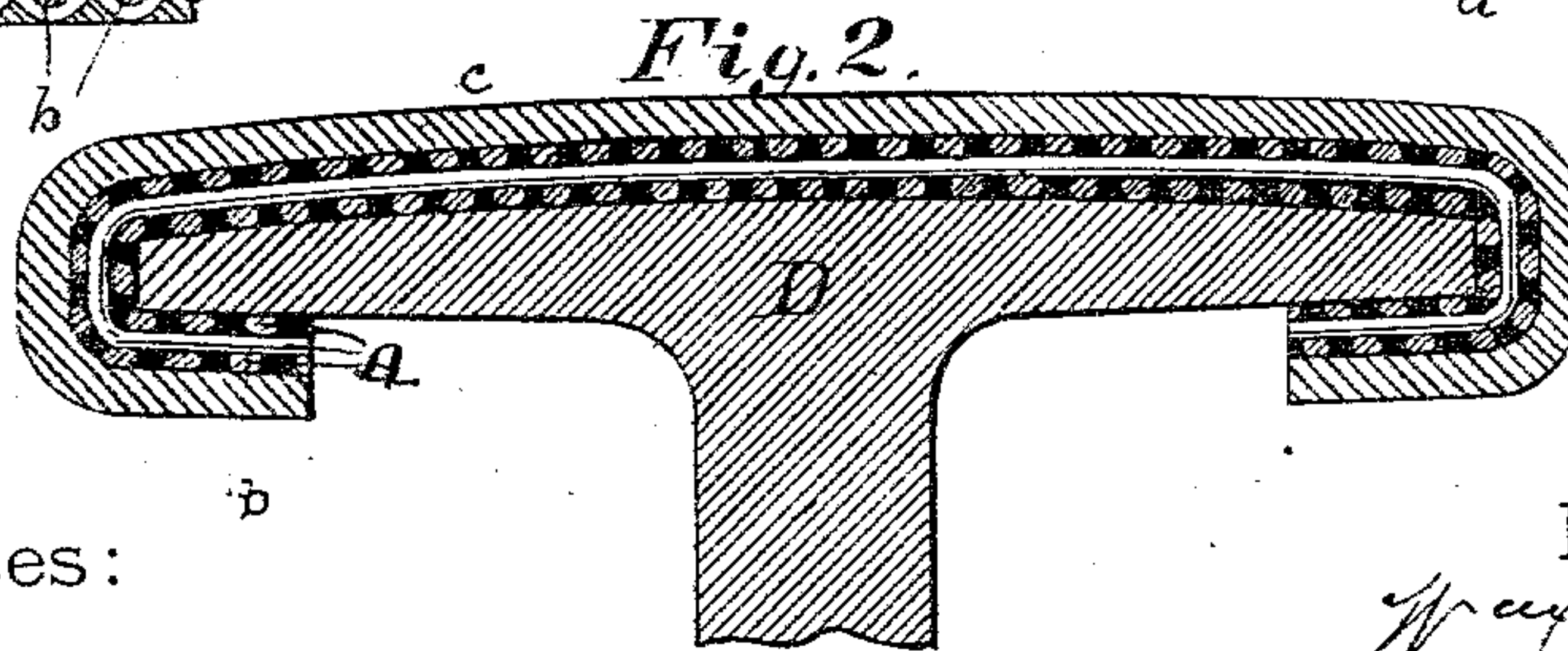


Fig. 2.

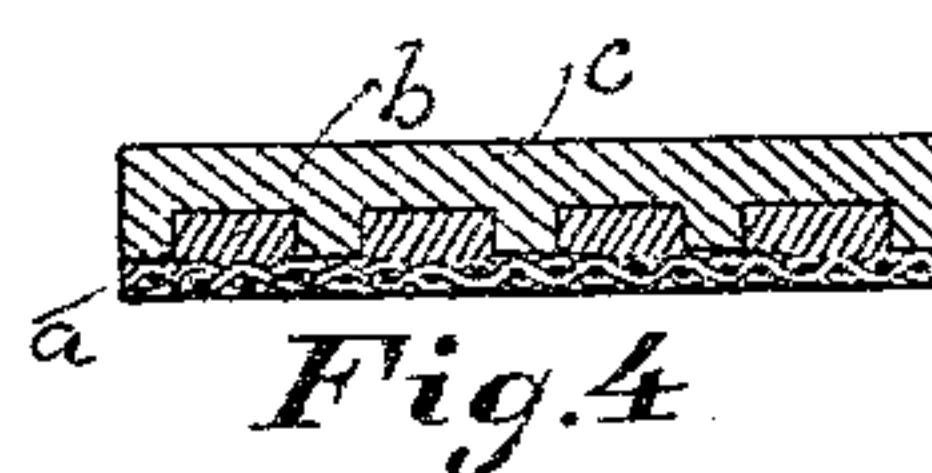


Fig. 4.

Witnesses:

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UNITED STATES PATENT OFFICE.

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PULLEY-COVERING.

SPECIFICATION forming part of Letters Patent No. 283,356, dated August 14, 1883.

Application filed April 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PAINTER, of Baltimore, in the county of Baltimore and State of Maryland, have invented a new and useful Pulley-Covering; and I do hereby declare that the following is a full and accurate description of the same.

I am aware that pulleys have heretofore been covered to increase traction or enlarge the diameter, and for this purpose coverings of wood, leather, paper, and composite fabrics of cloth, india-rubber, &c., have been employed. I therefore do not claim a covering, broadly considered. So far as I am aware, all those coverings which have been devised as manufactured material to be applied to pulleys for increasing their frictional surfaces have been made and adapted to be wound around the face of the pulley in a direction transverse to its axis, and have been secured generally by screwing, riveting, and cementing to the face of the pulley. I am also aware that, as a workshop expedient, strips of wood have been attached by screws, &c., to the face of the pulley in the direction of the axis thereof, the surface being afterward turned off in a lathe. My covering is radically different from these, inasmuch as it is designed and adapted to be secured in place upon the face of the pulley by bending the covering over and around the edges of the pulley, and with sufficient compression to grip said edges and hold the covering in place, so that the means for fastening the covering are entirely within and a part of the covering itself.

Figure 1 is a perspective view of a pulley with the covering as I prefer to make it partly applied. Fig. 2 is a transverse section of said covering and the pulley in the plane of its axis. Fig. 3 is section of the fabric transverse to the stiffening-wires. Fig. 4 is a similar view of a modified form of the material, showing stiffening-strip embedded in the rubber coating.

The design of my invention is to furnish a covering fabric for increasing the frictional surface of pulleys that is cheap and easily applied, and its essential feature is the stiffening wires or strips inclosed in the fabric by being woven or otherwise incorporated with it in the manufacture of the material itself.

While there are many ways of combining the stiffening wires or strips with the flexible covering material, I need show but two, preferring the form shown in Figs. 1, 2, and 3, in which I employ a foundation material having a warp, *a*, of cotton, and a filling, *b*, of annealed wires. To this is cemented the surfacing-sheet *c*, of rubber, as shown. A thin covering of rubber is also preferably applied to the opposite side to more firmly hold the warp-threads together when the material is cut off between the wires. Instead of rubber, I may similarly cement or otherwise apply to the foundation fabric leather, canvas, or other material. In Fig. 4 is shown in section a fabric composed of canvas, on which flat wires or strips of metal are laid parallel and held in place by the surfacing-sheet of rubber cemented to the canvas, as shown.

The stiffening wires or strips may be attached to the outside of the flexible fabric—that is, to the outer surface, but on the side coming next to the pulley—by rivets or other means, instead of being embedded in or incorporated with the material. These stiffening wires or strips *b* are made of ductile metal, such as soft iron, wire, or strips of sheet-iron, &c. They keep the fabric distended, and are substantially rigid in the direction of their length, but do not impair its flexibility in any other direction; hence the covering may be wrapped around a pulley without reference to its diameter, the wires *b* being disposed in the plane of the pulley's axis. The ductility of the metal permits the wires *b*, and with them the fabric, to be bent over the edges of the pulley *D*, as shown, without springing back, and thus they constitute a firm and strong fastening.

If the pulley-face is more than ordinarily crowning, it may be advantageous to cut the covering into strips of two or three inches wide, and apply them separately in the manner of lagging; but ordinarily the covering material will suffer sufficient compression lengthwise between the wires *b* to accommodate the difference in marginal and central diameters, due to the crowning shape. The absence of longitudinal stiffeners—such as would be present if wire-cloth sufficiently heavy to give the requisite grip were substituted for the strips *b*—

enables this covering to be thus accommodating and flexible.

Fabric having a stiffener of wire-cloth, or with wires or strips, like *b*, running longitudinally as well as transversely, however inserted or secured, would be equally stiff in one direction as another, and it would be difficult to bend such fabric over the edges of the pulley, as above described, without notching or slitting the edges of the covering. The same would be true if a sheet of metal, perforated or plain, should be employed for a stiffener. Hence, although longitudinal stiffening may be employed, I do not consider that it adds anything to the efficiency of the invention, the essential feature whereof is the transverse stiffening by wires or strips *b*, the ends whereof are adapted to be bent over the edges of the pulley and compressed thereon to hold the covering in place.

If the flexible material of which the covering is composed be sufficiently heavy or rigid of itself, it will not be necessary that the stiffening-strips run through it. In such instance the metallic clamping devices for gripping the edges of the pulley may be attached in any suitable manner to the edges only of the flexible fabric, (not being necessarily embedded in or incorporated with it, as heretofore described,) and the covering attached to the pulley by bending the said clamping devices over and around its edges. For instance, a covering of this form may be made by riveting a strip of ductile metal to each edge of a leather covering, which may be secured to the pulley by bending the said strips over the edges, as described. While this method of attaching the covering realizes some of the advantages of my invention, I do not consider it as efficient as those first described.

Having described my invention, what I claim as new is—

1. A pulley-covering composed of some suitable flexible material provided with a stiffening of some ductile metal, whereby it may be

attached and secured to the pulley-face by bending the edges of said covering over and around the edges of the pulley, as set forth.

2. A pulley-covering composed of flexible material, provided with parallel stiffening wires or strips of ductile metal, substantially as described, whereby said covering may be wrapped around the pulley and secured thereto by bending the ends of said stiffeners over the edges of the pulley, as set forth.

3. A fabric for covering pulleys, consisting of a foundation composed of a warp of cotton or other similar fiber and a filling of ductile wires, and having a coating of rubber, leather, or other suitable frictional material cemented or otherwise secured to said foundation, substantially as described.

4. A pulley-covering composed of two or more layers of suitable flexible material—such as canvas and india-rubber—substantially as described, and stiffeners of ductile metal incorporated with or between said layers, as set forth.

5. A fabric for covering pulleys, consisting of a suitable flexible material and a stiffening material, the former being adapted to yield to compression at and near the edges of the pulley, so that the said fabric will fit closely and conform to the shape of a crowning-pulley, substantially as set forth.

6. A pulley-covering consisting of a suitable flexible material, in combination with clamping devices adapted to hold the covering to the pulley by bending the said clamping devices over and around the edges of the pulley, substantially as described.

7. The method herein described for covering pulleys, the same consisting in attaching the covering fabric to the surface of the pulley by bending it over and around the edges of the pulley, substantially as described.

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Witnesses:

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