

(No Model.)

W. R. FOX.  
PULLEY.

No. 504,208.

Patented Aug. 29, 1893.

Fig. 1.

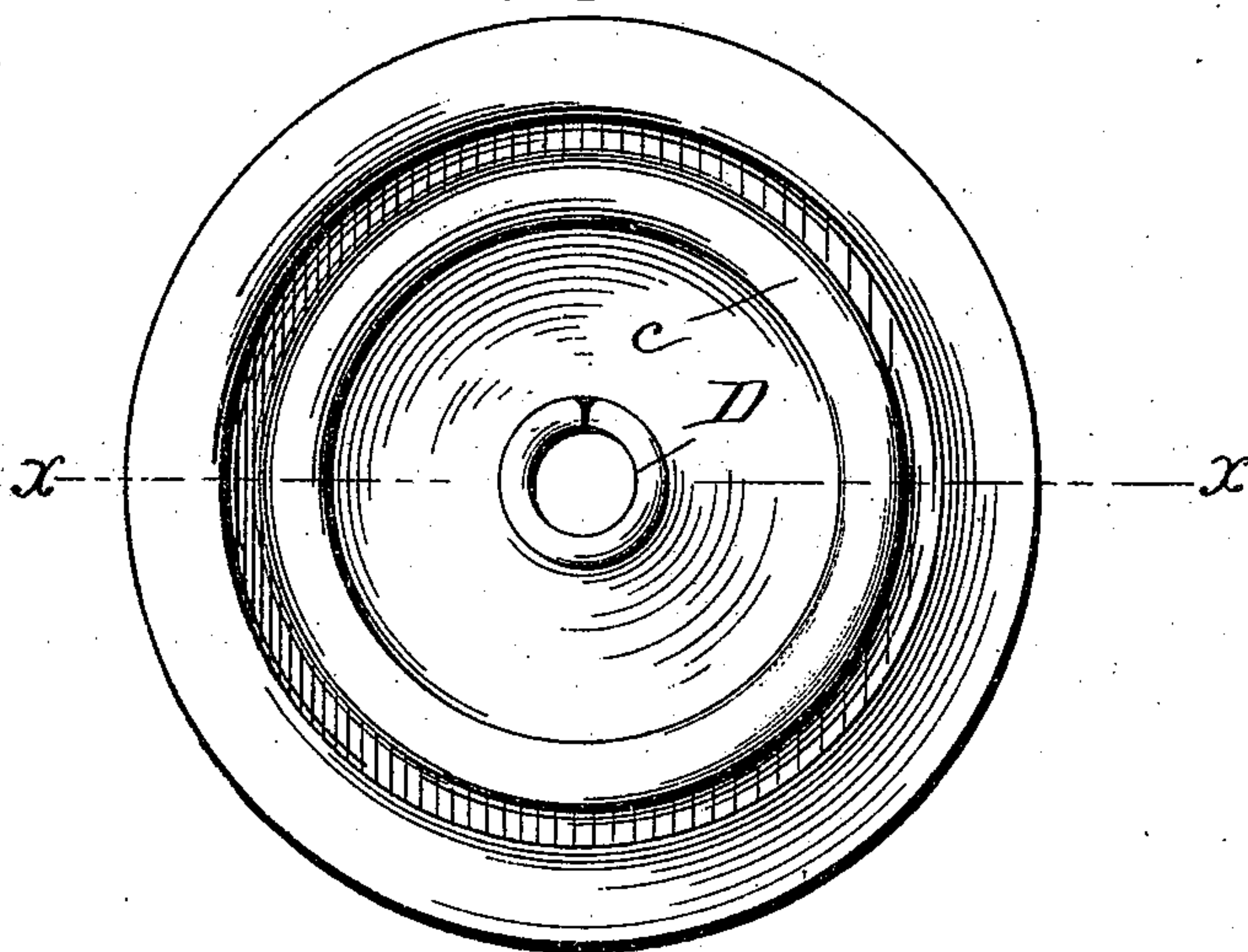


Fig. 2.

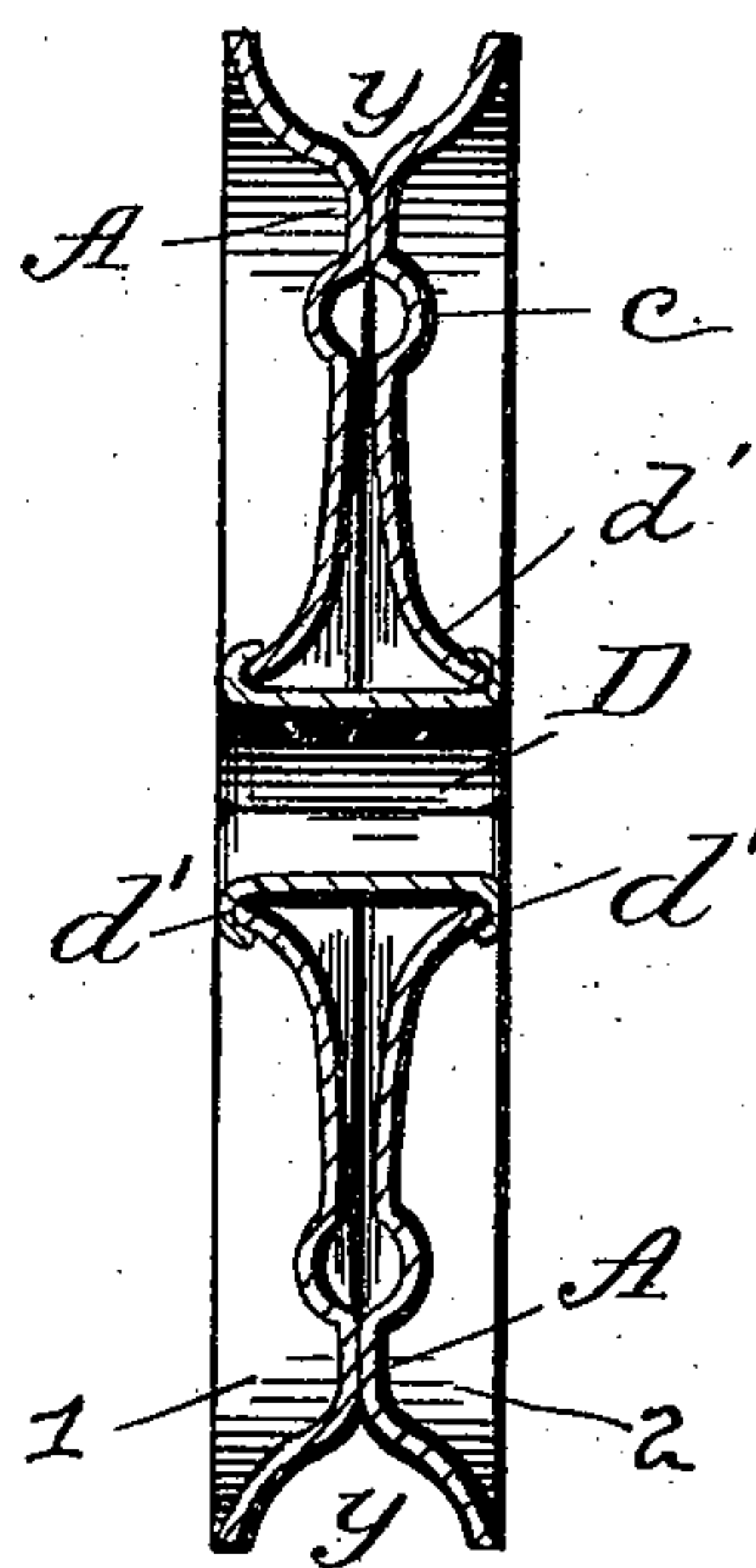
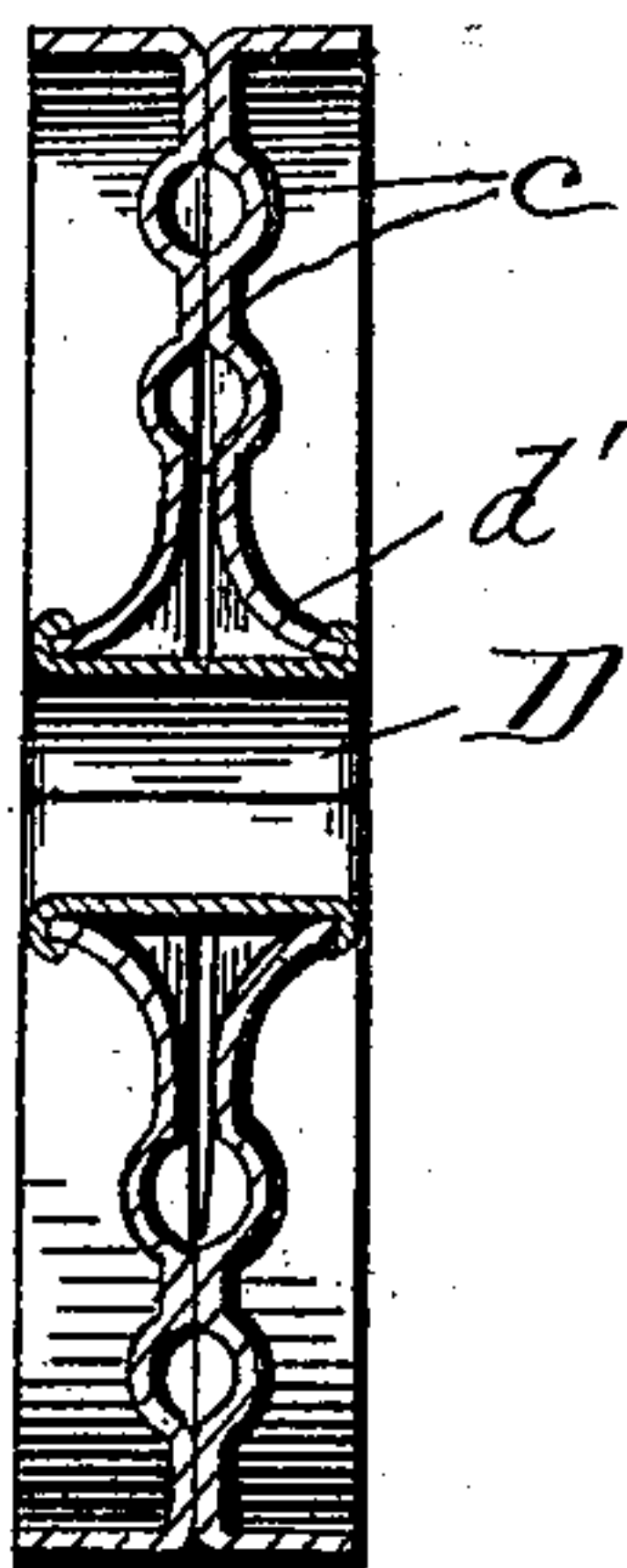


Fig. 3.



Attest  
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# UNITED STATES PATENT OFFICE.

WILLIAM R. FOX, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO THE FOX MACHINE COMPANY, OF SAME PLACE.

## PULLEY.

SPECIFICATION forming part of Letters Patent No. 504,208, dated August 29, 1893.

Application filed December 12, 1892. Serial No. 454,859. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM R. FOX, a citizen of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Pulleys or Wheels, of which the following is a specification.

My invention relates to wheels or pulleys of that class which are formed of disks of sheet metal struck up and duplicated to form the complete wheel.

My object is to form a cheap and strong pulley principally to be used as a sash pulley. It is illustrated in the accompanying drawings, in which—

Figure 1, shows the wheel in side elevation. Fig. 2, represents a section on line  $x-x$  of Fig. 1. Fig. 3, shows a similar section with the periphery plain.

In the drawings each of the parts 1 and 2 is struck up out of sheet metal, preferably steel, with a hole in the center. About the hole the metal is formed with a portion  $d'$  having concaved sides, so that the edge of the metal about the hole is turned approximately outward for a purpose hereinafter explained. Near the periphery of the disk is formed also, in the striking up of the metal, an annular bead  $c$  on the outside, and a corresponding groove on the inner surface. The disks are in contact at A between the beads  $c$  and the periphery, while upon the opposite side the disks flare away from each other. This gives a greater extent of yielding or elastic metal between the annular bearing A and the center, where the compression is applied.

The bead may be omitted and the disks instead coned from the annular edge at the center with concaved outer surface, out to the marginal flange. This gives the same marginal extended bearing, and the same larger extent of spring metal between the marginal bearing and the center. When the disks are placed together with the edges  $d'$  projecting outward they are fixed and secured together, by means of a sleeve or quill D, made of sheet metal rolled up in the form of a tube.

This is cheaper to make than an entire tube, and the longitudinal slit formed by the meeting edges of the strip does not impair the function of the sleeve in this combination. After the sleeve has been inserted the outer edges are turned over or upset outwardly over the outwardly turned edges about the hole of the disk. The concave outer face and the outwardly turned edge of the hole, better resists the compression than the old form of convex outer surface, which, near the hole must be approximately parallel with the general plane of the disk, and therefore more liable to be crushed inwardly, when the sleeve is upset. The overlapping edges of the sleeve or quill also hold more securely over the outwardly turned edges of the disk. The periphery of the pulley is formed by the outwardly swaged edges, which, when the disks are put together form the groove  $y$  for the cord. If a wheel be required with a flat periphery it is made as shown in Fig. 3. This figure shows also two beads  $c$ .

I claim—

1. A wheel or pulley composed of two disks of sheet metal having outwardly projecting portions around central holes, said disks being concaved about the holes, annular contacting portions near the periphery, and a central sleeve turned at its outer ends over the edges of the projecting portions, substantially as described.

2. A wheel or pulley composed of two disks of sheet metal having outwardly projecting portions around central holes, said disks being concaved about the holes, annular contacting portions near the periphery, and a split quill of sheet metal having its outer ends turned over the edge of the projecting portions of the disks, substantially as described.

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

WILLIAM R. FOX.

Witnesses:

JNO. DUFFY,  
WM. M. OWEN.