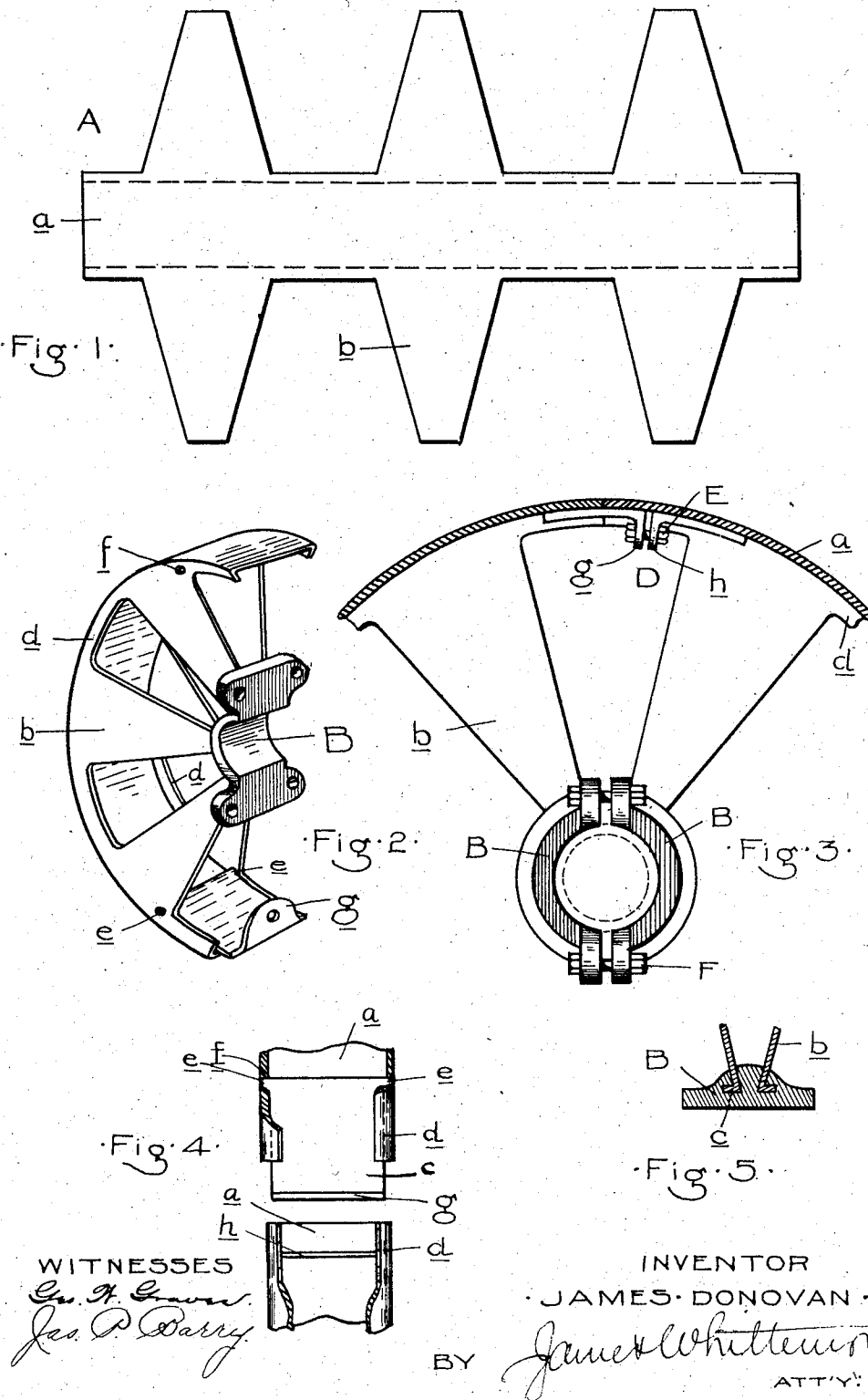


No. 778,309.

PATENTED DEC. 27, 1904.

J. DONOVAN.
WHEEL.

APPLICATION FILED JUNE 20, 1903.



UNITED STATES PATENT OFFICE.

JAMES DONOVAN, OF THREE RIVERS, MICHIGAN.

WHEEL.

SPECIFICATION forming part of Letters Patent No. 778,309, dated December 27, 1904.

Application filed June 20, 1903. Serial No. 162,308.

To all whom it may concern:

Be it known that I, JAMES DONOVAN, a citizen of the United States, residing at Three Rivers, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Wheels, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to the construction of metallic wheels more particularly designed for use as pulleys.

It is the object of the invention to obtain a construction of split pulley which is formed largely from a sheet-metal stamping; and to this end the invention consists in the construction as hereinafter described and claimed.

In the drawings, Figure 1 is a plan of the sheet-metal blank from which one of the sections of the pulley is formed. Fig. 2 is a perspective view of one of the sections completed. Fig. 3 is a side elevation showing the manner of securing the two sections to each other. Fig. 4 is a plan of the locking connection; and Fig. 5 is a section through the hub, showing the engagement of the spokes therewith.

As shown in Fig. 1, A is a sheet-metal blank comprising a central longitudinally-extending portion *a* and a plurality of laterally-extending portions *b*, which are preferably of the tapering form shown. The portions *b* are spaced from each other, and in the cutting of the blank the metal removed in forming these spaces is utilized in forming the arms or laterally-projecting portions of another blank. Thus the metal will cut with very little waste. The blank of the form shown is then struck up into a U-shaped section, while the central portion *a* is simultaneously curved into the segment of a circle, preferably a semicircle. The inner ends of the portion *b* are then bent to form the hooks *c*. A cast hub B is then formed, which unites the inner ends of the portions *b*. This hub is formed in sections corresponding in number to the sheet-metal sections which form the wheel; but in casting the hub the several sections are first cast integral and subsequently severed. This operation is performed by forming a suitable mold in which the inner ends of the

portion *b* are inserted and having division-strips which partially separate the sections of the hub from each other. These sections are united to each other by an inner annular portion surrounding the central core. Thus after the casting of the hub the several sections constituting the wheel are held together. In forming up the blank shown in Fig. 1 it is bent upon the dotted lines in said figure, so that the central portion *a* forms both the rim of the wheel and also inwardly-extending segmental flanges *d* upon opposite sides of said rim. These segmental flanges, as well as the portions *b*, which form the spokes of the wheel, are bent to incline inward or toward each other, so that a dovetail groove is formed by the flanges *d*. This groove is utilized for holding the splicing-tongues C, which are used for uniting the rim-sections of the wheel to each other. Each of these splicing-tongues is formed of sheet metal of a width to fit within the groove and to be held by the in-turned flanges *d*. The tongues are held from longitudinal movement in the groove by being provided with one or more lugs *e*, which engage with apertures *f* punched in the flange *d*. The lugs *e* may be engaged with said apertures during the forming up of the blank A, so that when said blank is formed the tongues C are rigidly secured in position and cannot be disengaged.

Each of the wheel-sections is preferably provided with one of the tongues C, secured in the manner described and having a portion projecting downward beyond the end of the rim. This portion is adapted to slidably engage with the dovetail groove in the adjacent end of the complementary wheel-section. To hold it in this engagement, the tongue is provided with an inwardly-extending ear *g*, which lies adjacent to an ear *h*, formed upon a member D, secured to the complementary section of the wheel.

The member D may be similarly formed to the member C and provided with similar locking-lugs engaging with apertures in the rim. The ears *g* and *h* are then clamped together by one or more bolts E. In the formation of the wheel the sheet-metal sections may be spliced together by the members C and D be-

fore the casting of the hub. After the hub is cast the wheel may be chucked and bored, the boring serving to cut away the integral uniting portion between the partially-divided sections of the hub, (indicated in dotted lines in Fig. 3,) and thus the sections are then free to be separated upon the removal of the bolts E. The wheel is finally trued by clamping the hub-sections B upon a suitable mandrel by means of bolts F. A wheel formed in the manner described is simple in its construction and also possesses great strength. The effect of casting the hub-sections B integral is that the contraction of the metal of the hub in cooling will place the spoke portions b under a slight tension, which tends to stiffen the wheel.

What I claim as my invention is—

1. A wheel-section comprising a single-piece metallic rim having inwardly-extending included marginal flanges and spokes extending from the flanges, a hub-section united with the spokes, a tongue between the flanges ex-

tending beyond the end of the rim-section and means for securing the tongue between the flanges comprising projections on the tongue-engaging apertures in the flanges.

2. A wheel structure comprising a plurality of complementary sections, each consisting of a rim portion having inwardly-extending segmental flanges and inwardly-tapering spokes, and splicing-tongues for uniting said portions, said tongues having integral lugs engaging apertures in said flanges and held thereby in fixed relation to the rim, the projecting ends of said tongues being turned inward to form securing-ears, and clamping-bolts engaging said ears for holding said sections together.

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

JAMES DONOVAN.

Witnesses:

GEO. H. ARNOLD,
L. F. CONSTANTINE.