





# UNITED STATES PATENT OFFICE.

FRITZ ROHRBECK, OF ST. VEIT-ON-THE-TRIESTING, AUSTRIA-HUNGARY.

## BELT-PULLEY.

SPECIFICATION forming part of Letters Patent No. 661,079, dated November 6, 1900.

Application filed July 3, 1899. Serial No. 722,727. (No model.)

*To all whom it may concern:*

Be it known that I, FRITZ ROHRBECK, a subject of the Emperor of Austria-Hungary, residing at St. Veit-on-the-Triesting, in the Province of Lower Austria, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Belt-Pulleys; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention has for its object the construction of light belt-pulleys with very stiff rims and arms. For this purpose both the rim and the arms of a belt-pulley according to this invention are formed by double sheet-metal strips or pieces of band or strip iron, of which those forming the rim are stiffened by one or more groove-like and surrounding pressed-out portions of the inner strip and are connected together by turning over the longitudinal edges of the outer strip, while the sheet-metal strips or pieces of band or strip iron that form the arms and which are provided with flanged edges to increase their strength form the opening of the hub or boss and are connected together in pairs and also with the ends of the rim-strips projecting in between them by screw or bolt devices. The screw or bolt devices enable the belt-pulleys to be quickly mounted and securely fastened direct on the shafts with or without keys and also allow the pulleys to be easily and quickly removed and taken to pieces.

Figures 1 to 4 of the accompanying drawings show by way of example a bipartite belt-pulley according to this invention, Fig. 1 being half an elevation and half a vertical section thereof and Figs. 2 and 3 being a vertical axial and a horizontal central section thereof, taken on lines *x x* and *y y*, respectively. Fig. 4 is a cross-section through the screw or bolt device of the sheet-metal strips or pieces of strip or band iron forming the arms and corresponds to the line A B of Fig. 1. Fig. 5 represents a bolt device for enabling a key to be used for connecting the arms with the shaft.

The rim of the belt-pulley consists of two halves, each of which is formed of two sheet-metal strips or pieces of strip or band iron *a b*. The inner strip *a* is bent semicircularly in a female die and, with the exception of the two ends which project out of the female die and are left plain, is simultaneously provided with one or more groove-shaped swellings *c*, which run in the direction of the longitudinal axis of the strip and stiffen it. The outer and broader strip *b* is put into a second female die, bent semicircularly therein, and simultaneously turned up at the longitudinal edges. Upon this the first-mentioned strip is laid, and the turned-up edges *d* are bent down upon the inserted strip, so that they embrace the longitudinal edges of the inserted strip, and the two strips are firmly connected together. On the subsequent connection with one of the two sheet-metal strips or pieces of strip or band iron forming the arms the projecting plain ends *e* of the inner strip are bent down upon the arm-strips.

The arms consist, as stated, of two sheet-metal strips or pieces of strip or band iron *f*, each of which is flanged at its longitudinal edges *g* to form a channel and at the same time in the middle part *h* and, in accordance with the half-diameter of the shaft on which the belt-pulley is to be fastened, provided with a hollow or depression corresponding to the half of the opening of the hub or boss. In the sheet-metal strips or pieces of band or strip iron *f* a depression is also made near each of its ends in order to form steps *i* of a height equal to the thickness of the rim-strips *a*, so that the ends of the strip *a*, which are laid upon these steps when the arm-strip *f* is connected with the rim, form a smooth surface with the arm-strips. Thus it will be seen that the pair of channel-shaped pieces which run diametrically across the pulley, having a struck-up or swaged hub formed therein, are very stiff, the flange *g* of the channel being an effectual preventive against bending the arms due to the pull at the face of the pulley.

For connecting the two sheet-metal strips or pieces of band or strip iron *f* with each other and with the inserted ends of the rim-strips screw-bolts *k* are provided, whose heads and nuts bear against cup-shaped pressed-



out supporting-pieces *l*, whose object is to place the heads and nuts so high between the flanges *g* that a screw-key can be easily applied. By screwing up the nuts not merely are the arms firmly connected with the rim, whose outer strips *b* thereupon abut smoothly against each other with their transverse edges, but the pulley is also securely fastened on the shaft inserted in the opening of the hub or boss. If the connection is to be effected by means of a key *m*, Fig. 5, a flat iron piece *p* is inserted between the sheet-metal strips or pieces of strip or band iron *f*, which in this case are also provided with steps *n*, and is fastened by means of the screw-bolt *k*, which leaves the keyway free.

In lieu of making the rim of two pairs of strips, as described and shown, it may be made of only one pair of strips.

I claim—

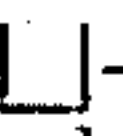
1. A belt-pulley comprising two semicircular parts, each composed of two strips of sheet metal, the outer strip having its lateral edges bent over the corresponding edges of the inner strip, there being a longitudinal corrugation on the inner strip, the edges of said strip bent inwardly, and a hub having radial arms secured to said inwardly-bent ends, substantially as set forth.


2. A belt-pulley comprising two complementary semicircular parts, each composed of two strips of sheet metal of different perimeter, the outer strip of greater perimeter having its lateral edges bent over the corresponding edges of the inner strip of least perimeter, the latter having its terminals bent inwardly, and a hub having radial arms secured to said terminals, for the purposes set forth.

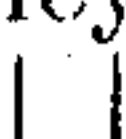
3. A split pulley comprised of two semicircular parts, each composed of two strips of sheet metal, the outer one forming the face of the wheel and having its edges bent over the corresponding face of the inner one, the flat ends of the inner strip bent inwardly, and a hub in two sections, radial arms thereon and offsets at the ends of each arm to receive the inwardly-bent ends of the inner strip, and a keyway arranged in said arms at the hub, substantially as set forth.

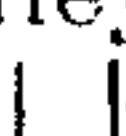
4. A belt-pulley comprised of two semicircular parts, each composed of two strips of sheet metal, the outer one forming the face of the wheel and having its lateral edges bent over the corresponding edges of the inner one, the ends of the inner strip bent radially inward, a bellied portion thereon extending

between the inwardly-bent ends, and a pair of channel-shaped arms secured to said ends, and a hub formed at the center of said arms, substantially as set forth.

5. A belt-pulley comprising a sheet-metal rim composed of two complementary semicircular sections whose terminals are bent inwardly to form bolt-flanges, and a hub composed of two strips of sheet metal -shaped in cross-section and bent to form between them shaft-bearings, and arms radiating therefrom, said strips being bolted together and to the inturned terminals of the rim, for the purposes set forth.

6. A belt-pulley comprising a sheet-metal rim composed of two complementary semicircular sections whose terminals are bent inwardly to form bolt-flanges, and a hub composed of two strips of sheet metal -shaped in cross-section and bent to form between them a shaft-bearing, and arms radiating therefrom, cup-shaped washers *l* and bolts *k* passing through the same and through the webs of the hub-sections and through said webs and the bolt-flanges on the rim-sections respectively, substantially as and for the purpose set forth.

7. A belt-pulley hub composed of two strips of sheet metal -shaped in cross-section and bent to form between them a shaft-bearing, and arms radiating therefrom, the web of said strips shaped to form a seat radiating from the shaft-bearing for the reception of a key, in combination with a pulley-rim, and means for securing the same to the radial arms of said hub, for the purposes set forth.

8. A belt-pulley hub composed of two strips of sheet metal -shaped in cross-section and bent to form between them a shaft-bearing, and arms radiating therefrom, the web of said strips shaped to form between them a seat radiating from said bearing, a filling-block inserted in said seat and bolted to the webs of said strips, said block shorter than its seat in a radial direction to form a keyway at the inner end of said seat, in combination with a pulley-rim, and means for securing the same to the radial arms of the hub, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

FRITZ ROHRBECK.

Witnesses:

RUDOLF ROHRBECK,  
ALVESTO S. HOGUE.