

No. 829,898.

PATENTED AUG. 28, 1906.

F. SCHULTZ.  
ROPE SHEAVE.

APPLICATION FILED MAR. 6, 1906.

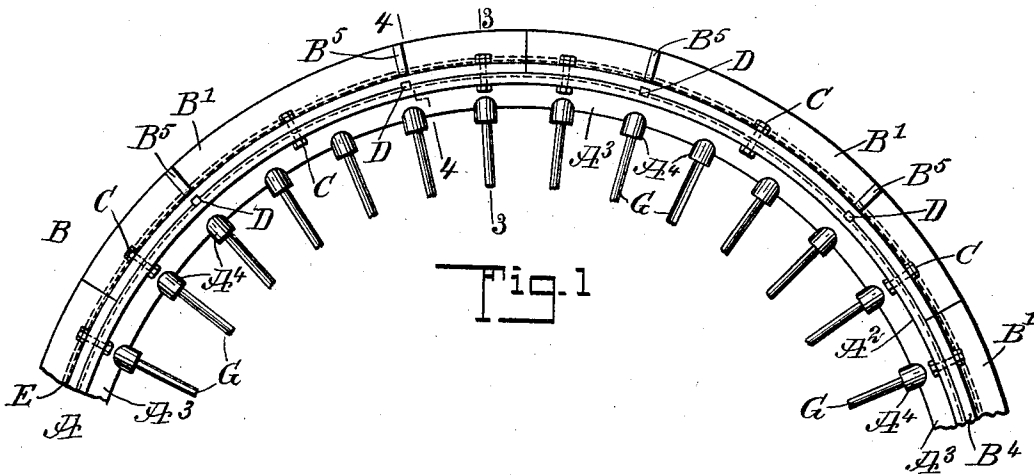


Fig. 1

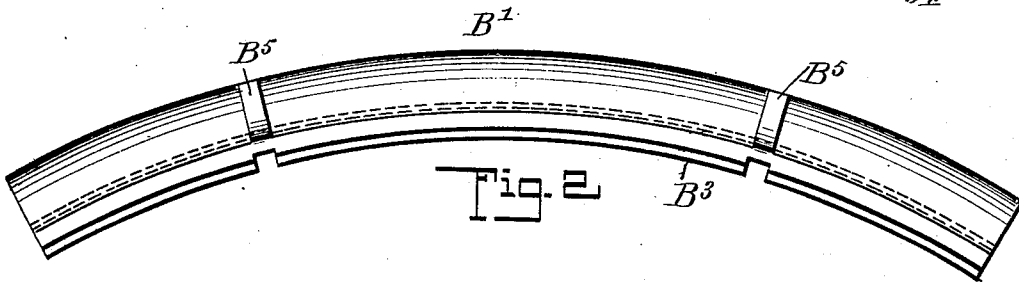


Fig. 2

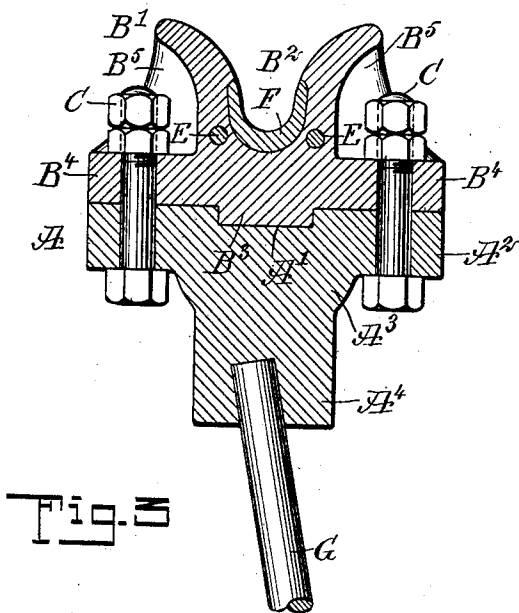


Fig. 3

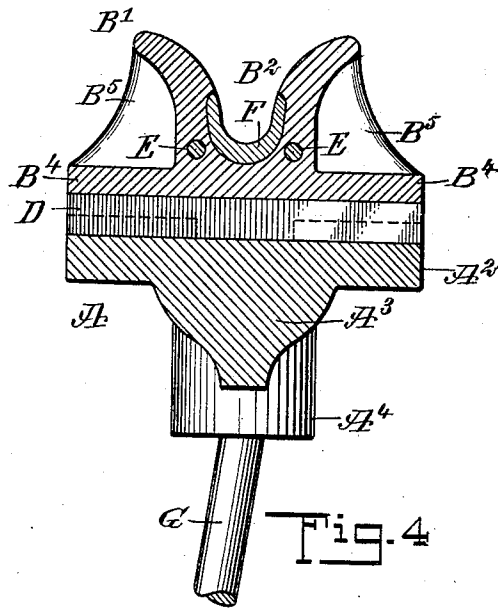


Fig. 4

WITNESSES:

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# UNITED STATES PATENT OFFICE.

FRANKLIN SCHULTZ, OF TAMAQUA, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO WILLIAM J. DORNBACH, OF LANSFORD, PENNSYLVANIA.

## ROPE-SHEAVE.

No. 829,898.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed March 6, 1906. Serial No. 304,481.

*To all whom it may concern:*

Be it known that I, FRANKLIN SCHULTZ, a citizen of the United States, and a resident of Tamaqua, in the county of Schuylkill and State of Pennsylvania, have invented a new and Improved Rope-Sheave, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved rope-sheave having separable tread-sections any one of which when worn out or broken can be quickly and conveniently removed and replaced by a new one without disturbing the position of the rope or cable or removing the spokes and hub from the sheave, the sheave being principally designed for use on the hoisting machinery of mines and the like.

The invention consists of novel features and parts and combinations of the same, which will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement. Fig. 2 is an enlarged side elevation of one of the tread-sections. Fig. 3 is an enlarged transverse section of the improvement on the line 3 3 of Fig. 1, and Fig. 4 is a similar view of the same on the line 4 4 of Fig. 1.

The continuous rim A of the sheave is provided with an annular tread B, made in segmental sections B' and having the usual annular groove B<sup>2</sup> for the passage of the rope or cable. The peripheral face of the rim A is formed with an annular groove A', into which fit the tongues B<sup>3</sup> of the tread-sections B' to hold the tread against lateral movement on the continuous rim A. By having the tongue and groove as shown and described it is evident that if the bottom of the groove B<sup>2</sup> should be worn through by the rope or cable then the separated parts of a tread-section are not forced off the rim A by the action of the rope or cable.

The tread-sections B' and the continuous rim A are formed with transverse flanges B<sup>4</sup> A<sup>2</sup>, engaged by bolts C for securely fastening the tread-sections in position on the rim A. Now in case a tread-section B' becomes worn out or broken then it can be readily removed

by removing the bolts C for this particular section to allow removal of the section and replacing it by a new one without disturbing any of the other sections or the position of the cable or rope extending in the groove B<sup>2</sup>.

It is understood that as the cable or rope engages at a time approximately one-half of the tread the sheave can be turned so as to bring the worn-out or broken tread-section B' in a position free of the cable or rope to allow convenient removal of this section, as above explained.

Integral ribs B<sup>5</sup> connect the flanges B<sup>4</sup> with the sides of the tread-sections to reinforce the same.

In order to relieve the bolts C of undue strain when the sheave is turned forward and backward on starting the hoisting machinery, use is made of transverse keys D, extending in registering recesses formed in the rim A and the tread-sections B'. As shown in Fig. 1, two of such keys D are employed for each tread-section B', and the keys are arranged in radial alinement with the ribs B<sup>5</sup> and alternate with the bolts C of a section.

In case a tread-section B' has worn very thin and breaks in a transverse direction then in order to prevent the broken parts from leaving the rim A of the sheave suitable rods E, preferably of copper or like material, are embedded in each tread-section B' on opposite sides of the groove B<sup>2</sup> thereof, as will be readily understood by reference to Figs. 3 and 4, it being understood that such copper rods E are fused into the cast tread-section during the pouring of the molten metal employed for forming a tread-section. The groove B<sup>2</sup> in each tread-section B' is provided with a lining F, preferably made of Babbitt metal, and especially serviceable in case a hemp rope is used in connection with the sheave.

The rim A is preferably reinforced at its inner face by an annular rib A<sup>3</sup>, provided with integral bosses A<sup>4</sup> for receiving the outer ends of the spokes G, secured in the hub of the sheave in the usual manner. It is, however, understood that the hub and rim of the sheave may be integrally connected by a solid web, if desired.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A sheave having a rim provided with a tread made in sections, the said rim and tread

having a tongue-and-groove connection, bolts for fastening the tread-sections to the rim and reinforcing-rods embedded in each tread-section in the direction of the length thereof.

5 2. A sheave having a rim provided with a tread made in sections, the said rim and tread having a tongue-and-groove connection and provided with side flanges, the tread-sections each having integral ribs connecting the  
10 flanges with the sides of said sections, bolts engaging the flanges for fastening the tread-sections to the rim, and transverse keys at the joints of the tread-sections with the rim, the said keys being arranged in radial aline-  
15 ment with the ribs and alternating with the bolts of a section, and extending in registering recesses formed in the rim and the tread-sections.

20 3. A sheave having a rim provided with a tread made in sections removably attached

to the rim, and reinforcing-rods embedded in each tread-section in the direction of the length thereof and located on opposite sides of the groove of the tread-section.

4. A sheave provided with a continuous 25 rim, a grooved tread fitting the said rim and made in sections having side flanges, reinforcing-rods embedded in each tread-section in the direction of the length thereof and located on opposite sides of the groove of the 30 tread-section, and radially-disposed bolts engaging the flanges and the rim for fastening the tread-sections in place on the rim.

In testimony whereof I have signed my name to this specification in the presence of 35 two subscribing witnesses.

FRANKLIN SCHULTZ.

Witnesses:

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C. F. SHINDEL.