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ROPE SHEAVE

Filed Nov. 3, 1928

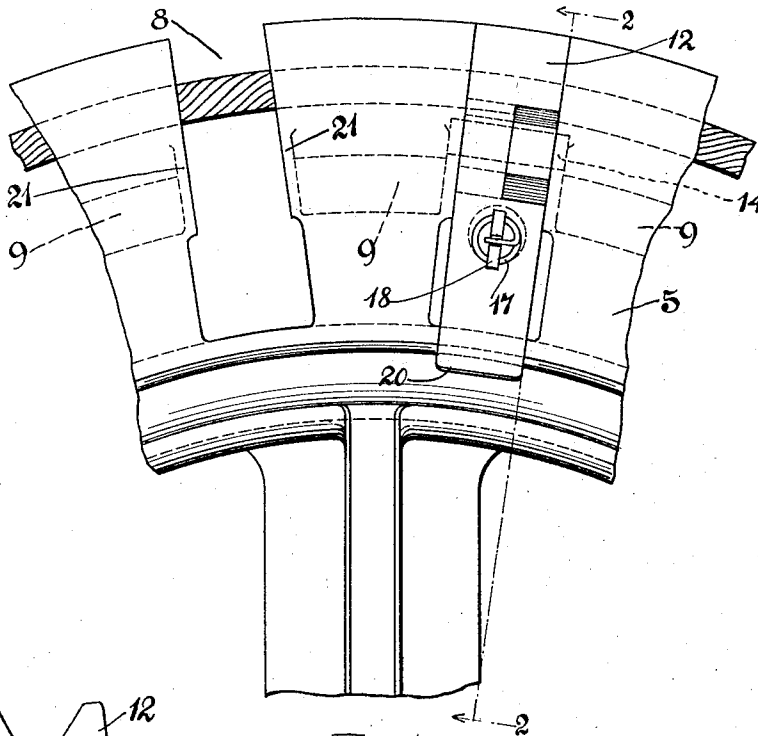


Fig. 1.

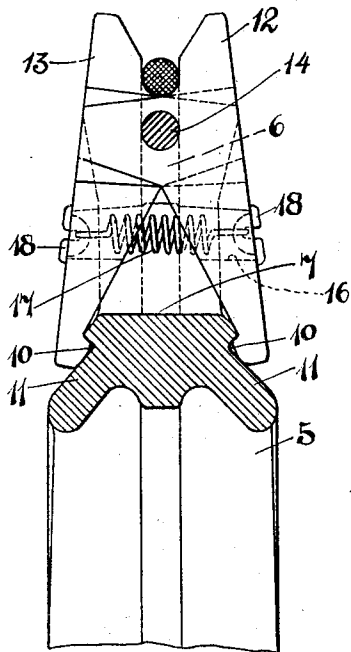


Fig. 2.

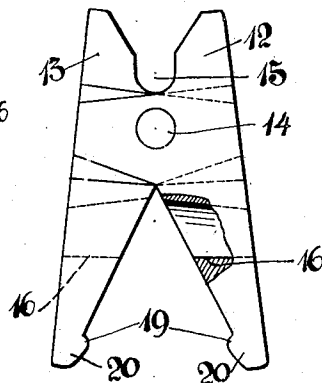


Fig. 3.

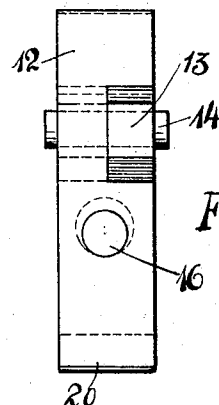


Fig. 4.

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ROPE SHEAVE

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The invention relates to rope sheaves and more especially to that type of rope sheaves having means for clamping that portion of the rope, that is actually in contact with the sheave thereby preventing any slippage of said rope.

The object of the invention therefore is to provide a rope sheave of the type indicated the clamping or gripping means whereof may be easily and readily removed and replaced.

A further object of the invention is to provide a rope sheave of the class indicated, the clamping or gripping means whereof may be installed or removed as a unit.

A still further object of the invention is to provide a rope sheave of the class indicated, the gripping mechanism whereof contains a spring, which is under tension, when the gripping means are in working position.

Other objects of the invention not specifically mentioned may be easily ascertained and understood from the following description in connection with the accompanying drawings forming a part thereof. It is however to be noted, that the invention is not to be restricted or limited to the exact construction or formation shown in the drawings and described in the specification, but that said invention is only to be limited by the scope of the claims appended hereto.

The drawings illustrate a preferred embodiment of the invention, and

Fig. 1 is a partial side view of a rope sheave according to the present invention;

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a detail view of a pair of gripping levers held together by means of their common pivot pin, and

Fig. 4 is a side view of Fig. 3.

The outer rim of the body 5 of the sheave is bifurcated by means of a groove 6 extending all around said body and having a bottom 7. A plurality of radially extending cross slots 8 are cut at regular intervals into said rim, and stiffening members 9 extend between the corresponding remaining rim parts.

A ring groove 10 is cut into each of the lateral faces of the sheave a short distance underneath the bottom 7 of the groove 6.

The lower wall of the two ring grooves is prolonged to form an inclined surface 11 extending laterally and radially of the body.

Into each of the chambers 8 formed in the rim of the sheave a gripping or clamping tong is inserted. Seeing that all these tongs are of equal construction, it will suffice to describe one of said tongs.

Each tong consists of two clamping levers 12 and 13 respectively. The two levers are held together pivotally by means of a pivot pin 14 extending at both ends somewhat beyond the tong levers. The outer portions of said tong levers form together a groove 15 adapted to receive a rope or the like. Each of the tong levers is provided in its lower portion with a conical hole 16. The bigger opening of each hole is located at the inner side of the lever. An extension spring 17 is arranged in said holes and at each outer end of said holes a shackle is arranged, to which the ends of the spring are fastened, thereby tending to pull the lower portions of the tong together and to open the rope receiving jaws of said tong.

Adjacent the lower or inner end of each lever a projection 19 is located and from there extends a somewhat curved surface 20 to the lower end of said lever.

The stiffeners 9 do not extend entirely to the end of the remaining parts of the walls of the bifurcation, but stop a short distance therefrom as indicated at 21 in Fig. 1, so that guide ways will be formed for the ends of the pins 14 extending beyond the tong.

In order to insert a tong into its chamber it is only necessary to force the lower part of the tong radially against the sheave, the lower lever parts will thereby be forced and the spring will be extended. As soon as the projection 19 will be forced over the upper wall of the ring groove 10, the spring will contract, forcing said projections 19 into engagement with the ring groove, thereby holding the tong in position. The ends of the pivot pin 14 extending beyond the tong will be located in the guide ways mentioned above.

When a rope engages the bottom of the groove 15 formed by the upper parts of the tong levers, it will urge the tong radially to-

ward the center of the sheave. The curved surface 20 will thereby be forced to slide onto and partly over the inclined surface 11 of the sheave, so that the outer portions of the tong levers will be forced toward each other, thereby gripping the rope and preventing any slippage thereof. As soon as the radial pressure on the tong decreases, the spring tends to contract the lower portions of the levers, whereby the tong will be moved outwardly of the sheave on account of the projections sliding over the inclined surface.

In order to remove a tong from its seat in the sheave, it is only necessary to compress the outer or gripping parts of said tong until the lower parts are far enough apart from each other to be free of the upper rim of the ring grooves 10.

Having described my invention and how the same is to be performed I claim as new and desire to secure by Letters Patent:

1. In a sheave having a circumferential groove a body having a plurality of chambers cut into its rim and provided with a ring groove cut into each of its lateral faces adjacent the bottom of the circumferential groove of the sheave, the lower rim of said ring groove forming an incline extending laterally and radially of said sheave, a plurality of gripping tongs adapted to be arranged in said chambers, and means on said tongs to engage said ring groove and to slide over said incline.

2. In a sheave of the class described a body, a bifurcated rim on said body, a plurality of crosswise and radially extending chambers provided in said rim, each lateral face of said body having a ring groove cut therein adjacent said rim, a plurality of gripping tongs arranged in said chambers, an outwardly and radially extending incline forming the inner edge of said ring grooves, each tong consisting of two tong levers, a pivot pin for each pair of levers, a rope gripping portion on the outer end of each lever, a spring arranged between the inner portion of each pair of levers and adapted to urge said portions toward each other, a projection adjacent the inner end of each lever and adapted to be forced into engagement with said ring grooves by said spring, and a curved surface on each lower end of said levers underneath said projection, said surface being adapted to engage with said incline.

In witness whereof I affix my signature.
WILHELM KARLIK.