May 19, 1925. 1,538,051

B. S. MINOR

BALANCING DEVICE FOR SHEAVE BLOCKS

Filed April 14, 1924

Fig. 1

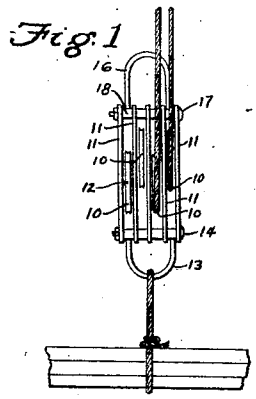


Fig. 2

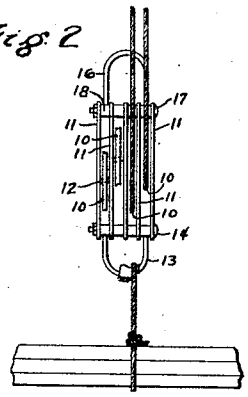


Fig. 4

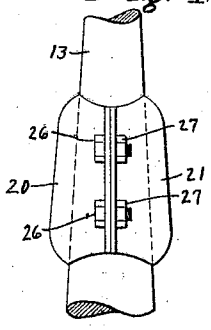


Fig. 3

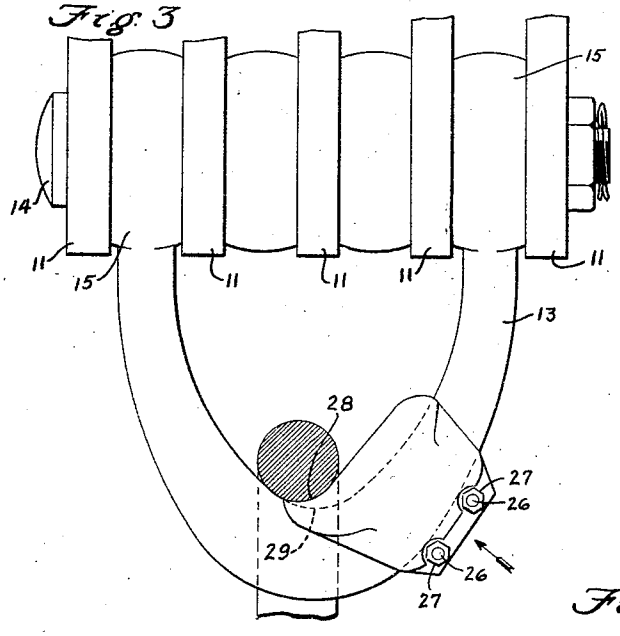


Fig. 5

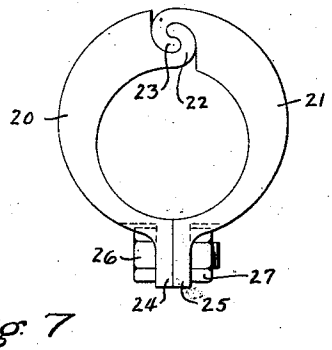


Fig. 6

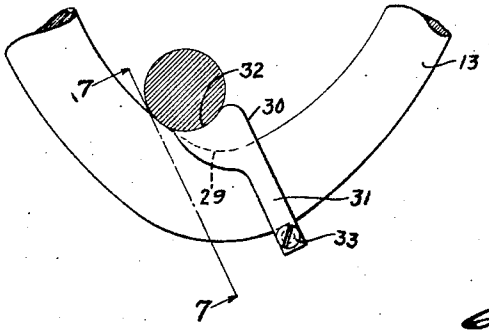
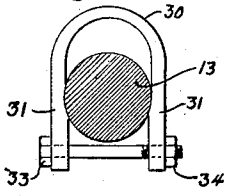


Fig. 7



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Patented May 19, 1925. 1,538,051

UNITED STATES PATENT OFFICE.

BURT STANLEY MINOR, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO REGAN FORGE & ENGINEERING COMPANY, OF SAN PEDRO, CALIFORNIA, A CORPORATION OF CALIFORNIA.

BALANCING DEVICE FOR SHEAVE BLOCKS.

Application filed April 14, 1924. Serial No. 706,324.

To all whom it may concern:

Be it known that I, BURT STANLEY MINOR, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Balancing Device for Sheave Blocks, of which the following is a specification.

My invention relates to sheave blocks and particularly to a device for balancing the block with relation to the load.

In cable sheave block constructions having a plurality of sheaves, oftentimes the full number are not needed in various hoisting operations, and as a consequence if only those sheaves located on either side of the longitudinal axis of the block are utilized the block will be canted from the vertical when a load is applied thereto, thereby creating undue and excessive wear on the sheaves, bearings, and cable lines. By means of my device which may be readily applied to the sheave block clevis, the above recited difficulty is largely obviated, the device being disposed in such a position on the block clevis that when a load is suspended therefrom the pull exerted on the block will be evenly distributed to constantly maintain the same in its normal vertical position during its operation.

Other objects and advantages will be clearly apparent from the following description, reference being had to the accompanying drawing forming a part thereof, in which:

Fig. 1 is a front view of a sheave block showing cables spooled between the sheaves at one side of the vertical axis of the block with the block canted by the load.

Fig. 2 is a view similar to Fig. 1, my balancing device holding the load shifted to one side and balancing the block vertically.

Fig. 3 is a front elevation of a sheave block and my load balancing device mounted on the lower clevis of said block.

Fig. 4 is a side view of my load balancing device.

Fig. 5 is an enlarged plan view of my load balancing device.

Fig. 6 is a front view of the lower clevis of a sheave block with a modified form of my load balancing device mounted on said clevis.

Fig. 7 is a sectional view taken on line 7—7 of Fig. 6.

In the drawings I have shown a block comprising four sheaves 10, but my invention is applicable to blocks comprising a greater or less number of sheaves. Sheaves 10 are journaled between vertical draw bars 11 in bearings 12 in said bars. A lower clevis 13 is connected at its ends to the lower ends of the draw bars 11 between the outer and adjacent draw bars, by a bolt 14 extending through the lower ends of the draw bars, and through eyes 15 on the ends of the clevis. An upper clevis 16 is connected at its ends to the upper ends of the draw bars 11, between the outer and adjacent draw bars, by a bolt 17, extending through the upper ends of the draw bars and through eyes 18 on the ends of the clevis.

My sheave block balancing device comprises a pair of arcuate clamp members 20 and 21, which embrace the lower clevis 13. Members 20 and 21 are formed at one end with interengaging hook-shaped hinge knuckles 22 and 23 respectively, and at their other ends, diametrically opposite said knuckles, with a pair of external radial flanges 24 and 25 respectively, which flanges are bolted together by a pair of bolts 26, extending through the flanges, and nuts 27 screwed on the ends of the bolts against one of said flanges, whereby the device is clamped on one of the arms of the clevis with the knuckles on the inside and the flanges on the outside of the clevis. The device is formed with a saddle or concavity 28 on its inner or hinged side at the lower end thereof which rests within the crotch 29 of the clevis and may be shifted to one side or the other of the vertical axis of the block upon loosening the nuts 27 and shifting the device in one direction or the other on the clevis which it embraces. The load sustaining cable extending through the clevis rests in the saddle 28 and is shifted by the device to one side or the other of the clevis, whereby the load is correspondingly shifted and the block balanced, so that the block will hang perpendicularly and cause the suspending cables to travel centrally and freely around said sheaves.

In the modified form of my invention shown in Figs. 6 and 7, the device is formed

of one piece of metal bent substantially U-shaped in the form of an arcuate head 30, and a pair of spring arms 31. A saddle 32 is formed in the top of the head 30. Head 30 and arms 31 embrace the clevis in the crotch 29 thereof with the head 30 and saddle 32 on the inside of the clevis and the extremities of the arms at the outside of the clevis. A single bolt 33 extends through the ends of the arms 31 outside the clevis and a nut 34 screws on the end of said bolt against one of said arms, whereby the device is clamped on the clevis. The saddle 32 may be adjusted from one side to the other of the clevis upon loosening the nut 34 and shifting the device in one direction or the other on the clevis.

What I claim is:

1. In combination with a sheave block provided with a clevis for sustaining a load, a block balancing device formed with a seat for receiving the load sustaining cable, and means for adjustably mounting said device on the clevis of said block, whereby said seat may be positioned at either side of the vertical axis of said block.

2. In combination with a sheave block provided with a clevis, of a block balancing device consisting of a pair of clamping members movably secured together, said device adapted to be detachably secured to either side of the vertical axis of the block, whereby to shift a load suspended from the block to one side or the other of its vertical axis.

3. In combination with a sheave block provided with a clevis for sustaining a load, a block balancing device comprising a air of clamp members formed with a concavity for receiving the load sustaining cable, one end of said members being formed with inter-engaging hook-shaped hinge knuckles, and securing means at the other end of said members for clamping said device in different positions on the clevis of said block, whereby to shift a load suspended from the blocks to one side or the other of its vertical axis.

4. In combination with a sheave block provided with a clevis for sustaining a load, a block balancing device comprising a pair of clamp members formed with a saddle for receiving the load sustaining cable, one end of said members being formed with interengaging hook-shaped hinge knuckles, flanges on the other ends of said members, and bolts and nuts for drawing said flanges together whereby the device may be clamped in different positions on said clevis and said saddle positioned in the center or at either side of the crotch of the clevis for balancing the load on the sheave block.

5. In combination with a sheave block provided with a clevis for sustaining a load, of an adjustable member secured to said clevis for shifting the load carried by said block to either side of its vertical axis, whereby to balance the sheave block when certain of the sheaves are inactive.

In witness that I claim the foregoing I have hereunto subscribed my name this 8th day of March, 1924.

BURT STANLEY MINOR.