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P. K. REED

SHEAVE SUPPORT

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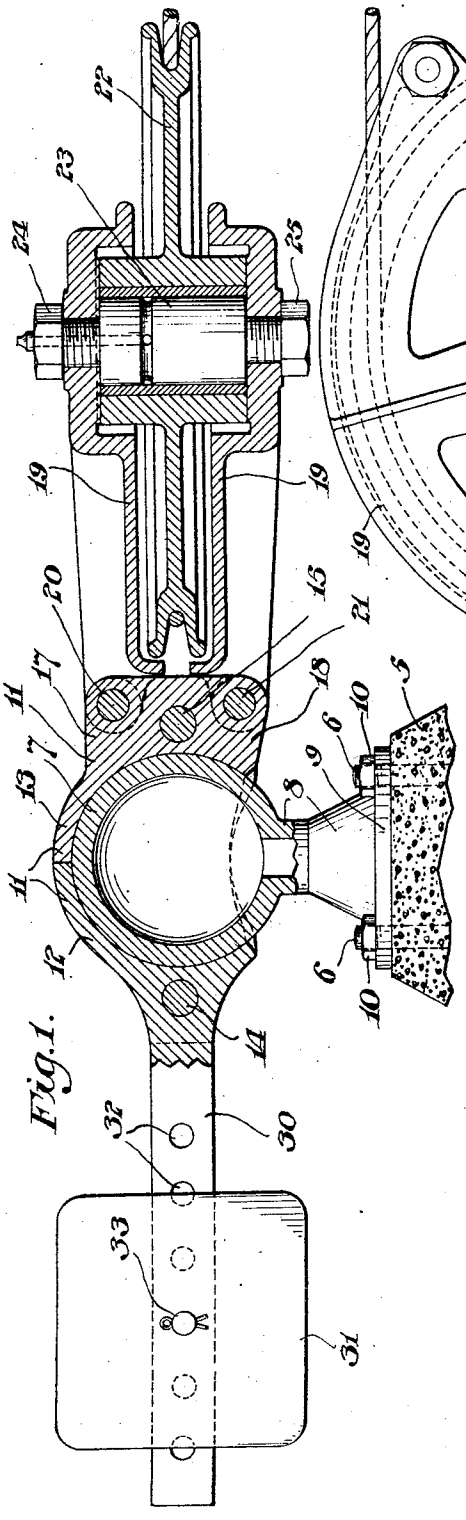


Fig. 1.

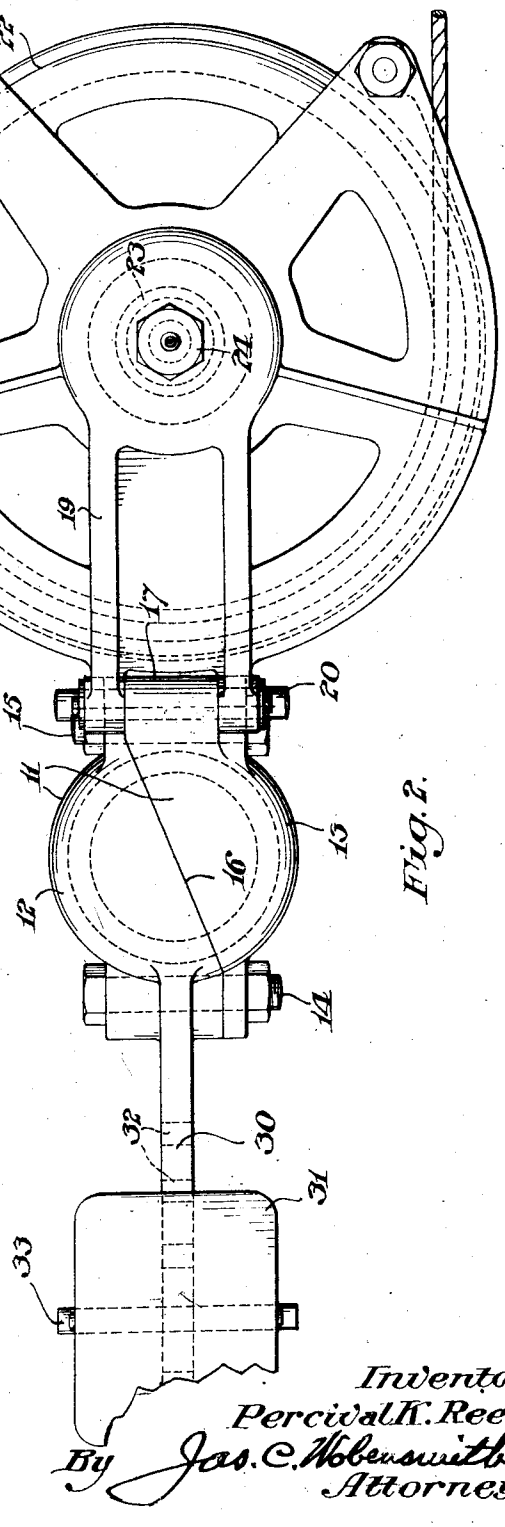


Fig. 2.

Inventor:
Percival K. Reed,
By Jas. C. Hobenswith
Attorney.

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PERCIVAL K. REED, OF LLANERCH, PENNSYLVANIA, ASSIGNOR TO ATLAS CONVEYOR COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

SHEAVE SUPPORT.

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My invention relates to improvements in sheave supports, and it has particular relation to a sheave support of the type wherein the same is so mounted as to permit the sheave to accommodate itself to the plane and direction of pull of the cable running therethrough, and counterbalanced for the purpose of reducing wear on the cable.

My invention contemplates a sheave support which, while adapted for a wide variety of uses, is particularly adapted for use in connection with drag scrapers such as are commonly employed in systems for the storage of coal, broken stone and similar commodities.

In the use of sheave supports in connection with drag scrapers, it is desirable that the fixed posts or other structure upon which the sheave supports are mounted be located as close as possible to the edge of the storage field, whereby the largest possible storage capacity will be obtained in a given area. It is also desirable that the sheave, as well as the counterbalance, be located as close as possible to the center about which the movement take place, thereby to reduce the inertia effects which occur when sudden changes of angularity take place.

The principal object, therefore, of my present invention is to provide a sheave support of a simple, durable and efficient character, which will permit the sheave to accommodate itself readily to the plane and direction of pull of the cable running over the same. A further object of my invention is to provide in such a structure an arrangement whereby the said structure may be made compact, so that the amount of dead area in the storage field will be reduced to a minimum, when the device is used in connection with drag scrapers or the like. A further object of my invention is to eliminate, in a sheave support of the character indicated, the use of a multiplicity of pivot pins. A still further object of my invention is to provide in such a structure an arrangement whereby the inertia effects will be reduced to a minimum, thus minimizing the strains upon the structure and the cable when sudden changes in angularity take place.

The nature and characteristic features of my invention will be more readily understood from the following description, taken in connection with the accompanying drawings forming part hereof, in which:

Figure 1 is a vertical central section of a sheave support embodying the main features of my present invention; and

Fig. 2 is a top or plan view thereof.

Referring to the drawings, there is there shown one form or embodiment of my invention, but it will of course be understood that various changes may be made in the details of the structure without departing from the spirit of my invention. In the form or embodiment shown in the drawings, 5 is a foundation block, preferably made of concrete or other similar material. Fixedly secured on the top of the foundation block, by means of bolts 6, is a spherical member 7. The spherical member 7 has a neck portion 8 extending to a flanged portion 9, which is engaged by the nuts 10 which are threaded on the foundation bolts 6.

Mounted on the spherical member 7 is a two part bracket member 11, internally shaped complemental to the spherical member 7 so as to be capable of universal movement thereon and about the center thereof. The two parts 12 and 13 of the bracket member 11 are held together upon the spherical member 7 by means of bolts 14 and 15 extending through suitable ears. The line of jointure of the two members 12 and 13 is preferably diagonally arranged as at 16 (see Fig. 2), whereby the same will not be in the direct line of the pull.

The member 13 is also provided with ears 17 and 18, to which the sheave frame 19, which may be of the usual construction, is secured by means of removable pins 20 and 21. The sheave 22 is also of the ordinary type, being journaled on a spindle 23, which is secured by means of nuts 24 and 25 in the frame 19.

The member 12 of the two part bracket 11 is provided with a rearwardly extending arm 30, upon which a weight 31 is adjustably mounted. For the purpose of securing the weight 31 in its adjusted locations, the bar 30 may be provided with a series of apertures 32, and a removable pin 33 passes through a suitable opening in the weight 31 and through one of the apertures 32 of the arm 30 when the weight 31 is at the proper position. Of course, it will be understood that other means of securing the weight 31 in adjusted locations may be used if desired.

It is, of course, well known to those skilled in the art that in the employment of drag

scrapers for storage of such commodities as coal, broken stone or the like, there is frequently employed a plurality of foundation blocks or posts at suitable intervals around the edge of the storage field, and that the sheave supports are customarily shifted as desired from one of these foundation blocks or posts to another as occasion arises in moving the material from one part of the field to another.

In the use of the present invention in connection with such equipment, the spherical members 7 will ordinarily be provided, one for each of the foundation blocks or posts, the same being more or less permanently secured thereto, and left in place when the sheave structure is moved from one block or post to another. For the purpose of shifting the same, the bolts 14 and 15 may be removed, whereupon the two part bracket may be separated and removed from the spherical member 7 and reassembled on a spherical member 7 mounted upon another of the blocks or posts.

In some designs of drag scrapers, the sheave supports, instead of being shifted from one foundation block to another, are mounted upon carriages, which in turn are movable about the margin of the storage field upon suitable track structures. Where such arrangements are employed, it will of course not be necessary to remove the bracket member from the spherical member to change the location of the sheave support.

The purpose of the pins 20 and 21 is to permit the cable to be readily placed over the sheave, or removed therefrom as occasion may require, it being readily understood that by the removal of the upper pin 20 the frame 19 with the sheave carried thereby may be swung downward about the pin 21 as a pivot, and the cable may then be placed upon or removed from the sheave 22.

It will be seen that by the arrangement herein described, there will be provided a sheave support in which the sheave may be readily and automatically shifted to the proper angular position by the pull of the cable and at the same time be permitted to conform to the plane thereof. It will also be seen that the centers of the mass of the structure on each side of the spherical member will be as close to the center of movement as is possible in a practical structure, thereby reducing the inertia effects which tend to destruction when rapid changes in the angular position of the parts take place, particularly in the use of the sheave support in connection with drag scrapers. Furthermore, this arrangement permits the foundation blocks or other supporting structure to be placed relatively close to the edge of the storage field, and consequently reduces the amount of dead area of the storage field.

Having thus described the nature and characteristic features of my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A sheave support comprising a spherical member, means for supporting the same, a bracket member having a portion complemental to and movably engaging the spherical member, a sheave supported by said bracket member, a rearwardly extending arm carried by said bracket member, and a counterbalance weight carried by said arm.

2. A sheave support comprising a spherical member, means for supporting the same, a bracket member having a portion complemental to and movably engaging the spherical member, a frame carried by said bracket member, a sheave journaled in said frame, a rearwardly extending arm carried by said bracket member, and a counterbalance weight carried by said arm.

3. A sheave support comprising a spherical member, means for supporting the same, a separable bracket member having a portion complemental to and movably engaging the spherical member, a frame carried by said bracket member, a sheave journaled in said frame, a rearwardly extending arm carried by said bracket member, and a counterbalance weight carried by said arm.

4. A sheave support comprising a spherical member, means for supporting the same, a two part bracket member having a portion complemental to and movably engaging the spherical member, a frame carried by one part of said bracket member, a sheave journaled in said frame, a rearwardly extending arm carried by the other part of said bracket member, and a counterbalance weight carried by said arm.

5. A sheave support comprising a spherical member, means for supporting the same, a two part bracket member having a portion complemental to and movably engaging the spherical member, a frame carried by one part of said bracket member, a sheave journaled in said frame, a rearwardly extending arm carried by the other part of said bracket member, and a counterbalance weight adjustably mounted on said arm.

In testimony whereof, I have hereunto signed my name.

PERCIVAL K. REED.