V. W. MASON.

UNIVERSAL SHEAVE SUSPENSION.

APPLICATION FILED APR. 24, 1911.

1,027,491.

Patented May 28, 1912.

Fig. 1.

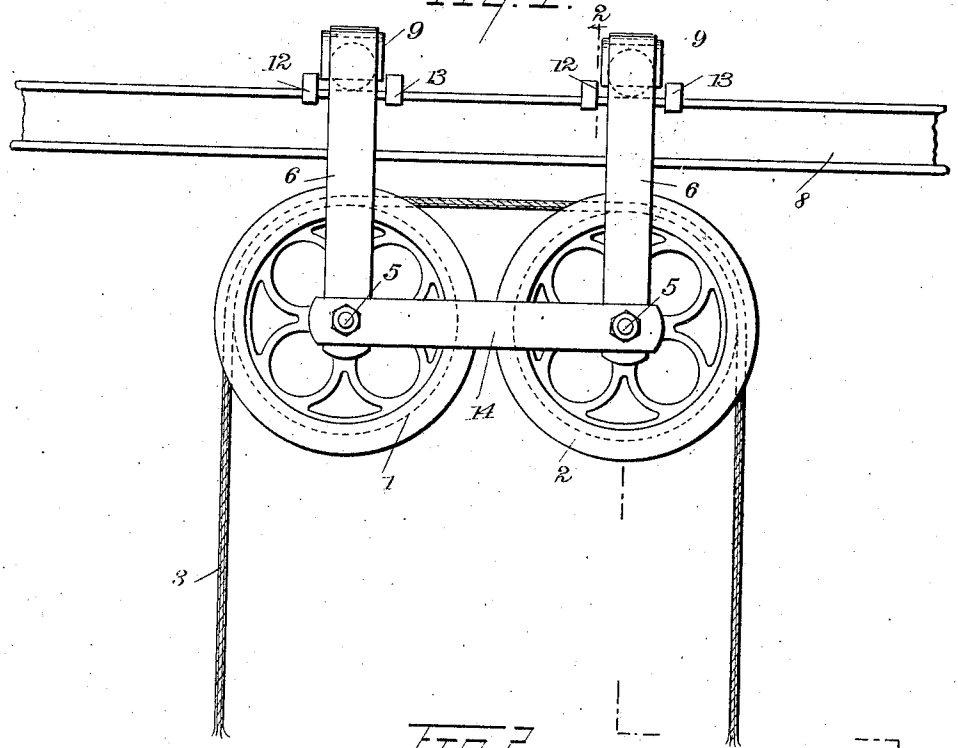


Fig. 2.

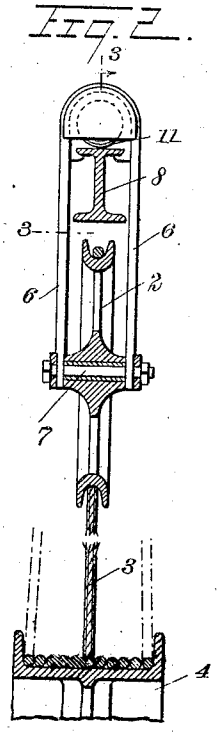
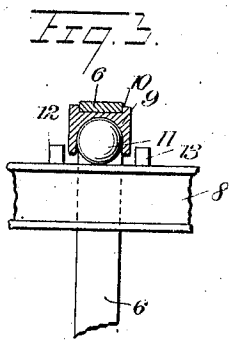
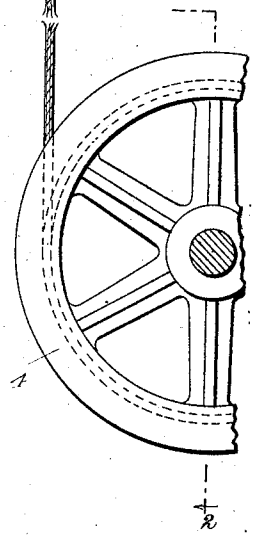


Fig. 3.





WITNESSES:

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UNIVERSAL SHEAVE SUSPENSION.

1,027,491. Specification of Letters Patent. Patented May 28, 1912.

Application filed April 24, 1911. Serial No. 623,020.

To all whom it may concern:

Be it known that I, VOLNEY W. MASON, a citizen of the United States, and a resident of Providence, in the county of Providence and State of Rhode Island, have invented a new and Improved Universal Sheave Suspension, of which the following is a full, clear, and exact description.

My invention relates generally to suspension means for sheaves and more particularly it involves such a mechanism which is particularly adapted for use in elevator shafts.

The object of my invention is to provide a device of this class which may adapt itself to the different angles in which the cable lies as the cable is wound on a drum during the lifting of the car.

A further object of my invention is to provide a device of the class described in which the sheave suspension will rest on its supporting member at substantially a point whereby the suspension may be moved freely in different directions whereby the passage of the cable over the sheave is facilitated.

A further object of my invention is to provide a device of the class described which shall consist of few parts and which shall be efficient in its operation, at the same time providing a construction in which the sheave may take up a variety of positions during operation.

Reference is to be had to the accompanying drawings forming a part of this specification, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a side view, partly in section, showing the support, together with a portion of a cable passing around the sheaves carried thereby, the drum on which the cable is wound being also shown; Fig. 2 is a vertical sectional view, on the line 2—2 of Fig. 1; Fig. 3 is a sectional view on the line 3—3 of Fig. 2.

The sheaves 1, 2, are of any suitable form of construction and are such as are generally used at the top of elevator shafts in order to change the direction of motion of the lifting cable 3, this cable being wound on a suitable drum 4, generally placed at the bottom of the shaft. Each of the sheaves is suitably supported, as at 5, in one end of the forked member 6, there being a pin or axle 7 extending through this forked member on which the sheave turns.

Each of the members 6, is suitably supported on a beam 8 extending across the top of the elevator shaft, this beam in the drawings being shown as an I-beam, although any other desired form may be used. The members 6 straddle the beam 8 and extend downwardly therefrom, the upper closed end of each of these members being provided with a recessed block 9, having the upper portion thereof provided with a slot 10, whereby it is firmly positioned within the member 6. This recessed block is in effect a pocket into which a suitable steel ball 11 is received, the ball resting on the top of the beam 8 and the ends of the block 9 adjacent the recess which receives the ball being remote from the upper portion of the beam whereby the position of the ball within the recess is secured.

The distance between the sides of the suspending member 6 is suitably greater than the width of the beam 8 whereby this member with the sheave therein may swing pendulum-like between either side of the beam about the point of contact of the ball 11 with the beam as a center; the upper portion of the beam is provided with lugs 12, 13, whereby travel of the suspension member along the beam, save through a limited distance, is prevented. Each of the members 6 may be connected together at the point of pivotal support of the sheaves by a link 14 of any suitable form of construction whereby an articulated structure is produced.

As the car is raised in the elevator shaft the cable 3, which is wound on the drum 4, moves from side to side on this drum, as shown in dotted lines in Fig. 2, in the extreme positions, the cable not extending in a vertical plane but at an angle thereto so that if the sheaves at the top of the shaft are rigidly supported there is a certain amount of pressure against the sides of the groove in the sheaves; in the operation of my device, however, the sheave and supporting means therefor will move from the vertical position to either side thereof, as occasion may require, in the winding of the cable on the drum because of the means of suspension

shown which is at substantially a point whereby the sheave may adjust itself to the angles of the cable, thereby taking off undue pressure or strain on the sides of the peripheral groove in the sheave.

While I have shown my suspension means applied particularly to elevator shafts, it is obvious that it is capable of a variety of uses and that it may be so adapted by changing the size and form of the various parts without departing from the spirit of my invention.

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

1. A device of the class described comprising a sheave, a forked suspending member provided with means for rotatably supporting the sheave, a suitable beam extending between the sides of the said forked suspending member, and a ball carried adjacent the upper end of the said member and resting on the said beam.

2. A device of the class described comprising a sheave, a supporting member therefor, a beam adapted to support the supporting member, and a ball between the beam and the supporting member and in engagement with each whereby the supporting member may move relatively to the beam.

3. A device of the class described comprising a sheave, a supporting member therefor of forked construction, a beam extending between the arms of the said forked supporting member and spaced therefrom, a ball resting on the beam and in engagement with the closed end of the said forked supporting member whereby the said supporting member and sheave may freely swing about the point of contact of the said ball with the said beam, and means for limiting the travel of the said supporting member along the beam.

4. A device of the class described comprising a sheave, a supporting member therefor, the sheave being suitably supported in the open end of the said supporting member, the said supporting member being of forked construction, a beam extending between the sides of the said supporting member, a recessed block adjacent the upper end of the said supporting member, a steel ball carried in the said recess and resting in the top of the said beam whereby the said supporting member and sheave may freely swing from side to side of the said beam.

5. A device of the class described comprising a plurality of sheaves, a plurality of supporting members therefor, each of the supporting members being of forked construction, a suitable beam extending between the sides of each of the forked members, a recessed block carried adjacent the upper end of each of the said forked members, a ball seated in each of the said recesses and in engagement with the top of the said beam, together with a plurality of lugs carried by the said beam against which the said blocks are adapted to abut, thereby limiting the movement of the sheaves longitudinally of the beam, together with a link connecting the said supporting members whereby an articulated structure is produced.

6. A device of the class described, comprising a sheave, a forked suspending member provided with means for rotatably suspending the sheave, a suitable beam extending between the sides of the said forked member, together with a ball carried by the upper end of the said forked member, and resting on the top of the said beam, and means positioned at opposite sides of the said ball, in order to limit the travel of the ball along the beam.

7. A device of the class described, comprising a plurality of sheaves, a plurality of forked supporting members therefor, a suitable beam extending between the said forked supporting members, a recessed block carried at the upper end of each of the said forked members, a ball seated in each of the said recesses and resting on the top of the said beam, a plurality of lugs spaced on the beam and on opposite sides of the balls, whereby the travel of the balls along the beam is determined, together with a plurality of links connecting the bottom of each of the said forked supporting members, whereby an articulated structure is produced.

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

VOLNEY W. MASON.

Witnesses:
L. J. GALLAGHER,
PHILIP D. ROLLHAUS.