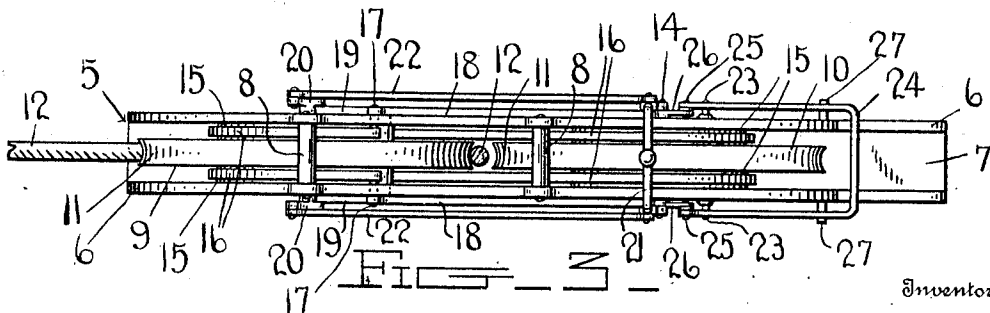
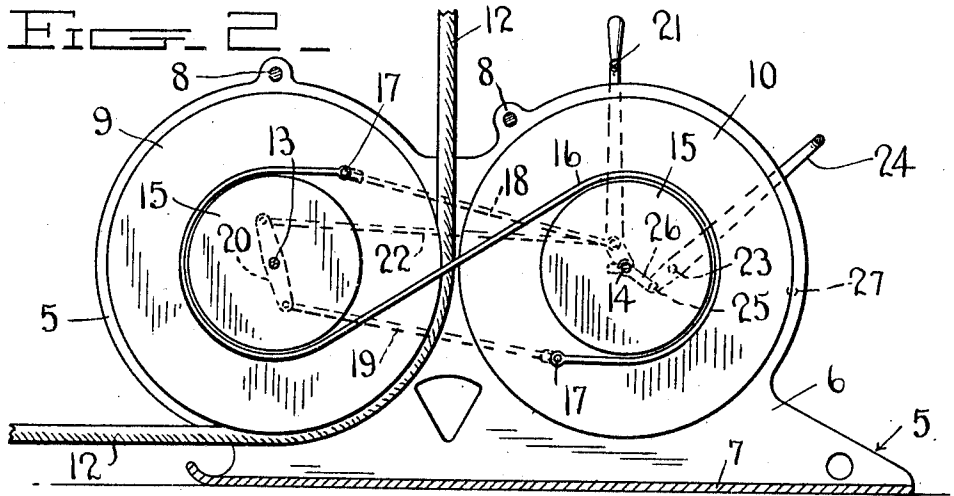


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Inventors

Witnesses

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Marrilla Marshall &

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~~Handwritten signatures~~

Attorneys

UNITED STATES PATENT OFFICE.

CHARLES H. BOUTWELL AND MARRILLA MARSHALL, OF RAWSON, OHIO.

PULLEY BRAKE AND GRIP.

969,835.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed May 8, 1909. Serial No. 494,726.

To all whom it may concern:

Be it known that we, CHARLES H. BOUTWELL and MARRILLA MARSHALL, citizens of the United States, residing at Rawson, in the county of Hancock, State of Ohio, have invented certain new and useful Improvements in Pulley Brakes and Grips; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to a pulley brake and rope grip and more particularly to the class of pulleys with means for controlling its rotation and to grip a rope adapted to travel thereover.

The primary object of the invention is the provision of mechanism of this character in which the speed of rotation of a pulley is regulated by brake means and a rope traveling over the pulley may be gripped to prevent the slipping thereof on the said pulley when the latter has been brought to a standstill or stop.

Another object of the invention is the provision of mechanism of this character which is simple in construction, thoroughly efficient in operation and inexpensive in the manufacture.

In the drawings accompanying and forming part of this specification is illustrated the preferred form of embodiment of the invention, which to enable those skilled in the art to practice the invention, will be set forth at length in the following description, while the novelty of the invention will be brought out in the claims succeeding the description.

In the drawings:—Figure 1 is a side elevation of the invention. Fig. 2 is a similar view with the front side section of the casing removed. Fig. 3 is a top plan view.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring more particularly to the drawings the numeral 5 designates generally the pulley supporting frame which is preferably constructed of metal although it may be of any other desirable material and consists of spaced side sections or walls 6, the latter mutually united or connected by a base piece 7, which latter may be mounted upon a foundation or any other suitable supporting means, and these side sections or walls

are held against separation by bolt members 8, to produce a rigid and strong frame structure. Within the frame structure between the said side walls 6, are rotatably mounted pulleys 9 and 10, each being formed in its periphery with a groove 11, which is adapted to circumscribe only one third of the diameter of a lifting or hoisting cable 12, which latter travels upon the pulley 9, and passes between the peripheral edges of it and the pulley 10. This pulley 9, is journaled upon an axle 13, having its bearing in the side wall or section 6 of the frame so as to hold the pulley against relative displacement with respect to the pulley 10, which latter is journaled upon an axle 14 movably mounted in elongated slots to permit the shifting of said pulley 10 toward and away from the other pulley as will be hereinafter described.

Formed on opposite side faces of the pulleys 9 and 10 are frictional brake band wheels 15, the same having trained thereover in opposite directions the extremities of brake bands 16, which have their terminals connected to pins 17, which latter project through suitable elongated slots contained in the side walls and are attached to operating rods 18 and 19, disposed exteriorly of the frame on opposite sides thereof, the rods 19 being pivotally connected to rocking links or levers 20, which are centrally connected to the outer ends of the axle 13, while the rods 18, are pivotally connected to a throw lever 21, adapted to be manually controlled by an operator.

Pivotally connected to the rocking levers 20 are connecting rods 22, which latter are also pivotally connected to the throw lever 21, at the point of pivotal connection of the rods 18, therewith so that upon manipulating this throw lever 21, in one direction the brake bands will be drawn taut about the friction wheels 15, thus serving as a braking medium for the pulleys to regulate the speed of rotation thereof. During the braking of the pulleys in this manner the pulley 10 will be shifted by said throw lever toward the pulley 9, so as to close in upon the cable 12, to grip the same and thus prevent the slipping thereof upon the pulley 9, should considerable weight or strain exist upon the cable.

Connected by pivots 23 exteriorly to the sides of the frame are the arms of a shifting element or lever 24, and to the extremi-

ties of the arms of this lever are pivoted as at 25 links 26, which latter are also connected to the axle 14, so that upon shifting the throw lever 21, this shifting lever 24, is automatically or simultaneously actuated to move the same a predetermined distance when the pulley 10 has been shifted toward the pulley 9, to grip the cable so as to lock the said pulley 10, against reverse movement until the shifting lever has been manually actuated in a direction to a position for releasing the said pulley 10, to free the cable.

Projecting outwardly from the sides 6 of the frame into the path of movement of the shifting lever 24, are stop lugs or pins 27, so as to limit the gravitating movement of the said shifting lever 24, when being automatically thrown to a position for locking or holding the pulley 10, in its gripping relation with respect to the pulley 9, for engagement with the cable.

It will be obvious that when the shifting lever 24 has assumed a position for maintaining the said pulley 10, in its gripping relation with respect to the pulley 9, the lever 21 may be thrown in opposite directions to permit the tightening of the bands 16, upon the friction wheels or to slacken the said band and in this manner the pulleys may be positively controlled as to their rotation with respect to each other when gripping the cable.

From the foregoing, the construction and operation of the invention seems clear without the necessity of a more extended explanation and therefore the same has been omitted.

What is claimed is:—

1. In mechanism of the class described a pulley frame, opposed pulleys mounted within the pulley frame, a cable trained over one of said pulleys and adapted to travel between it and the other pulley, means for moving one of the pulleys toward and away from the other pulley to grip and release the cable and brake mechanism operated by said means to regulate the speed of rotation of the pulleys.

2. In mechanism of the class described a pulley frame, opposed pulleys mounted with-

in the pulley frame, a cable trained over one of said pulleys and adapted to travel between it and the other pulley, means for moving one of the pulleys toward and away from the other pulley to grip and release the cable, brake mechanism operated by said means to regulate the speed of rotation of the pulleys, and means automatically actuated by said first named means for holding the movable pulley in its shifted position with respect to the other pulley when gripping the cable.

3. In mechanism of the class described a pulley frame, opposed pulleys mounted within the pulley frame, a cable trained over one of said pulleys and adapted to travel between it and the other pulley, means for moving one of the pulleys toward and away from the other pulley to grip and release the cable, brake mechanism operated by said means to regulate the speed of rotation of the pulleys, means automatically actuated by said first named means for holding the movable pulley in its shifted position with respect to the other pulley when gripping the cable, and means limiting the movement of the last mentioned means in one direction.

4. In mechanism of the class described, a supporting frame, rotatable pulleys mounted in said frame and normally spaced from each other, one of said pulleys movable with respect to the other to bring the pulleys toward and away from each other, friction wheels formed on opposite sides of the pulleys, brake bands trained over the friction wheels, a throw lever pivoted to the axis of the movable pulley, a cable adapted to travel between the pulleys, connections between the ends of said brake bands and the throw lever to enable the regulation of speed of the pulleys, and means automatically actuated by the throw lever to hold the movable pulley in close shifted relation to the other pulley when gripping the cable.

In testimony whereof, we affix our signatures in presence of two witnesses.

CHARLES H. BOUTWELL.
MARRILLA MARSHALL.

Witnesses:

FRANK A. EATON,
A. T. WORTHINGTON.