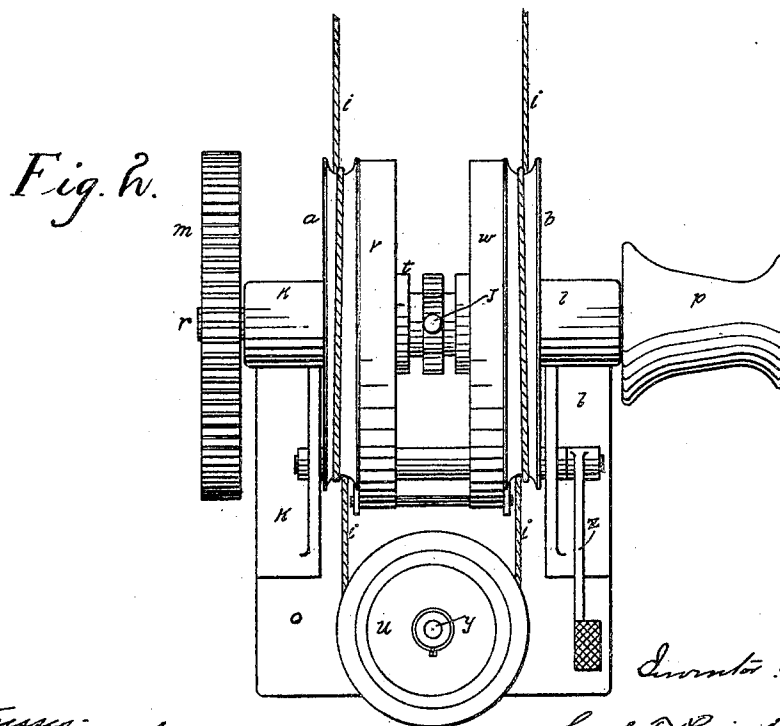
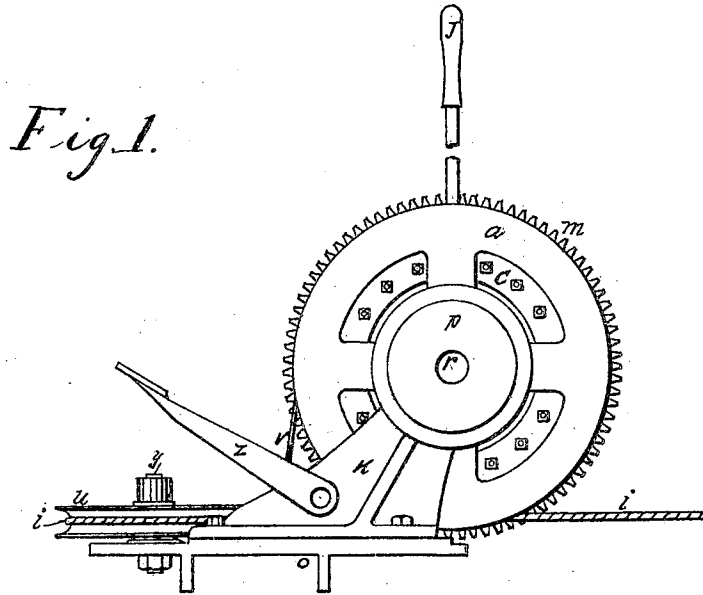


No. 818,115.

PATENTED APR. 17, 1906.

C. T. PAINTER.
HOISTING APPARATUS.
APPLICATION FILED JULY 3, 1905.

2 SHEETS—SHEET 1.



Witnesses:
John F. Golding.
Geo. B. Pittu.

Inventor:
Carl T. Painter
By J. S. Barker
Atty.

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2 SHEETS—SHEET 2.

Fig. 3.

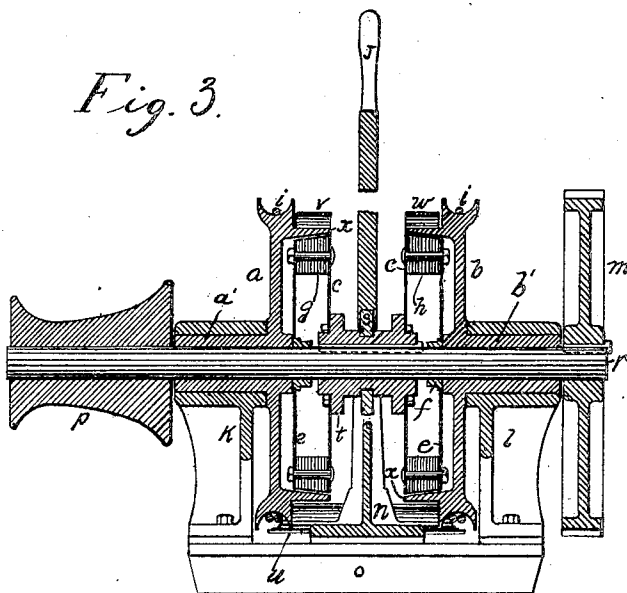
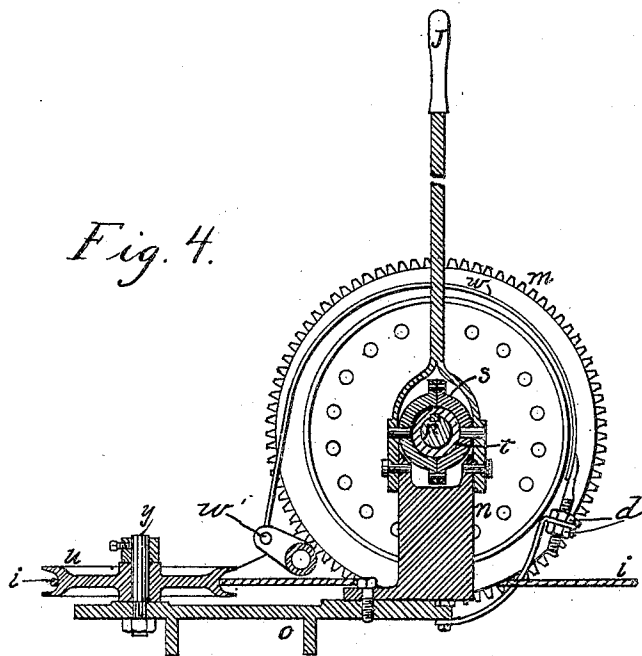


Fig. 4.



Witnesses:
John F. Golding
Geo. B. Pitts

Inventor
Carl T. Painter
By J. S. Barker
att'y.

UNITED STATES PATENT OFFICE.

CARL T. PAINTER, OF CHATTANOOGA, TENNESSEE.

HOISTING APPARATUS.

No. 818,115.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed July 3, 1905. Serial No. 268,124.

To all whom it may concern:

Be it known that I, CARL T. PAINTER, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in and Relating to Hoisting Apparatus, of which the following is a specification.

My invention has for its object to produce a hoisting apparatus or machine of simple construction and that is adapted to be driven either forward or backward by a motor running constantly in one direction. I am aware that, broadly considered, a hoisting mechanism possessing this capability is old; but I have made certain improvements, to be hereinafter pointed out, whereby the machine is improved and whereby it is possible to use a single cable passing from one object to be raised, such as a platform of an elevator, and thence to the hoisting-machine, around a wheel or sheave thereof, which is used to give one direction of movement to the cable, thence around another wheel or sheave of the hoisting-machine, which is employed to give the other direction of movement to the cable, and thence to a second object to be lifted, such as another and oppositely-moving platform or in place of such a platform a counterweight.

In the accompanying drawings, wherein my invention is illustrated, Figure 1 is a side elevation of a hoisting apparatus. Fig. 2 is a top plan view. Fig. 3 is a vertical section taken through the driving-shaft, and Fig. 4 is a central longitudinal section.

In the drawings, *o* designates a base-plate that serves as the foundation for the apparatus. To it are secured, preferably by bolts, two standards or brackets *k l*, carrying bearings for the main driving-shaft *r* and the two grooved wheels *a b*, around each of which passes one or more times the cable *i*. The hubs *a' b'* of the wheels *a b* surround the driving-shaft *r*, but are loose thereupon, so that the motion of the shaft is not directly communicated to the wheels. The shaft is connected with a motor by gearing of any approved construction and arrangement, a single member only being represented—to wit, the spur-wheel *m*, that is fast upon the shaft. Upon the opposite end of the shaft is mounted a winch-head *p*. The wheels *a b* are each provided with an inward-extending beveled flange *x*, adapted to serve the double purpose of one member of a friction-clutch and also as a brake-rim.

Within the flanges *x* are mounted the movable friction clutch members *g h*, that are connected fast to a sliding sleeve *t*, that is splined to the central portion of the shaft *r*. The movable clutch members are preferably constructed as represented in Fig. 3—that is to say, an annular friction member *g* or *h*, formed of some suitable material, is confined between two disk-like plates *c e*, these parts being bolted together. The outer plate is secured fast to the sliding sleeve *t*, while the inner plate is secured to a sliding ring *f*, that is loosely mounted upon the shaft. This makes a strong and yet easily-constructed and very light movable friction member. The band *s*, to which the clutch-shifting lever *J* is connected, is mounted loosely in a groove formed circumferentially in the sliding sleeve *t*. The clutch-shifting member or lever is pivotally mounted in a bracket or standard *n*.

v w represent brake-bands that surround, respectively, the flanges *x* of the two sheaves or wheels *a b*. The brake-bands are connected with some stationary part of the frame by means, such as indicated at *d*, that permit of the necessary adjustment being made to brakes. The other ends of the brake-bands are connected to a shaft or cross-bar *w'*, mounted in the arm of a foot-operating brake-lever *z*.

As shown in Fig. 2, the cable is continuous and passes around the sheaves or wheels *a b*, and in passing from one wheel to the other it engages with and is directed in its course by a grooved wheel *u*, mounted loosely upon a stud or shaft *y*. The axis about which the wheel *u* turns is at right angles to the axis of the wheels *a* and *b*. Under ordinary circumstances the former, the axis for the wheel *u*, is vertically disposed and the latter is horizontally disposed.

The apparatus that I have described may be applied to very many uses. One use for which it is well adapted is for moving the platforms or cages of elevators employed for lifting material in the construction of buildings. In using an apparatus of this character it is desirable to employ an engine or motor that runs constantly in one direction—as, for instance, a gas-engine. The ends of the cable will be connected with two movable objects, as the platforms of an elevator, arranged to move in opposite directions. The cable comes from one of the cages, passes under the wheel *a*, encircles the same completely, and passes thence backward or rearward

half around the pulley or wheel *u*, thence forward under the wheel *b*, which it encircles completely, and leaving the same from the under side goes to the other platform. It
 5 will thus be seen that a single cable only is required, whereas heretofore in apparatus of the type to which my invention belongs it has been necessary to employ two cables, one
 10 attached to each of the wheels or drums that corresponds to the wheels designated *a* and *b* of this case. When the clutch-shifting lever *J* stands upright, as indicated in the drawings, both of the movable clutch members
 15 are out of engagement with the flanges *x* of the grooved cable wheels or sheaves, and the parts of the apparatus run loosely, no motion being imparted to the cable. If, however, the handle be inclined either to the right or to
 20 the left, the wheel toward which it is inclined is connected with the driving-shaft and rotated, its motion being imparted to the cable.

The brake *w* is used to stop the apparatus quickly when the clutch members are moved to disengaging positions.

25 What I claim is—

1. In a hoisting mechanism, the combination of a pair of wheels about which a cable is adapted to pass, a clutch mounted between the wheels and arranged to be brought into
 30 engagement with one or the other thereof accordingly as it is moved, and thereby connect it with a source of driving power, and a cable-guiding pulley arranged to direct the cable from one of the wheels to the other,
 35 substantially as set forth.

2. In a hoisting mechanism, the combination of a pair of wheels about which a cable is adapted to pass mounted loosely upon a
 40 shaft, a clutch mounted between the wheels and arranged to be brought into engagement with one or the other thereof accordingly as

the clutch is adjusted and to thereby connect the wheel with a source of driving power, and a guiding-pulley for the cable mounted loosely upon a support, the axis of the said pulley
 45 being disposed at right angles to the axis of the said wheels, substantially as set forth.

3. In a hoisting apparatus, the combination of a shaft adapted to be continuously driven in one direction, a pair of wheels *a*, *b*,
 50 loosely mounted thereupon and provided with peripheral cable grooves or seats, clutch mechanism arranged to connect one or the other of the wheels with the shaft accordingly as it is adjusted, a grooved pulley, *u*,
 55 mounted loosely upon a support that is disposed at right angles to the shaft on which the wheels *a*, *b*, are mounted, and a hoisting-cable passing around one of the wheels, thence around the pulley *u* and thence
 60 around the other wheel, substantially as set forth.

4. In a hoisting-machine, the combination of a shaft, *r*, a pair of wheels provided with cable seats or grooves loosely mounted on the
 65 said shaft and formed with laterally-projecting flanges having inclined faces adapted to constitute friction-surfaces, and movable friction members adapted to engage with the said inclined faces of the flanges of the wheels,
 70 each comprising an annular friction-ring, disk-like plates secured near their outer edges to the opposite faces of the ring and near their inner edges to sliding ring-like
 75 members mounted on the driving-shaft, and means for shifting the movable clutch members, substantially as set forth.

CARL T. PAINTER.

Witnesses:

K. E. GODFREY,
 GEO. T. WHITE.