

No. 890,663.

PATENTED JUNE 16, 1908.

A. LAMBERT.
FALL ROPE CARRIER.
APPLICATION FILED JULY 9, 1907.

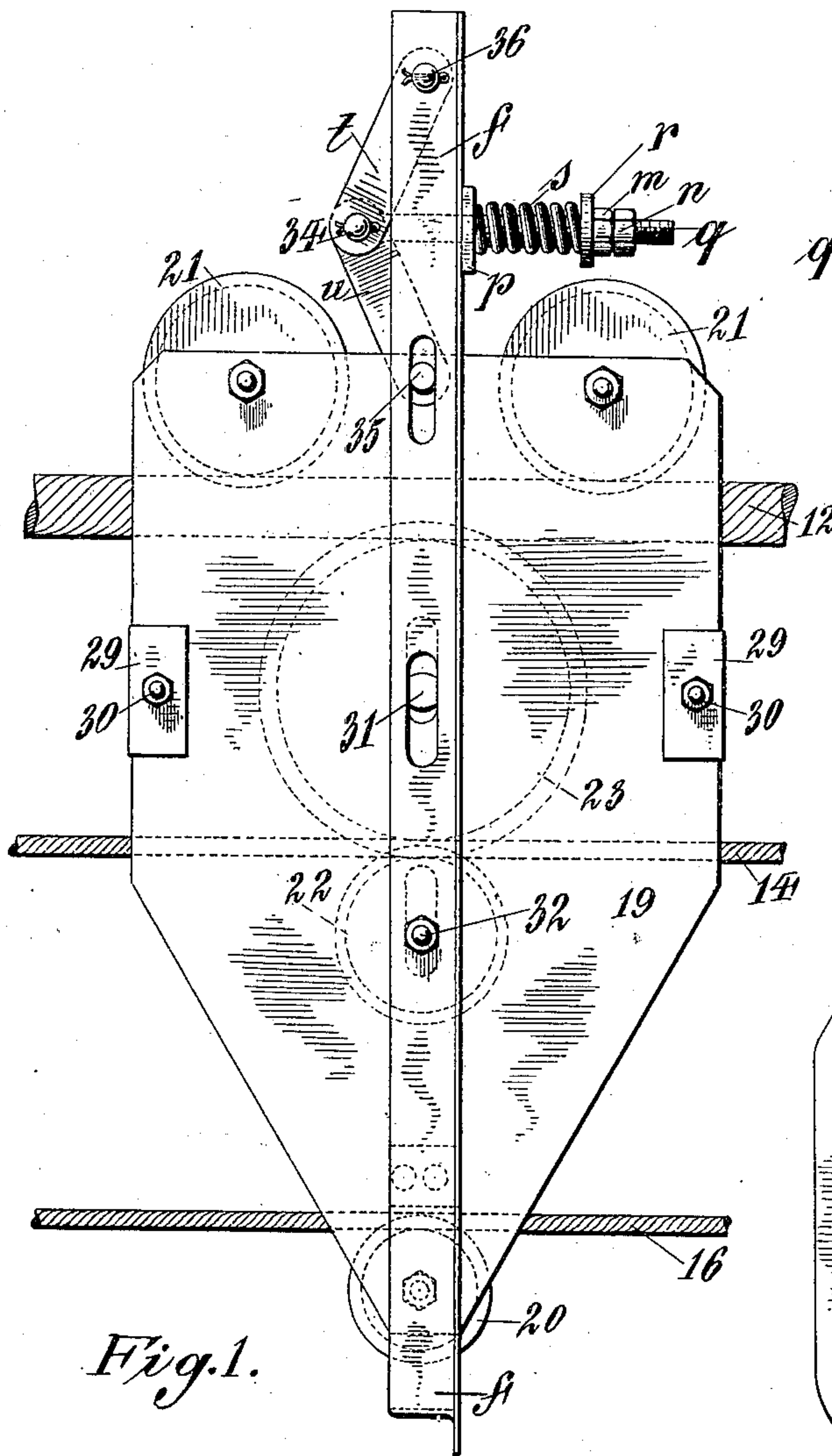


Fig. 1.

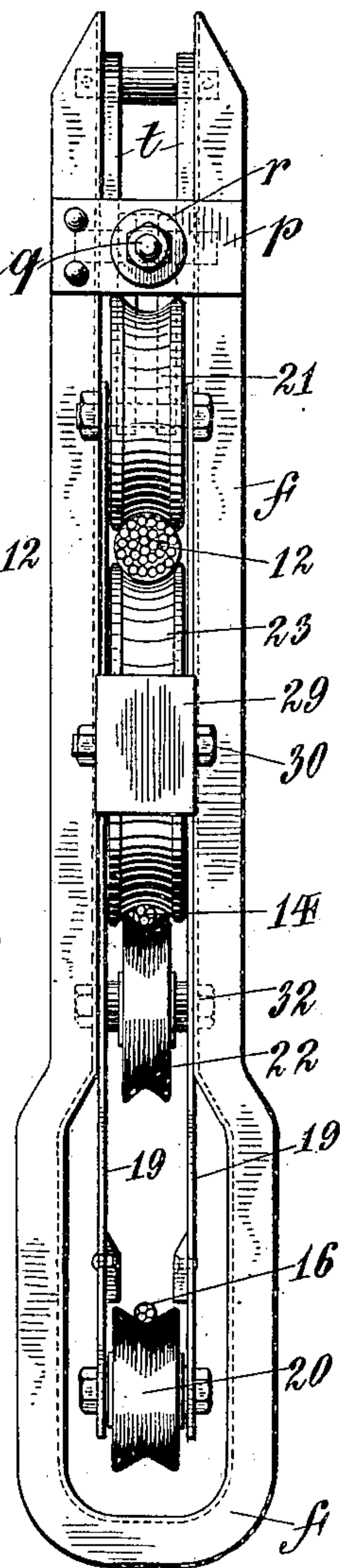


Fig. 2.

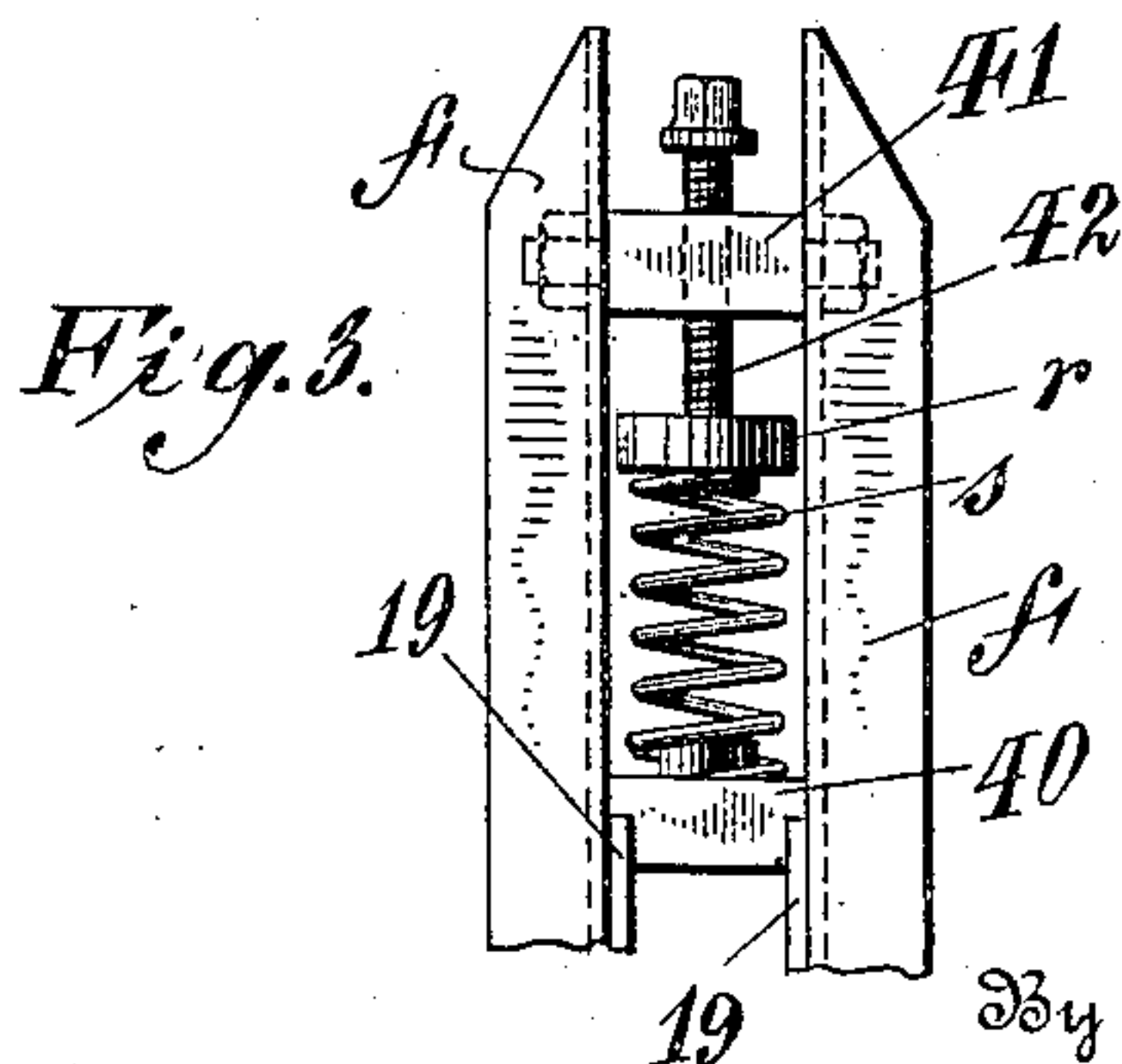


Fig. 3.

Witnesses:
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Inventor
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UNITED STATES PATENT OFFICE.

ASHER LAMBERT, OF NEWARK, NEW JERSEY.

FALL-ROPE CARRIER.

No. 890,663.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed July 9, 1907. Serial No. 382,918.

To all whom it may concern:

Be it known that I, ASHER LAMBERT, a citizen of the United States, and a resident of Newark, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Fall-Rope Carriers, of which the following is a specification.

This invention relates to conveyers or cable ways for hoisting and conveying.

10 The object of this invention is to provide an adjustable rope carrier which is simpler and less liable to derangement than any heretofore known or used.

15 In conveyers of this character it is desirable and necessary to support some or all of the flexible ropes employed from the main cable or trackway so as to prevent sagging of the ropes and interruption to the successful movement of the carrier, and so as to permit the raising and lowering of the load or bucket from the load carriage at any point between the terminal stations.

Each carrier should be automatically movable at a predetermined and characteristic 25 rate so as to maintain the proper space or distance between successive carriers. To attain this object each carrier is provided with a single propelling element, like a grooved wheel, sheave or pulley; this wheel 30 or element preferably engages the underside of the main track or cable and the upper side of the endless haul rope; the track, the wheel and the haul rope are in one and the same vertical plane, and the effort of the haul rope 35 tends to force the single wheel into engagement with the main track; this steadies the carriers and prevents wobbling. I provide for forcing the haul rope into engagement with the single or propelling wheel by means 40 additional to the effort of the haul rope as described. This consists in providing cheek plates constituting a support or frame to carry the wheels located above the main cable also a propelling wheel and a carrying 45 wheel, and a separate, distinct frame articulated to the first named frame, the second frame carrying a wheel or pulley in position below the haul rope and interposing a spring actuated connection between the two frames 50 so that the wheels above the main track are forced toward the track from above and the wheel below the haul rope presses the haul rope into engagement with the propelling wheel and the single propelling wheel into 55 engagement with the lower side of the main cable. I sometimes use a single helical

spring with means for adjusting its pressure and I sometimes use a toggle jointed lever in connection with a spring as just described. With a grooved wheel of given diameter arranged as described the rate of movement is one-half the speed of the haul rope. 60

The accompanying drawings illustrate the invention:

Figure 1 is a side elevation of the fall rope 65 carrier; Fig. 2 is an end view thereof and Fig. 3 is a view of a modification of the arrangement of the adjusting spring.

There is a main track or cable 12; the haul rope is shown at 14; the fall rope 16 supplies means for raising and lowering the load 70 carriage.

The rope carrier is constructed with a frame 19 which may be of any suitable material—preferably consisting of iron cheek 75 plates between which pass the cable 12, and the lower run of the haul rope 14. The cheek plates of the frame 19 are secured by angle pieces 29 held in position by suitable bolts 30. The carrying sheaves or wheel 20 80 is located in the bottom of the frame 19 to carry the hoist rope 16. There are two sheaves or wheels 21 journaled in the top of the frame 19; these wheels run upon the main track 12. The wheel 22 is located below the haul rope 14. It is designed to press 85 the haul rope 14 into engagement with the underside of the wheel 23 and at the same time to press the wheel 23 into engagement against the underside of the track 12. This 90 sheave or wheel 22 is in a frame *f* formed of angle iron; the frame *f* is slotted to receive the ends of the shaft or bolt 31 on which the wheel 23 rotates. The shaft 32 of the wheel 22 passes through slots in the cheek plates of 95 the frame 19; the frame *f* is in a sense articulated to the frame 19 by these adjustable points of connection 31 and 32.

t and *u* are links forming a toggle jointed lever, the joint or connection is on the pin 100 34. Link *t* is pivoted to frame *f* at 36; link *u* is pivoted to frame 19 at 35. The frame *f* is slotted to permit bolt 35 to pass through it; this forms an additional point of connection between the frames *f* and 19. A plate *p* 105 is fixed on the frame *f* and through it passes a bolt *q*; bolt *q* is in engagement with the pin 34. There is a helical spring *s* on the bolt *q* between the plate *p* and the washer *r* on bolt *q*. On the bolt *q* is a nut *m* and a check nut 110 *n*; these provide means for adjusting the expansive effort of the spring *s*.

In Fig. 3, there is a modification of the arrangement of the spring *s*. There is a block 40 connected to the cheek plates of the frame 19 at the top, and a block 41 is fixed in position between the two members of the frame *f*. 42 is an adjusting screw engaging threads in the block 41. *r* is a washer on the free end of screw 42 and the spring *s* is fixed in position between the blocks 40 and 41. The extent of compression of the spring *s* is regulated by the screw 42.

From the foregoing description it is apparent that the frames or supports *f* and 19 slide upon each other and that sheave 22 is fast in the frame *f* while the sheaves 21 are fast in the frame 19. The effort of the spring *s* and its connections is such that the frame *f* is forced upward and the frame 19 downward, from which it results that sheave 22 is pressed against the underside of rope 14 which in turn is pressed against the underside of wheel 23, wheel 23 is pressed against the underside of track 12 and sheaves 21 are pressed against the upper side of track 12.

The invention here described and claimed is shown and described in two co-pending applications for United States Letters Patent, Serial Numbers 382919 and 382920, filed July 9, 1907; said applications describe and claim specific modifications of structural features not herein shown or described.

What I claim and desire to secure by Letters Patent is:—

1. In a conveyer the combination of a track, a haul rope, and a rope carrier consisting of a propelling wheel engaging the under side of the track and the upper side of the haul rope, a wheel engaging the upper side of the track, and means for automatically varying the grip of said wheels on said track.

2. In a conveyer the combination of a track, a haul rope, and a rope carrier consisting of a propelling wheel engaging the under side of the track and the upper side of the haul rope, a wheel engaging the upper side of the track, means for supporting said wheels in operative position and means for automatically varying the grip of said wheels on said track.

3. In a conveyer the combination of a track, a haul rope, and a rope carrier consisting of a propelling wheel engaging the under side of the track and the upper side of the haul rope, a wheel engaging the upper side of the track, means for supporting said wheels in operative position consisting of a suitable frame; a supplemental frame, an adjustable connection between said frames and a spring

imparting to said connection a tendency to draw said frames in a predetermined direction and cause said wheels to grip the track.

4. In a conveyer the combination of a track, a haul rope and a rope carrier consisting of a propelling wheel engaging the under side of the track and the upper side of the haul rope, a wheel engaging the upper side of the track, a wheel engaging the under side of the haul rope, means for supporting said wheels in operative position, a supplemental frame engaging the last named wheel, an adjustable connection between said frames and a spring imparting a normal bias to said connection.

5. In a conveyer the combination of a track, a haul rope, and a rope carrier consisting of a propelling wheel engaging the under side of the track and the upper side of the haul rope, a pair of wheels engaging the upper side of the track, means for supporting all said wheels in operative position and means for automatically varying the grip of said wheels on said track.

6. In a conveyer the combination of a track, a haul rope, and a rope carrier, consisting of a propelling wheel in position between the track and haul rope, a frame or support for said wheel, a wheel running on the track and supported in said frame, a wheel or pulley in position below the haul rope, a frame or support for said wheel, adjustable connecting points between said frames, a toggle jointed lever connecting said frames and a spring for imparting a bias to said lever.

7. In a conveyer the combination of a track, a haul rope and a rope carrier consisting of a propelling wheel engaging the under side of the track and the upper side of the haul rope, a wheel engaging the upper side of the track, a wheel engaging the under side of the haul rope, means for supporting said wheels in operative position consisting of two parallel cheek plates, a supplemental frame supporting the last named wheel, slotted bearings in said frame for the last named wheel, an adjustable mechanical connection between said frames, and an adjustable spring imparting a normal bias to said mechanical connection.

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

ASHER LAMBERT.

Witnesses:

EDWIN SEGER,
SIDNEY MANN