(No Model.)

T. S. MILLER & J. FOSTER.

TENSION CARRIAGE FOR ENDLESS ROPE TRANSMISSION.

No. 419,208. Patented Jan. 14, 1890.

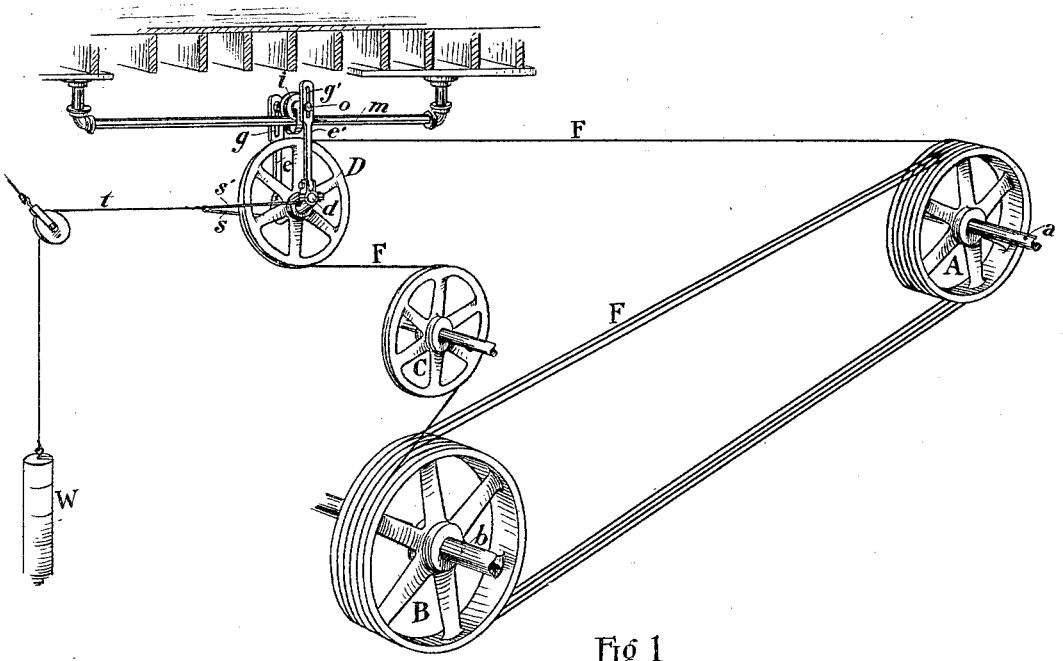

Fig. 1

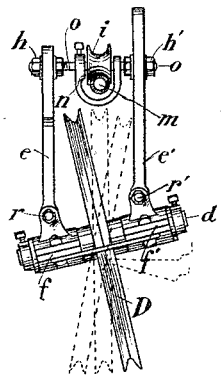

Fig. 2

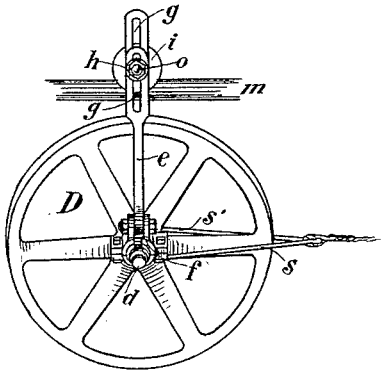

Fig. 3

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TENSION-CARRIAGE FOR ENDLESS-ROPE TRANSMISSION.

SPECIFICATION forming part of Letters Patent No. 419,208, dated January 14, 1890.

Application filed November 18, 1889. Serial No. 330,680. (No model.)

To all whom it may concern:

Be it known that we, THOMAS SPENCER MILLER, of Brooklyn, in the county of Kings and State of New York, and JED FOSTER, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Tension-Carriages for Endless Rope or Band Transmissions of Power; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to that part of a rope-transmission which provides for taking the slack out of the rope by means of what is usually known as a "tension-carriage;" and it consists of an improved form of carriage constructed as shown and described in the accompanying drawings and specification.

The object of our invention is to simplify the construction and increase the efficiency and utility of the tension-carriage. We attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of a rope-drive employing our tension-carriage. Fig. 2 is an enlarged end view, and Fig. 3 an enlarged side view, of the tension-carriage.

Similar letters refer to similar parts throughout the several views.

A is a driving sheave or wheel, receiving power from any convenient source through the shaft *a*.

B is a driven wheel transmitting power to drive any desired machinery through the shaft *b*.

C is an idler-wheel used to change the direction of the rope F.

D is the wheel of the tension-carriage.

d is the shaft which carries the wheel D.

f f' are the journal-boxes which carry the shaft *d*.

e e' are hangers connected pivotally with the journal-boxes *f f'* at *r r'*.

g g', Figs. 1 and 3, are slots in the hangers *e e'*, for adjustment.

o o is a shaft or bolt threaded for the nuts *h h'*, and carrying the roller *i*, which is preferably grooved to suit the track *m*. The yoke or strap *n* serves to retain the roller *i* in position on the track *m*. Strap or yoke *s s'* serves to connect tension-carriage with rope or chain *t*, which carries the weights W.

It is usually desirable to locate the travel of the tension-wheel in rope-transmissions near the ceiling, above and out of the way of other machinery, and as heretofore constructed the tension-wheel has been mounted in a necessarily cumbersome and heavy frame-work provided with rollers traveling upon two parallel tracks. Such construction necessitates an extensive frame-work for supporting the tracks at a considerable distance from the ceiling.

In the use of our invention we employ a rigid self-supporting track, preferably tubular, secured in close proximity to the ceiling, and suspend the tension-wheel therefrom by hanger-arms. This suspension enables us to simplify the construction very materially and secure a delicate self-adjustment of the tension-wheel to the alignment of the rope. By reason of this gravity-suspension one supporting-track and one carrying-roller will maintain the tension-wheel in its proper position and leave it free to move bodily back and forth under the influence of the rope and weights, and as the track is cylindrical and the roller grooved to match, the tension-wheel is free to adjust itself to any slight variations in the travel of the rope or the alignment of the track. By thus suspending the tension-wheel in a simple yoke on a single roller we are enabled to use a self-supporting track, and the reduced weight and friction render the tension-carriage more sensitive to the varying strains on the rope, and therefore more efficient in taking up the slack arising from expansion and contraction of the rope and in maintaining a proper frictional tension of the rope on the wheels. Incidentally this also saves wear and strain on the rope, as it makes it possible to keep the slack taken up by the use of less weight at W. This simplified form furthermore reduces the space required for operation of carriage, and renders it possible to use it in places where the old-style carriages could not be employed.

The hanger-arms are mechanically adjustable to set the angle of the tension-wheel to the lead or travel of the rope as it passes off of one side of the driving-wheel onto the other side of the driven. The dotted lines in Fig. 2 of the drawings illustrate different positions of the tension-wheel.

It is obvious that our invention is applicable to transmissions of various forms, whether composed of one or more strands or transmitting power to one or more shafts.

The principal object of our invention can be attained by fixing the tension-wheel at the proper angle in its frame or yoke and without making the hanger-arms mechanically adjustable.

Having fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a rope-transmission, a tension-wheel suspended from a track in a yoke or carriage, substantially as shown and described.

2. A tension-wheel for rope-transmission, mounted in a yoke which is pivotally suspended from a track, as and for the purpose specified.

3. In a tension-carriage for rope-transmission, suspending-arms adapted to be adjusted for varying angles of the tension-wheel and fitted with journal-bearings pivotally secured thereto, substantially as shown and described.

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