

UNITED STATES PATENT OFFICE.

THOMAS SPENCER MILLER, OF NEW YORK, N. Y.

CONVEYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 474,047, dated May 3, 1892.

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To all whom it may concern:

Be it known that I, THOMAS SPENCER MILLER, of New York, in the county and State of New York, have invented a new and useful
5 Improvement in Conveying Apparatus, of which the following is a specification.

In the accompanying drawings, Figure 1 is a general side view of the apparatus. Fig. 2 is a side detail of the carriage and one rope-carrier. Fig. 3 is a cross-section on the line
10 $x x$ of Fig. 2, showing the carrier in section and the carriage behind it. Fig. 4 is a detail. Fig. 5 is a detail side view of a carriage and carrier of modified construction. Fig. 6
15 is a cross-section on the line $y y$ of Fig. 5, showing the carrier in section and the carriage behind it. Fig. 7 is a detail.

$a b$ are the towers.

20 $c d$ are two cables or trackways extending parallel with one another between the towers.

e is the hoisting or fall rope.

f is the rope-drum for hoisting.

g is the fall-block sheave.

h is the carriage.

25 i is the fall-rope sheave on the carriage.

j are the carriage-wheels that run on the cable c .

k are the carriage-wheels that run on the cable d .

30 l and l' are the side frames of the carriage, depending from the axle of the wheels $j k$ and carrying the axle of the sheave i .

m and m' are buffers extending, respectively, backward and forward from the carriage to strike against and deflect the fall-rope-carrier's sheave.

n are the fall-rope carriers, which consist of the following parts: o and o' are clamps fixed upon the cables c and d , respectively.

40 In the construction shown in Figs. 2, 3, and 4 a fixed elongated hook or trough p depends from the clamp o' and a fixed stud p' depends from the clamp o , the trough being formed in a circle struck from the center of the stud p' . Upon the fixed stud is journaled
45 a horizontal lever q , provided on one arm with a counterbalanced weight q' , and upon the extremity of the other arm with a flange q^2 , adapted to swing laterally into and engage
50 with the hook or trough p , as shown in Fig. 3, and half-way between the vertical plane of the two cables also provided with the roller

or sheave q^3 . The lever q is free to swing upon the stud p' , excepting as the springs r and r' tend to hold it in the position shown
55 in the drawings, which bridges at right angles the space between the cables. Now it is obvious that the springs r and r' will always hold the roller q^3 in position to support the fall-rope, excepting when the carriage is passing, and that when the carriage approaches
60 one of the buffers on the carriage will strike the roller q^3 and swing the lever q in opposition to the spring r or r' into a position parallel with and to one side of the path
65 of the carriage, so that the carriage may pass freely, and that as soon as the carriage has passed the spring r or r' will swing the lever q back into its normal position for supporting the fall-rope. The same action will take
70 place from whichever side of the carrier the carriage approaches, excepting that a different spring and a different buffer will come into play when the approach is made on one side from what are utilized when the approach
75 is made on the other.

In the modification shown in Figs. 5, 6, and 7 bearings s and s' , parallel with the cables, are provided on the clamps o and o' for the hangers t and t' . These hangers are provided,
80 respectively, with the weights u and u' , which hold them normally at the inclination shown in Fig. 6. On the extremity of the hanger t is fixed one end of the shaft v of the sheave or roller q^3 and the other extremity of this
85 shaft carries a hook or latch v^2 , as shown in Fig. 7, which hook is in position to engage with a hole or projection v^3 on the extremity of the hanger t' . Now it is obvious that under the action of the weights u and u' , or
90 springs or other equivalent devices, the parts just described will normally bridge the space between the cables c and d and maintain the roller q^3 in the position for supporting the fall-rope, but that these parts have a capacity
95 of being thrust aside upon the approach of the carriage. For the latter purpose the carriage is provided with the buffers m and m' , which contain the converging ends m^2 and m^3 . The hangers t and t' are provided with
100 guard-pieces w and w' , projecting into the path of the converging ends m^2 and m^3 , respectively. Now it will be evident as the carriage approaches the carrier the buffer ends

m^2 and m^3 , striking against the guard-pieces w and w' , will swing the hanger t with the roller q^3 and the hanger t' to the left and right, respectively, of the path of the carriage, and
 5 that as soon as the carriage has passed the parts of the carrier will resume their normal position for the support of the fall-rope.

Having thus described two forms in which my invention may be embodied, I do not desire to be understood as limiting myself to the
 10 exact form, number, or arrangement of parts.

I claim—

1. In a conveying apparatus containing two parallel cables, a carriage to travel thereon,
 15 and a rope supported by said carriage, in combination with said parts, a rope-carrier, a clamp whereby it is connected with one of said cables, means whereby the free end of said carrier is normally steadied, and a clamp
 20 whereby said means is secured to the other of said cables, substantially as described.

2. In a conveying apparatus containing two parallel cables or trackways, a carriage to travel thereon, and a rope supported by said
 25 carriage, in combination with said parts, a rope-carrier connected with one of said cables or trackways and extending into the space between the cables or trackways, and means whereby said rope-carrier is normally held in
 30 said position, substantially as described.

3. In a conveying apparatus containing two parallel cables or trackways, a carriage to travel thereon, and a rope supported by said
 carriage, in combination with said parts, a
 35 rope-carrier connected with one of said cables or trackways and extending into the space between the cables or trackways, and means whereby the free end of said carrier is normally sustained by the other cable or track-
 40 way, substantially as described.

4. In a conveying apparatus containing two parallel cables or trackways, a carriage to travel thereon, and a rope supported by said
 carriage, in combination with said parts, a
 45 rope-carrier connected with one of said cables

or trackways and extending into the space between the cables or trackways, means whereby said rope-carrier is normally held in
 said position, and a buffer mounted upon the
 carriage, whereby said rope-carrier is thrust
 50 out of the path of the carriage, substantially as described.

5. In a conveying apparatus containing two parallel cables or trackways, a carriage to travel thereon, and a rope supported by said
 carriage, in combination with said parts, a
 rope-carrier, and a substantially perpendicular pivotal connection between said rope-carrier and one of said cables or trackways,
 whereby said rope-carrier may swing in a plane
 60 substantially parallel with the plane of said cables or trackways into and out of the path of said carriage, substantially as described.

6. In a conveying apparatus containing two parallel cables or trackways, a carriage to
 travel thereon, and a rope supported by said
 carriage, in combination with said parts, a
 rope-carrier, a swinging arm pivotally connected intermediate its ends by a substantially perpendicular pivot to one of said
 cables or trackways and carrying said rope-carrier on one end, and a counterpoise carried
 by the other end of said arm, substantially as
 described.

7. In a conveying apparatus containing two
 parallel cables or trackways, a carriage to
 travel thereon, and a rope supported by said
 carriage, in combination with said parts, a
 rope-carrier connected with one of said cables
 or trackways by a substantially perpendicular
 80 pivotal connection and extending into the space between the said cables or trackways, and a spring tending to hold said carrier in position for supporting said rope, substantially as described.

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Witnesses:

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