M. G. WILSON.

TROLLEY.

APPLICATION FILED MAR. 7, 1921.

1,429,007. Patented Sept. 12, 1922.

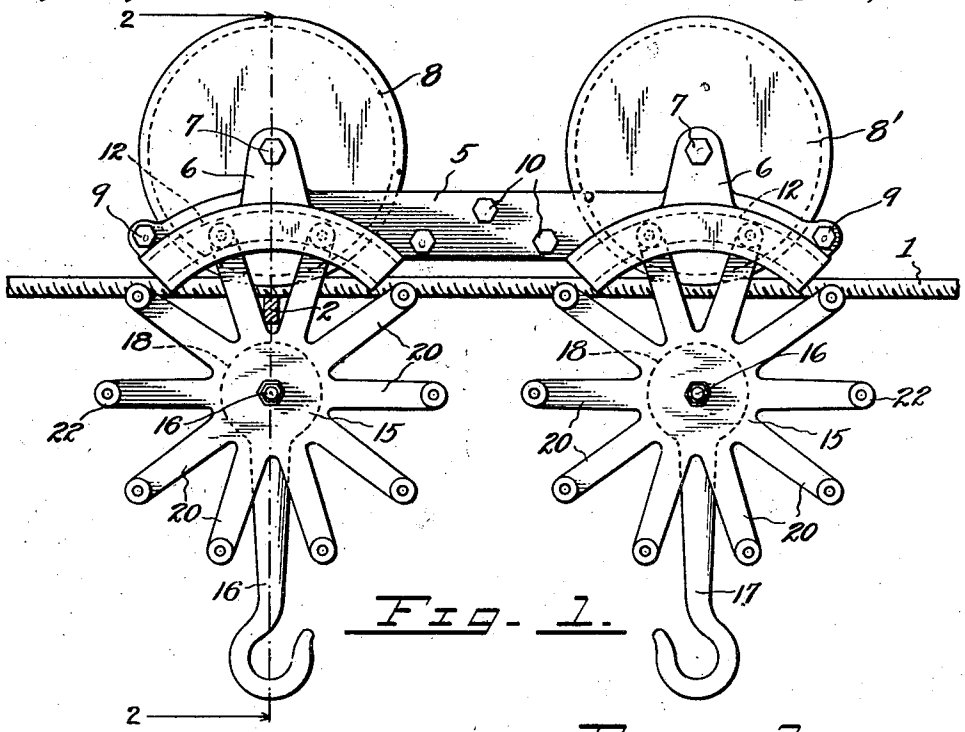


Fig. 1.

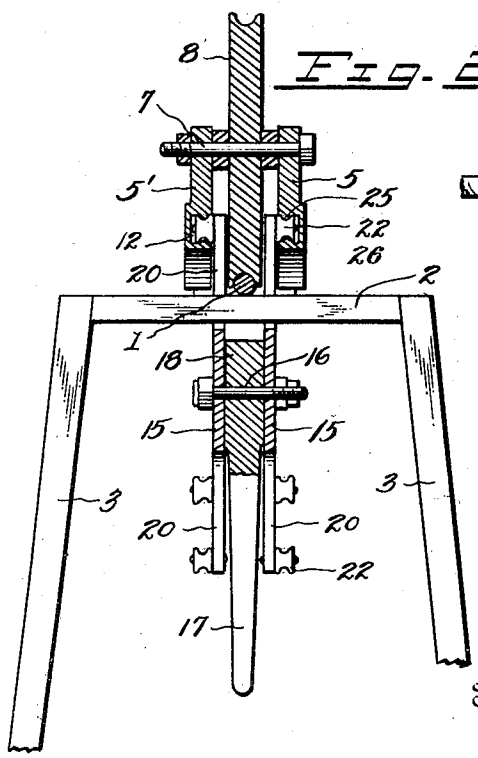


Fig. 2.

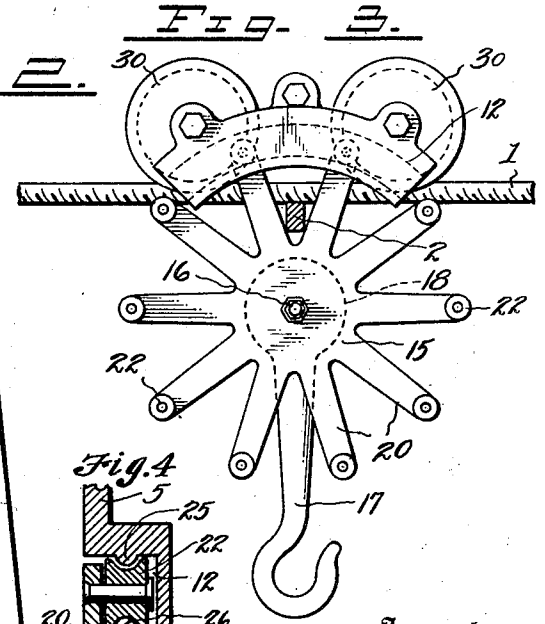


Fig. 3.

Fig. 4

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Patented Sept. 12, 1922.

1,429,007

UNITED STATES PATENT OFFICE.

MELVEN G. WILSON, OF SEATTLE, WASHINGTON, ASSIGNOR OF ONE-HALF TO VICTOR J. THURLOW, OF SEATTLE, WASHINGTON.

TROLLEY.

Application filed March 7, 1921. Serial No. 450,114.

To all whom it may concern:

Be it known that I, MELVEN G. WILSON, a citizen of the United States, and a resident of the city of Seattle, county of King, State of Washington, have invented certain new and useful Improvements in Trolleys, of which the following is a specification.

This invention relates to trolleys, and more particularly to what may be termed stepping trolleys of that character adapted for transporting suspended loads along overhead cables or rails.

In the logging industry it is especially desirable in some cases to transport logs along overhead cables, but with trolleys or tackles of the type commonly used, it is impossible to provide or use supports or guys for the cables because such would interfere with the travel of the trolley. In mining it is often desirable to employ the overhead cable or rail method of transporting ore, and in some cases one sided trolleys have been provided for travel along supported cables, but such trolleys have proven unsafe as they are apt to leave the cable.

It is therefore the object of this invention to overcome these previous difficulties by the provision of a trolley that will be absolutely safe and efficient in its operation in that it will not be possible for it to leave the cable or rail whereon it travels, and, which is of such construction that it can pass cross bars, or guys supporting the cable without interfering therewith.

Other objects of the invention reside in the manner of constructing the various parts of the device and their combination and operation.

In accomplishing the objects of the invention, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of a stepping trolley constructed according to the present invention and mounted for travel along a cable supported at intervals by cross bars.

Figure 2 is a transverse, vertical section taken on the line 2—2 in Figure 1.

Figure 3 is a side elevation of an alternative construction employing one suspending hook and stepping wheel.

Figure 4 is an enlarged detail section showing the character of sheave rollers used for suspending the stepping wheels.

Referring more in detail to the several views of the drawings, wherein like reference numerals designate the same or like parts—

1 designates what may be an overhead cable or rail which is supported at intervals necessary according to its use, by horizontal cross bars 2, which, as shown in Figure 2, may be mounted upon suitable frame structures 3 at their opposite ends. In some cases it may be preferred to use suspending cables in place of the cross bars, but in this case the operation of the trolley would be the same.

The preferred type of trolley is illustrated in Figures 1 and 2. This comprises a frame structure formed of two parallel, spaced apart side rails 5 and 5′, provided adjacent their opposite ends with upwardly extending portions 6 between which are extended bolts 7 upon which sheave, or trolley wheels 8 and 8′ are mounted in such manner as to follow along the cable 1. The rails 5 and 5′ are rigidly joined at their ends by bolts 9, and also between the wheels by a plurality of bolts, as at 10, so that the frame is perfectly rigid.

Formed at the opposite ends of the rails 5 and 5^1 are arcuate, inwardly opening guideways or channels 12, as shown in Figure 2. These are formed about centers which would be perpendicularly below the axes of the wheels 8—8′, and which extend approximately forty five degrees each side of a plane vertically through said axles.

15 designates the suspending or stepping wheels. These are arranged in pairs at opposite ends of the rails 5 and 5′; those of each pair being mounted rotatably on bolts 16 from which, between paired wheels, are suspended carrying hooks 17, wherefrom the load to be transported is suspended.

The upper ends of these hooks are enlarged to form spacing hubs 18 for the paired wheels and to provide substantial bearing surfaces against which the wheels may turn. Each of the wheels 15 comprises a solid, central hub portion from which is extended a plurality of radially

directed arms 20 which, in the present device, are ten in number.

Mounted at the ends of these arms, at equal radial distances from the centers of the wheels and on the outside faces thereof, are sheave rollers 22 which are adapted for movement within the guide channels 12, and serve as means for suspending the wheels and hooks from the side rails.

Formed on the upper and lower walls of the channels 12 are longitudinally extending beads 25 and 26 along which the sheave rollers may follow and which will prevent the latter from being displaced from proper position within the guideways.

The arms 20 of the wheels 15 are of such number that there will be two or more of each wheel at all times connected with the rails 5—5′, and they are of such length that, as the device moves along the cable, the arms will receive the cross bars 2 therebetween and will carry the hooks past any interference.

In Figure 3 I have illustrated an alternative construction which employs but one pair of stepping wheels and two arcuate guide rails 12 which are supported by rollers 30 at their ends. This device operates as that previously described but is intended for lighter work.

Assuming that the device is so constructed and mounted on a cable or rail supported upon transverse bars or cables, it will be seen that as the trolley moves along the cable the cross bars will enter between the arms of the forward wheel and will revolve the wheel in its support, so that the wheel passes across the bar without being disconnected from the carrying frame.

Having thus described my invention, what I claim as new therein and desire to secure by Letters Patent, is:

The combination with a cable provided with transverse supporting bars, of a trolley adapted for travel along said cable comprising paired, longitudinally extending frame rails, sheave wheels mounted between said rails at their ends for travel along said cable, said rails being provided at their opposite end with inwardly facing, arcuate channels formed about centers substantially below the cable and opening at their ends in the direction of the cable, paired stepping wheels mounted between said rails at their opposite ends, each wheel comprising a plurality of radial arms provided with sheave rollers at their ends arranged circularly on the same radii as said arcuate channels and adapted to move therein and to suspend said wheels thereby below said cable; said arms being of such length and spaced to receive the cross bars between the same as the trolley moves thereover and hangers suspended from between paired wheels wherefrom loads may be suspended and carried along said cable.

Signed at Seattle, Washington, this 28th day of February 1921.

MELVEN G. WILSON.