Oct. 11, 1938. C. BRAUNE ET AL 2,132,558

TRACTOR TYPE CARRIAGE

Filed Dec. 31, 1936

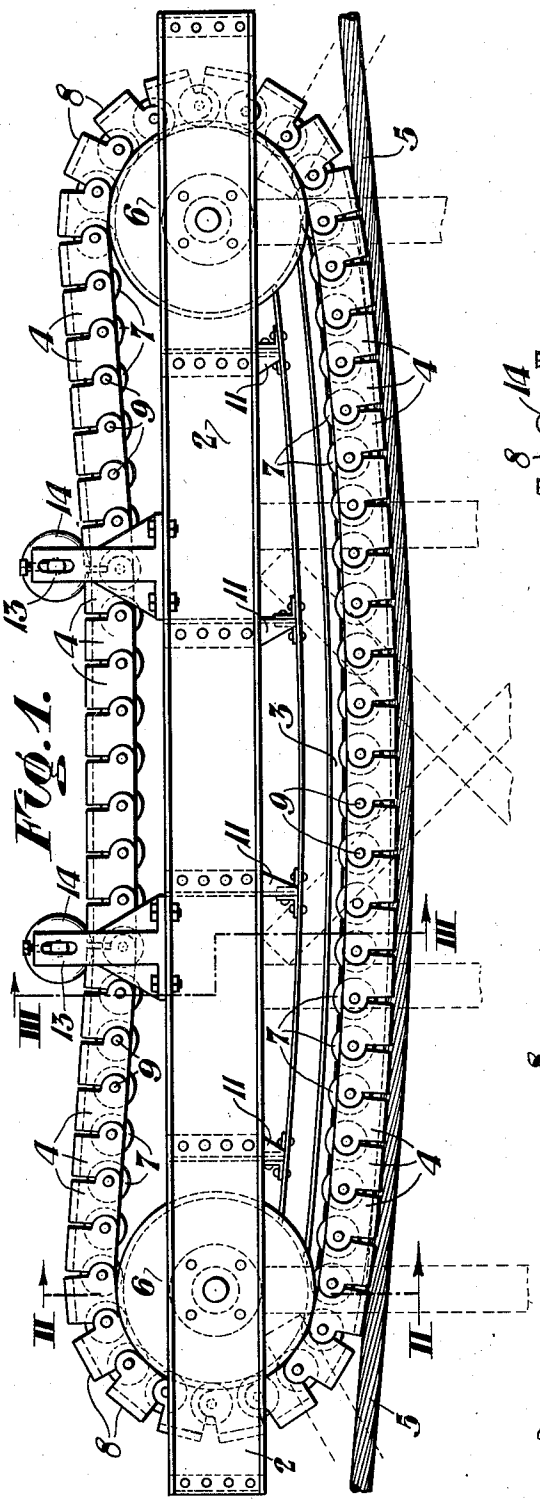


Fig. 1.

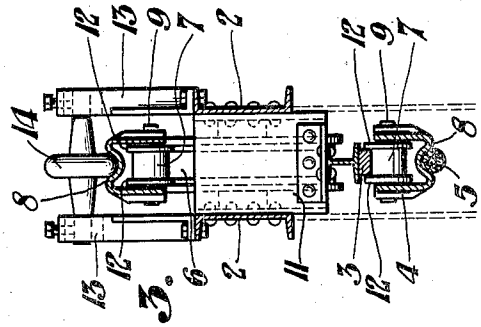


Fig. 3.

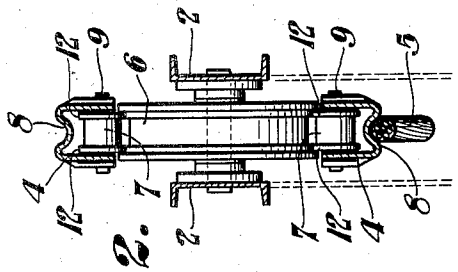


Fig. 2.

Inventors:
CARL BRAUNE and
EUGENE J. REARDON,
by: Ursin & Rauber
their Attorneys.

Patented Oct. 11, 1938 2,132,558

UNITED STATES PATENT OFFICE

2,132,558

TRACTOR TYPE CARRIAGE

Carl Braune, Worcester, Mass., and Eugene J. Reardon, East Haven, Conn., assignors to The American Steel and Wire Company of New Jersey, a corporation of New Jersey

Application December 31, 1936, Serial No. 118,646

2 Claims. (Cl. 105—148)

This invention relates to a tractor carriage for use in connection with the overhead type of conveyer systems, such as cableways, tramways, monorails, etc.

The prime cause of failure of track cables is fatigue caused by repeated bending and heavy bending stress caused by heavy unit pressures. It will be realized that the conventional type of carriage with the circular type of wheels grooved to fit the cables presents but a limited area of surface contact between wheel and the cable, resulting in high unit pressures. That section of area of contact with the wheel and the high pressure on the cable is the result of the bending stress in the wires-in-contact of the cable and the cable as a total structure. A reduction in the effective working pressure results in a reduced bending stress in the individual wires-in-contact and in the cable structure.

In order to obtain the low unit pressures, we have designed a tractor-type of carriage which will present the same arc of periphery between the tractor tread and cable as does the conventional circular wheel but give greater longitudinal contact with the cable, resulting in greater length of bearing and unit area of contact. This greater unit area of contact between the tractor treads and cable, made possible by using the tractor-type of carriage, will result in increased life of the track cables over that possible with the conventional type of circular wheel carriage.

Other objects and advantages will become apparent as the description proceeds, in which:

Figure 1 is a side view of the carriage and supporting means of the present invention;

Figure 2 is a section taken on line II—II of Figure 1; and

Figure 3 is a section taken on line III—III of Figure 1.

In the drawing, the carriage comprises a supporting-frame indicated by the numeral **2** adapted to support a track **3** upon which a continuous chain of traveling cable shoes or treads **4** are adapted to travel. The track **3** is suitably secured to said supporting frame by a plurality of brackets **11** and is curved gradually in the vertical plane of its long axis so that the loaded catenary of the cable **5**, in conforming thereto, will not be caused to assume a curvature of a lesser radius than that to which the carriage track **3** is scribed. This curvature of track **3** is such that it will prevent excessive bending in the cable, resulting in a longer life therefor.

The track **3** extends into the rollers **6** at both ends of the carriage frame **2**. This results in a continuous contour of contact for the cable shoe or tread rollers **7** from the time they leave the roller **6** until they come in contact with the cable **5** and return to the roller **6** at the other end of the carriage. The rollers **6** are so shaped that the roller **7**, of the cable shoes, pass from the track **3** into the roller **6** without misalignment. The cable shoes or treads **4** comprise a carrying plate **8** bent to conform in shape to the track cable **5** so as to give a maximum area of contact both in radial and longitudinal planes. The cable shoes **5** are provided with pins **9** and suitable bearings (not shown) for supporting the carrying plates **8**, which enable the cable shoes **4** to be moved with a minimum amount of friction.

The rollers **7** are provided with flanges **12** to guide and maintain the position of the cable shoes **4** in proper position as they contact the cable **5** or pass over the rollers **6** and along the track **3**.

The upper section of the continuous shoe plates does not operate over a fixed track but will hang free between the rollers **6**. Brackets **13** are adapted to support adjusting rollers **14** to maintain a tension on the continuous cable shoe or tractor tread unit, shown in cross-section in Figure 3. This bracket and adjusting roller may be altered to suit conditions where a desired tension is required upon the said unit. Also, any number of units may be used depending upon the size of carriage required.

Any convenient type of means may be provided for supplying power to propel the carriage, such means being, for example, a Diesel, gas or electric power unit; or, if desired, an independent outside agent may be used which will consist of a driven rope or series of ropes attached to the carriage by mechanical means.

While we have shown and described one specific embodiment of the invention, it will be understood that we do not wish to be limited exactly thereto, since various modifications may be made without departing from the scope of the invention as defined by the following claims.

We claim:

1. In combination with a cable, an overhead tractor carriage having a wide area of longitudinal contact with said cable, said carriage comprising a supporting frame, a curved track carried by said frame, grooved rollers mounted on said frame adjacent the ends thereof, said track extending into the grooves formed on said rollers, and a continuous tread surrounding said rollers and track, said continuous tread including a plurality of pivotally connected shoes having a

cable engaging surface so constructed and arranged as to present a maximum area of contact with said cable both in circumferential and longitudinal directions.

2. In combination with a cable, an overhead tractor carriage having a wide area of longitudinal contact with said cable, said carriage comprising a supporting frame, a curved track carried by said frame, grooved rollers mounted on said frame adjacent the ends thereof, said track extending into the grooves formed in said rollers, a continuous tread surrounding said rollers and track and adjustable rollers supported by said frame, said rollers constructed and arranged to engage the unsupported top surface of said continuous tread to maintain a downward tension on the continuous tread.

CARL BRAUNE.
EUGENE J. REARDON.