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ROLLER FOR FINISHING AND SMOOTHING CEMENT AND CONCRETE PAVEMENTS.

APPLICATION FILED MAY 18, 1918.

1,302,275. Patented Apr. 29, 1919.

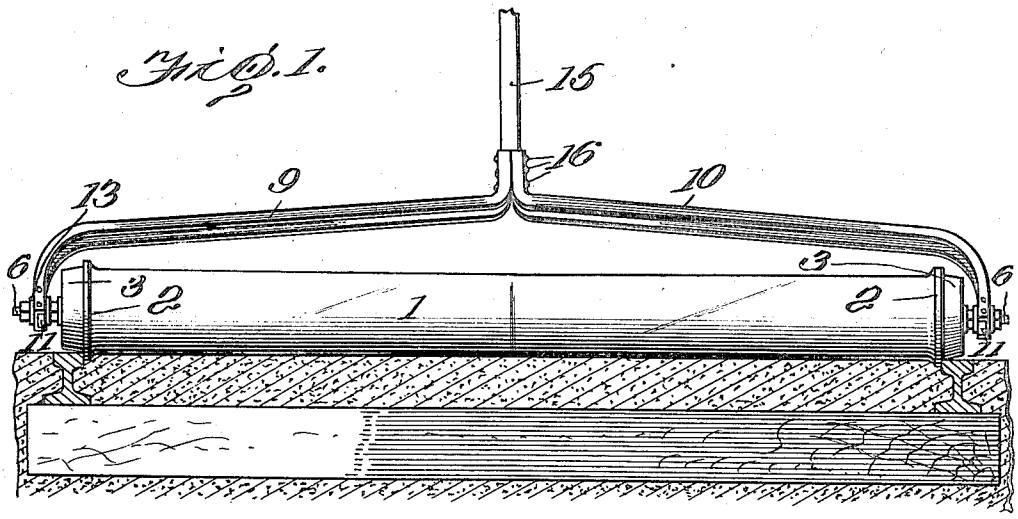


Fig. 1.

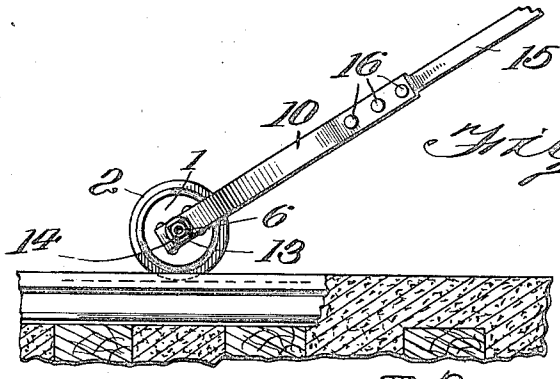


Fig. 2.

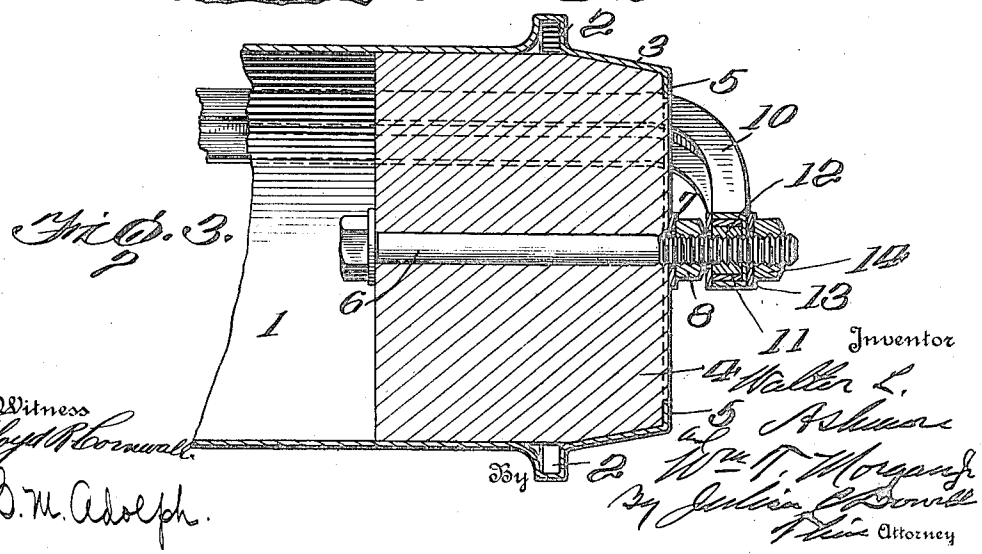


Fig. 3.

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UNITED STATES PATENT OFFICE.

WALTER L. ASHMORE AND WILLIAM T. MORGAN, JR., OF MACON, GEORGIA; W. T. MORGAN, SR., TEMPORARY ADMINISTRATOR OF SAID WILLIAM T. MORGAN, JR., DECEASED.

ROLLER FOR FINISHING AND SMOOTHING CEMENT AND CONCRETE PAVEMENTS.

1,302,275. Specification of Letters Patent. Patented Apr. 29, 1919.

Original application filed March 27, 1916, Serial No. 87,099. Divided and this application filed May 18, 1918. Serial No. 235,342.

To all whom it may concern:

Be it known that we, WALTER L. ASHMORE and WILLIAM T. MORGAN, JR., citizens of the United States, residing at Macon, in the county of Bibb and State of Georgia, have invented certain new and useful Improvements in Rollers for Finishing and Smoothing Cement and Concrete Pavements; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to an improvement in rollers for finishing and smoothing cement and concrete pavements, this being a division of our application filed March 27, 1916, Serial No. 87,099, which became Patent 1,273,022 of July 16, 1918. This invention is more particularly adaptable for finishing and smoothing pavements between tracks or rails of railways.

The invention consists of a roller adapted to be supported on the tracks or rails and constructed to engage and work the concrete or cement mass between the rails, for causing the larger or coarser particles to be worked toward the bottom of the concrete bed and the smaller particles to the top of the mass. The concrete or cement mass is in an oversaturated or plastic condition and as the roller is worked over the surface of the mass the lighter particles and water will come to the top and flow over the coarser particles which will by the rolling action be forced toward the bottom of the mass; the lighter particles and water are, after they have been brought to the upper surface of the mass, operated on by the roller for spreading the liquid and particles evenly and smoothly over the coarse particles and filling any uneven portions or cavities. In this manner, an even and smooth upper surface is provided after the concrete or cement mass has set.

By this method of working the concrete or cement mass check cracks are eliminated, as all of the coarse particles are forced toward the bottom, and the finer particles brought to the top or upper surface.

The invention further consists of annular flanges formed near the ends of the roller for producing grooves in the pavement along the rails for the flanges of the car wheels.

The invention consists of other novel features of construction and combinations of parts which will be hereinafter described and pointed out in the claims.

In the accompanying drawing:—

Figure 1 is a view in front elevation of the invention;

Fig. 2 is a view in side elevation; and

Fig. 3 is a detail longitudinal sectional view through one end of a slightly modified form of roller.

In the drawing, the roller 1, is shown constructed of wood of a light weight and arranged to float on the plastic mass of cement or concrete.

The roller 1 is provided near each end with an annular flange 2, for forming grooves along the rails in the concrete as the roller travels or floats over the plastic mass in forming the pavement. The outer ends of the roller 1, beyond the flanges 2 are beveled or tapered as at 3, 3 to conform to the contour of the tread surface of the rails, so that the grooves will be formed to a depth suitable for the flanges of the car wheels regardless of the conditions of the tread surface of the rail.

Bail members 9 and 10 are secured to a handle 15, by bolts 16, at one end, and to stub shafts 6, which are rigidly attached to the roller 1. The bail members are held on the shafts 6 by means of washers 13 and nuts 14.

The body portion of the roller is shaped to conform with the finished top of the concrete surface between the tracks, that is to say, with the highest points in the center and sloping toward the sides.

The roller 1 is adapted to be of such a length that the ends thereof will rest and travel along the rails 17, 17, as shown in Figs. 1 and 2, with the central portion of the roller in a position to float and operate on the plastic or over-saturated concrete. As the roller is moved over the plastic concrete the finer particles and water will be brought to the top, and the coarser particles worked toward the bottom; and after the coarser particles have been worked toward the bottom of the plastic mass the roller will cause the finer particles and water to be

worked over the coarser particles producing a smooth and even surface, which when set will be eliminated of any check cracks.

During the action of the roller on the plastic mass, the flanges 2 will shape up the edges of the pavement and form a groove along the rails for the flanges of car wheels. These flanges 2 form the groove along the rails without affecting the formation of the concrete body between the rails, and it is not necessary to lower the edges of the concrete body at this point as is customary, but instead the surface of the concrete body beside the track rails is maintained on substantially the same level with the upper surface of the rails. Any drop or depression is in this manner eliminated, which is conducive to jolts when vehicles pass over the tracks. By lowering the longitudinal edges of the pavement along the rails in forming grooves for the car wheel flanges, the constant travel of the vehicles over the rails tends to hammer the pavement down, making the depression greater, thereby producing great jolts to the vehicles, and making it practically impossible in wet weather for vehicles to pass over the tracks diagonally without skidding or sliding.

As shown in Fig. 3, it is evident that the roller 1 might be constructed of hollow steel, with the flanges 2, struck up from the body, for forming the grooves or channels along the rails.

Received in each end of the roller 1, is a cylindrical block 4, which is held in place by the ends of the roller, which are bent downwardly over a portion of the outer ends of the blocks as at 5.

A shaft 6 passes through each block 4, and received on the screw-threaded or outer portion of the shafts are washers 7 and nuts 8 for holding the shafts in place.

The bail members 9 and 10, formed of light pressed steel channel iron, of U-shaped cross section, are provided with steel blocks 11, which blocks are each provided with an opening for the reception of an internally threaded bushing 12. The bushings 12 are adapted to be screwed onto the shafts 6, and after the bails have been applied, a washer 13 and nut 14 are placed on the end of each shaft for holding the parts in place.

What we claim is:—

1. A device for finishing concrete pavements and the like between the rails of a railway track, consisting of a roller for working and finishing the surface of the pavement between the rails, and means carried by the roller near its ends for forming grooves in the pavement beside the track rails adapted to receive the flanges of the car wheels.

2. A device for finishing concrete pavements and the like between the rails of a railway track, consisting of a roller having a smooth surface for working and finishing the surface of the pavement between the rails, and annular flanges, one at each end, for shaping the edges of the pavement beside the rails and forming grooves therein adapted to receive the flanges of the car wheels.

3. A roller for finishing concrete pavements and the like between track rails, said roller being liquid-tight and provided with a handle and having flanges thereon, one adjacent each end thereof, for forming grooves beside the track rails to receive the flanges of the car wheels.

In testimony whereof we affix our signatures in the presence of witnesses.

WALTER L. ASHMORE.
WILLIAM T. MORGAN, Jr.

Witnesses to signature of Walter L. Ashmore:

L. D. Moore,
J. T. Hogan.

Witnesses to signature of William T. Morgan, Jr.:

Otto S. Lauerman,
Jas. E. Helm.