May 3, 1927. 1,626,879

F. L. SHIDLER ET AL

APPLIANCE FOR FINISHING CONCRETE PAVEMENTS

Filed Dec. 18, 1924

Fig. 1.

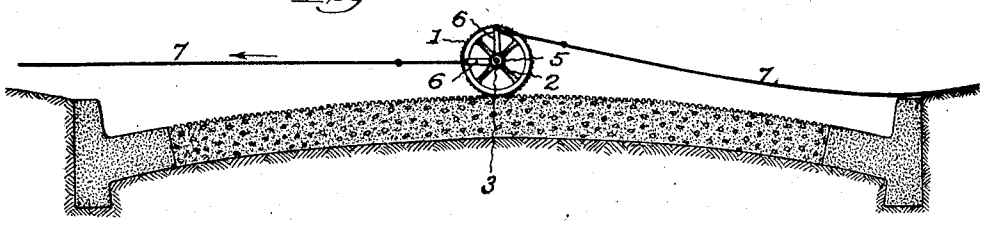


Fig. 2.

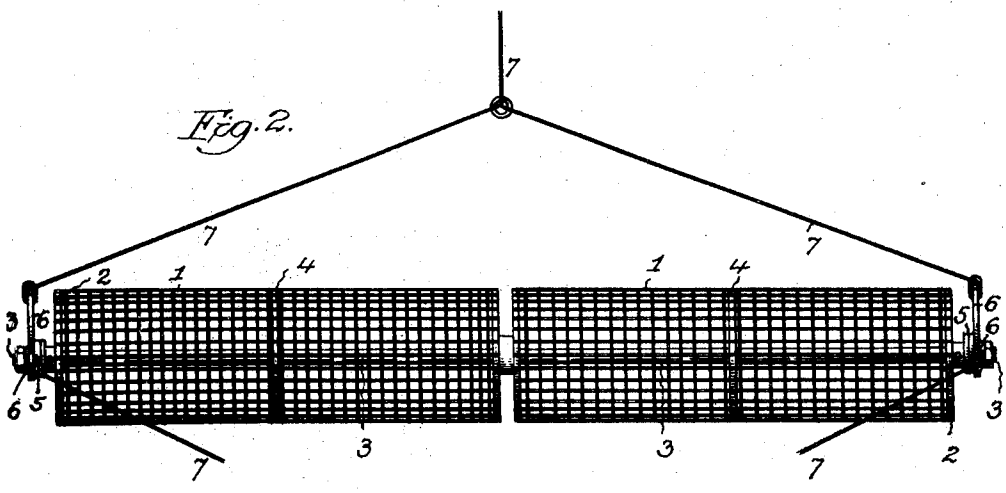


Fig. 3.

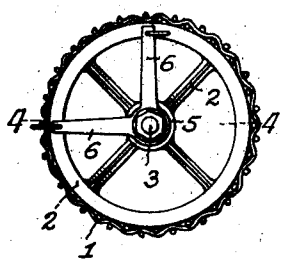
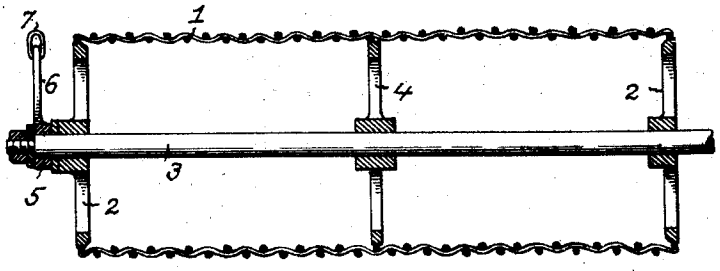


Fig. 4.



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UNITED STATES PATENT OFFICE.

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APPLIANCE FOR FINISHING CONCRETE PAVEMENTS.

Application filed December 18, 1924. Serial No. 756,647.

This invention relates to the method of finishing concrete pavements, in which the unset mass of concrete is rolled to assist in the escape of occluded air, gases, etc. from the mass with a view to attain uniform density of said mass, and the present improvement has for its various objects:—

To provide a rolling means of an approximately floating nature and comprising a cylindrical shell of foraminous perforated or reticulated material, adapted in actual use to effect indentations in the unset mass of concrete, releasing contained air, etc., and thus attain greater density without disturbing or displacing the concrete mass as originally placed.

To provide a duplex pulling means for the cylindrical roller aforesaid, whereby the roller can be drawn alternately from one side to the other of the road, without the flexible pulling connection which is not in active use, dragging upon the concrete mass, all as will hereinafter more fully appear.

In the accompanying drawing:

Fig. 1, is an elevation, partly in section, illustrating the present process and means, with the duplex pulling means thereof.

Fig. 2, is a plan view of the roller and the associated pull connections of the present improvement.

Fig. 3, is a detail side elevation of the roller and accessories.

Fig. 4, is a longitudinal section of same on line 4—4, Fig. 3.

Like reference numerals indicate like parts in the several views.

The material and main distinctive features of the present improvement involves the use of a cylindrical roller 1 of the shell type, with its circular wall formed of a foraminated material such as perforated sheet metal or of woven wire as shown in the present illustration of the invention.

At each end the roller 1 is provided with skeleton heads 2, having central hubs for attachment to the axle 3 of the appliance. For most uses a pair of the rollers 1, arranged in longitudinal alignment on the axle 3, have been found to be a very practical and efficient arrangement. When of an extended length each roller will be provided with intermediate skeleton heads 4 for the purpose of bracing the shell or roller 1 against deformation in actual use.

Pivotally attached to the respective ends of the axle 3, are counterpart pulling frames, each comprising a hub member 5 and a pair of eye bars 6 arranged in right angle relation as shown, and to which the tow lines 7 are attached, with said tow lines extending in opposite directions and to opposite sides of the roadway in order that the roller 1 may be drawn alternately from one side to the other of the roadway in carrying on the present invention.

The angular arrangement of the eye bars 6 above described, is of material value in the construction, in that in active pull on the tow line 7 of one eye bar 6, will initially move said eye bar to a horizontal position and in doing so raises the companion eye bar 6 to a vertical position with its inactive tow line in an elevated condition, so as not to drag upon the unset surface of the concrete mass.

In actual use, the foraminated roller 1 of the present invention, as it is drawn over an unset mass of concrete on a roadway, acts to penetrate the surface of such mass and form indentations therein of sufficient depth to permit the escape of contained air, excess water and other matters considered detrimental to concrete. Such penetrations of the concrete mass is ordinarily deep enough to reach and level the coarser aggregate of the mass to a desired uniform surface, without any displacement or bringing to the surface any portions of such coarser aggregate. In such operation the action of the foraminated roller 1 is wholly compressive, without any floating action tending to cause the concrete mass to push ahead of the roller and be displaced from where it was originally deposited.

It is within the scope of the invention to increase the weight of the roller, by added weights, in the manner usual to lawn and like rollers, to meet varying conditions of fluidity etc. in different grades or mixtures of pavement concrete.

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

1. A roller for finishing concrete pavements comprising a cylindrical shell of foraminous material, skeleton heads connected to the ends of said shell, an axle connected to said heads, and pull connections connected to said axle.

2. A roller for finishing concrete pavements comprising a cylindrical shell of foraminous material, skeleton heads con-

nected to the ends of said shell, skeleton bracing heads arranged intermediate of said end heads, an axle connected to said heads, and pull connections connected to said axle.

3. A roller for finishing concrete pavements comprising a cylindrical shell of foraminous material, skeleton heads connected to the ends of said shell, an axle connected to said heads, frames journalled on the ends of the axle and having radial eye bars arranged in right angle relation to each other, and pull connections attached to said eye bars and extending in opposite directions.

4. A roller for finishing concrete pavements comprising a cylindrical shell of foraminous material, skeleton heads connected to the ends of said shell, skeleton bracing heads arranged intermediate of said end heads, an axle connected to said heads, frames journalled on the ends of the axle and having radial eye bars arranged in right angle relation to each other and pull connections attached to said eye bars and extending in opposite directions.

Signed at Kankakee, Illinois, this 15th day of December, 1924.

FRANK L. SHIDLER.
ROBERT D. GREGG.