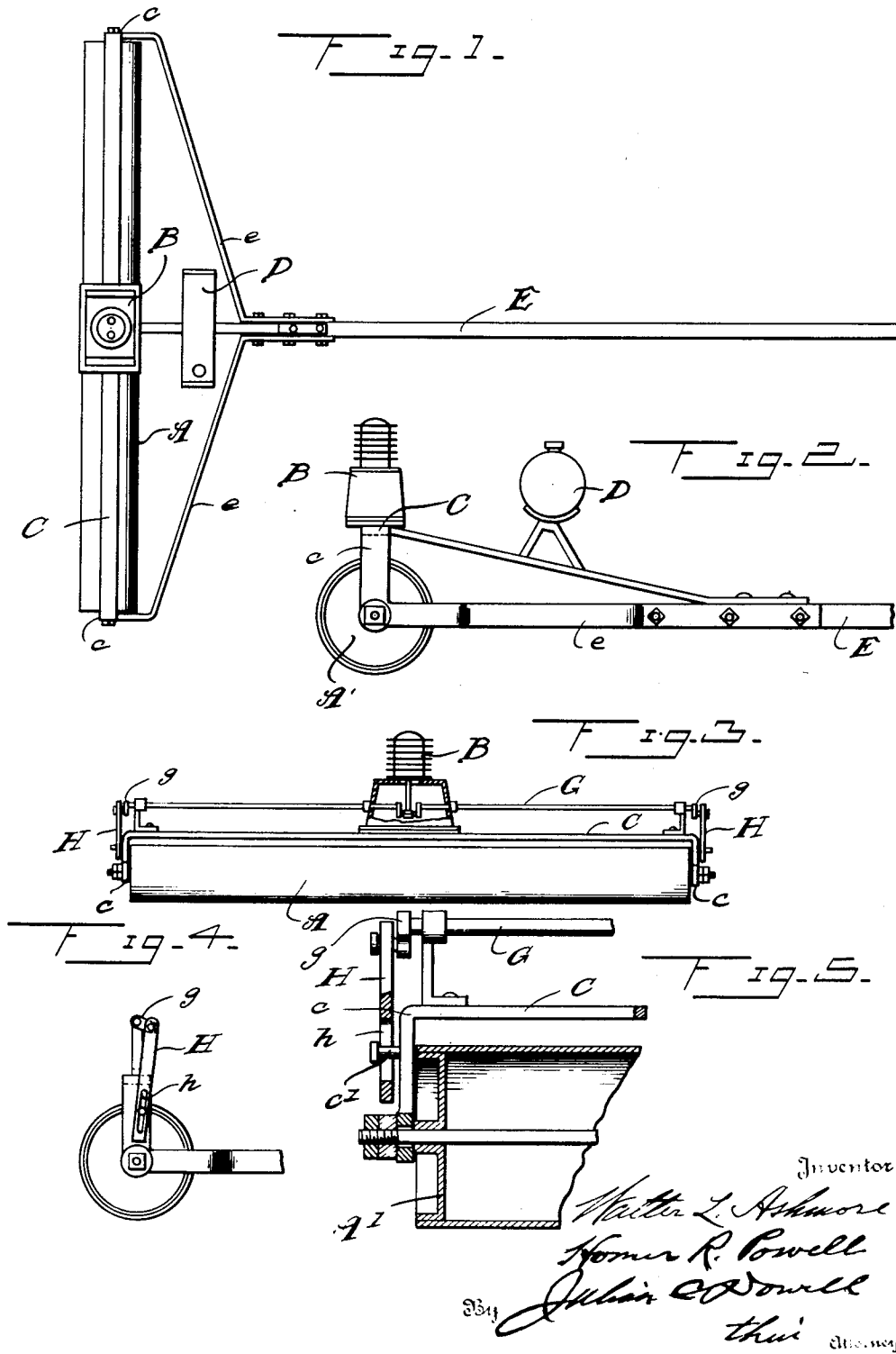


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 DEVICE FOR FINISHING CONCRETE PAVEMENTS.
 APPLICATION FILED JULY 25, 1919.

1,364,604.

Patented Jan. 4, 1921.



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UNITED STATES PATENT OFFICE

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DEVICE FOR FINISHING CONCRETE PAVEMENTS.

1,364,604.

Specification of Letters Patent.

Patented Jan. 4, 1921.

Application filed July 25, 1919. Serial No. 313,170.

To all whom it may concern:

Be it known that we, WALTER L. ASHMORE and HOMER R. POWELL, 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 Devices for Finishing 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.

This invention relates to means for smoothing and finishing concrete pavements, and more particularly to devices for rolling and agitating the surface of oversaturated concrete which is spread over the road bed as it comes from the mixing machine.

One object of the invention is to provide a rolling and finishing device of the character shown in patent No. 1,273,022 issued July 16, 1918, to W. L. Ashmore and W. T. Morgan, Jr., for process and device for finishing concrete pavements, with means for vibrating the roller or producing a tamping effect as the rolling device is moved to and fro over the surface of the concrete in the finishing and smoothing process.

Another object is to provide means of the character referred to which will permit the use in road-making of a less plastic or stiffer concrete than the oversaturated material heretofore ordinarily employed in using rolling devices of the type shown in the aforesaid patent for smoothing and finishing the surface and eliminating any excess water, whereby the pavement is made more compact and durable and not liable to develop check cracks when finished.

The invention will first be hereinafter more particularly described, with reference to the accompanying drawings, which are to be taken as a part of this specification, and then pointed out in the claims at the end of the description.

In said drawings, Figure 1 is a plan view of a rolling device having a vibrator mounted thereon and illustrating one form of embodiment of our invention;

Fig. 2 is a side elevation of the same;

Fig. 3 is a rear view of a similar rolling device with means for producing a tamping

effect and illustrating another form of embodiment of our invention;

Fig. 4 is a fragmentary detail side view, and Fig. 5 a fragmentary detail sectional view of the device shown in Fig. 3.

Referring to said drawings, in which the same reference letters are used to denote corresponding parts in different views, the letter A denotes a rolling device, consisting preferably of a hollow, liquid-tight roller of only a few inches in diameter and relatively great length and light weight, or in other words a very long and light roller, of rod-like form, to adapt it to float on the surface of freshly laid oversaturated concrete and to act as a straight edge for straightening and smoothing such surface. The letter B denotes a vibrator, which in this instance is a gasoline engine mounted on a supporting bar or frame-piece C which extends across the supporting frame parallel with the roller journaled therein and has pendant arms *c* which are provided with eyes or apertures in their lower ends to receive the ends of the roller shaft or axle or stub shafts projecting from the roller heads A¹ so as to adapt the engine or motor to vibrate the roller, by the impulse of a disconnected engine, or by means connected with the crank wheel or piston of the engine, as hereinafter described.

In the form shown, a gasoline supply tank D is mounted on the roller frame bar C for connection with the engine or motor in the usual manner for supplying gas thereto. A long handle E, having a forked end or bail members *e, e* with apertured ends or eyes fitted upon the ends of the roller shaft is provided, for moving the roller backward and forward over the surface of the concrete in such manner as to cause the heavier particles to sink or settle down while the lighter particles are brought to the surface and the high and low places brought to a common level, thus straightening and smoothing the surface of the concrete and eliminating any excess water contained therein.

In some cases it is desirable to provide means for lightly hammering or tapping the ends of the roller shaft or stub axles, and to this end the crank shaft of the en-

gine or motor, or the piston rod, may be connected with a crank shaft G mounted in standards on the roller frame, as shown in Figs. 3, 4, and 5 of the drawings, and having a crank arm *g* at each end carrying a pin on which is pivotally supported a depending bar H, which is adapted to serve as a tappet or hammer to strike the axle or other part of the roller once during each rotation of the crank shaft or each reciprocating movement of the piston, whereby a tamping effect or action of the roller is produced as it is moved over the surface of the concrete, thereby facilitating the settling, leveling and finishing process. A single hammer or two or more hammers may be used, though two are shown. These hammers or tappets in the form shown consist of vertical, slidably movable rods or bars having slots *h* therein to receive studs or pins *c*¹ projecting from the depending arms of the cross bar C, to serve as guides for the reciprocating bars and adapt them to strike the axle or roller element at the limit of each downward movement.

Various changes may be made in the details and arrangement of parts without departing from the spirit and scope of our invention. We therefore do not desire to be limited to the forms shown or to any particular type of motor, or the specific means shown for effecting the hammer-like stroke or tap on the axle or other part of the roller to vibrate the latter, as other means may be employed to produce the same result, and although our invention is specially designed and adapted for use in straightening and smoothing oversaturated concrete, it may be used not only on concrete but other types of paving, for instance, monolithic brick pavements.

Our improved rolling device may be advantageously employed in finishing pavements made by laying and rolling an inferior grade of concrete and immediately spreading over the surface thereof a mixture of a superior grade of aggregate mixed with cement in suitable proportions to form a very hard surface, thereby reducing the cost of a superior pavement.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is—

1. A device for finishing concrete pavements and the like, comprising a light roller of small diameter and relatively great length whereby it is adapted to float on freshly laid plastic concrete and to act on the surface thereof as a straight edge, for straightening and smoothing such surface, an operating handle, and means for vibrating said roller as it is moved back and forth over the surface of the concrete.

2. A device for finishing concrete pavements and the like, comprising a roller of

small diameter and relatively great length and light weight, whereby it is adapted to float on freshly laid plastic concrete and to act on the surface thereof as a straight edge, for straightening and smoothing such surface, said roller being journaled in a light frame provided with a long handle, and a vibrator mounted on said frame.

3. A device for finishing concrete pavements and the like comprising a frame of light weight having a long handle, a hollow, liquid-tight roller of small diameter and relatively great length and light weight journaled in said frame and having a vibrator mounted thereon.

4. A device for finishing concrete pavements and the like comprising a long roller of relatively small diameter and light weight adapted to float on freshly laid plastic concrete and to act on the surface thereof as a straight edge, for straightening and smoothing such surface, and having means thereon for vibrating the roller as it is moved over the surface of the concrete mass.

5. In combination, a roller-carrying frame, a roller of small diameter and relatively great length and light weight journaled in said frame and adapted to float on freshly laid plastic concrete and to act on the surface thereof as a straight edge, for straightening and smoothing such surface, and a motor mounted on said frame and adapted to vibrate the roller.

6. In combination, a roller of small diameter and relatively great length and light weight adapted to float on freshly laid plastic concrete and to act as a straight edge for straightening and smoothing the surface of the plastic paving material spread upon a road bed, a motor mounted on the roller, and means actuated by said motor for effecting a vibratory tamping action of the roller as it is moved over said surface.

7. A device for finishing pavements comprising a roller of small diameter and relatively great length and light weight, a roller carrying frame having a long handle with bail members in which said roller has its bearings, an arched frame member having a motor mounted thereon, said member having depending end-portions with apertured ends through which the roller axle extends, a crank-shaft carrying vertically reciprocating bars having elongated slots therein to receive studs projecting from said depending frame members and connections between said motor and crank shaft for imparting a reciprocating movement to said bars, the latter being adapted to strike the axle of the roller during each revolution of said crank-shaft.

8. The herein described method of finishing pavements made of oversaturated concrete, which consists in spreading the paving material over the surface of the road bed

and rolling the surface of the freshly laid material with a vibrating roller of relatively small diameter and great length adapted to float on the surface of the concrete and act
5 as a straight edge for straightening and smoothing such surface and eliminating any excess water.

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

WALTER L. ASHMORE.
HOMER R. POWELL.

Witnesses:

L. D. MOORE,
P. G. HOGAN.