

O. LANCE.
 CONCRETE ROAD LAYING MACHINE.
 APPLICATION FILED MAY 31, 1918. RENEWED MAR. 7, 1919.

1,303,566.

Patented May 13, 1919.

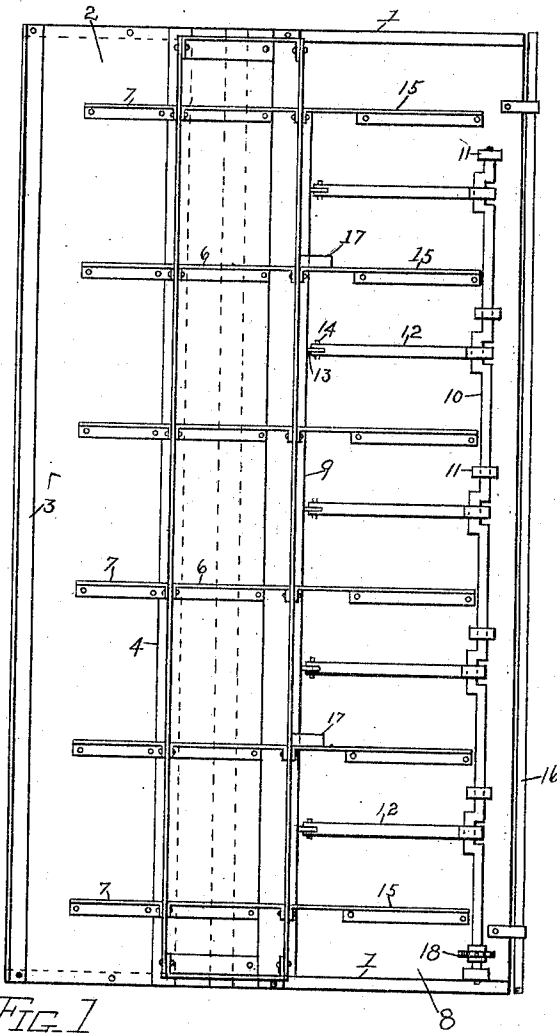


FIG. 1

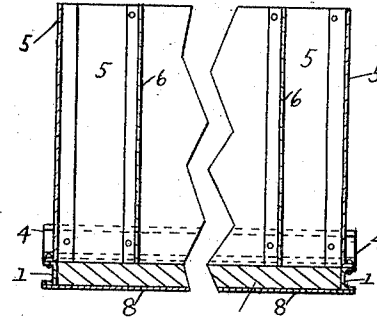


FIG. 3

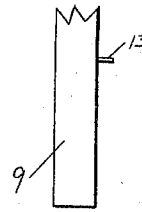


FIG. 4

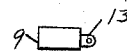


FIG. 5

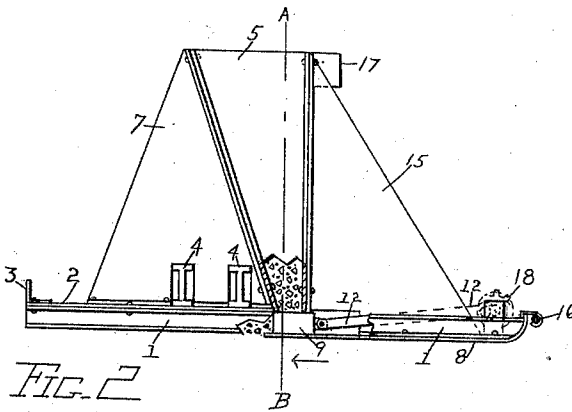


FIG. 2

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OLIVER LANCE, OF SAN DIEGO, CALIFORNIA.

CONCRETE-ROAD-LAYING MACHINE.

1,303,566.

Specification of Letters Patent.

Patented May 13, 1919.

Application filed May 31, 1918, Serial No. 237,510. Renewed March 7, 1919. Serial No. 281,255.

To all whom it may concern:

Be it known that I, OLIVER LANCE, a citizen of the United States, residing at San Diego, in the county of San Diego and State of California, have invented a new and useful Concrete-Road-Laying Machine, of which the following is a specification.

My invention relates to machines for spreading concrete on highways in the course of construction and has for its objects the provision of a device adapted to be coupled to a concrete mixer; which shall spread a quantity of green concrete the full width of the pavement; which shall tamp said quantity of concrete; which shall form and finish the surface of the pavement and mechanically move itself forward at each tamping operation. Other objects will appear as the description progresses.

I attain these objects by the mechanism illustrated in the accompanying drawings, which illustrate the preferred form it being understood that I do not confine myself to the precise construction of the device as herein shown, but that various changes and adaptations may be made within the scope of what hereinafter is claimed, without departing from the spirit of the invention.

Figure 1 is a plan view of the device; Fig. 2, a side elevation of the device, parts being broken away to show the tamper member; Fig. 3, an elevation of a section on the line A—B of Fig. 2, looking in the direction of the arrow, the concrete not being shown; Fig. 4, a fragmentary plan view of the tamper member; and Fig. 5, an end elevation of the tamper member.

Similar reference characters refer to like parts throughout the several views.

The device comprises two channel iron runners 1, 1; a surfacing plate 2 mounted on said channel irons; an angle iron 3, mounted on said plate 2 for the purpose of strengthening said plate at the edge thereof; two I beams 4, mounted on said plate for the purpose of reinforcing said plate; a hopper 5, having an open bottom; a series of reinforcing walls 6, mounted within said hopper and forming compartments therein; a series of reinforcing plates 7, secured to the oblique wall of said hopper and to the top of said plate 2; a bottom plate 8 mounted on the bottom of said channel irons 1, 1; a tamper member 9 disposed on said plate 8 under the opening in the bottom of said hopper; a crank shaft 10 mounted in stand-

ards 11, mounted on said plate 8; pitmen 12 mounted on said crank shaft and connected to lugs 13 on the tamper member 9 by pins 14; reinforcing plates 15 mounted on said plate 8 and secured to the vertical side of said hopper 5; a sprinkling pipe 16, mounted in front of said channel irons; and a sprocket wheel 18 mounted on the crank shaft 10.

In operation the device is connected to a concrete mixing machine by the lugs 17. Spouts lead from the mixing machine into the several compartments of the device. A chain is mounted on the sprocket wheel 18 and connected to any suitable actuating mechanism on the mixer. The mixed concrete is conveyed by the spouts to the various compartments of the device and the sprocket wheel 18 actuated, thereby revolving the crank shaft 10. In the drawings the tamper member 9 is shown in a position under the hopper thereby closing the opening, but as the crank shaft 10 is revolved farther the tamper member 9 is drawn from under the hopper and opens the hopper thereby permitting a quantity of concrete to drop on the plate 8 behind the tamper member. As the crank shaft continues to revolve, the tamper member is returned to the position shown in the drawing and thereby forces the concrete under the plate 2, at the same time thrusting the entire device forward, due to the resistance of the concrete under the plate 2. This operation is repeated every time the crank shaft makes one revolution.

The plate 2 is made to conform to the desired curve of the surface of the pavement, usually convex, and the pavement, is thus mechanically formed and surfaced without additional labor. The plate 8 extends slightly beyond the stroke of the tamper member in order to decrease the liability of foreign substances getting under the tamper member. In order to afford a wet surface upon which to deposit the green concrete, a sprinkler pipe 16 is mounted on the front of the device to which a hose may be attached.

The usual practice in laying concrete on highways requires the building of forms to shape the side wall of the concrete. This is usually accomplished by staking 2x4 scantlings along the edge which determines the width and depth of the concrete bed. The road bed is sprinkled with a hose and the green concrete is spread upon the wet

ground. The surfacing is accomplished by two men using a surfacing implement.

My device sprinkles the ground, spreads the green concrete thereon, tamps it, forms the side walls and surfaces the entire body of concrete without the necessity of building forms, and automatically moves itself forward.

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

1. A concrete road laying machine of the class described comprising two horizontally disposed runners; a surfacing plate mounted on said runners; a hopper mounted on said runners in front of said surfacing plate; a bottom plate mounted on the bottom of said runners; a series of standards mounted on said bottom plate; a transversely disposed shaft having a plurality of cranks therein and mounted in said standards; a toothed wheel mounted on said shaft whereby said shaft is actuated; a tamper member slidably mounted between said hopper and said bottom plate and adapted to move longitudinally of said machine; and a plurality of pitmen connecting said cranks and said tamper member; for the purposes set forth.

2. A concrete road laying machine of the class described, adapted to be attached to a concrete mixing machine, in combination; two longitudinally disposed runners adapted to slide on the ground and form the side walls of the concrete; a plate mounted on said runners and adapted to form and finish the surface of the concrete; a hopper having a plurality of compartments therein, mounted on said runners in front of said plate adapted to receive green concrete from a mixing machine; a second plate mounted on the bottom of said runners extending from the front to a point slightly beyond the center of the machine; a transversely disposed tamping member comprising a rectangular metal beam having lugs thereon

and slidably mounted on said second named plate under said hopper and adapted to move longitudinally of said device; a series of standards mounted on said last named plate; a transversely disposed shaft having a series of cranks therein, mounted in said standards; and a series of pitmen connecting said lugs and said cranks; for the purposes set forth.

3. A device of the class described adapted to be attached to a concrete mixing machine, comprising two runners adapted to form the side walls of a concrete road; a convexly curved plate mounted on said runners and adapted to form and finish the surface of a concrete road; a hopper mounted on said runners adapted to receive green concrete from a mixing machine; lugs on said hopper by which it is connected to the mixing machine; a bottom plate mounted on said runners; a series of standards mounted on said bottom plate; a transversely disposed crank shaft having a plurality of cranks, journaled in said standards; a toothed wheel mounted on said shaft by which said shaft is actuated; a tamper member comprising a transversely disposed beam having lugs thereon, slidably mounted on said bottom plate under said hopper, adapted to move longitudinally of said device; a series of pitmen connecting said cranks and said lugs on said tamper member; and a transversely disposed perforated water pipe mounted on the front end of said bottom plate adapted to be connected to a hose and to sprinkle the road ahead of said device; for the purposes set forth.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

OLIVER LANCE.

Witnesses:

J. J. LAUDKI,

GEO. E. LEACH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."