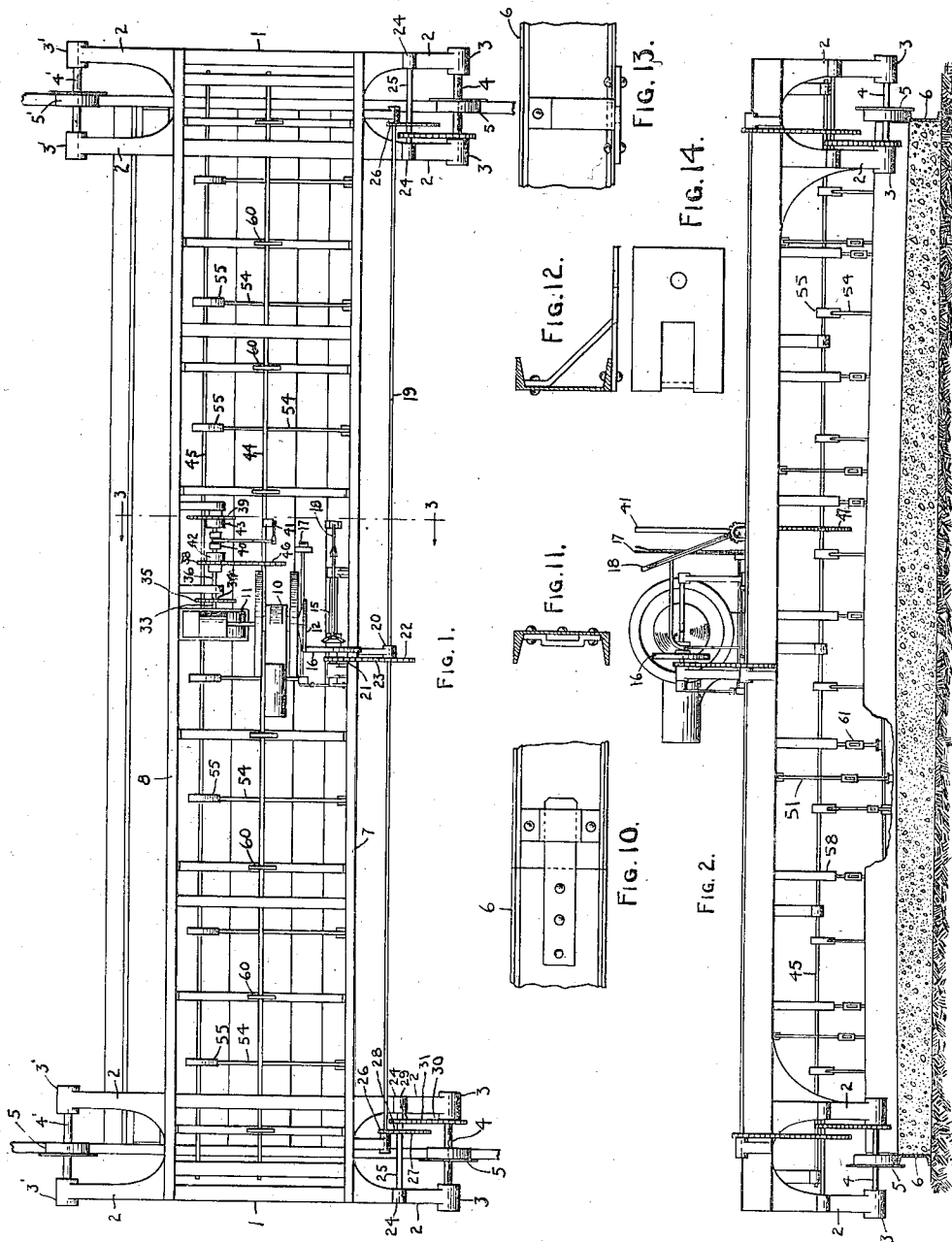


R. E. REYNOLDS.
ROAD SURFACING MACHINE.
APPLICATION FILED DEC. 22, 1917

1,306,353.

Patented June 10, 1919.
3 SHEETS—SHEET 1.



Robert E. REYNOLDS, INVENTOR

BY
Hardway, Catter
ATTORNEYS

R. E. REYNOLDS.
ROAD SURFACING MACHINE.
APPLICATION FILED DEC. 22, 1917.

1,306,353.

Patented June 10, 1919.

3 SHEETS—SHEET 2.

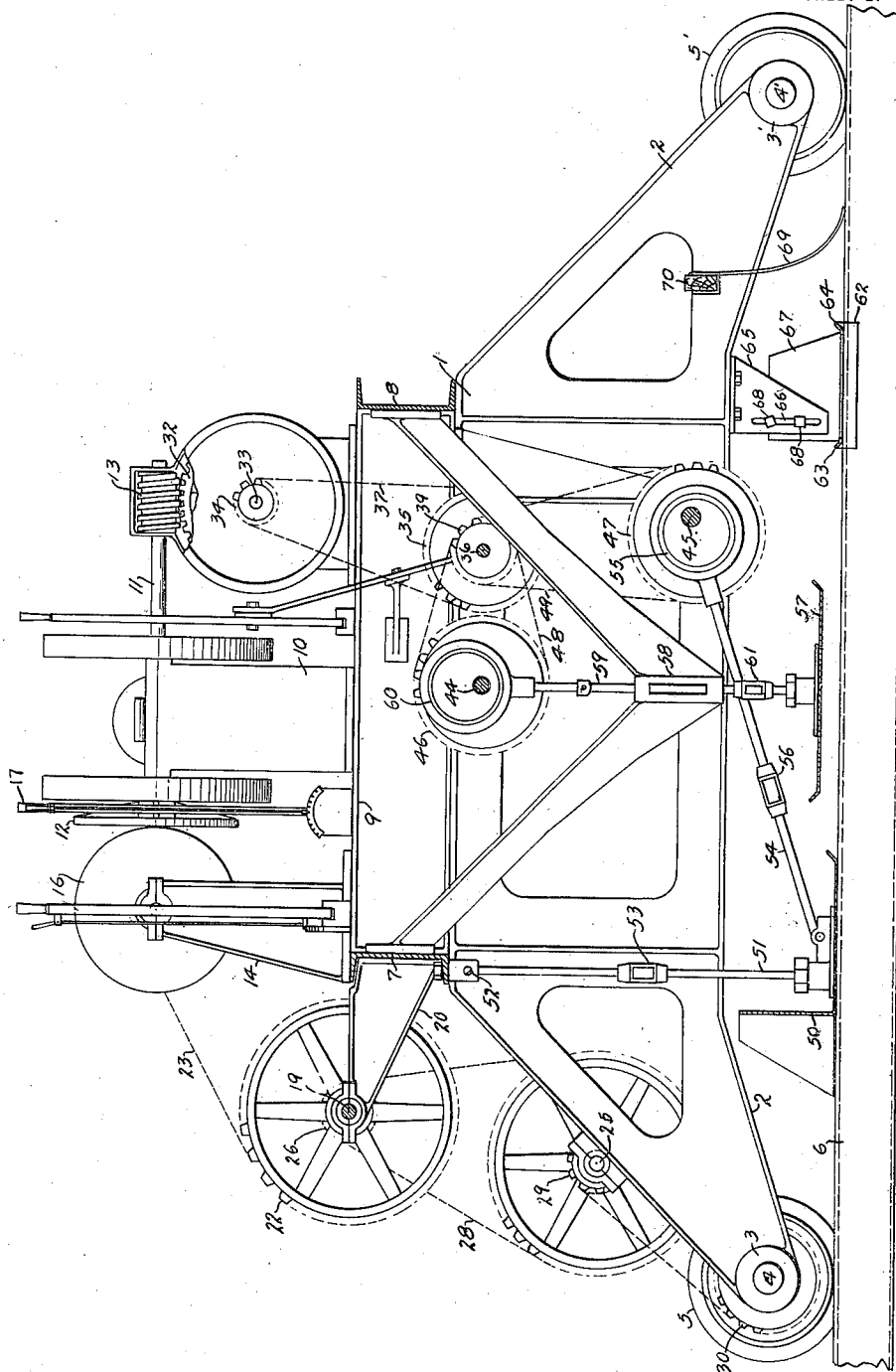


Fig. 3.

ROBERT E. REYNOLDS, INVENTOR

BY
Hardway Cather
ATTORNEYS.

R. E. REYNOLDS.
ROAD SURFACING MACHINE.
APPLICATION FILED DEC. 22, 1917.

1,306,353.

Patented June 10, 1919.
3 SHEETS—SHEET 3.

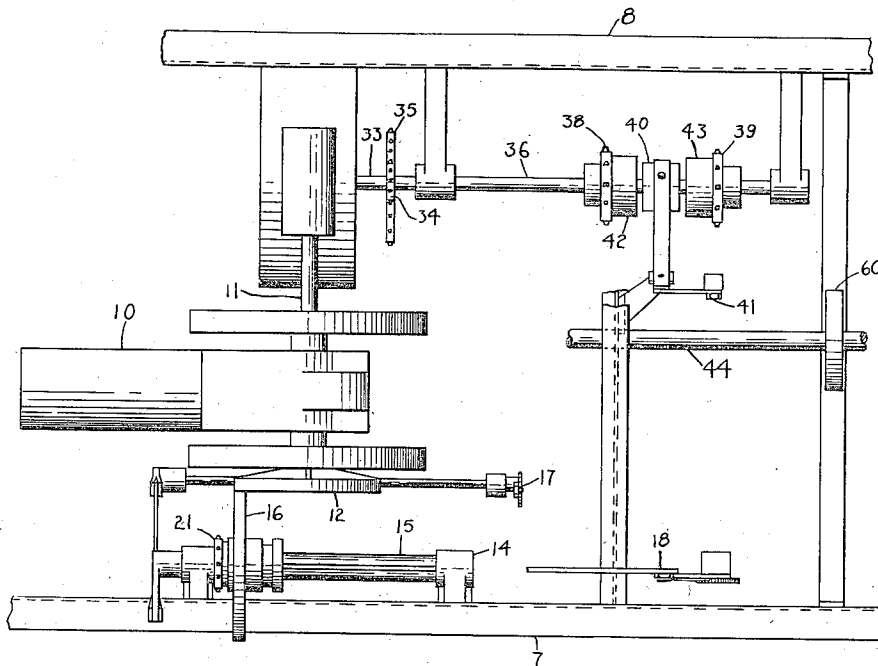


FIG. 4.

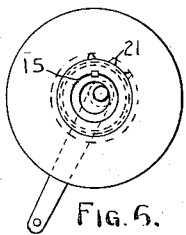


FIG. 6.

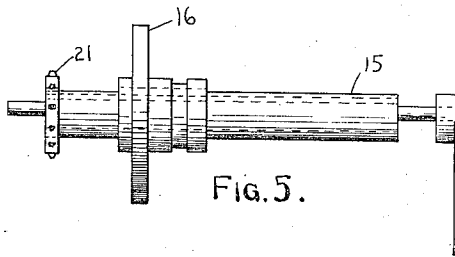


FIG. 5.

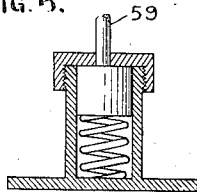


FIG. 9.

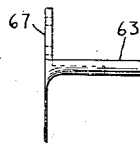


FIG. 7.

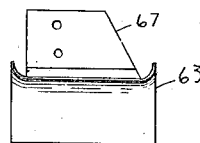


FIG. 8.

Robert E. REYNOLDS, INVENTOR

BY
Hardway Cuthy
ATTORNEYS

UNITED STATES PATENT OFFICE.

ROBERT E. REYNOLDS, OF HOUSTON HEIGHTS, TEXAS.

ROAD-SURFACING MACHINE.

1,306,353.

Specification of Letters Patent. Patented June 10, 1919.

Application filed December 22, 1917. Serial No. 203,385.

To all whom it may concern:

Be it known that I, ROBERT E. REYNOLDS, a citizen of the United States, residing at Houston Heights, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Road-Surfacing Machines, of which the following is a specification.

This invention relates to new and useful improvements in a road surfacing machine.

The object of the invention is to provide a machine of the character described which is specially designed for applying a surface of concrete or other similar material to roads and streets, and includes means for spreading the surfacing material over the foundation of the roadway as well as means for tamping said material, so as to give a true and even surface.

A further feature of the invention resides in the provision of a machine of the character described provided with means for smoothing and giving a finished appearance to the edge of the roadway. A still further feature of the invention resides in the provision of a flexible apron, which follows the tampers and imparts a roughened surface to the finished roadway, so that the concrete or other surfacing material will not harden into a perfectly smooth and slippery surface. With the above and other features in view the invention has particular relation to certain novel features of construction, operation and arrangement of parts, one example of which is given in this specification and illustrated in the accompanying drawings, wherein:

Figures 1 and 2 show, respectively, a plan view and a front elevation of the device.

Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 1,

Fig. 4 is an enlarged fragmentary view,

Figs. 5 and 6, respectively, show an enlarged fragmentary view and an end view of an eccentric bushing employed,

Figs. 7 and 8 show, respectively, an enlarged fragmentary end view and a side view of the edger provided for the purpose of smoothing and finishing the edge or curb of the roadway,

Fig. 9 is a detail view of the form of connection whereby the tamper is secured to its operating rods,

Figs. 10 and 11 show side and end views of the track joints, and

Figs. 12, 13 and 14 show side, front, and

bottom views, respectively, of the track braces.

Referring now more particularly to the drawings wherein like numerals of reference designate similar parts in each of the figures, the numerals 1, 1 refer to the end castings of the framework, the opposite ends of each of which are formed into the legs 2, 2. The free end of these legs are formed into alined bearings wherein the shafts 4 and 4', respectively, rotate, and, mounted on these shafts are the supporting wheels 5 and 5', formed to move upon the track 6. The end castings are connected by the side members 7 and 8 preferably formed of channel irons, which, together with the end I-beams 9, 9 form the frame-work of the machine.

Mounted upon this frame-work is a suitable motor 10 having the drive-shaft 11. Fixed upon one end of this shaft is a friction-wheel 12, and upon the other end thereof is the screw-gear 13. Fixed upon the front side of the frame-work are the bearings 14, 14 in which the shaft 15 rotates. Splined upon this shaft is the friction-wheel 16 which may be brought into and out of contact with the friction-wheel 12, through the eccentric bushing, shown in detail in Fig. 5, and operated through the instrumentality of the hand-lever 17. The friction-wheel 16 may be shifted toward and from the center of the friction-wheel 12, so as to decrease or increase the speed of rotation thereof, and may be shifted from one side to the other of said friction-wheel 12 so as to reverse the rotation of said wheel 16, this shifting being accomplished through the instrumentality of the hand-lever 18. A long counter-shaft 19 is mounted in suitable bearings carried by the respective castings 1, 1 and is also provided with a central bearing 20 carried by the side member 7. Fixed upon the shaft 15 is a sprocket-wheel 21 and in alinement therewith is the sprocket-wheel 22 which is fixed upon the shaft 19, and operating over said sprocket-wheels and transmitting rotation from the former to the latter, is the sprocket-chain 23. The legs 2, 2, have the alined bearings 24, 24 wherein rotate the short shafts 25, 25. Fixed upon the respective ends of the counter-shaft 19 are the small sprocket-wheels 26, 26, in alinement with the large sprocket-wheels 27, 27 which are fixed upon the shaft 25, and operating over these sprocket-wheels and transmitting rotation from the former to

the latter are the sprocket-chains 28, 28. Each shaft 25 has a small sprocket-wheel 29 fixed thereon and in alinement with a large sprocket-wheel 30 which is fixed upon the corresponding shaft 4 and operating over these sprocket-wheels and transmitting rotation from the former to the latter is the sprocket-chain 31.

It is obvious that the traction mechanism hereinbefore described may be operatively connected with and disconnected from the motor 10 by bringing the friction-wheel 16 into or out of mesh with the friction-wheel 12 through the instrumentality of the hand-lever 17. It is further obvious that the speed thereof may be varied and the movement reversed by shifting said friction-wheel 16 back and forth on its shaft 15, through the instrumentality of the hand-lever 18.

The screw-gear 13 is in mesh with a screw-gear 32 which is fixed on shaft 33, this shaft is rotatable in suitable bearings and has the small sprocket-wheel 34 fixed thereon and in alinement with a larger sprocket-wheel 35 which is fixed on the shaft 36. A sprocket-chain 37 operates over these sprocket-wheels and transmits rotation from the former to the latter. Loosely mounted on the shaft 36 are the sprocket-wheels 38 and 39, which are spaced apart and splined on the shaft 36; between said sprocket-wheels 38 and 39 is a double clutch member 40 which is manipulated back and forth through the hand-lever 41 in the well known manner. The inner sides of the sprocket-wheels 38 and 39 are formed into the respective clutch members 42 and 43 with which the clutch member 40 may be alternatively engaged so as to force the sprocket-wheels 38 and 39 to rotate with the shaft 36. Two counter-shafts 44 and 45 are mounted in suitable bearings carried by the frame-work, the former of which has the sprocket-wheel 46 in alinement with the sprocket-wheel 38 and the latter of which has the fixed sprocket-wheel 47 in alinement with the sprocket-wheel 39. The sprocket-wheel 46, fixed on the shaft 44 is driven from the sprocket-wheel 38 through the sprocket-chain 48, and the sprocket-wheel 47 is driven from the sprocket-wheel 39 through the sprocket-chain 49.

Extending the full width of the machine is a spreader 50 which is formed of a metallic plate, or runner, whose front edge is turned up at right angles to the road surface. This spreader is supported by a plurality of supporting rods 51, to the lower ends of which the spreader is secured, the upper ends of said rods being hinged to the frame-work at the point 52 and the rods being provided with turn-buckles 53 to permit the vertical adjustment of the spreader. A plurality of connecting rods 54 are pivoted at their forward ends to the spreader and whose other

ends have eccentric bearings 55 on the shaft 45. As the shaft 45 rotates an oscillatory motion will be imparted to the spreader in the direction of the line of movement of the machine. The connecting rods 54 are provided with turn-buckles 56 whereby their length may be varied.

The numeral 57 designates the tamper which is a transverse metallic plate whose edges are up-turned, as shown in Fig. 3. This plate extends the full width of the machine and both the spreader 50 and the tamper 57 are curved, as shown in Fig. 2 to conform to the desired curvature of the surface of the roadway being formed.

Secured to, and depending from, the side members of the framework are the vertical bearings 58 through which the tamper-rods 59 operate. The upper ends of these rods have eccentric bearings 60 on the shaft 44 and as said shaft rotates said rods 59 are reciprocated vertically. Each of the rods 59 is provided with a turn-buckle 61 for adjustment and the tamper is supported by said rods, being connected to the lower ends thereof through a yieldable connection shown in detail in Fig. 7.

Shown in Fig. 8 is a runner 62 which is formed of a curved metallic plate and is provided to smooth and give a uniform curved contour to the edges of the road surface. The front and rear ends of this runner are upwardly curved, as at 63 and 64. Depending from the respective end castings 1, 1 are the bearing-plates 65, 65 each having a vertical slot 66, and the runner 62 has an up-standing flange 67, integral therewith. Suitable securing bolts 68 pass through the slots 66 and are threaded into the flange 67. These bolts secure the runners 62 in position and permit the vertical adjustment thereof relative to the bearings 65.

In the formation of a road surface the concrete, or other surfacing material is poured onto the road foundation in front of the machine. As the machine moves forward the oscillating spreader 50 first comes in contact with the piles of surfacing material and smooths them down and spreads the material uniformly over the roadway. When this is done the clutch-member 40 is then shifted into engagement with the clutch member 42 which will operate to declutch the spreader from its driving mechanism and to operatively connect the tamper with its driving mechanism. The tamper will be reciprocated vertically and will tamp the surfacing material and form it into a smooth firm surface having an oval contour.

The tamper leaves the surface perfectly smooth and if it hardens in that condition it will be slippery. For the purpose of imparting a rough surface to the finished road I have provided a transverse apron 69

formed of heavy coarse fabric or some similar material. The upper edge of this apron is secured to the transverse beam 70 whose ends are anchored to the rear legs of the end castings 1, 1. This apron extends the full width of the roadway and its lower edge is free and drags over the smooth surface and slightly roughens the same so that when surfacing it will have a uniform oval contour but will not, when hardened be slippery.

What I claim is:

1. A road surfacing machine including a supporting frame-work, a traction mechanism for propelling the machine, a material spreader suspended from the framework, means for oscillating said spreader, a tamper following the spreader and means for reciprocating the tamper vertically.

2. A road surfacing machine including a supporting framework, a traction mechanism for propelling the machine, a transverse, oscillating spreader provided to spread surfacing material, a transverse tamper following said spreader, means for oscillating the spreader, means for reciprocating the tamper vertically and curb-formers carried by the frame-work and provided to smooth and give a uniform contour to the edges of the surface being formed.

3. A road surfacing machine including a supporting framework, a traction mechanism for propelling the machine, a transverse oscillating spreader provided to spread surfacing material, a transverse tamper following said spreader, means for oscillating the spreader, means for reciprocating the tamper vertically, and a transverse flexible apron suspended from the frame-work and whose free edge rests upon the surface being formed.

4. A road surfacing machine including a supporting framework, a propelling mechanism therefor, a transverse runner for spreading surfacing material, a vertically reciprocating tamper following the runner, and a transverse flexible apron suspended from the machine behind the tamper whose free portion rests upon the surface being formed.

5. A road surfacing machine including a

supporting framework, a traction mechanism for propelling the machine, a transverse tamper extending the full width of the machine, means for reciprocating said tamper vertically, and an oscillating spreader carried by the framework in advance of the tamper.

6. A road surfacing machine including a supporting frame-work, a traction mechanism for propelling the same, a transverse material-tamper, depending from the framework, means for reciprocating said tamper vertically and forming members carried by the frame-work and provided to smooth and give a uniform contour to the edges of the road surface being formed.

7. A road surfacing machine including a supporting frame-work, a traction mechanism for propelling the same, a transverse material-tamper, depending from the framework, means for reciprocating said tamper vertically, and a transverse flexible apron suspended from the machine behind the tamper whose free portion rests upon the surface being formed.

8. A device of the character described, including a framework, a material spreader, depending therefrom and formed of a horizontally arranged plate, whose front edge is turned up at an angle to the road surface, means for oscillating said spreader and a flexible apron following the spreader, and arranged to pass over the road surface being formed.

9. A device of the character described including a framework, a transverse material spreader, formed of a horizontal plate whose front edge is upturned at an angle to the road surface, means for oscillating said spreader, a yieldably mounted tamper depending from the framework behind the spreader, and means for reciprocating the tamper.

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

ROBERT E. REYNOLDS.

Witnesses:

E. V. HARDWAY,
JAS. W. OLIVER.