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Patented Mar. 14, 1899.

W. H. JOHNSON.  
ROAD MAKING MACHINE.

(Application filed Apr. 16, 1898.)

(No Model.)

2 Sheets—Sheet 2.

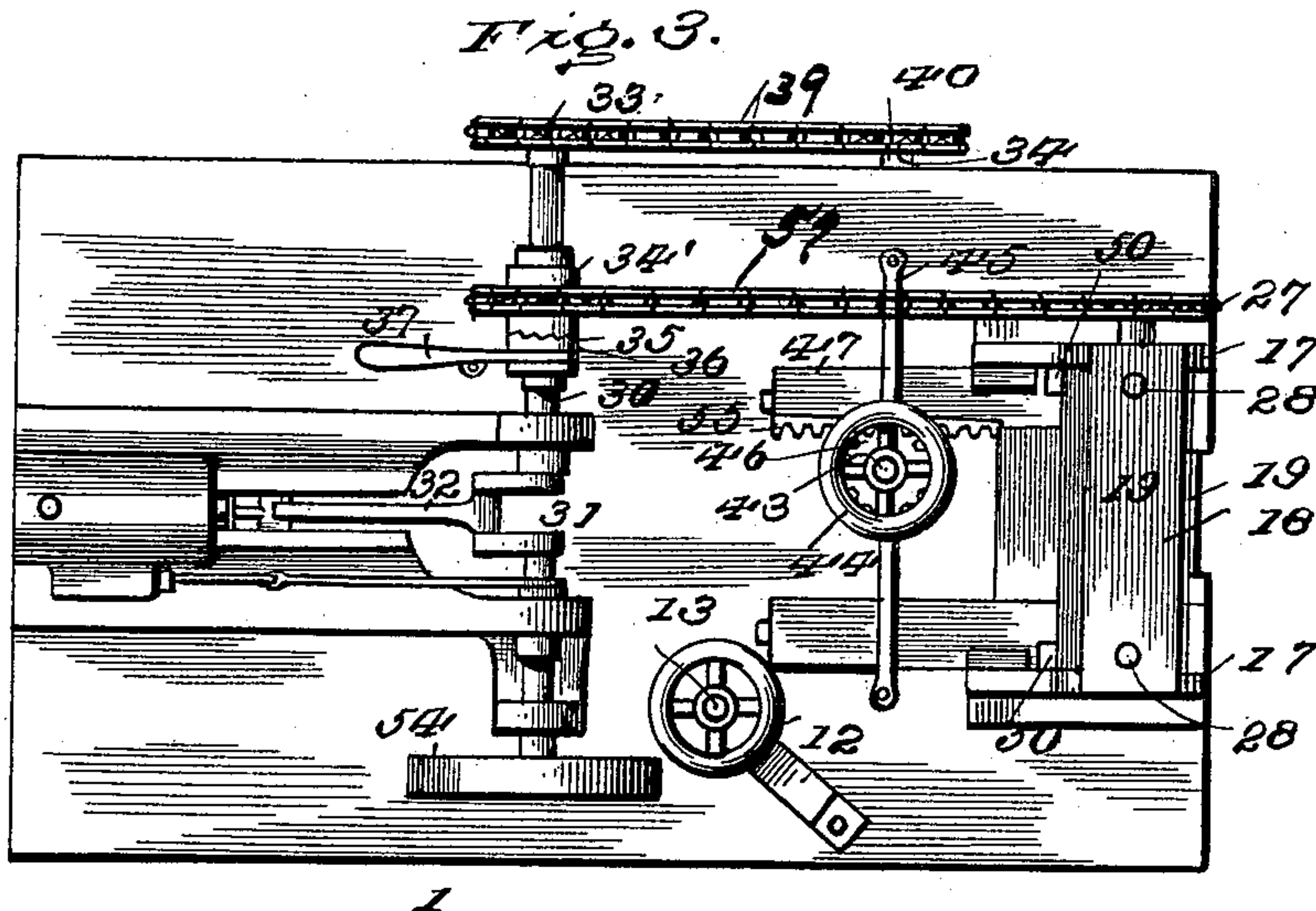
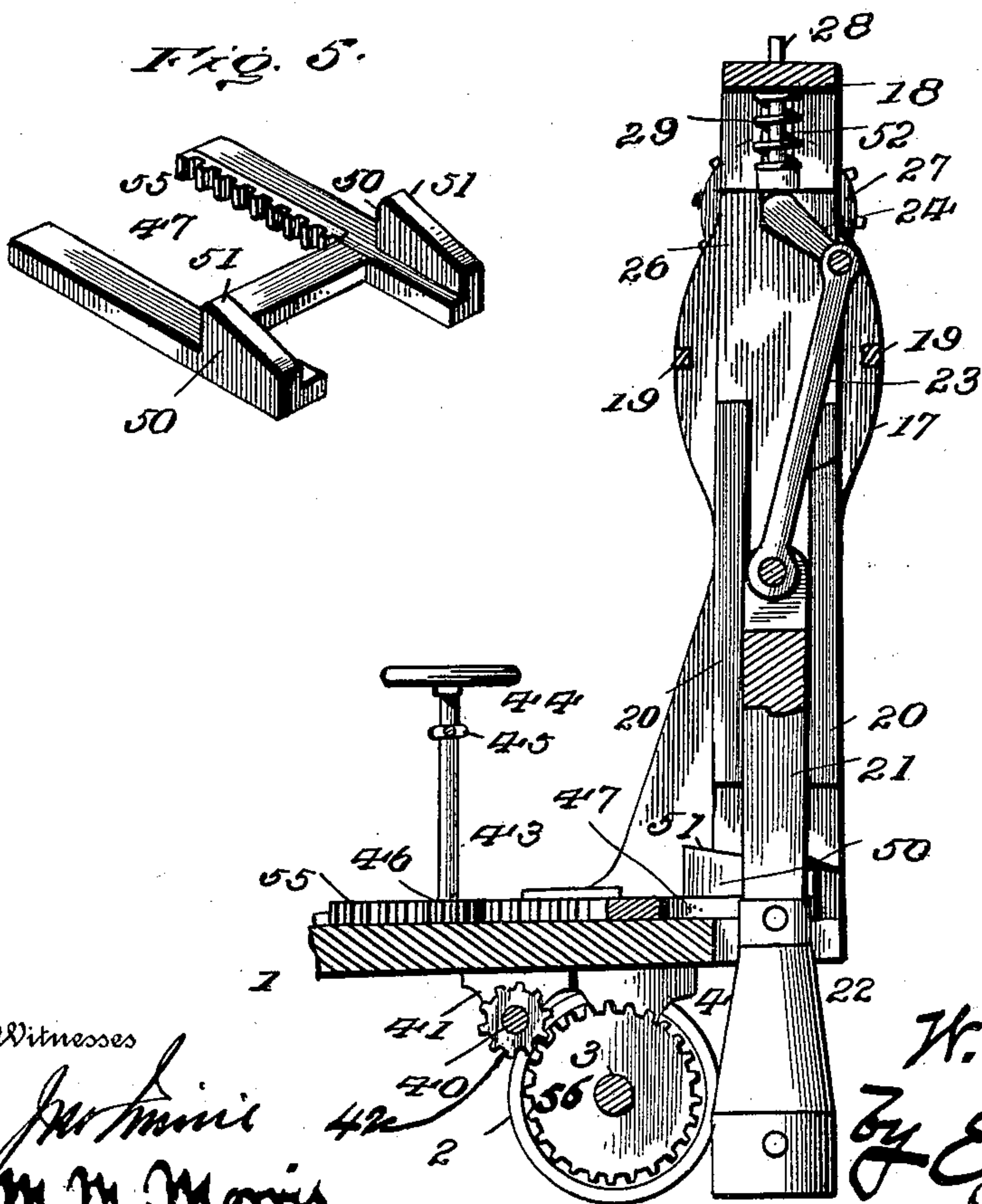


Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## ROAD-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 621,094, dated March 14, 1899.

Application filed April 16, 1898. Serial No. 677,835. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. JOHNSON, a citizen of the United States, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Road-Making Machines; and I 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 has relation to improvements in road-making machines; and its object is to provide a machine to be used in connection with road-making for the purpose of ramming the stones or material composing the road-bed.

The invention contemplates a particular construction and arrangement to provide for moving the machine by steam or other motive power and operating the hammer during such movement, including an arrangement for throwing the hammer out of operation when it is desired to transport the machine from place to place.

To the above ends and to such others as the invention may pertain the same consists in a platform mounted upon a truck or supporting-frame and carrying a reciprocating hammer, a driving-shaft geared to the axle of one pair of transporting-wheels, and to means for operating the hammer, a mechanism for turning the other pair of transporting-wheels in guiding the machine, the driving-shaft being connected to a suitable engine mounted upon the truck, and means for regulating the force of the hammer, all as will be hereinafter fully set forth, and particularly pointed out in the appended claims.

The annexed drawings, to which reference is made, fully illustrate my invention, in which—

Figure 1 represents a perspective view of my device. Fig. 2 is a bottom view of the same. Fig. 3 is a plan or top view. Fig. 4 is a vertical sectional view showing a portion of the platform broken away, and Fig. 5 is a perspective view of the slide and its rack.

Referring by numerals to the accompanying drawings, 1 designates a platform which is supported upon transporting-wheels 2, having broad tires, those at the front of the ma-

chine being mounted on a shaft or axle 3, journaled in bearings 4, depending from the platform and rigidly secured thereto. 55

The supporting-wheels at the rear end of the machine are mounted upon the axle 5, supported in bearings 6, rigidly secured to a plate 7, extending across the under side of the platform, and is centrally pivoted thereto by a bolt 8, which extends through the parts, and to this plate is rigidly attached an arm 9, which extends through and is supported by a metal strap or loop 10, secured to the under side of the platform, the outer end of said arm having a segment 11 rigidly secured thereto and provided with teeth. By this manner of connecting the supporting-wheels to the platform the said wheels are employed for turning the machine, which is accomplished by means of a hand-wheel 12, mounted upon an upright shaft 13, which passes through the platform 1 and carries a pinion 14 and in mesh with the toothed segment on the arm 9, which projects from the pivoted plate carrying the said supporting-wheels. 60 65 70 75

A standard or brace extends from the platform to brace the upper part of the shaft or steering-post 13, the latter being held in proper position by a collar 16, having a set-screw for securing it to the shaft and bearing upon a plate or washer let into the platform. 80

Mounted upon the forward end of the machine is a superstructure consisting of the side pieces 17 17, connected to each other at their upper ends by a cross-piece 18 and braced at an intermediate point by a cross-bar 19. 85

Between the side pieces of the superstructure are secured guides 20 20 for the sliding block 21, to which the hammer or rammer 22 is rigidly connected. The slide is connected by a pitman 23 to a crank portion or eccentric 24 of the shaft 25, which has bearings in vertical pieces 26, which move vertically against the inner side of the uprights, the ends of said shaft passing through slots in the upper portion of the side pieces or standards 17 17, while one end of the shaft 25 is extended to receive a sprocket-wheel 27. The vertical pieces 26, in which the crank-shaft is journaled, are provided with upper end extensions or rods 28, which extend through openings therefor in the cross-piece 95 100



18 and have coiled springs 29 interposed between said cross-piece and shouldered upper end of the vertical pieces 26 26.

The guides 20 20 for the slide which carries the rammer 22 are secured to the vertical pieces to which the shaft 25 is journaled, and by this arrangement the jar occasioned by the hammer striking the road or stones will be received by the springs 29.

The axle upon which the transporting-wheels at the forward end of the machine are mounted is driven by means of an engine mounted upon the rear portion of the platform, the gearing being of any well-known and approved style, that shown consisting of a shaft 30, having a crank portion 31, to which the pitman-rod 32 of the engine is connected, the shaft 30 having a fly-wheel 54 and a sprocket-wheel 33, which is connected by a chain to a sprocket-wheel 34 on the axle 40. This sprocket-wheel 33 is connected by a chain 39 to a sprocket-wheel 34 on a shaft 40, journaled in bearings 41 to the platform, and this shaft has a pinion 42, meshing with a gear-wheel 56 on the axle 3, which provides for transportation of the machine. The wheel 34 is connected by a chain 57 to the sprocket-wheel 27 on the crank-shaft supported in the superstructure, which gives motion to the crank-shaft 25, thus operating the slide-block 21, carrying the rammer 22.

Upon the platform 1 is mounted a second vertical shaft 43, having a hand-wheel 44 and supported by brace-rods 45, which shaft has a pinion 46 in mesh with teeth 55 on a sliding frame 47, which latter is provided with side pieces 50 50, having inclined edges 51 51, which engage the lower portion of the sliding pieces 26 26, and by manipulating the hand-wheel 44 the inclined pieces 50 50 serve as a stop and regulate the pressure or force of the blow upon the work.

It will thus be seen by reference to the above description, when taken in connection with the annexed drawings, that when the engine is started the machine will be moved and may be guided by turning the hand-wheel 12, which moves the rear supporting-wheels, the shaft which is geared to the engine being connected positively to the front supporting-wheels, and when the movable clutch-section thereon is in engagement with the sprocket-wheel 34' the latter will operate the reciprocating hammer to give the proper movement thereto. This provides a machine that can be effectively used in making roads or paving, as the hammer will properly ram the stones or paving, taking the place of the old method of doing it by hand, and the machine may be geared to give the proper number of reciprocations to the hammer with respect to the distance traveled, for it will be seen that the machine is moved at the same time the hammer is operated.

It will be further observed that by my construction of a road-making machine the same is given all power necessary to ram the pav-

ing-stones or road, and it can be quickly manipulated in shifting the same from place to place, and the force of the stroke of the hammer can be regulated to a nicety. At the same time it is cheap to manufacture, durable, and not liable to get out of order.

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

1. In a device of the character described, the combination with the platform provided with the transporting-wheels and mechanism for driving the machine, of the slotted standards, spring-actuated vertical pieces, the shaft carrying the pitman, the regulating device composing the rack-bar, the inclined pieces thereon and the pinion engaging said rack-bar and the hand-wheel, 44, all substantially as described.

2. In a device of the character described, the combination with slotted standards secured to the platform, the movable pieces, 26, 26, having the upper end extensions, the coiled springs upon these extensions, crank or eccentric shaft having the sprocket-wheel, the pitman on said shaft and slide carrying the hammer, the inclined frame and rack therefor, pinion engaging said rack, hand-lever which operates said pinion, the steering device consisting of the segmental rack, pinion therefor and hand-lever 12, and the sprocket-wheels connected by the chains and operated by means, substantially as described.

3. In a device of the character described, the combination with the portable platform, of the sprocket-wheels secured to the transverse shafts, the chains and the steering device, the sliding frame, slotted uprights, hammer-carrying slide, the regulating inclined frame, rack-bar therefor and hand-lever, having the pinion engaging said bar, all substantially as described.

4. In a road-making machine, the combination with a truck or supporting-frame mounted upon transporting-wheels, a shaft driven from a suitable engine or other motive power, and geared to the axle of one pair of supporting-wheels, a superstructure consisting of side pieces or uprights connected at their top by a cross-piece, movable side pieces located within the frame and spring-depressed, a crank-shaft or eccentric journaled in the movable pieces, and a hammer or sliding weight connected to the crank or eccentric, together with gearing connecting the crank-shaft or eccentric with the driving-shaft of the machine, all substantially as described.

5. In a device of the character described, the combination with the truck or platform supported upon transporting-wheels, a shaft driven from a suitable engine and positively connected to an axle of the supporting-wheels, a superstructure mounted upon the platform and having movable pieces, springs for depressing the movable pieces, a crank-shaft or eccentric journaled in said movable pieces and a sliding weight or hammer connected to



the crank-shaft or eccentric by a pitman; together with a sprocket-wheel mounted upon the crank-shaft or eccentric-shaft, a sprocket-wheel loosely mounted upon the driving-shaft  
5 and connected to the sprocket-wheel of the crank or eccentric shaft, and means for throwing the sprocket-wheel on the driving-shaft in and out of connection therewith, all substantially as described.

10 6. In a device of the character described, the combination with a supporting-frame or truck, of a superstructure mounted thereon, vertically-movable pieces located within the superstructure, a crank or eccentric shaft  
15 journaled in the movable pieces and extending into slots in the upper portion of the side pieces of the superstructure, one end of the crank or eccentric shaft being extended to re-

ceive a sprocket-wheel, guide-strips attached to the movable pieces, a sliding weight or hammer engaging the guide-strips and connected  
20 to the crank or eccentric shaft by a pitman; together with a shaft driven from a suitable motor and having a sprocket-wheel which is connected by chain to the sprocket-wheel of  
25 the crank or eccentric shaft which operates the hammer, and means operated by a vertical shaft to regulate the pressure for the work, all substantially as described.

In testimony whereof I affix my signature 30  
in presence of two witnesses.

WILLIAM H. JOHNSON.

Witnesses:

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