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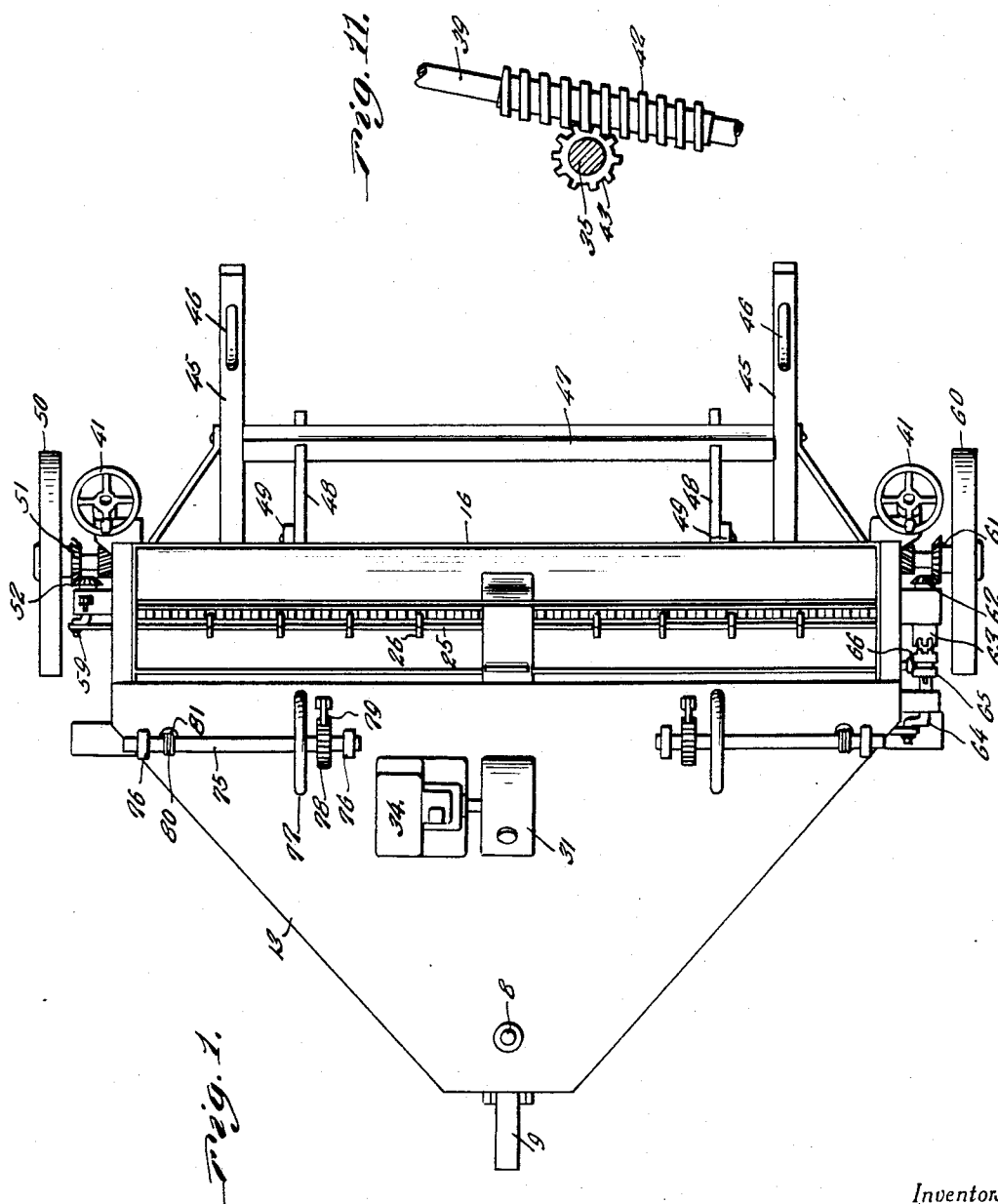
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2,176,534

ROAD BUILDING MACHINE

Original Filed April 10, 1937

4 Sheets-Sheet 1



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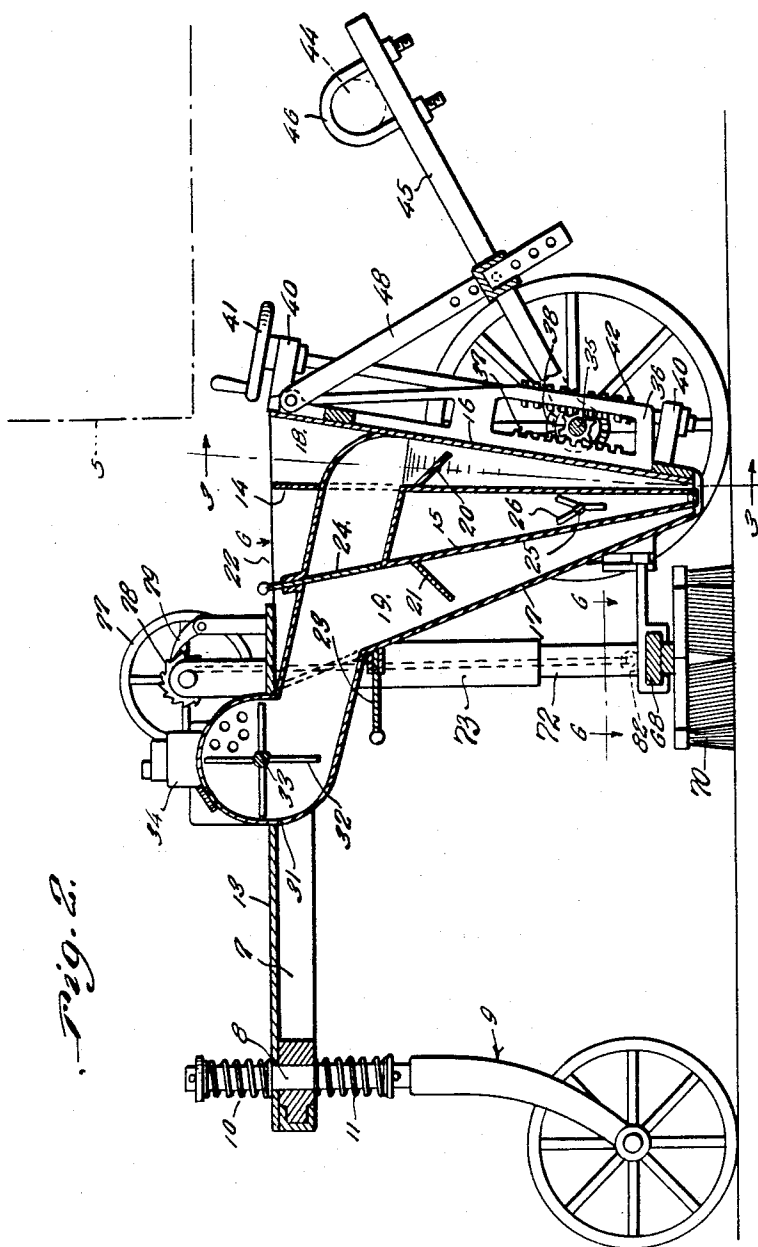


Fig. 2.

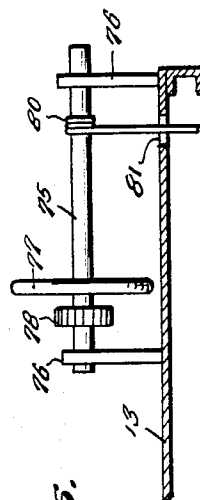


Fig. 5.

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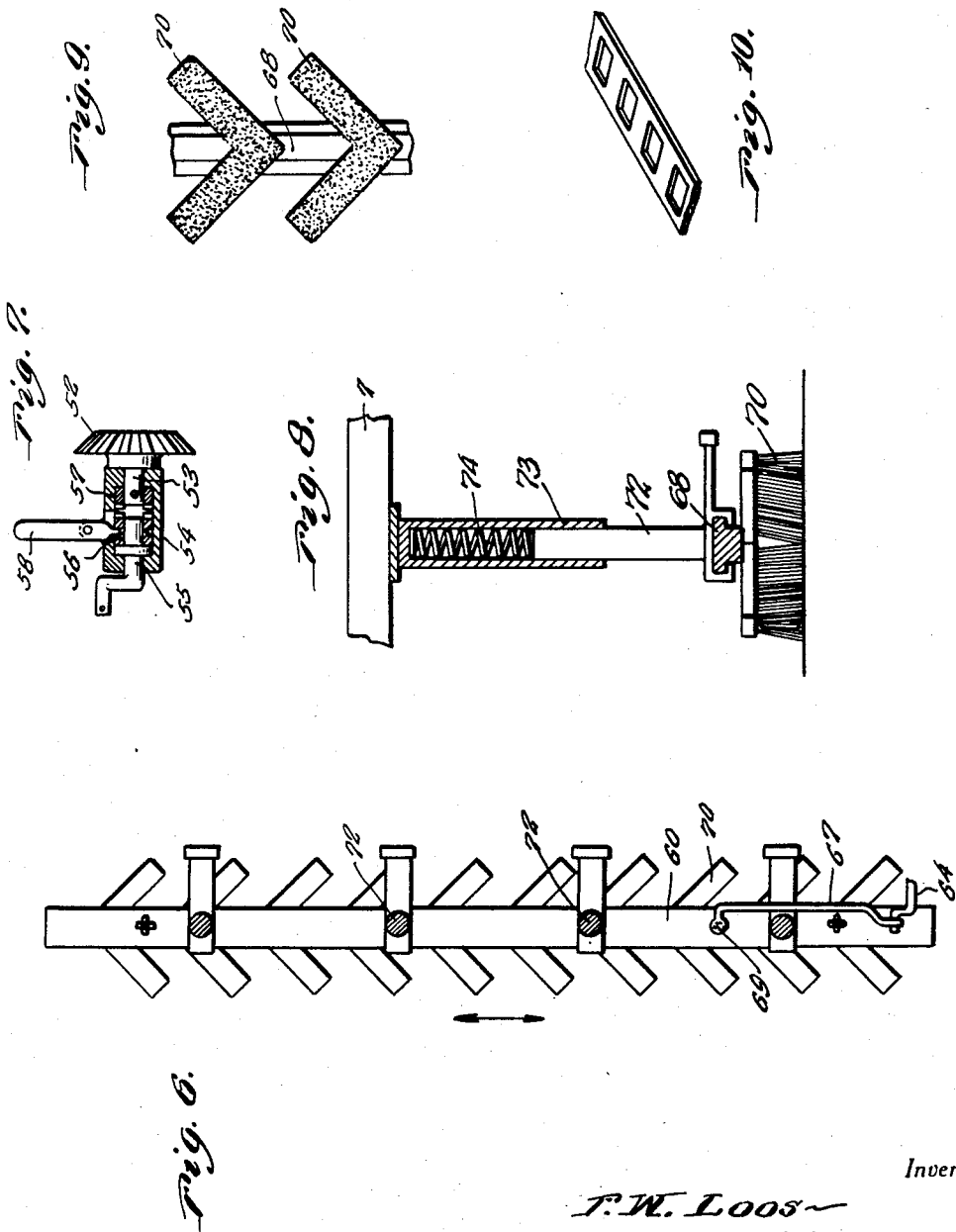
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UNITED STATES PATENT OFFICE

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ROAD BUILDING MACHINE

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OhioApplication April 10, 1937, Serial No. 136,195
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1 Claim. (Cl. 94-44)

This invention appertains to new and useful improvements in means for building roads.

The principal object of the present invention is to provide a machine for building roads wherein road material is forced under pressure into a road bed, thus saving considerable time now utilized by workmen while at the same time constructing a better road surface.

Another important object of the invention is to provide a road building machine wherein the road building material is forced under pressure into a road bed and simultaneously levelled.

Still another important object of the invention is to provide a road building machine wherein material is discharged under pressure and in such a manner that it is evenly distributed over and into the road bed.

These and various other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:

Figure 1 represents a top plan view of the machine.

Figure 2 is a vertical longitudinal sectional view through the machine.

Figure 3 is a vertical sectional view on the line 3-3 of Figure 2.

Figure 4 is a fragmentary vertical sectional view through the hopper.

Figure 5 is a fragmentary transverse sectional view through the upper portion of the machine.

Figure 6 is a horizontal sectional view taken substantially on the line 6-6 of Figure 2.

Figure 7 is a fragmentary detailed sectional view of the agitator drive.

Figure 8 is a fragmentary detailed sectional view of the brush mount.

Figure 9 is a fragmentary bottom plan view of the brush assembly.

Figure 10 is a fragmentary perspective view of the discharge control plate.

Figure 11 is a fragmentary sectional view of the machine lifting and lowering means.

Referring to the drawings wherein like numerals designate like parts, it can be seen in Figure 2, that the forward portion of the machine is to be located immediately under the rear portion of a truck or the like 5 so that material from the truck can be dumped into the hopper generally referred to by numeral 6.

This machine consists of the super-frame 7 gradually tapering toward its rear end. Vertically disposed through the rear end of the frame 7 is the shaft 8 of the caster wheel assembly generally referred to by numeral 9. Said shaft 8 is

provided with springs 10 above and below the frame 7 to afford shock absorbing means for the caster wheel. The rear portion of the frame 7 is provided with a platform or covering 13.

The hopper 6 consists of a pair of downwardly converging side walls 14-15 and outside, that is, forwardly and rearwardly of the side walls 14-15 are air passageways defined by vertical walls 16-17 downwardly converging with respect to the walls 14-15. In the passageways 18-19 thus defined are the baffles 20-21 respectively. Traversing the upper portions, crossing the hopper 6 and terminating in the upper portion of the passageway 18 is the downwardly flaring air conduit 22. A slide valve plate 23 can close or open the conduit 22 with respect to the passageway 19 and a vertically slidable plate 24 can close off the passageway 22 with respect to the hopper 6 and passageway 18 if desired.

These passageways in conjunction with the conduit 22 can be brought into play for exerting a downward driving force on material discharged from the lower end of the hopper 6. Only one of these air passageways is employed at a time, the one to be used depending on whether the machine is going in a forward direction or reverse direction. If in the forward direction, the passageway 19 is being used and the valve plate 24 is maintained closed. For backward movement of the machine, the valve plate 24 will be disposed in open position while the slide plate 23 will be closed so as to shut off the passageway 19 from air force delivered by the blower.

In either use of the passageways, the air would force the stone dust into the roadbed as it leaves the central passageway between the passageways 18-19.

A horizontally slidable rod 25 is provided in the lower portion of the hopper 6 and this has fingers 26 thereon so that when the rod is reciprocated these fingers will stir up the material in the hopper and thus agitate the same so that the material will readily discharge from the hopper.

As shown in Figure 4, the lower portion of the hopper has a perforated bottom 27 under which slides the control plate 28, this control plate having openings 29 therein registrable with the openings in the bottom 27. One end of this plate 28 is provided with the shank 30 whereby the plate can be set to regulate the discharge of material.

As is clearly shown in Figures 2 and 3, the rear end of the air conduit 22 merges with the fan housing 31 in which the blower 32 is located on the shaft 33, which shaft is driven by a small

electric or gas motor 34 mounted upon the platform 13.

Numeral 34 represents the forward axle of the machine which is disposed through the vertically disposed frames 36 secured to the front wall 16. Each of these frames 36 has a rack 37 therein with which engages a pinion 38 on the corresponding end of the axle 35. Vertically extending shafts 39 are supported by bearings 40 on the wall 16, each having a hand wheel 41 at its upper end and a worm 42 adjacent its lower end meshing with a pinion 43 on the said axle 35.

Obviously by rotating these shafts 39 the axle 35 can be rotated so that it will ride upwardly or downwardly the forward end of the machine.

As is shown in Figure 2, the rear axle or axle housing 44 of the truck 5 has the arms 45 secured thereto by U-clamps 46. These arms 45 are bridged by the channeled bar 47 through slots in which extend the pivotal arms 48—48 pivotally secured as at 49 to the front wall 46. The lower end portions of these arms 48 are perforated and suitable bolts or pins can be disposed through these openings for preventing displacement of the arms 48 from the channeled bar 47.

As is shown in Figure 1, the front wheel 50 rotatable on the axle 35 has a beveled gear 51 meshing with the beveled gear 52 which is on the stub shaft 53 journaled into the stationary housing 54 (see Figure 7). Also journaled into the housing 54 is the short crankshaft 55 on which the clutch sleeve 56 is splined. Secured to the stub shaft 53 is the clutch member 57 with which the slidable sleeve 56 is engageable. The sleeve 56 can be engaged with the clutch member 57 by operation of the pivotal arms 58. The outer end of the short crankshaft 52 is connected as at 59 to the agitator rod 25.

The other front wheel 60 has a beveled gear 61 meshing with the bevel gear 62 on a shaft which carries the clutch member 63. A crankshaft 64 has a slidable sleeve 65 splined thereon and controlled by the arm 66. This sleeve 65 can be split to engage the clutch member 63 so that the front wheel 60 is connected up with the crankshaft 64. The crankshaft 64 is connected by the rod 67 to the brush back 68 as at 69. V-shaped brush units 70 are secured to this brush back or bar 68 which is slidably disposed through the guide members 71. Extending upwardly from the brush back 68 are the shanks 72 slidable in the depending barrels 73 which depend from the frame 7 of the machine. Interposed between the upper ends of the shanks 72 and the upper ends of the barrels 73 are the coiled compressible springs 74 which tend to tensionally urge the

brush assemblies against the ground. It can thus be seen that as the wheel 60 rotates, the crank 64 will be rotated imparting reciprocatory motion to the brush back 68.

For permitting lifting of the brush assembly, a pair of lifting assemblies are provided as shown in Figure 1. These lifting assemblies each consists of a shaft 75 journaled to bearings 76. The shaft is provided with the hand wheel 77 and has the ratchet wheel 78 with which the spring-pressed dog 79 is engaged. A cable 80 is wound on the shaft 75 and extends downwardly through an opening 81 in the platform 13 to connect to an eye 82 on the brush back 68. Thus the brush assembly can be lifted from the roadway whenever desired as when bringing the machine from one place of operation to another.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

What is claimed as new is:

A road building machine comprising a platform, a hopper depending from said platform and including downwardly converging side walls and substantially triangular shaped end walls with the latter projecting forwardly and rearwardly of the side walls, said walls cooperating in forming a road material chamber tapering towards its lower end, converging walls coacting with said side and end walls in forming downwardly converging air passages arranged forwardly and rearwardly of the road material chamber, said walls coacting to form a discharge nozzle of elongated formation extending transversely of the platform and arranged in close proximity to the ground and common to the air passages and the road material chamber, an adjustable control means for the nozzle, an air tube connected with a power driven blower on the platform and connected with the upper portion of the air passages, control means for said passages, a pilot ground wheel for one end of the platform, rack type frames carried by one of the walls of the hopper, an axle extending through the frames, wheels journaled on the axle, pinions journaled on the axle and meshing with the rack frames, and operating means for rotating the pinions on the rack frames to raise and lower the nozzle of the hopper with respect to the ground.

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