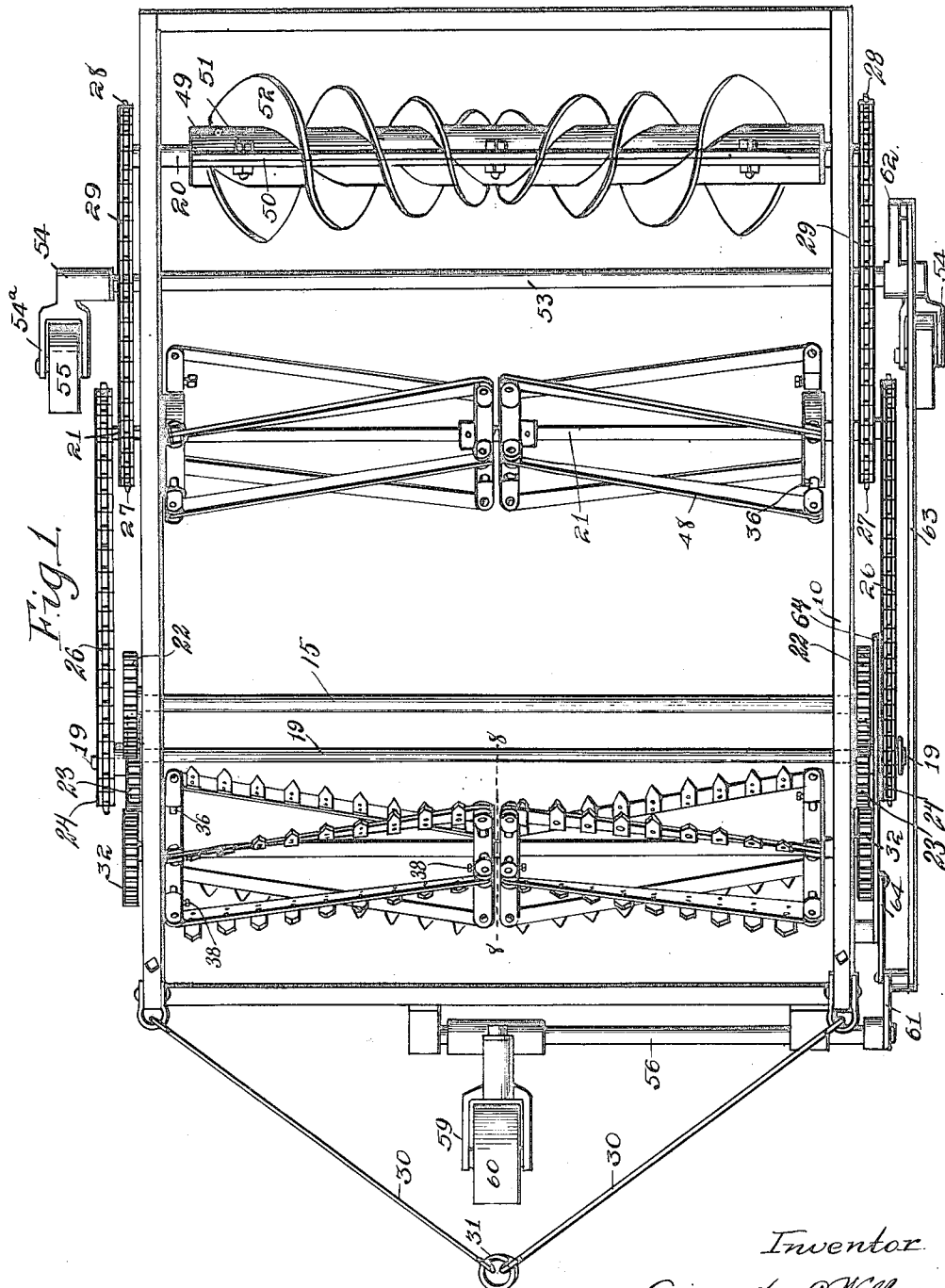


A. C. WILLSON.
ROAD MAKING MACHINE.
APPLICATION FILED MAR. 27, 1916.

1,225,547.

Patented May 8, 1917.
3 SHEETS—SHEET 1.



Witness
A. L. Wagner.

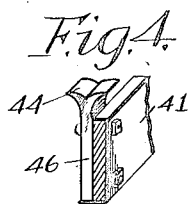
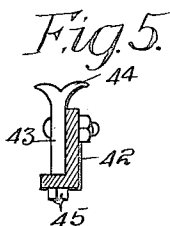
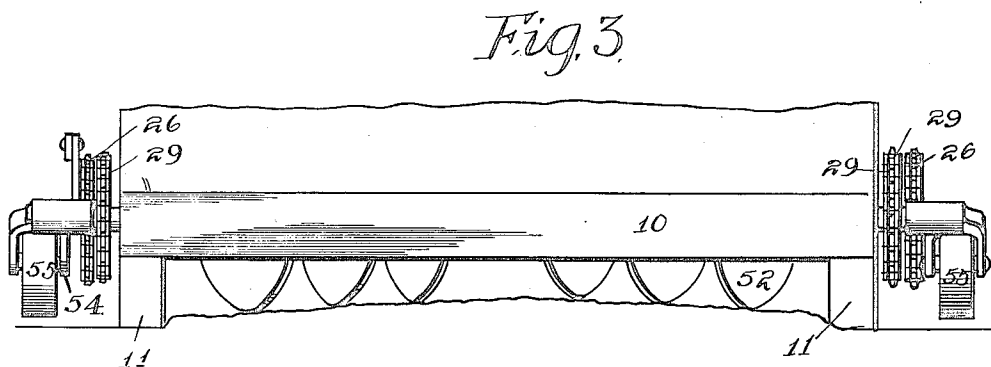
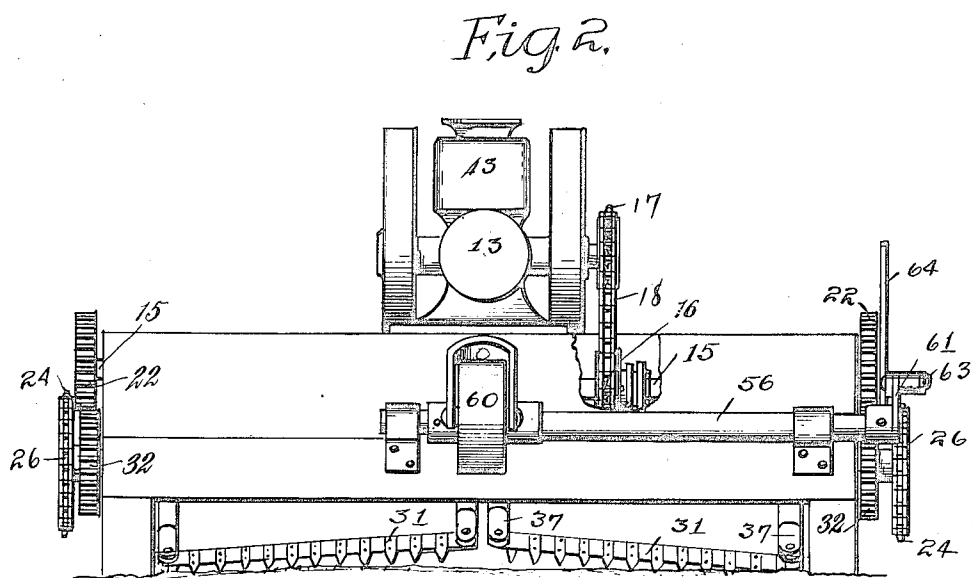
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

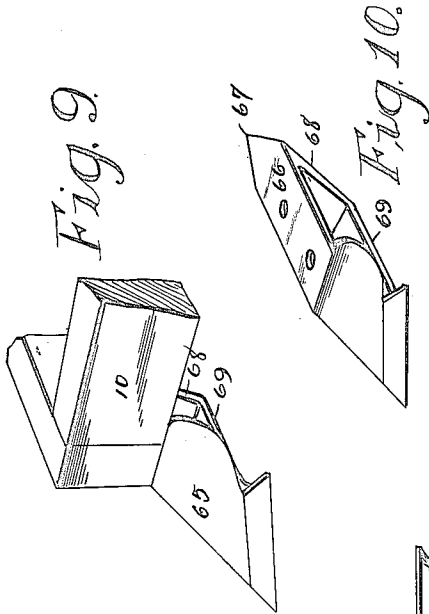
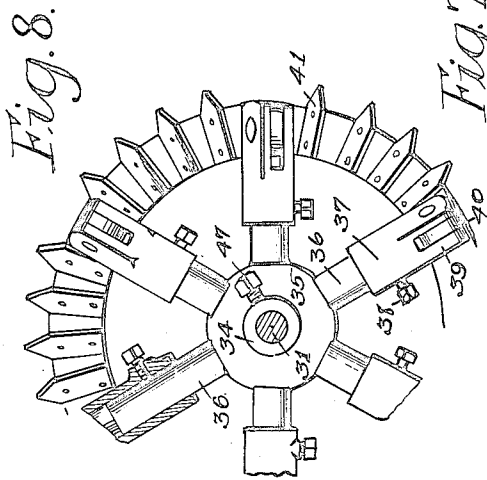
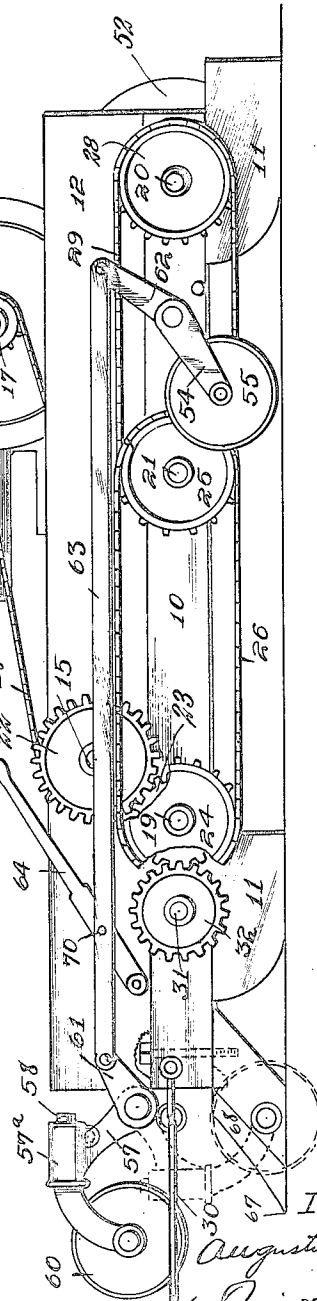


Fig. 7.



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UNITED STATES PATENT OFFICE.

AUGUSTUS C. WILLSON, OF DES MOINES, IOWA.

ROAD-MAKING MACHINE.

1,225,547.

Specification of Letters Patent.

Patented May 8, 1917.

Application filed March 27, 1916. Serial No. 87,109.

To all whom it may concern:

Be it known that I, AUGUSTUS C. WILLSON, a citizen of the United States, and resident of Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Road-Making Machine, of which the following is a specification.

The object of my invention is to provide a road making machine having means for cutting and loosening the dirt, means for scraping and smoothing the same, and means for forming a central ridge therein.

A further object is to provide such a machine in which all of said means are adjustable for regulating the operation thereof.

A further object is to provide in such a machine new and novel means for adjusting the dirt moving parts.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1, shows a top or plan view of the lower frame of a road making machine embodying my invention.

Fig. 2 shows a front elevation of the same.

Fig. 3 shows a rear elevation of the same.

Fig. 4 shows a perspective view of a form of the cutting tooth.

Fig. 5 shows a front elevation of one of the cutting teeth, illustrating a different method of mounting the same on the machine.

Fig. 6 shows a front elevation of a suitable form of the cutting tooth.

Fig. 7 shows a side elevation of the machine, the dirt cutting and scraping member being omitted.

Fig. 8 shows a detail, sectional view taken on the line 8—8 of Fig. 1.

Fig. 9 shows a perspective view of one of the cutting members at the front corners of the machine, and

Fig. 10 shows a perspective view of the same in another position.

In the accompanying drawings, I have used the reference numeral 10 to indicate generally what I shall call the lower frame of the machine which is supported on runners or other suitable means 11. On the frame 10 is an upper frame 12. Supported on the upper frame 12 is a suitable prime mover such as a gasoline engine 13. Mount-

ed in the frame 12 is a transverse shaft 15 on which is a gear 16 in line with the gear 17 on the engine shaft. A chain 18 travels on the gears 16 and 17.

Mounted in the frame 10 near the forward end thereof is a shaft 19. Mounted in the frame 10 near the rearward portion thereof is a shaft 20. A shaft 21 is mounted in said frame intermediate of the shafts 19 and 20. On the shafts 15 and 19 are gears 22 and 23, which mesh with each other. On the shafts 19 and 21 are alined sprockets 24 and 25 on which a chain 26 travels. On the shafts 20 and 21 are sprockets 27 and 28 on which a chain 29 travels.

The shafts have the same chain and sprocket gear arrangement at each end as clearly shown in Fig. 1.

Secured to the forward portion of the frame 10 are forwardly extending rods inclined toward each other and connected at their forward ends, preferably by a ring 31^a to which a draw-bar or the like may be secured.

The upper frame 12 is omitted in Fig. 1, for clearness sake.

Located just forwardly of the shaft 19 is a shaft 31. On the shaft 31 are gears 32, at the opposite ends thereof, meshing with gears 23 on the shaft 19.

On the shaft 31 is mounted a suitable earth cutting and digging device, which will now be described.

Mounted at each end of the said shaft is a collar 34 on which is formed a hub 35 having radially extending arms 36. Similar hubs having similarly radially extending arms are mounted adjacent to each other near the middle of the shaft 31.

The outer ends of the arms 36 are telescopically received in members 37 which are located in their various adjusted positions on the arms 36 by means of set screws 38. The members 37 have at their outer ends spaced arms 39 to receive bars 40 which are pivotally mounted between the arms 39 of the respective members 37. Each bar 40 is connected with one of the members 37 on the outer hub and with one of the members 37 on one of the inner hubs, as clearly shown in Fig. 8, and the bars 40 are arranged spirally, as shown in Fig. 1.

Mounted on the bars 40 are digging teeth 41, which may be bolted to said arms, as shown in Fig. 6, so that they may be readily adjusted and sharpened or replaced.

In Fig. 5, I have shown a modified form of the bar 40 having the shape of an angle iron 42, also a modified form of the teeth 41. The tooth in Fig. 5 is indicated by the character 43 and has a bifurcated cutting edge 44. The shank of the tooth 43 is extended through the angle of the angle iron 42, and is screw-threaded to receive a bolt 45.

In Fig. 4, I have shown a digging tooth 46 bolted to the bar 40 and having the bifurcated cutting edge 44.

The collars 34 are locked in position on the shaft 31 by means of set screws 47.

It will readily be seen that the positions 15 of the bars 40 and the angles of the cutting teeth, with relation to the ground, may be varied for accomplishing different purposes, by rotating the collars 34 on the shaft 31 and by sliding the inner collars 34 inwardly 20 or outwardly slightly as desired.

The total diameter of the device, just described, may be regulated by sliding the members 37 on the arms 36 and locking them in different positions by means of set 25 screws 38.

On the shaft 21 are collars having hubs 35 and arms 36 similar to those on the shaft 31.

The arms 36 on the shaft 21 have similar 30 members 37, to the outer ends of which are pivoted cutting blades 48.

The relative positions of the cutting blades, 48, the angles at which they strike the ground and the total diameter of the 35 device of which they form a part may be varied by adjusting the members 34 on the shaft 21 and by adjusting the members 37.

Mounted on the shaft 20 is a cylinder made in two halves, 49, having flanges 50 40 along their adjacent edges connected by means of bolts 51.

On the cylinder, just described, is a multiple part spiral blade 52 made in two halves. One half of the blade 52 is mounted on one of 45 the halves 49, and the other half of said blade is mounted on the other half 49 on said cylinder. The total diameter of the blade 52 is smallest at the middle of the axle 20 and gradually increases toward each 50 end, as shown in Fig. 1.

The operation of the device now being described can be varied by removing the half cylinders and substituting cylinders having blades 52 of different sizes.

55 Mounted in the frame 10 near the rearward part thereof is a transverse shaft 53, which may be suitably supported at any point for locking the wheels 55 supported thereon either at the side or beneath the 60 main frame, as may be desired.

On the shaft 53, at the ends thereof, are arms 54 having bifurcated ends 54^a in which are rotatably mounted supporting wheels 55.

In the front of the machine a shaft 56 is rotatably mounted. The shaft 56 carries an

arm 57 having formed thereon a bearing 57^a in which is mounted a shank 58, having a bifurcated arm 59 between which is mounted a wheel 60. The wheel 60 is mounted in the front of the machine from side to side.

On the shaft 56, near one end thereof, is an arm 61. The arm 62 is mounted on one end of the shaft 53.

The arms 61 and 62 are connected by a link 63. A lever 64 is pivoted to the frame 12 and is pivoted between its ends to the link 63. By moving the lever to one position of its movement, the wheels 55 and 60 are raised above the ground. By moving the lever 64 to another position of its movement the 75 wheels 60 and 55 are lowered to the ground, and the entire machine is raised off the ground and supported on said wheels. The lower position of the wheels 60 and parts immediately connected therewith is shown 85 by dotted lines in Fig. 7.

At the front lower corners of the frame 10 are mounted cutting plows or the like, comprising the portion 65 shaped somewhat like an ordinary plow share having at its 90 upper end the flat member 66 adapted to be bolted to the frame 10. On one end of the member 66 is a point 67 from which a share 68 extends away in an inclined position, as shown in Fig. 10. One edge of the head of the share 68 is connected with the share 65 95 by means of the flat member 69 which may be bolted to the frame 10 for reversing the position of the said cutting device.

The use of the cutting device at the forward corners of the frame results in cutting 100 a smooth track, in which the runners or wheels 11 may travel.

In the practical operation of my improved road making machine, it will be seen that 105 the digging teeth 41 or 43 or 46, as the case may be, cut and loosen the earth.

It will be noted that the members 48 are inclined from their outer ends slightly rearwardly in the machine for smoothing the 110 loose earth toward the center of the machine.

The spiral blade 52 finishes the smoothing of the ground and moves the earth toward the center, leaving a central ridge. It will be seen that when this machine has 115 traveled over the ground, the road will have been completed.

The machine may be made of any desired width, and numerous changes may be made in the construction and arrangement of its parts without departing from its essential features and purposes, and it is my intention to cover by my present application any such changes which may be included within the scope of my claims. 125

It will be noted that by removing the bolt 70 by which the lever 64 is connected with the link 63, the frame 12 and the parts supported thereon may be removed from the machine. 130

The truck is supported on the machine and may be quickly and easily adjusted for use when desired.

I claim as my invention:

- 5 1. In a device of the class described, a frame, a transverse shaft mounted therein, a plurality of bars, means for adjustably mounting said bars on said shaft for varying the positions of the ends of the bars
10 radially of the shaft and also in circles around the shaft, whereby the total diameter of the device formed by said bars may be varied, and whereby the angles at which they approach the ground may be varied,
15 and digging devices mounted on said bars.

2. In a device of the class described, a frame mounted on suitable devices, whereby said frame may be carried over the ground, forward and rearward rotatable shafts mounted in said frame, adjustable digging 20 devices mounted on the forward shaft, adjustable cutting devices mounted on the rearward shaft, adapted to move dirt upon the longitudinal center of the path over which the machine travels, a source of power, and 25 means for operatively connecting said shafts therewith.

Des Moines, Iowa, March 16, 1916.

AUGUSTUS C. WILLSON.