G. BURNS.

MACHINE FOR SPREADING ROAD SURFACING MATERIAL.

APPLICATION FILED JAN. 7, 1915.

1,162,029.

Patented Nov. 30, 1915.

2 SHEETS—SHEET 1.

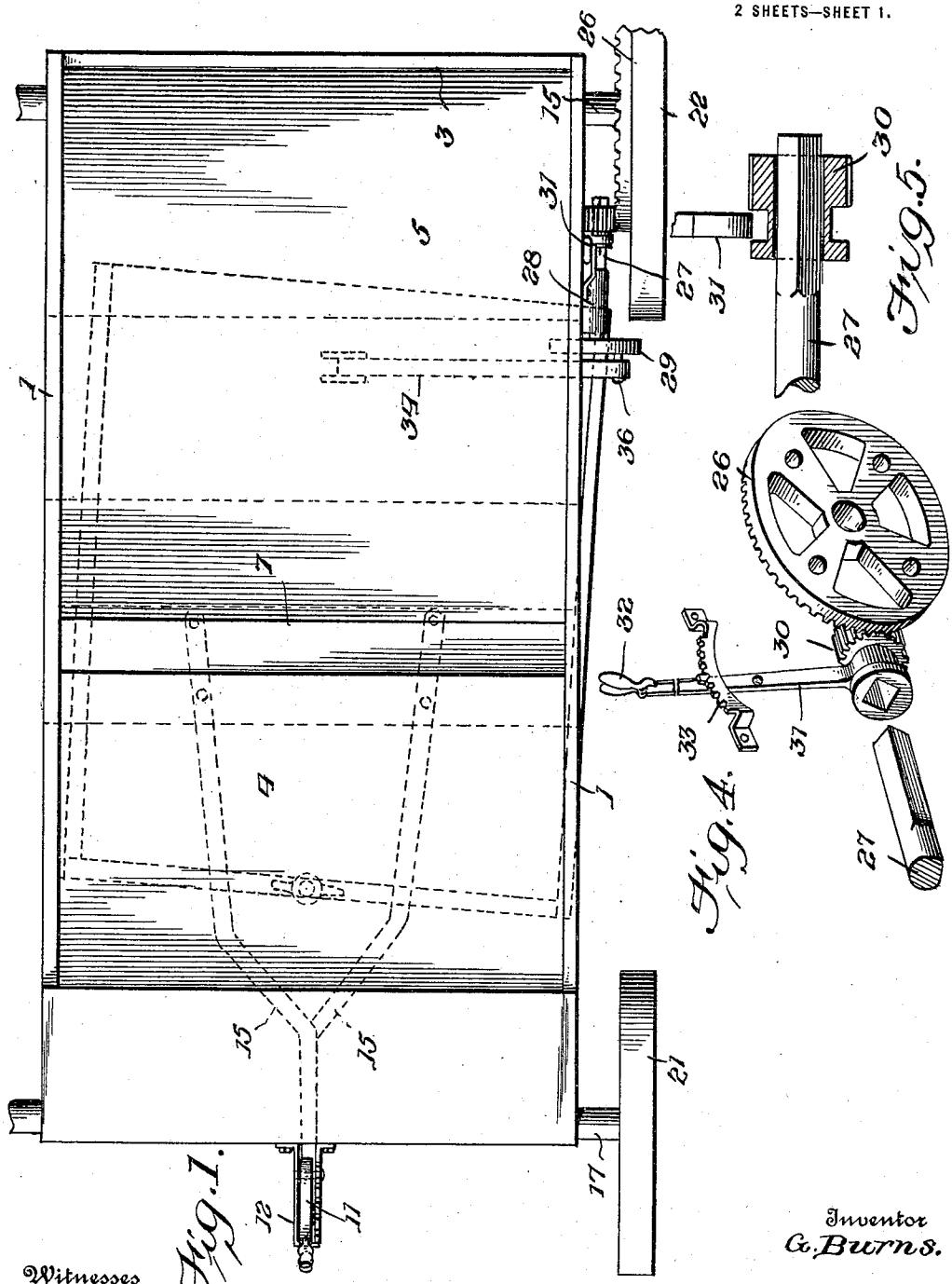


Fig. 1.

Fig. 4.

Fig. 5.

Witnesses

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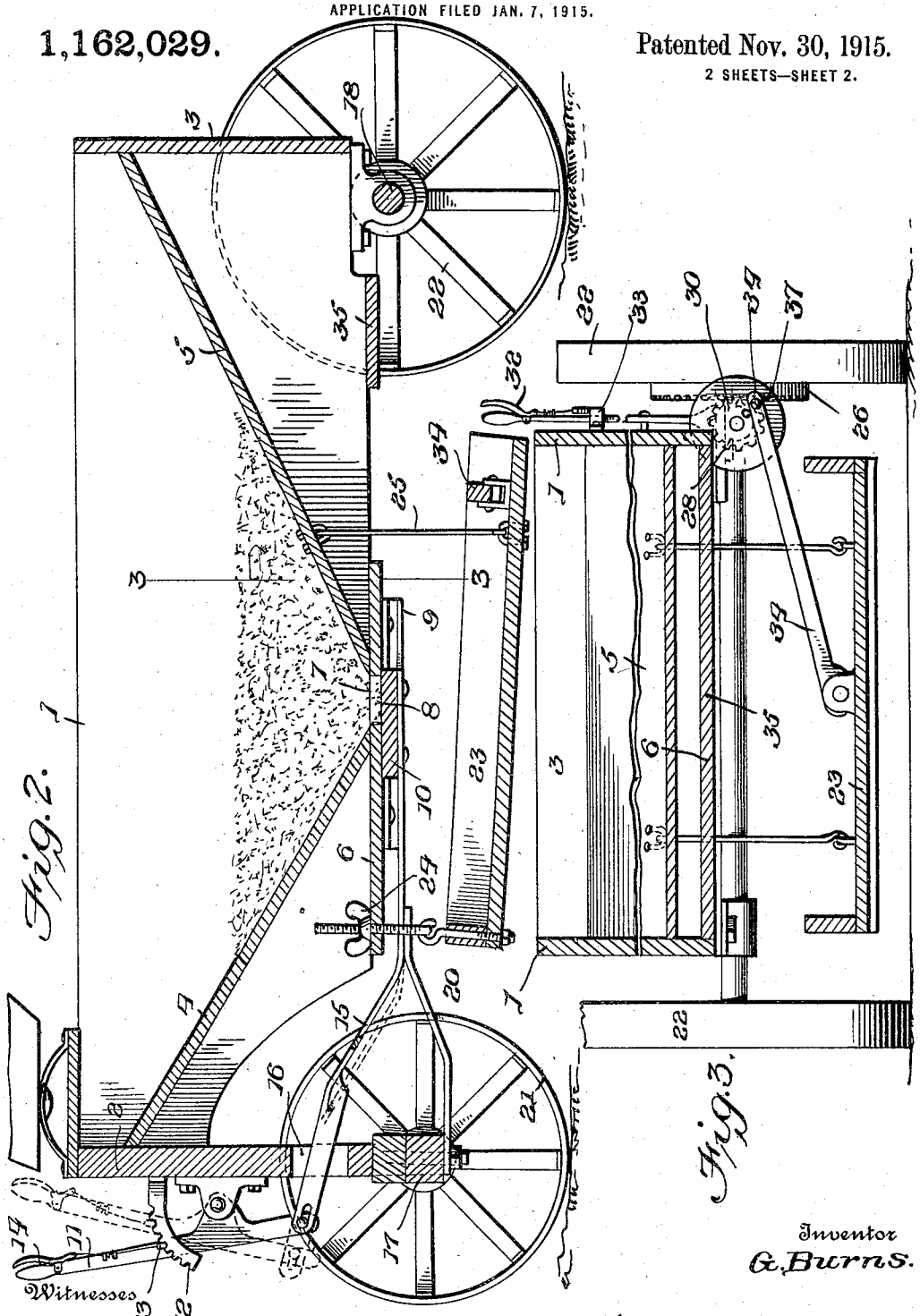


Fig. 2.

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

GARRETT BURNS, OF CANANDAIGUA, NEW YORK.

MACHINE FOR SPREADING ROAD-SURFACING MATERIAL.

1,162,029. Specification of Letters Patent. Patented Nov. 30, 1915.

Application filed January 7, 1915. Serial No. 1,013.

To all whom it may concern:

Be it known that I, GARRETT BURNS, a citizen of the United States, residing at Canandaigua, in the county of Ontario and State of New York, have invented certain new and useful Improvements in Machines for Spreading Road-Surfacing Materials, of which the following is a specification.

The invention has relation to spreading machines being designed most especially to provide a machine for scattering material broadcast upon roadways when it is required to surface the same either when making repairs or when constructing and finishing a roadway.

The invention provides a machine which may be propelled over a roadway and which during its travel scatters or distributes material over the road to form the surface thereof, such machine embodying means for regulating the delivery of the material according to the condition of the surface of the road or to meet conditions encountered in the surfacing of the road.

A further purpose of the invention is the provision of a machine embodying a comparatively few number of parts and which in operation is effective and capable of being easily manipulated and thrown into or out of action and at the same time admitting of the delivery being regulated or entirely cut off.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly claimed.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the invention as claimed may be resorted to when desired.

Referring to the drawings, Figure 1 is a top plan view of a machine embodying the invention; Fig. 2 is a vertical central longitudinal section. Fig. 3 is a transverse section on the line 3—3 of Fig. 2. Fig. 4 is an enlarged detail view of the means for throwing the mechanism into and out of action. Fig. 5 is a detail view of a portion of the longitudinal shaft, the pinion mounted thereon and the lever for shifting the pinion.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

In its general outline the machine presents the appearance of a wagon and comprises a body and running gear. The body of the machine constitutes in effect a hopper for receiving the material to be supplied to the surface of the road to be treated or repaired. As illustrated the body of the machine consists of side pieces 1, front and rear end pieces 2 and 3, respectively, and a bottom comprising oppositely inclined end sections 4 and 5 and an intermediate horizontal section 6. The lower ends of the sections 4 and 5 are spaced apart to form a discharge opening 7 which registers with a corresponding opening 8 formed in the horizontal section 6. Guides 9 are located upon the under side of the section 6 adjacent the ends thereof and support a cut-off 10 by means of which the discharge opening 8 is adapted to be regulated or entirely closed. The cut-off 10 is adapted to be moved and held in the adjusted position by any suitable means and for convenience a lever 11 is mounted upon the front end piece 2 and is disposed vertically and extends within convenient reach of the driver so as to be readily manipulated. A guide bracket 12 projects forwardly from the end piece 2 and receives the upper portion of the lever 11. The guide bracket is toothed and a dog 13 mounted upon the lever 11 is adapted to engage the toothed portions of the guide bracket and secure the lever and the cut-off in the required adjusted position. A hand latch 14 mounted upon the lever 11 is connected with the dog 13 to admit of operating such dog in a manner well understood. Connecting bars 15 are attached at their forward ends to the lower end of the lever 11 and extend rearwardly and are attached to the cut-off 10. The bars 15 are rearwardly diverged so as to insure like movement of the cut-off throughout its length and prevent binding thereof in the guides 9. The forward ends of the bars 15 pass through a vertical slot 16 formed in the lower portion of the end piece 2, thereby assisting materially in preventing lateral movement of the lever.

The body of the machine is provided with

a front axle 17 and a rear axle 18. The front axle 17 is connected to the body in any well known manner to admit of its turning about a vertical axis for purposes of steering. A pole or tongue 19 is connected to the axle 17 and is adapted to have the team hitched thereto for drawing the machine over the road. A hammer strap 20 connects the axle 17 at a middle point with the forward portion of the section 6. The axle 17 is provided with supporting wheels 21 which are smaller than the rear wheels so as to turn under the front portion of the body, the forward ends of the side pieces 1 being cut away at their lower edges for such purpose. The rear axle 18 is provided with supporting wheels 22 one of which constitutes the driver for operating the distributing hand or shaking table.

Beneath the body of the machine is disposed a pan or table 23, the same being suspended in a manner to admit of a shaking or vibratory movement being imparted thereto for leveling the material and insuring a broadcast delivery thereof. This pan is disposed below the intermediate section 6 of the bottom and inclines in the direction of its length in a rearward and downward direction so as to facilitate the movement of the material thereover. A rim extends upwardly from the sides and front of the pan to prevent the material from wasting thereover. The pan is suspended at its front end by means of an adjustable connection 24, thereby admitting of the inclination of the pan being regulated to suit the nature of the material and the grade of the road. This connection 24 is disposed midway of the sides of the pan and constitutes an axis about which the pan oscillates in its shaking or vibratory movements. Links 25 support the rear portion of the pan and are connected at their upper ends with the body of the machine. These links are located near the sides of the pan and serve to hold the same level at all times. The pan is adapted to have a lateral vibratory movement imparted thereto which results in leveling or distributing the material throughout the width of the pan with the result that such material is delivered upon the road uniformly.

It is to be understood that a shaking movement may be imparted to the pan in any manner and such movement is essential in order to obtain a uniform distribution of the material over the pan and a positive feed of the material therefrom. As shown one of the rear wheels 22 is utilized as a driver and a gear wheel 26 is secured thereto. A longitudinal shaft 27 disposed at one side of the machine and mounted in a bearing 28 has a crank wheel 29 at its forward end and its rear end is provided with a pinion 30 which is mounted on such shaft to move thereon so as to be thrown into or out of meshing engagement with the teeth of the gear wheel 26. A lever 31 mounted upon a side of the body has its lower end in engagement with the pinion 30 to admit of moving such pinion either into or out of engagement with the teeth of the gear wheel 26. The lever 31 is provided with the usual hand latch 32 arranged to coöperate with a toothed segment 33 for holding the lever and the pinion 30 in the required adjusted position. A pitman 34 connects the crank 29 with the pan 23. The bearing 28 is formed at one end of a cross piece 35 which is arranged beneath the rear portion of the body and attached to the side pieces 1. The cross piece 35 serves in a measure to brace and strengthen the body as well as forming a support for the crank shaft 27.

In the operation of the machine the material, such as sand, gravel or the like to be applied to the surface of the road is placed in the hopper or body and the machine is propelled over the road in any manner. The cut-off 10 is opened more or less by manipulating the lever 11 so as to obtain proper delivery of the material. When the material is in motion and the pinion 30 is in mesh with the gear wheel 26, the pan or table 23 receives a lateral vibratory or shaking movement, thereby agitating the material delivered thereon from the hopper or body. This movement of the pan insures a positive and uniform delivery of the material which drops from the pan upon the road. When it is required to stop the delivery of the material, the lever 11 may be manipulated to move the cut-off 10 so as to close the discharge opening 8 or the lever 31 may be operated to disconnect the crank shaft 27 from the drive wheel. Either one or both of such operations may be effected without stopping the forward movement of the machine. It is also observed that the delivery of the material may be regulated while the machine is advancing so that portions of the road may be supplied with less material for surfacing than other portions according to the condition of the road.

According to the nature of the material employed it has been found desirable to vary the shaking movement of the pan. This is accomplished by providing the crank wheel 29 with a wrist pin 36 which is adjustable to different distances from the center of the crank wheel. A plurality of openings 37 are formed in the crank wheel 29 at different distances from the center thereof to receive the wrist pin 36. The wrist pin may be secured in the adjusted position in any approved way.

Having thus described the invention, what is claimed as new, is:—

1. In a machine for applying material to the surface of a road, a body having a discharge opening, supporting wheels therefor,

a laterally shaking pan disposed below the body in position to receive the material therefrom, a longitudinal shaft at one side of the body, a pitman and crank connection between such shaft and pan, a gear wheel connected with one of the supporting wheels of the body, and a pinion splined to the longitudinal shaft and movable thereon into or out of meshing relation with the said gear wheel.

2. A machine of the character specified comprising a body formed of inclosing ends, parallel sides, and a bottom, embodying oppositely inclined sections with their lower ends spaced apart to form a discharge opening, the side pieces being cut away at their forward ends below the front bottom section, front and rear supporting wheels, the front wheels being adapted to turn under the side pieces of the body, a shaking pan suspended beneath the body and inclined rearwardly and downwardly, connecting means between the shaking pan and one of the rear wheels to admit of a lateral vibratory movement being imparted to the pan, a cut-off for regulating the discharge opening, and an operating lever mounted upon the front of the body and having connection with the cut-off for moving the same.

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

GARRETT BURNS. [L. S.]

Witnesses:
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PETER J. MACK.

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