E. J. ROBARDS.

ROAD SCRAPER.

APPLICATION FILED DEC. 18, 1918.

1,313,115.

Patented Aug. 12, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

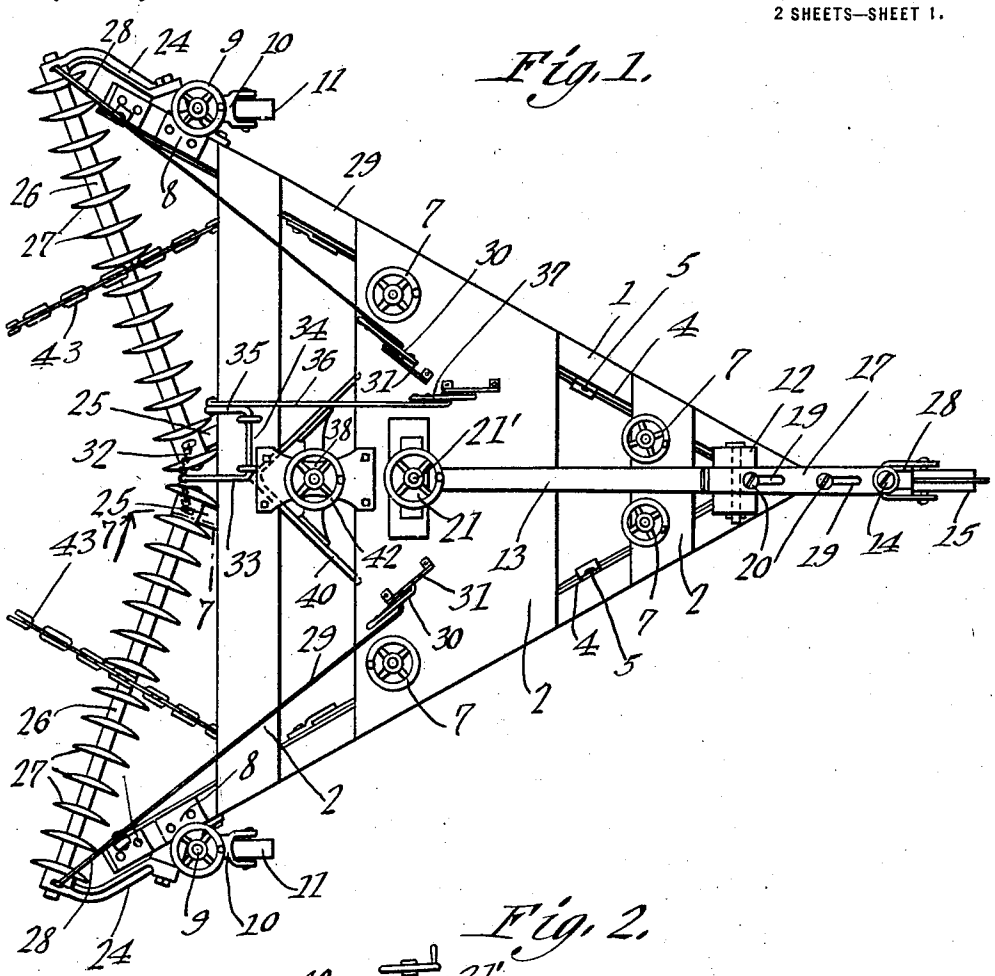
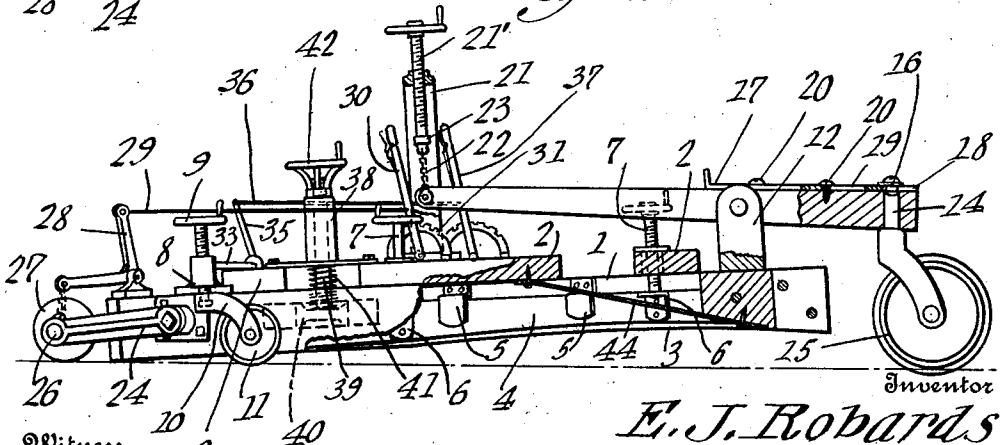


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

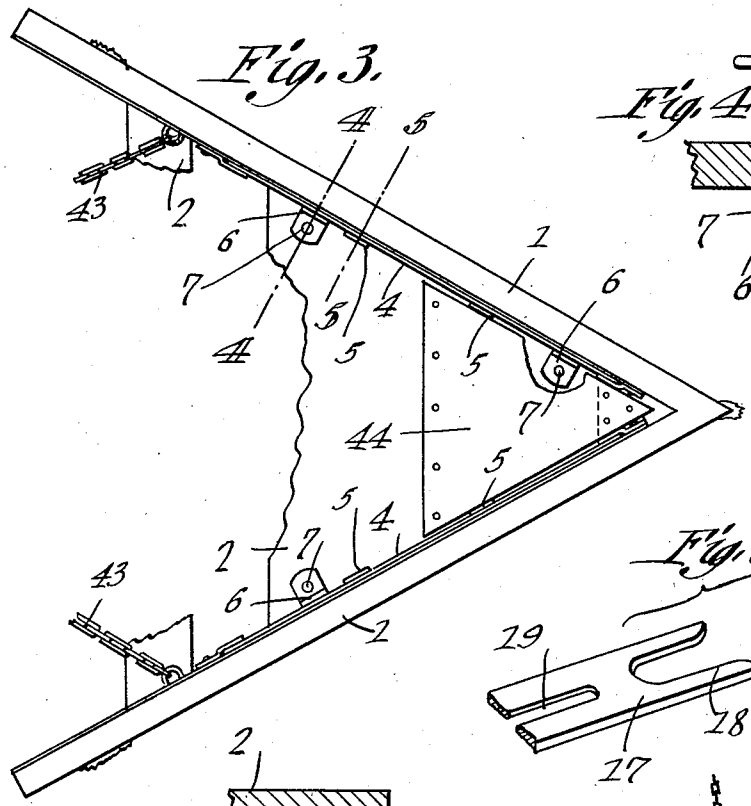


Fig. 4.

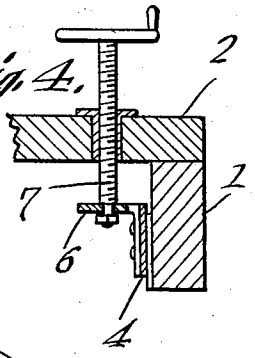


Fig. 6.

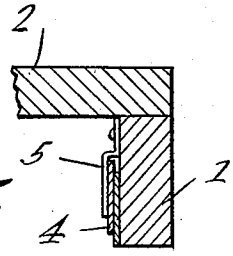


Fig. 5.

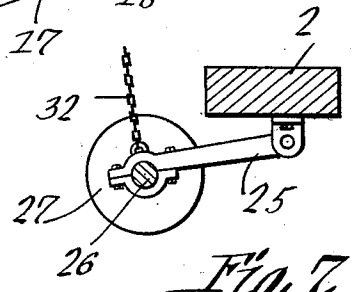


Fig. 7.

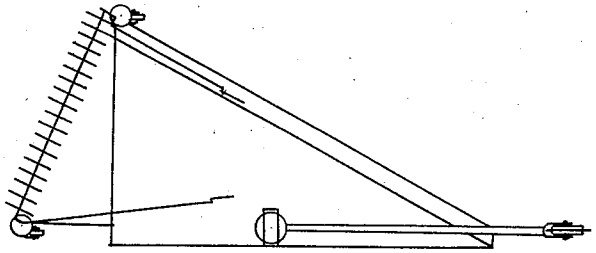


Fig. 8.

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UNITED STATES PATENT OFFICE.

EDWARD J. ROBARDS, OF ALEXANDRIA, MINNESOTA.

ROAD-SCRAPER.

1,313,115. Specification of Letters Patent. Patented Aug. 12, 1919.

Application filed December 18, 1918. Serial No. 267,355.

To all whom it may concern:

Be it known that I, EDWARD J. ROBARDS, a citizen of the United States, residing at Alexandria, in the county of Douglas and State of Minnesota, have invented a new and useful Road-Scraper, of which the following is a specification.

This invention relates to road scrapers, one of its objects being to provide a machine which can be drawn readily over a road being repaired and which has novel and efficient means for loosening the top dressing or surface of the road and spreading it evenly so as to produce a properly crowned road free of irregularities.

Another object is to provide a machine of this character having means whereby the surface of the road can be torn up with comparative ease, requiring but little power for that purpose.

Another object is to provide a road scraper that can be adjusted readily to properly crown the road and distribute the material.

A still further object is to provide means for holding the machine in proper line while in operation, said means being adapted to be released when desired to allow the machine to turn readily.

Another object is to provide means for packing the material along the center line of the machine and where the road is subjected to greatest wear.

A still further object is to provide adjustable scraping blades mounted in a novel manner.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims, it being understood that various changes may be made in the construction and arrangement of the parts without departing from the spirit or sacrificing any of the advantages of the invention as set forth in the appended claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings—

Figure 1 is a plan view of the machine.

Fig. 2 is a vertical longitudinal section therethrough.

Fig. 3 is a bottom plan view, parts being broken away.

Fig. 4 is a section on line 4—4, Fig. 3.

Fig. 5 is a section on line 5—5, Fig. 3.

Fig. 6 is a detail view of the locking means of the guiding caster.

Fig. 7 is a section on line 7—7, Fig. 1.

Fig. 8 is a plan view showing in diagram, a modified form of the machine.

Referring to the figures by characters of reference, 1 designates forwardly diverging side beams suitably connected at their rear ends and provided, at intermediate points, with connecting strips 2 extending transversely and completing a strong frame or body for the machine. The lower faces of the side beams are cut away longitudinally to form elongated depressions in the bottom of the beams, as indicated at 3. Scraping blades 4 are extended along the inner sides of the beams and are slidable upwardly and downwardly upon guide brackets 5 secured to the beams. Additional brackets 6 are secured to and extend laterally from the blades and swiveled within them are the lower ends of adjusting screws 7 mounted in certain of the strips 2. Thus it will be seen that by means of these screws, the blades can be raised or lowered relative to the beams 1 to compensate for wear.

Extending laterally from the front end portions of the beams 1 are brackets 8 in which are mounted screws 9 on the lower ends of which are swiveled the yokes 10 of casters 11, adapted to trail with the machine under all conditions. For the purpose of holding the machine in proper line while in use, a standard 12 is mounted on the rear or apex portion of the frame of the machine and has a beam 13 pivoted therein. The rear end of this beam extends rearwardly beyond the frame and the stem 14 of a caster 15 is revolubly mounted in the beam. The upper end of the stem is flattened, as shown at 16 in Fig. 6 and is adapted to be engaged by a sliding latch 17 mounted on the beam 13 and provided with a forked end 18. The latch is slotted as shown at 19 for engagement with guides 20 and can be shifted into or out of engagement with the stem. When

in engaging position it holds the stem and caster against rotation about the axis of the stem but, when disengaged, permits free rotation of the stem, as when it is desired to turn the machine. The front end of the beam 13 extends into a guide standard 21 in the upper end of which is mounted an adjusting screw 21'. The lower end of the screw has a chain 22 connected thereto by a swivel 23 and this chain or other flexible connection used, is attached to the front end of the beam. Thus by rotating the screw in one direction the front end of the beam will be drawn upwardly and the caster 15 pressed downwardly against the road, thereby to raise the rear end of the frame of the machine. The frame will move downwardly by gravity when the screw 21' is turned in the opposite direction to lower the chain 22.

Pivotally connected to the front end portion of each beam 1 is an arm 24 and additional arms 25 are pivotally connected to the middle portion of the front strip 2. Bearing within the arms 24 and 25 are shafts 26 which diverge forwardly and a gang of cultivator disks 27 is carried by each shaft, as shown. The arms 24 are connected by chains or the like to bell crank levers 28 mounted on the front portion of the frame at the sides thereof and these levers are, in turn, connected by rods 29 to operating levers 30 having suitable means, such as toothed segments 31, etc., for holding them against movement. The arms 25 are connected by chains 32 or the like with an arm 33 on a shaft 34. This shaft has another arm 35 connected by a rod 36 to an operating lever 37 which can also be provided with suitable means for holding it against movement.

A standard 38 is mounted on the front portion of the frame of the machine and has a stem 39 slidably mounted therein and extending downwardly. To the lower end of this stem is secured a V-shaped spreader 40 and a spring 41 is mounted on the stem and bears downwardly on the spreader to hold it at its lowest point under normal conditions. The stem can be raised relative to the frame and against the action of the spring by means of an adjusting wheel screwed on the upper end of the stem, as shown at 42.

Draft chains 43 or the like are connected to the front portion of the machine and secured between the beams 1 adjacent the rear ends thereof is a compressing and smoothing plate 44 which is inclined upwardly and forwardly, the lower or rear end of the plate being flush with the lower faces of the beams 1.

In using the machine the levers 30 and 37 are manipulated to give the shafts 26 the desired pitch. The casters 11 and 15 are adjusted relative to the body so as to cause the scraping blades 4 to properly engage the loosened soil and said blades are also adjusted relative to the beams 1. The machine is then drawn forward by any suitable means. During the forward movement the disks 27 will cut into the surface of the road and loosen and tear it up. As the wheel 15 is locked against rotation about the axis of its stem, the machine will be held to its course during the forward movement thereof and as the loosened and broken material is left by the disks, it will be spread laterally by the spreader 40, thus to remove all raised portions and fill all depressions. The surplus material will be guided by the blades 4 to position under the plate 44 which will compress and pack the material. As the machine is adapted to repair one half of a road at one operation it will be obvious that the packing of the material by the plate 44 will take place where the road is subjected to the greatest wear by the wheels of vehicles. By adjusting the shafts 25 and the spreader 40 the proper crowning of the road can be effected and by adjusting the blades 4 the positions of the blades can be regulated to increase or diminish the depth of their penetration into the loosened material, thereby to regulate the amount of material deflected under the compressing and smoothing plate. By pulling the machine along one side of the road and back along the other side thereof, the repair of the road can be effected quickly and efficiently.

Under some conditions it is desirable to use only one gang of disks, as shown in diagram in Fig. 8. Where this is done it is not necessary to use the full width frame shown in Fig. 1, but, as shown in said Fig. 8 one side of the frame can be made parallel with the path of movement of the machine.

It is designed, in all forms of the machine, to have the length of the complete machine greater than the length of vehicles using the road. It has been found that wherever there is a raised portion on a road there is usually produced a corresponding depression by the rear wheels of the vehicles passing over the raised portion. By having the machine longer than a vehicle it will not be affected by the said irregularities of the road surface but will smooth them out effectively.

What is claimed:—

1. A road scraper including a frame having forwardly diverging side beams, scraping blades on the beams, a gang of disks between the front ends of the beams for loosening the material of the road, means in rear of said gang for spreading the loosened material toward the side beams and blades, and means between the rear portions of the beams for sliding over and packing material directed thereunder by the blades and beams.

2. A road scraper including forwardly

diverging gangs of disks for loosening the material of a road, spreading means back of said gangs, forwardly diverging side beams extending to a point back of the spreading means, and a forwardly and upwardly inclined packing member between the rear portions of the beams.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

EDWARD J. ROBARDS.

Witnesses:
IVY E. SIMPSON,
PHILOMENA A. ROCKELLI.

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