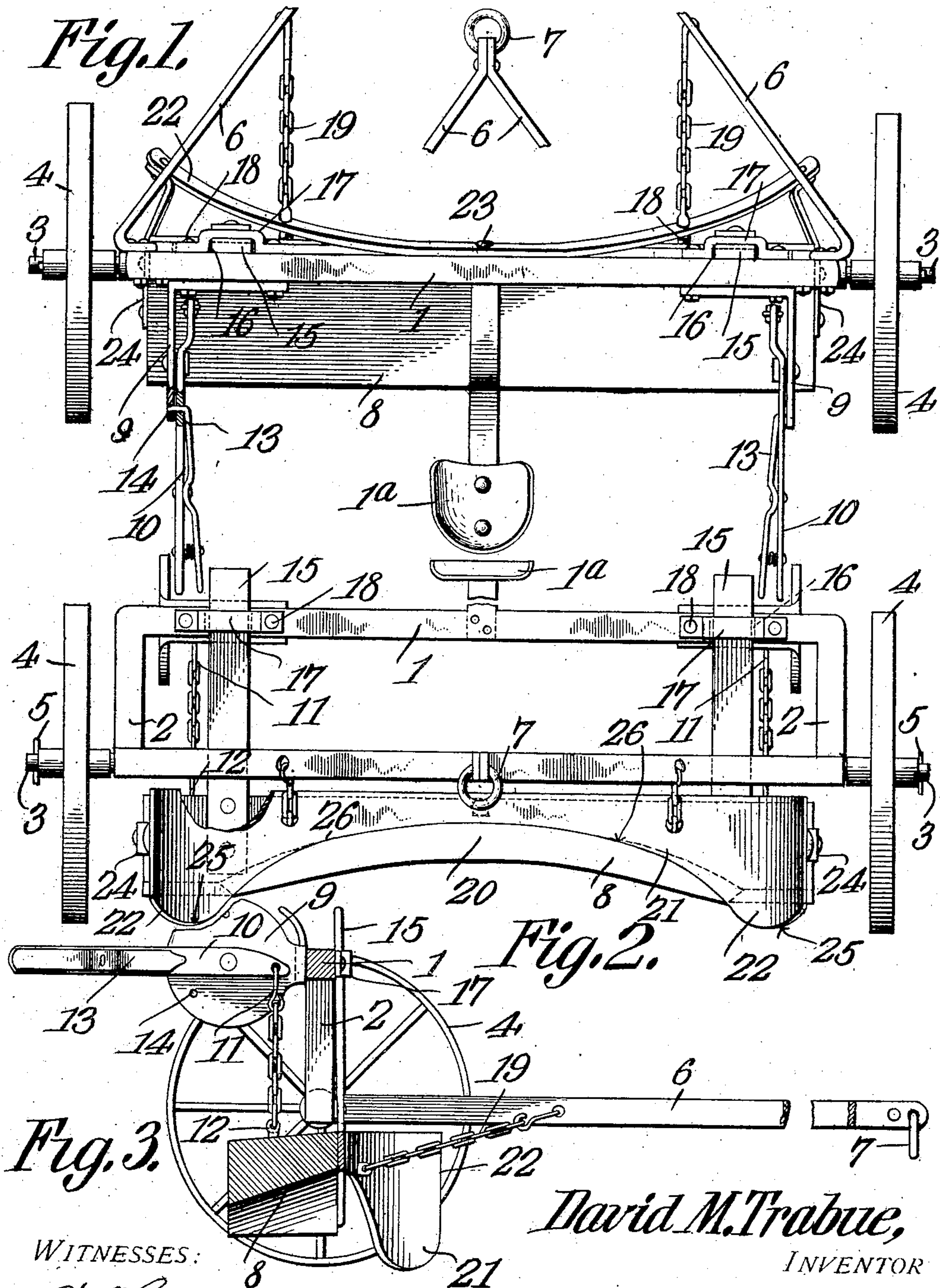


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D. M. TRABUE.
GRAVEL SPREADER AND ROAD LEVELER.

APPLICATION FILED AUG. 14, 1906.



WITNESSES:

E. H. H. H.
E. H. H. H.

E. H. H. H.

David M. Trabue,

INVENTOR

By

C. A. Snow & Co.,

ATTORNEYS

UNITED STATES PATENT OFFICE.

DAVID M. TRABUE, OF MAYS, INDIANA.

GRAVEL-SPREADER AND ROAD-LEVELER.

No. 851,712.

Specification of Letters Patent.

Patented April 30, 1907.

Application filed August 14, 1906. Serial No. 330,605.

To all whom it may concern:

Be it known that I, DAVID M. TRABUE, a citizen of the United States, residing at Mays, in the county of Rush and State of Indiana, have invented a new and useful Gravel-Spreader and Road-Leveler, of which the following is a specification.

This invention relates to a road working machine, and it relates more particularly to a machine for spreading gravel, crushed stone, and other material, in making or repairing a road and for leveling and smoothing down the ridges left in the middle of the road after the passage of a road scraper.

The invention has for one of its objects to provide a machine of this character which is of simple and improved construction and capable of efficient and reliable operation for either spreading or leveling.

A further object of the invention is the provision of an improved form of spreading blade adapted to be removably supported on the leveler or any other suitable part of the machine so that a common elevating means may be employed for the scraper and leveler.

Another object of the invention is the employment of a novel form of leveler comprising a ponderous body, as, for instance, a metal casting, so shaped and arranged as to simultaneously smooth the road-bed and tightly compact the earth, gravel, or other material.

With these objects in view, and others, as will appear as the nature of the invention is better understood, the invention comprises the various novel features of construction and arrangement of parts, which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a plan view of the machine, a portion of the draft device being broken away. Fig. 2 is a front view. Fig. 3 is a longitudinal section of the machine.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

Referring to the drawing, 1 designates the axle of the machine which may be a single bar of iron of suitable rigidity, as shown, or of any other suitable construction, so as to serve to support the various operating parts of the machine. The ends of the axle bar 1

are turned down to form crank arms 2 and from the arms extend integral spindles or stub axles 3 for receiving the road wheels 4, the latter being held in place by cotter pins 5, or other suitable means. Extending forwardly from the stub axles and rigidly secured thereto is a triangular frame composed of iron bars or members 6 riveted together at their forward ends and provided with a ring, hook, or the like, 7, for attaching the machine to a wagon, team of horses, or engine, so as to draw the machine. The arrangement of this draft frame is such that the axle will travel normally with its length at right angles to the road or general direction of travel of the machine. Mounted on the arched axle at any convenient point is a driver's seat 1^a, which may be of any approved construction.

Under the axle 1, and disposed parallel therewith, is the leveler 8 comprising a heavy mass or body, such as a metal casting, of considerable length compared with its cross sectional dimensions and approximately coextensive with the axle. The leveler is supported on the axle by two elevating and lowering mechanisms arranged at the ends thereof. Each mechanism comprises a bracket 9 secured to the rear side of the axle and extending rearwardly therefrom. The leveler is supported on the bracket by a lever 10 pivoted on the latter and a link or chain 11 connected at its upper and lower ends, respectively, to the forward end of the lever and to the top of the leveler by an eye 12. The rear end of the lever serves as a handle, and a spring actuated latch 13 is carried thereby and arranged to engage at its forward end in any one of a plurality of perforations 14 provided in the bracket around the fulcrum of the lever. By this means, the lever can be tilted and adjusted to any desired position for supporting the leveler at any desired height. Since two of these mechanisms are provided, the leveler can be adjusted so that it will run horizontal, or with either end raised, according to the work to be done. The leveler is guided to move vertically by posts or standards 15, one adjacent each end, which move in guideways 16 formed by the front surface of the axle bar and centrally offset plates, as 17, secured to the axle by rivets or bolts 18, the same serving also to secure the brackets of the elevating mechanism to the axle.

In order to take the strain off the posts or

standards 15, the leveler is braced from the members 6 of the draft device by chains 19, or equivalent means. The posts 15 operate to maintain the leveler in its proper position with relation to the road, irrespective of the vertical adjustment. The under surface of the leveler is concaved or cut away to form an arch 20 that extends approximately the full length of the same and it is so shaped as to give the proper crown or slope to the roadway. In order to better compact the earth, gravel, or the like, of the road-way, the arch tapers toward the rear, or contracts. In other words, the arch inclines downwardly toward the rear at a slight angle to the horizontal, so that from the front to the rear of the arch each part thereof acts to progressively compress and compact the road surface. The leveler is intended to be used principally for running over a road that has been previously scraped by a scraping machine, so as to smooth and level the ridges formed in the center of the road by the scraping machine. The great weight of the leveler serves to compact the material of the road for the same purpose that an ordinary road roller is used, and the arch of the leveler operates to give the proper crown or slope to the roadway.

For adapting the machine to operate as a spreader, a spreader blade 21 is removably attached to the machine, preferably on the front of the leveler. This blade is made of sheet steel of suitable thickness and is curved forwardly at its ends so as to form scoop-like extensions 22. The body portion of the blade is disposed vertically and rests with its rear surface against the front of the leveler, and the blade is secured to the latter by a central bolt 23, or equivalent means, and end braces 24 extending rearwardly from the extensions 22 and embracing the ends of the leveler to which they are bolted or otherwise suitably secured. The intermediate portion of the blade is cut away along its lower edge to conform to the central portion of the arch of the leveler. The lower edge of the extension 22 at each end of the blade is considerably below the bottom of the leveler at such points, so that the curvature, from the point 25 of each extension 22 to the point 26, does not conform to the leveler, but is more concaved. It will thus be seen that the spreader distributes the gravel, earth, or other material of the roadway so that an exaggerated crown or slope is produced, but this, however, is reduced by the action of the leveler operating to compress and compact the material. Since the spreader is attached to the leveler, it is obvious that it can be raised or lowered by the same mechanisms employed for adjusting the height of the leveler. When the machine is to be used as a leveler, it is obvious that the spreader blade must be removed.

From the foregoing description, taken in connection with the accompanying drawing, the construction and method of operation, and the advantages thereof, will be readily understood by those skilled in the art to which the invention appertains, and it is thought that further description is therefore unnecessary.

I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, but I desire to have it understood that the apparatus shown is merely illustrative, and that various changes may be made, when desired, as are within the scope of the invention.

What is claimed is:—

1. In a road working machine, the combination of a supporting structure, with the blade extending transversely to the road and having a curved lower edge.
2. In a road working machine, the combination of a supporting structure, with a blade extending across the road and having an end curved in a forward direction and its lower edge arched, and means for mounting the blade on the supporting structure.
3. In a road working machine, the combination of a supporting structure, with a blade having a concaved lower edge and its ends curved forwardly, and means for adjustably mounting the blade on the said structure.
4. In a road working machine, the combination of a supporting structure, with a blade which is arched approximately the full length of its lower edge and curved forwardly at its ends to form scoops, and means for adjusting the height of the blade on the said structure.
5. In a road working machine, the combination with a supporting structure, of a leveler mounted thereon with its length extending transversely to the road and arched on its under surface.
6. In a road working machine, the combination of a supporting structure, with a leveler of suitable weight mounted thereon, the under surface of the leveler being inclined downwardly in a rearward direction.
7. In a road working machine, the combination of a supporting structure, with a leveler of suitable weight mounted thereon which is arched and inclined rearwardly on its under surface.
8. The combination of a supporting structure, road wheels, a leveler disposed with its length transversely of the road, a spreader blade correspondingly disposed, and means for adjusting the leveler and blade on the supporting structure.
9. The combination of a supporting structure, road wheels mounted thereon, a leveler supported on the structure, and a spreader blade removably attached to the leveler.
10. The combination of a supporting structure, road wheels mounted thereon, a

leveler which is arched on its under surface between its ends, a spreader blade which is arched along its lower edge, and means for supporting the leveler and blade on the structure.

11. The combination of a supporting structure, road wheels mounted thereon, a leveler which is arched on its under surface between its ends, a spreader blade which is arched along its lower edge, devices for removably attaching the spreader blade to the leveler with their arched portions coinciding, and means for adjustably mounting the spreader blade and leveler on the structure.

12. The combination of a supporting structure, road wheels, a leveler, a spreader blade mounted on the leveler, and means for raising and lowering the leveler with the blade thereon, said means comprising a lever mounted on the structure, a link connecting the lever with the leveler, and a device for locking the lever in different positions.

13. The combination of a supporting structure, road wheels, a leveler, a spreader blade mounted on the leveler, and separate means for raising and lowering the leveler with the blade thereon, each of said means comprising a lever mounted on the structure, a flexible connection between the lever and the adjacent end of the leveler, and a latch mechanism for holding the lever in different positions.

14. The combination of a supporting structure, road wheels, a leveler, a spreader blade mounted on the leveler, means for guiding the leveler with the blade thereon in a vertical plane, and adjustable devices for supporting the leveler on the said structure.

15. The combination of a supporting structure, road wheels mounted thereon, a leveler disposed below the structure, posts attaching the leveler on the structure, a draft frame connected with the structure, and means for bracing the leveler from the draft device.

16. The combination of a supporting structure, road wheels mounted thereon, a leveler, posts for guiding the movement of the leveler with respect to the structure, means for raising and lowering the leveler, a draft device connected with the structure, and means extending between the ends of the leveler and the draft device for bracing the leveler therefrom.

17. The combination of a supporting structure, road wheels mounted thereon, a leveler disposed below the structure, upright posts for guiding the movement of the leveler with respect to the structure, a draft device

extending forwardly from and connected with the structure, and independent adjusting mechanisms arranged between the ends of the leveler and structure and extending rearwardly from the latter.

18. The combination of an axle bar, wheels on the ends thereof, a leveler located directly below the axle, vertically extending members movable along the axle for guiding the movement of the leveler, and means between the axle and leveler for adjusting the height of the leveler.

19. The combination of an axle bar, wheels on the ends thereof, a leveler located directly below the axle, vertically extending members attached to the leveler, devices secured to the axle to form guides for the said members, and separately actuated mechanisms between the ends of the leveler and axle for adjusting the former.

20. The combination of an axle, wheels mounted on the same, a leveler, standards on the same, offset plates on the axle cooperating with the latter to form guides in which the standards move vertically, and means for adjusting the leveler.

21. The combination of an axle, wheels mounted on the same, a leveler, standards on the same, offset plates on one side of the axle which cooperate with the latter to form guides in which the standards move vertically, brackets on the opposite side of the axle from the plates, and mechanisms supported on the brackets and attached to the leveler for adjusting the latter.

22. The combination of an axle, wheels mounted on the same, a leveler, standards on the same, offset plates on one side of the axle which cooperate with the latter to form guides in which the standards move vertically, brackets on the opposite side of the axle from the plates, bolts serving as common means for securing the plates and the brackets to the axle, and mechanisms on the brackets and attached to the leveler for adjusting the latter.

23. In a road working machine, a leveler, a spreader blade arranged on one side thereof with its ends projecting therefrom, and devices between the ends of the leveler and blade for bracing the latter.

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

DAVID M. TRABUE.

Witnesses:

CLEM C. CLARK,
BERT L. TRABUE.