S. A. ULRICH.

ROAD GRADER.

APPLICATION FILED AUG. 24, 1908.

917,977.

Patented Apr. 13, 1909.

2 SHEETS—SHEET 1.

Fig. 5.

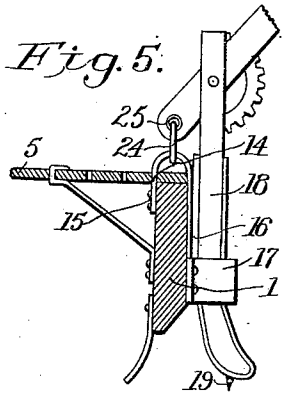


Fig. 6.

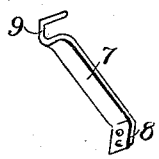


Fig. 1.

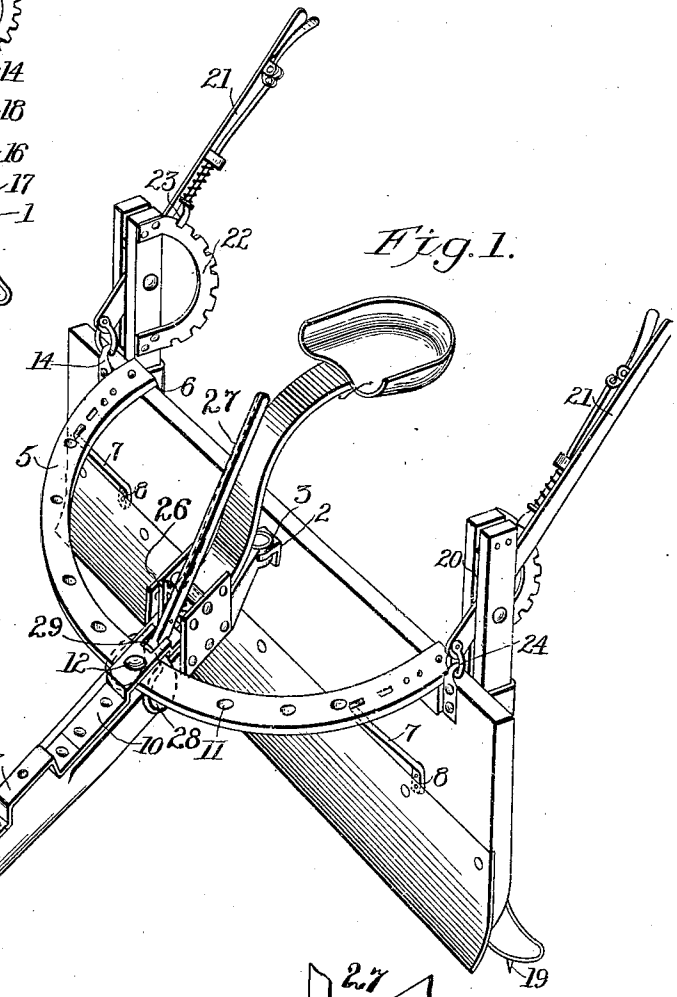
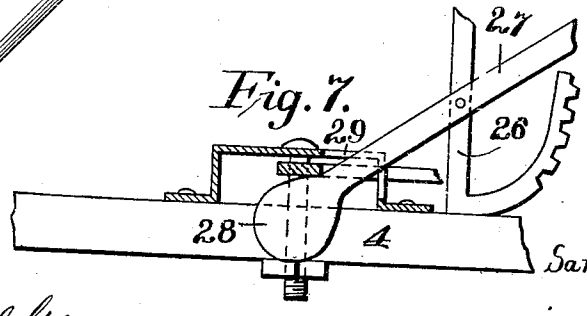


Fig. 7.



Witnesses

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2 SHEETS—SHEET 2.

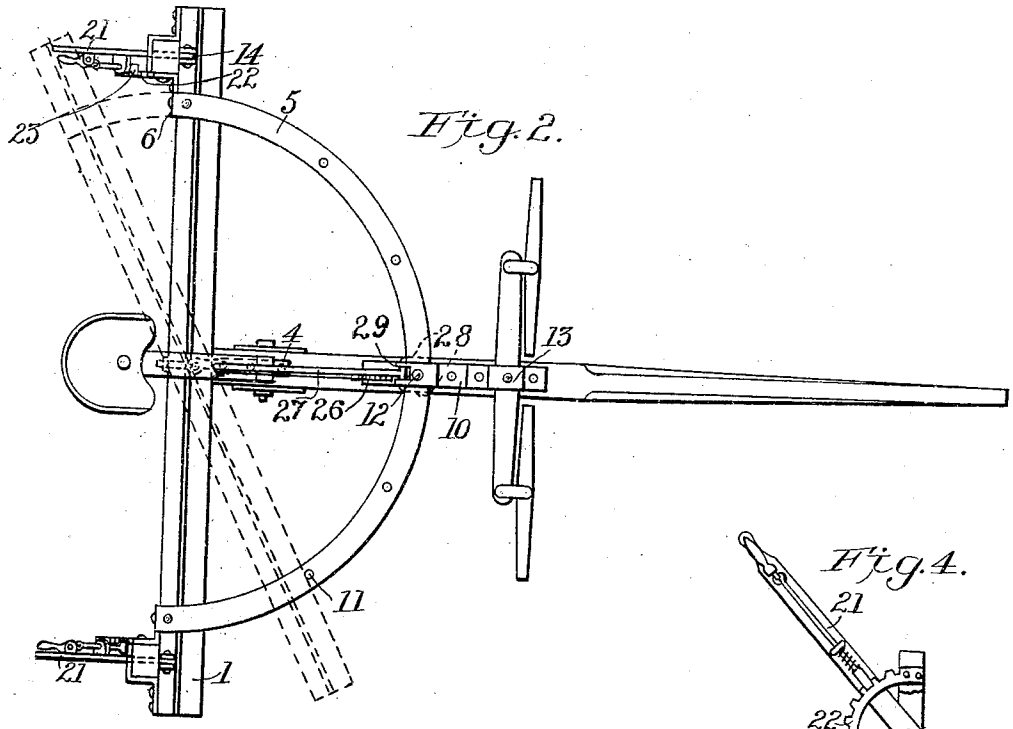


Fig. 2.

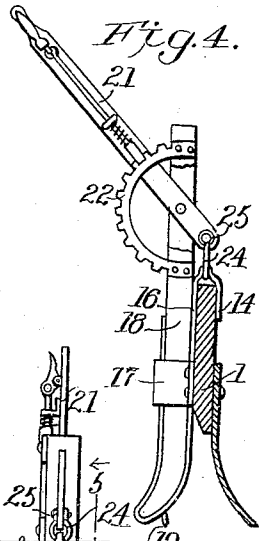


Fig. 4.

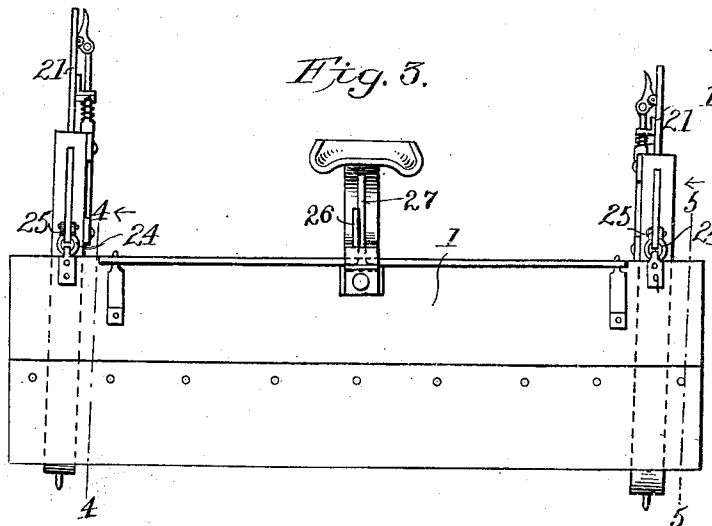


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL A. ULRICH, OF MENDOTA, MISSOURI.

ROAD-GRADER.

No. 917,977. Specification of Letters Patent. Patented April 13, 1909.

Application filed August 24, 1908. Serial No. 450,040.

To all whom it may concern:

Be it known that I, SAMUEL A. ULRICH, a citizen of the United States, residing at Mendota, in the county of Putnam and State of Missouri, have invented certain new and useful Improvements in Road-Graders, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in road graders, and has for its object the production of a scraper which can be adjusted to be used as a drag or road grader.

Another object of this invention is the production of a scraper which is comparatively simple in construction, and easy to handle or operate.

With these and other objects in view, this invention consists of certain novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings: Figure 1 is a perspective view of my scraper. Fig. 2 is a top plan view of my scraper. Fig. 3 is a front view. Fig. 4 is a section taken on line 4—4, Fig. 3, looking in the direction of the arrow. Fig. 5 is a sectional view taken on line 5—5, Fig. 3, looking in the direction of the arrow. Fig. 6 is a detail perspective of the brace for the curved guide. Fig. 7 is a side elevation of the guide plate regulating device.

Referring to the drawings by numerals, 1 designates a scraper body, which I shall hereinafter designate as a scraper plate. To the front of the scraper body 1 is secured an angle-member 2, and the upper flange of the angle-member 2 fits in the bifurcated end 3 of draft pole 4, and said flanged portion is held in said bifurcated end 3 by means of a bolt or rivet passing through said bifurcated end and said flanged portion. The ends 6 of the curved guide plate 5 are bent downwardly and secured to the rear of the scraper plate 1. The guide plate is also secured to the top of the scraper plate 1. An angle-brace 7, shown in Fig. 6 in detail, is secured at its downwardly-extending end 8 to the scraper plate 1. The angle-brace 7 constitutes a flat body portion, which terminates into a reduced U-shaped portion 9, at its upper end, the U-shaped portion constituting a hook passing through the guide plate 5. The guide plate 5 will be clamped between the two parallel portions of the U-shaped portion 9, and in this manner the plate 5 cannot become accidentally detached from the brace 7.

A bracket 10 is secured to the upper face of the draft pole 4, and said bracket constitutes a guide for the guide plate 5. The plate 5 is provided with a plurality of apertures 11, and a pin 12 passes through the bracket 10 through one of the apertures 11 in the guide plate 5, and securely locks the guide plate 5 in the guide 10. In this way the scraper plate can be adjusted to any angle, and it will be seen that in this manner the device may be used either to level a road, or to act as a drag or grader. Upon the pole 4 and in front of the bracket 10 is also placed a bracket 13, which bracket retains the whiffle-tree upon the pole.

An inverted U-shaped member 14 straddles the upper edge of the scraper plate 1, and said member 14 is provided with a short leg 15, which is secured to the front of the scraper plate, and a long leg 16 which is secured to the rear of the scraper plate. The long leg 16 extends nearly the entire height of the scraper plate 1. To the rear of the scraper plate 1 is also secured a bracket 17, which bracket acts as a guide for the leg or standard 18. The long leg of the inverted U-shaped member 14 acts as a track for the leg or standard to work upon. Upon the lower end of the standard 18 is positioned a spur 19, which spur acts to prevent the scraper from sliding when the scraper plate 1 is raised by the means hereinafter described. The standard 18 is provided with an elongated slot 20, in which is pivotally mounted a lever 21. Secured to the inner side of the standard 18 is a curved rack 22, which is adapted to be engaged by a spring-pressed pawl 23, carried by the lever 21. The U-shaped member 24 is connected to the U-shaped member 14 and to the lower end of the lever 21. The ends of the U-shaped member 24 terminate into eyes 25, and a rivet or bolt passes through the eyes 25 and the lower end of the lever 21, and connect said U-shaped member to said lever 21.

It will be seen that I have provided a scraper which can not only be adjusted at a certain angle, by means of the guide plate 5,

but also provide a scraper which is provided with a scraper plate or body which can be raised entirely from the ground and be supported by the standards 18, or can be raised only at one end, by means of one of the levers 21.

A rack plate 26 is positioned upon the draft pole 4, and pivotally mounted upon the rack plate 26 is a lever 27, which is provided with a spring-pressed pawl, which pawl engages the teeth upon the rack plate 26 and locks the lever 27 in an adjusted position. The lever 27 is provided with a lower bifurcated end 28 which straddles the draft pole 4 and is positioned directly under the guide plate 5. The guide 10 upon the draft pole is provided with a slot 29, through which passes the lever 27. This slot is positioned in the guide 10 to allow free movement of the lever 27. As the guide plate is connected to the scraper plate 1 it will be seen that when the guide plate is raised or lowered by means of the lever 27 the angle of the scraper plate 1 will be changed or regulated. It will also be seen that by the use of this lever the angle of the scraper plate 1 can be adjusted so as to act as a scoop, or merely as a scraper.

What I claim is:

1. In a device of the character described, the combination with a scraper, a draft animal connecting means connected to said scraper, of vertical legs, each leg provided, at its lower end, with a spur, and provided near its upper end with an elongated slot or aperture, and means positioned in said aperture and connected to said scraper for raising and lowering said scraper.

2. In a device of the character described, the combination of vertical legs, each leg provided, at its lower end, with a spur, a scraper body positioned contiguous to said legs, and means for adjusting said scraper body upon said legs.

3. In a device of the character described, the combination of legs, each leg provided with elongated apertures, near its upper end, a lever pivotally mounted in said slots or apertures of each leg, scraping means supported upon said lever means, and locking means carried by said lever and the upper portion of said leg for holding said lever and scraper means in an adjusted position.

4. In an apparatus of the class described, the combination of vertical legs or standards, rack plates positioned upon one side of said legs or standards, levers pivotally mounted upon said legs, to one side of said rack, and means carried by said lever and coöperating with said rack for locking said lever in an adjusted position.

5. In an apparatus of the class described, the combination with a scraper body, a curved guide plate secured to said scraper body, an angle bracket secured near the lower end to said scraper body and having its upper end extending through said guide plate, a pole pivotally connected to said scraper body and slidably mounted upon said guide plate, and means securing said pole in an adjusted position upon said guide plate.

6. In an apparatus of the class described, the combination of legs, a scraper plate engaging said legs, lever means pivotally connected to said legs, a substantially U-shaped member connected to said lever means, and means connecting said U-shaped member and said scraper plate.

7. In an apparatus of the class described, the combination of legs, a scraper body slidably connecting said legs, and lever means extending through said legs and pivotally connected to said scraper body for adjusting the same upon the legs.

8. In an apparatus of the class described, the combination of legs, a scraper body slidably engaging said legs, and lever means supported by said legs and pivotally connected to said scraper body for adjusting the same upon the legs.

9. In an apparatus of the class described, the combination of legs or standards, provided with slots formed near the upper end thereof, levers pivotally mounted in said slots of said standards, and means connecting said lever means to said scraper plate.

10. In an apparatus of the class described, the combination with a scraper plate, of a circular guide connected, near its ends, to said scraper plate, an angle brace connected, at one end, to said scraper plate and provided with an upper U-shaped portion extending through said scraper plate, draft means connected to said scraper plate, and means positioned upon said draft means and said guide plate for holding said scraper plate in an adjusted position.

11. In a device of the class described, the combination with a scraper plate, draft means connected to said scraper plate, guides secured to the rear of said scraper plate, legs or standards positioned in said guides, lever means positioned upon said standards and connected to said scraper plate, and means positioned upon said standards and said lever for holding said scraper plate in an adjusted position.

12. In a device of the character described, the combination with scraping means, a draft pole connected to said scraping means, of a guide positioned upon said draft pole, a guide plate connected to said scraping means and passing through said guide, and means positioned upon said draft pole for raising and lowering said guide plate.

13. In a device of the class described, the combination with a scraper plate, a draft pole, of a guide positioned upon said draft pole, a guide plate secured to said scraper plate and passing through said guide, a rack plate positioned upon said pole, and means

pivotally mounted upon said rack plate for locking said guide plate in an adjusted position.

14. In a device of the character described, the combination with a scraper plate, a draft pole, a guide positioned upon said draft pole, of a guide plate secured to said scraper plate and passing through said guide, a rack plate mounted upon said pole, a lever pivotally mounted upon said guide plate, and spring-pressed means positioned upon said lever for holding said lever in an adjusted position, said lever provided with a lower bifurcated end, said bifurcated end straddling the draft pole and being positioned directly under said guide plate.

15. In a device of the character described, the combination with a scraper plate, a draft pole, a guide positioned upon said draft pole, a guide plate secured to said scraper plate and passing through said guide, a rack plate secured to said draft pole, said guide provided with a slot, a lever pivotally mounted upon said rack plate, said lever working in said guide, means formed upon one end of said lever for raising and lowering said guide plate, and means positioned upon said lever and engaging said rack plate for holding said lever in an adjusted position.

16. In an apparatus of the character described, the combination of a leg, scraping means supported by said leg, and means carried by said leg and connected to said scraping means for adjusting the same upon said leg.

17. In an apparatus of the character described, the combination with scraping means, of a leg, said scraping means slidably engaging said leg, and manually operated means connected to said scraping means and being capable of adjusting the same longitudinally of the leg.

18. In an apparatus of the character described, the combination with a plurality of legs, vertical movable scraping means engaging said legs, means supported by said legs and connected to said scraping means and being capable for adjusting the scraping means on said legs at an angle to the horizontal plane.

19. In an apparatus of the character described, the combination with scraping means, of means connected thereto and slidably engaging the same for pitching or tilting said scraping means.

20. In an apparatus of the character described, the combination with a scraping body, draft means secured to said scraper body, guide means connected to said scraper body and said draft means, and lever means carried by said draft means and adapted to actuate said guide means for adjusting the same upon said draft means.

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

SAMUEL A. ULRICH.

Witnesses:
C. A. MIDDLETON,
FRANK MIDDLETON