W. A. HUNTER.

ROAD DRAG.

APPLICATION FILED MAY 29, 1916.

1,200,113. Patented Oct. 3, 1916.

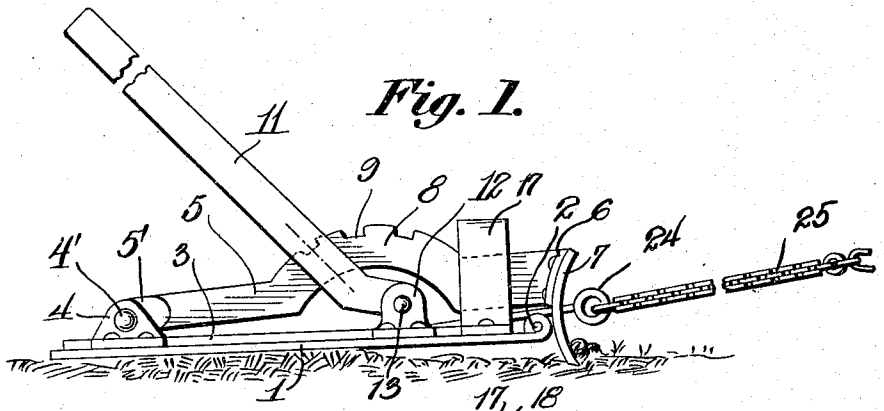


Fig. 1.

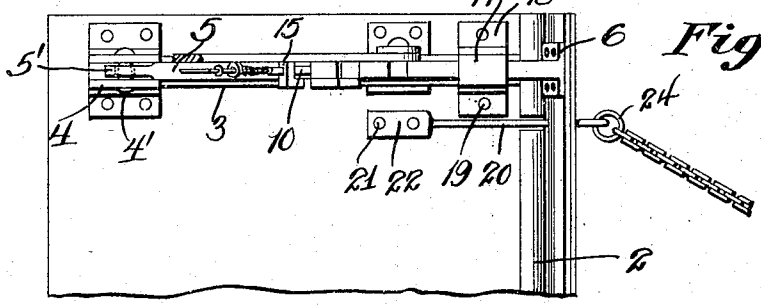


Fig. 2.

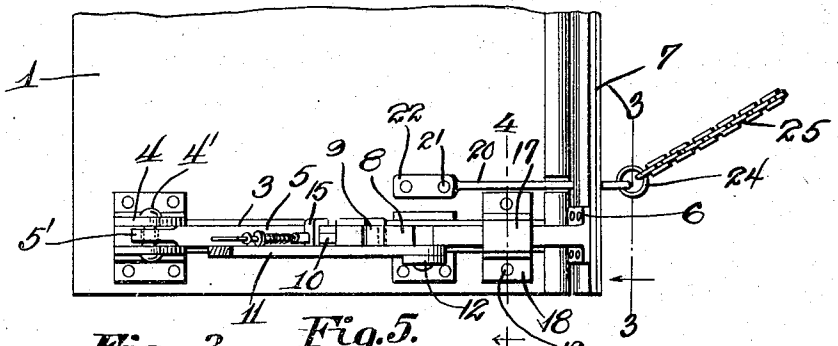


Fig. 3.

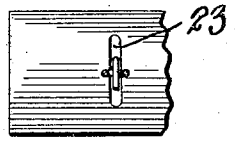


Fig. 5.

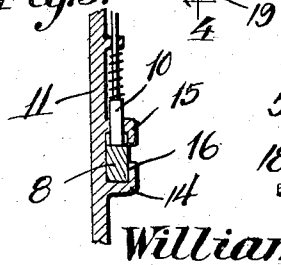
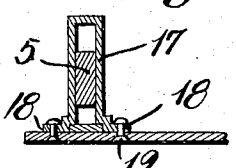


Fig. 4.



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ROAD-DRAG.

1,200,113. Specification of Letters Patent. Patented Oct. 3, 1916.

Application filed May 29, 1916. Serial No. 100,604.

To all whom it may concern:

Be it known that I, WILLIAM A. HUNTER, a citizen of the United States, residing at Mankato, in the county of Jewell and State of Kansas, have invented certain new and useful Improvements in Road-Drags, of which the following is a specification.

This invention relates to a road drag and more particularly to a device employed for smoothing and leveling road beds where the surface of the road bed is irregular and it is desired to remove the ridges and furrows which exist in unfinished road beds.

As a further object of the invention the device is provided with a knife-edged blade arranged at its forward end and adapted to be adjusted to extend into the road bed at various depths whereby a large or a small quantity of the surface may be removed while the road bed is being smoothed.

The invention also aims to provide a device of this character which will compactly smooth and level the road bed after the knife has passed over the same and which will be adapted to be drawn over the road bed in a manner that will allow various adjustments of the cutting blade while the device is in operation.

A further object of this invention is the provision of a road drag which consists of comparatively few parts and is simple in construction, but durable and well adapted to withstand the rough usage to which devices of this character are ordinarily subjected.

For a full description of the invention and the advantages and merits thereof, reference is to be had to the following description and the accompanying drawings, wherein is illustrated the preferred form of my invention, in which,

Figure 1 is a side elevation. Fig. 2 is a top plan. Fig. 3 is a fragmentary section on the line 3—3 of Fig. 2. Fig. 4 is a fragmentary vertical section on the line 4—4 of Fig. 2. Fig. 5 is a fragmentary section on the line 5—5 of Fig. 1.

A large rectangular plate 1 constructed of metal of any desirable weight is provided with a bead 2 at its forward edge, the bead being constructed by rolling the edge of the plate upon itself whereby it may be free to slide easily over slight obstructions in the roadway. A bracing cleat 3 is secured adjacent each edge of the plate for strengthening the same and preventing the plate from warping or bending while it is in use. At the rear end of each of the cleats a pair of upstanding ears 4 are mounted for pivotally receiving one end of a blade carrying arm 5. The forward end of each of the blade carrying arms 5 is provided with a flange 6 to which the cutting blade 7 is secured by rivets, bolts or other suitable fastening elements. The cutting blade 7 is transversely convex to add to the strength of the blade and to facilitate the cutting of the road bed.

The central portion of each of the blade carrying arms 5 is of an arcuate formation to provide with locking segment 8 having a plurality of notches 9 one of which is adapted to receive the locking dog 10 of the adjusting lever 11. A bearing 12 is secured to the plate 1 adjacent each cleat 3 and receives one end of the adjusting lever 11, the end of the lever being pivotally mounted on the bearing 12 by a pivot pin 13. By referring to Fig. 5 of the drawing it will be observed that each lever 11 is provided with retaining fingers 14 and 15 which are bent to provide a yoke 16 adapted to embrace the segment 8 of each blade carrying arm 5. The locking dog 10 extends through an opening in the retaining member 15 and is adapted to engage with one of the notches 9 for locking the adjusting lever in the desired position. This construction permits the cutting or leveling blade 7 to be adjusted whereby the edge of the blade may be disposed considerably below the bottom surface of the plate 1 or may be raised entirely out of engagement with the road bed when it is desired to simply smooth the same by means of the plate 1. Straddling each cleat 3 and extending upwardly therefrom is a guide yoke 17 through which the forward end of each blade carrying arm is disposed for limiting the forward movement of the arm and for preventing the lateral sway thereof while the device is in use. The lower portion of each guide yoke 17 is provided with a flange 18 fastened to the plate 1 by rivets or bolts 19.

For dragging the device over the road bed I provide a pair of draw bars 20, one of which is secured to the plate 1 by the fastening rivets 21 which extend through the flanges 22 formed at the ends of the draw bars 20, the blade 7 is provided with vertically extending slots 23 through which the forward end of the draw bars 20 are extend-

ed and the terminals of the draw bars are provided with rings 24 to which draft chains 25 are secured. By providing the blade with vertical slots through which the draw bars are extended the adjustment of the blade is permitted, at the same time the draw bars are being employed to move the device over the ground or road bed. The draft animals are hitched to the draft chain and the driver of the animals may stand upon the plate 1 whereby his weight will aid the plate in smoothing and leveling the road bed although, it will be understood, that any suitable weight may be added to increase the effectiveness of the plate during the leveling process.

It is sometimes desirable, where a graded road is being prepared, that the angular disposition of the cutting blade should be varied. This may be accomplished by moving the adjusting lever at one side of the plate to a greater distance than the lever at the opposite side thereby raising one end of the cutting blade to a greater height than the opposite end thereof. The position of the smoothing plate 1 will however remain the same. In order that the torsion which would be liable to occur in the blade carrying arms 5 may be obviated, I provide the ends of the arms 5 with a reduced portion 5′ through which the pivot pins 4′ are extended thereby causing a space between the sides of the arms 5 and the ears 4. The aperture in the ends of the arms which receives the pivot pin 4 will be slightly larger than the pivot pin so that it will be free to move for providing the angular disposition of the cutting blade 7.

In reduction to practice I have found that the form of my invention illustrated in the drawings and referred to in the above description, as the preferred embodiment, is the most efficient and practicable; yet realizing that the conditions concurrent with the adoption of my device will necessarily vary, I desire to emphasize the fact that various minor changes in the details of construction, proportion and arrangement of parts may be resorted to, when required, without sacrificing any of the advantages of my invention, as defined in the appended claims.

I claim:

1. In a road drag, the combination of a smoothing plate, a blade carrying arm pivotally mounted upon each end of said plate, a cutting blade mounted on said arms and provided with vertical slots, a locking segment formed in each of said arms and provided with a plurality of notches, adjusting levers pivotally mounted on the plate, retaining means carried by each adjusting lever and adapted to embrace the said segment in the corresponding blade carrying arm, locking dogs carried by each lever and adapted to engage one of the notches formed in the said segment, and draw bars having their ends secured to said smoothing plate and extending forwardly and through said vertical slots whereby said adjusting levers may accomplish the adjusting of said cutting blade independently of the connection of the draw bars with said plate.

2. In a road drag, the combination of smoothing means, with a cutting blade disposed forwardly of said means and provided with vertical slots, draft elements extended through the slots in said cutting blade and secured to said smoothing means whereby the adjustment of said blade may be accomplished while said smoothing means is in operation, and means carried by said smoothing means and connected to said cutting blade for adjusting said blade.

3. In a road drag, the combination of a rectangular smoothing plate disposed horizontally and having its forward edge turned upon itself to provide a bead, a pair of blade carrying arms, one of which is mounted adjacent each end of said plate and extends to the forward edge thereof, a cutting blade carried by said blade carrying arms, and adjusting means pivotally mounted on said plate and engaging said arms for raising either end of said cutting blade whereby said blade may be disposed at an angle to the smoothing surface of the said smoothing plate.

4. In a road drag, the combination of a rectangular smoothing plate, bearings secured to said plate and provided with apertures, pivot pins extended through the apertures in said bearings, blade carrying arms loosely connected to said pivot pins, means pivotally mounted on opposite ends of said plate and adapted to be independently and manually operated and engaging said blade retaining arms, a blade carried by the forward ends of said blade retaining arms and disposed forwardly of the edge of said plate, said means adapted to adjust either end of said blade for disposing the cutting edge of said blade at an angle to said plate.

5. In a road drag, the combination of a smoothing plate, with a cutting blade disposed forwardly of the forward edge of said plate, blade retaining arms pivotally mounted on said plate and having their forward ends secured to said cutting blade, bracing cleats secured to said plate and disposed vertically beneath said blade retaining arms for strengthening said plate, means for raising and lowering said blade retaining arms and a guide yoke straddling each cleat at each end of said plate and embracing the corresponding arm.

6. In a road drag, the combination of a smoothing plate, with a cutting blade disposed forwardly of the forward edge of said plate and provided with vertical slots, blade retaining arms pivotally mounted on

said plate and having their forward ends secured to said cutting blade, bracing cleats secured to said plate and disposed vertically beneath said blade retaining arms for strengthening said plate, means for raising and lowering said blade retaining arms, a guide yoke straddling each cleat at each end of said plate and embracing the corresponding arm, draw bars secured to said plate and extending forwardly through said slots in said blade, and means connected to said draw bars for dragging said plate.

7. In a road drag, the combination of a smoothing plate, blade carrying arms pivotally mounted upon said plate at each end thereof, each arm having an arcuate portion formed intermediate its ends, a blade carried by the free ends of said blade carrying arms, each of said blade carrying arms provided with an adjusting lever comprising integrally formed retaining members adapted to embrace the arcuate portion of each of said blade carrying arms, and a locking dog carried by said levers and adapted to engage with one of a plurality of notches formed in said arcuate portions.

8. In a road drag, the combination of a smoothing plate, a blade carrying arm pivotally mounted upon each end of said plate, and provided with an arcuate portion intermediate its ends, the said arcuate portion having a plurality of notches formed in one edge, a blade carried by the free ends of the blade carrying arms and provided with vertical slots, each of said blade carrying arms provided with an adjusting lever comprising integrally formed retaining members adapted to embrace the arcuate portion of the corresponding blade carrying arm, a locking dog carried by each lever and adapted to engage in one of the said notches, draw bars having their ends secured to said smoothing plate and extending forwardly and through the said slots whereby said adjusting levers may accomplish the adjusting of said cutting blade independently of the connection of the draw bars with said plate, the free ends of said draw bars being disposed forwardly of said cutting blade, and draft chains connected to said free ends.

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

WILLIAM A. HUNTER.

Witnesses:
G. O. KIRKPATRICK,
LEWIS H. STAFFORD.

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