Dec. 23, 1941. A. KERN, JR 2,267,699

ROAD SCRAPER

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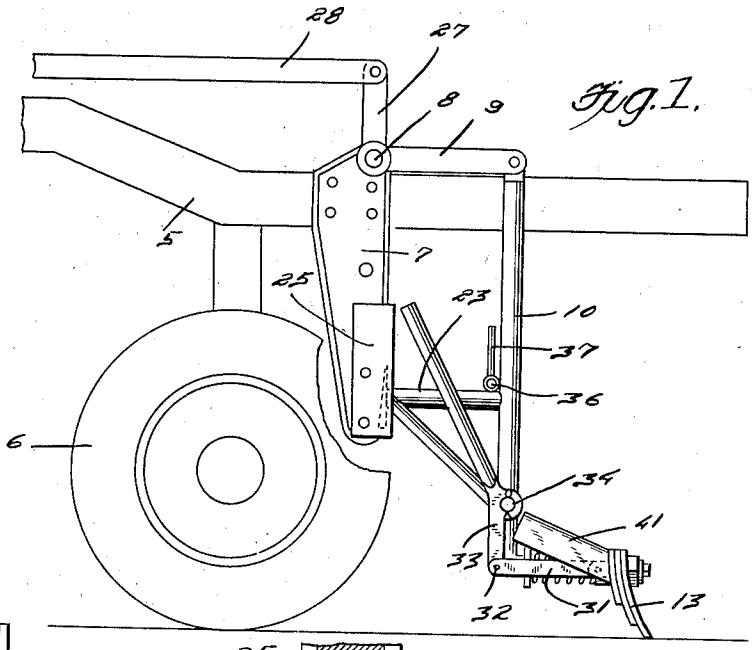

Fig. 1.

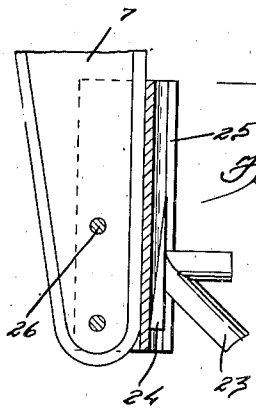

Fig. 5.

Fig. 4.

Inventor

Anton Kern, Jr.

By Clarence A. O'Brien

Attorney

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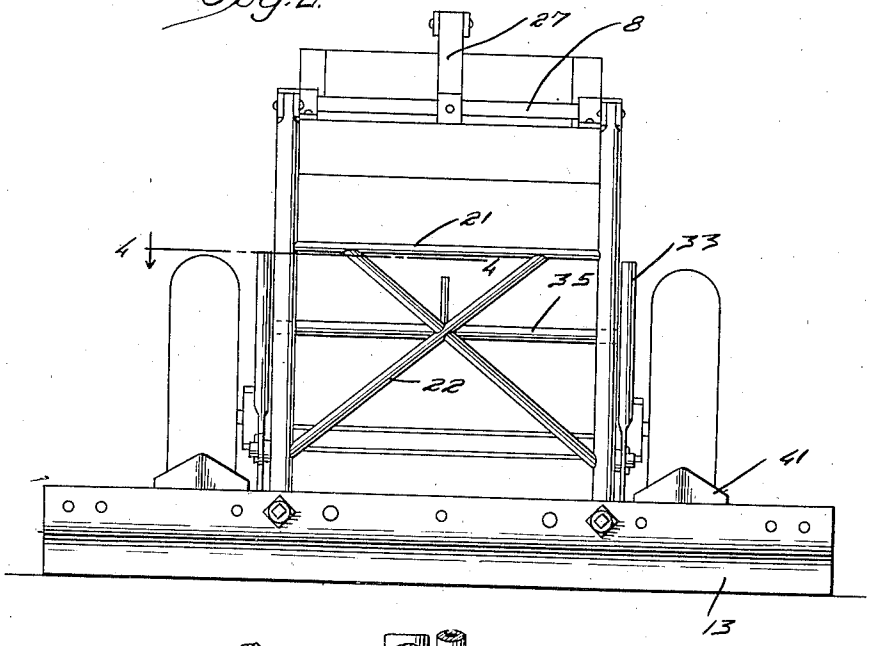
Fig. 2.



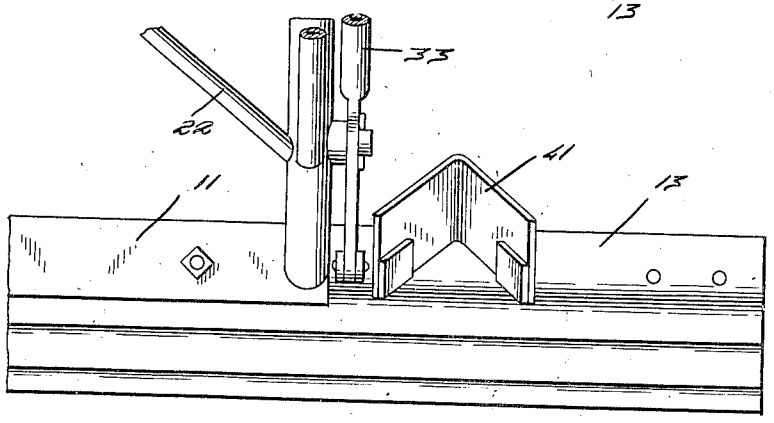


Fig. 3.

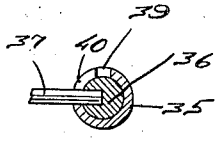


Fig. 6.

Inventor

Anton Kern, Jr.

By Clarence A. O'Brien

Attorney

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UNITED STATES PATENT OFFICE

2,267,699

ROAD SCRAPER

Anton Kern, Jr., Sebeka, Minn.

Application January 15, 1941, Serial No. 374,569

9 Claims. (Cl. 37—178)

The present invention relates to new and useful improvements in scraping attachments for road graders and has for its primary object to provide a scraper blade adapted for detachably mounting in advance of the machine and embodying means for raising the blade out of road scraping position from the driver's seat or control cab and also embodying novel means for securing the blade in oppositely inclined positions for selectively throwing the loose material toward either side of the machine.

A still further object is to provide a scraper attachment of this character of simple and practical construction, which is efficient and reliable in performance, relatively inexpensive to manufacture and install in operative position and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which

Figure 1 is a side elevational view of the scraper shown in position at the front end of a tractor or other road machine,

Figure 2 is a front elevational view,

Figure 3 is a fragmentary rear elevational view,

Figure 4 is a fragmentary sectional view taken substantially on a line 4—4 of Figure 2,

Figure 5 is a vertical sectional view through one of the guides for raising and lowering the blade supporting frame, and

Figure 6 is a sectional view through the adjustable locking bar taken substantially on a line 6—6 of Figure 4.

Referring now to the drawings in detail, wherein for the purpose of illustration I have disclosed a preferred embodiment of the invention, the numeral 5 designates the front end of the frame of a conventional form of road scraper or similar road machine which is mounted on the wheels 6. Fixedly secured to the frame 5 and extending downwardly at each side thereof, is an arm 7 to the upper portion of which is journalled a rock shaft 8 having a pair of forwardly extending arms 9 adjacent each end of the shaft 8. To the outer ends of the arms 9 are pivotally attached rods 10 which extend downwardly and to the lower ends of which is secured a transversely extending beam 11, the beam being welded or otherwise fixedly secured to the lower ends of said rods.

Projecting forwardly from the beam 11, adjacent each end thereof, is a guide arm 12 on which the scraper blade 13 is slidably mounted through a sleeve 14 fixed in an opening 14' in the blade. The scraper blade is preferably constructed of a plurality of laminated sections connected together by means of bolts 15. Mounted on the guide arm 12 between the beam 11 and the blade 13 is a coil spring 16 yieldably urging the blade forwardly, the outer end of the guide arm being provided with a nut or head 17. Projecting rearwardly from the blade 13 adjacent each end thereof, is a guide arm 18 which is slidably mounted at its rear end in the beam 11, the rear end of the arm 18 having a nut 19 thereon and a coil spring 20 is mounted on the arm between the blade and the beam.

Transversely extending braces 21 connect the two vertical rods 10 and inclined braces 22 are also provided connecting the transverse braces, and the braces are welded or otherwise fixedly secured to the rods. Rearwardly extending braces 23 are also attached to the rods 10, the rear ends of the braces having a shoe 24 welded or otherwise secured thereto.

The shoes 24 are of wedge-shape form as illustrated to advantage in Figure 5 of the drawings, and are slidably mounted in the vertically extending guides 25 secured to the lower portion of the arms 7 by bolts 26 or the like.

Rising from the rock shaft 8 is an arm 27 to the upper end of which is pivotally secured a lever 28 leading to the operator's cab of the machine, whereby it will be apparent that upon a rearward movement of the lever 28 the arms 10 will be raised upwardly, whereby to bodily raise the blade 13. The wedge formation of the shoes 24 in the guides 25 compensates for the slight rearward movement necessary for the blades 13 during the upward swinging movement of the arms 9 whereby to prevent binding of the shoes in the guides.

Projecting rearwardly from the blades 13, adjacent each end thereof, is a pair of spaced ears 29 on which a pin 30 is mounted, the pin providing a pivotal mounting for the front end of a link 31 which extends rearwardly and has its rear end pivoted as at 32 to the lower end of a lever 33 which is pivoted intermediate its ends as at 34 adjacent the lower end of the rods 10.

A transversely extending tubular rod 35 is welded or otherwise secured behind the rods 10 and also supported on the braces 23, the rod 35 having a bolt 36 slidably mounted thereon, the bolt being adapted for projecting outwardly of either end of the tube 35 for engaging behind the

upper end of the lever 33 to retain the lever with its lower end moved rearwardly whereby to pull the adjacent end of the blade 13 in a rearward direction and thus incline the blade toward one side of the machine. The locking bolt 36 is manipulated by means of a lever 37 which projects upwardly through a slot 38 formed in the tubular member 35. The slot 34 includes a longitudinally extending portion 39 along which the lever 37 is movable for projecting the bolt 36 outwardly of either end of the tubular member, and the slot further includes laterally extending portions 40 at each end of the longitudinally extending portion and within which the lever 37 may be moved for securing the bolt in the desired position.

The bolt 36 corresponds in length to the tubular member 35 so that only one end of the bolt may be projected from said member for locking the adjacent end of the blade in its rearwardly inclined position.

Extending upwardly and rearwardly from the blade 13, in alinement with the wheels 6, is a V-shaped shield 41 adapted to deflect loose material from the path of the wheels, as the material rides over the upper edge of the blade. The shield is welded or otherwise secured to the blade.

It is believed the details of construction, advantages and manner of use of the device will be readily understood from the foregoing without further detailed explanation.

What I claim is—

1. A road scraper comprising a scraper blade, spring means projecting the blade forwardly, means for supporting the blade in advance of a vehicle and means for adjusting either end of the blade into a transversely inclined position against the tension of said spring means.

2. A road scraper comprising a scraper blade, means for supporting the blade in advance of a vehicle and including yieldable means for each end of the blade for projecting the blade forwardly and means for regulating the pressure of the blade at either end against the yieldable means to incline the position of the blade.

3. A road scraper comprising a scraper blade, means for slidably supporting the blade for movement in a forward or rearward direction on the front end of a vehicle, spring means yieldably urging the blade forwardly and means for securing either end of the blade rearwardly against the tension of the springs to maintain the blade in a transversely inclined position.

4. A road scraper comprising a scraper blade, spring means projecting the blade forwardly, means for supporting the blade in advance of a vehicle, means for moving the blade into oppositely inclined transverse positions against the tension of said spring means and means for retaining the blade in its inclined position.

5. A road scraper comprising a scraper blade, spring means projecting the blade forwardly, means for supporting the blade in advance of a vehicle and including guide rods longitudinally of the vehicle on which the blade is slidably mounted, means for moving either end of the blade on said rods to incline the blade against the tension of said spring means and means for retaining the blade in said inclined position.

6. A road scraper comprising a scraper blade, spring means projecting the blade forwardly, means for supporting the blade in advance of a vehicle and including guide rods longitudinally of the vehicle on which the blade is slidably mounted, means at each end of the blade for moving the blade into a transversely inclined position against the tension of said spring means and means selectively engaging either of said last named means for retaining the blade in said inclined position.

7. A road scraper comprising a scraper blade, spring means projecting the blade forwardly, means for supporting the blade in advance of a vehicle and including guide rods longitudinally of the vehicle on which the blade is slidably mounted, means at each end of the blade for moving the blade into a transversely inclined position against the tension of said spring means and a locking bar selectively engaging either of said last named means for retaining the blade in its inclined position.

8. A road scraper comprising a scraper blade, spring means projecting the blade forwardly, means for supporting the blade in advance of a vehicle and including guide rods longitudinally of the vehicle on which the blade is slidably mounted, an upwardly extending lever at each end of the blade for moving the same into a transversely inclined position against the tension of said spring means and a transversely disposed slidable locking bar engageable with the levers for retaining the blade in its inclined position.

9. A road scraper comprising a rock shaft journalled transversely of a road vehicle, arms projecting forwardly from the shaft, a scraper blade suspended from said arms, means extending rearwardly from the shaft for raising the blade, a channelled guide carried by the vehicle, a brace extending rearwardly from the blade and a wedge-shaped shoe carried by the brace and slidably mounted in said guide, said shoe being tiltable upon upward movement of the blade to prevent binding of the shoe in the guide.

ANTON KERN, JR.