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E. B. WINTERS

ROAD DRAG AND SCRAPER

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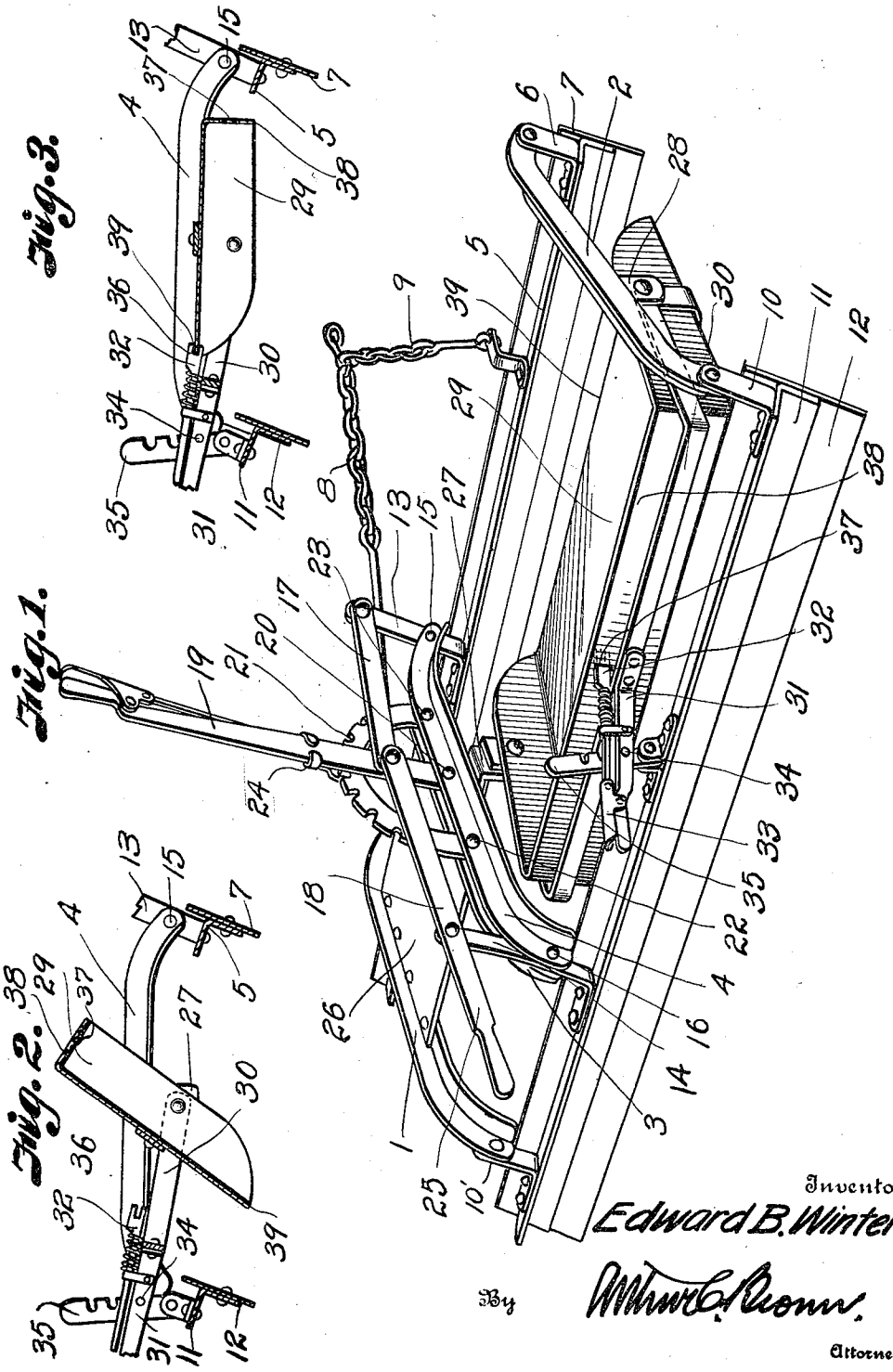


Fig. 3.

Fig. 1.

Fig. 2.

Inventor
Edward B. Winters.

By Arthur C. Brown.

Attorney

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UNITED STATES PATENT OFFICE.

EDWARD B. WINTERS, OF COFFEYVILLE, KANSAS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE WICHITA SCRAPER DRAG COMPANY, OF SEDGWICK COUNTY, KANSAS.

ROAD DRAG AND SCRAPER.

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To all whom it may concern:

Be it known that I, EDWARD B. WINTERS, a citizen of the United States, residing at Coffeyville, in the county of Montgomery and State of Kansas, have invented certain new and useful Improvements in Road Drags and Scrapers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to a combined road drag and scraper and one of the objects thereof is to provide a drag adapted to be combined with a scraper in such a manner that normally the scraper will be out of functional position but which is so mounted that it may be conveniently arranged to function whenever desired.

Road drags perform their function by leveling off the slight inequalities in the surface of the road, the action being such that slight depressions can be filled in by the earth in front of the blades. Frequently, however, the depressions or cavities in the road are of such proportions that the drag will not fill them. Under such conditions it has hitherto been the practice to use a separate scraper or road shovel to accumulate sufficient earth to fill up the road depressions. Not infrequently the road shovel or scraper is not readily available, so considerable time is consumed in interchangeably bringing the drag and road scraper into service.

According to my invention the road drag is provided with a scraper which may normally be maintained out of functional position so that the drag may perform in the usual way but which, should the occasion arise, is capable of being brought into functional position so that a relatively large amount of earth may be accumulated to be directed into the cavity to be filled. In one aspect of my invention the scraper is so arranged that it may serve as a support or platform for the operator of the drag.

The novel arrangement of parts and combinations of parts will be specifically referred to hereinafter, reference being had to the accompanying drawings in which—

Fig. 1 is a perspective view of a road drag to which my invention is applied.

Fig. 2 is a cross sectional view through the same, showing the scraper in its dumping position, and

Fig. 3 is a similar view showing the scraper in its non-functioning position.

The drag frame is shown as consisting of the end bars 1 and 2 and the intermediate cross bars 3 and 4, the latter lying close together and adapted to support certain blade operating mechanism. Pivoted to the front ends of the bars 1 and 2 is a blade-carrying angle 5, the pivotal connection being effected by means of end brackets 6 which are pivoted to the front ends of the bars and which are rigidly attached to the angle 5, the bracket on the left hand side of Fig. 1 not being shown.

The angle 5 carries a front blade 7 and to the angle 5 is also attached a hitch consisting of the chains 8 and 9. At the rear ends of the cross bars 1 and 2 are the upstanding brackets 10 and 10′ for supporting the blade carrying angle 11 to which the rear blade 12 is secured.

Intermediate the ends of the angles 5 and 11 are upstanding levers 13 and 14, which are pivoted to the respective ends of the cross bars 3 and 4, the levers 13 and 14 being interposed between the cross bars 3 and 4 and connected thereto by rivets 15 and 16. The upstanding levers 13 and 14 are connected by links 17 and 18 to an operating lever 19 pivoted between the bars 3 and 4 by a pivot 20.

There is a segmental rack 21 fastened between the bars 3 and 4 by the rivets 22 and 23. The teeth on the segmental rack are adapted to be engaged by a manually-actuated pawl or dog 24 carried by the lever 19. Therefore, the angles 5 and 11 may be tilted through the instrumentality of the lever 19, its link connections and the levers 13 and 14. This construction per se constitutes no part of my present invention.

Extending rearwardly from the link 18 is a handle 25, by means of which the operator may tilt the rear of the drag if desirable. Supported by the cross bars 1 and 3 is a platform 26. Depending from the bar 4 and

from the bar 2 are bearings or ears 27 and 28, in which is pivotally mounted a scraper or road shovel 29, there being a yoke 30 consisting of a U-shaped bar also pivoted to the ears or bearings 27 and 28. The yoke or U-shaped bar 30 carries a bracket 31 intermediate its ends on which is a spring-actuated detent or dog 32 adapted to be operated by the hand lever 33 pivoted to the bracket 31. The bracket arm 31 carries a transverse pin 34 adapted to engage in any of the notches in the pivoted latch bar 35, the pivoted latch bar being carried by the angle 11. The pivoted latch bar is adapted to be manually swung into position to have its notches engaged by the pin 34 so that the parts will be in the position shown in Fig. 1. When the pin 34 moves out of engagement with the notch on the latch bar 35, the latch bar may swing back on its pivot. It will have to be raised, however, when it is desired to bring it into engagement with the pin 34 the next time.

The dog or detent has a bifurcated end 36 adapted normally to be received within the slot 37 in the rear flange 38 of the slip but adapted to be withdrawn therefrom so as to allow the scraper to rotate about its axis if desired.

Normally the bifurcated portion of the dog or detent 31 is adapted to receive in its bifurcated end the cutting edge 39 of the inverted scraper, which in the position shown in Fig. 3 serves as a platform on which the operator may ride, the scraper shovel being prevented from rotating about its axis by the bifurcated portion 36 of the dog or detent. When in this position the road drag can function in the usual way to scrape or level off the road and cover up small cavities or scrape off inequalities.

When it is desired to accumulate enough earth to fill up a relatively large cavity, the dog or detent 31 will be withdrawn from contact with edge 39 of the scraper so that it may rotate about its axis to assume the position shown in Fig. 1, and have its slot 37 engaged by the dog so that it will in effect be rigid with the yoke 30. Then the yoke and scraper shovel will be locked together; the operator may then raise and lower the brackets 31 to effect the proper inclination of the shovel with respect to the earth to make a slight cut or a deep cut, the pin 34 being engaged by one of the notches in the large lever 35 to hold it at the proper inclination.

When the shovel has accumulated sufficient earth and it is desired to dump it into the cavity, the operator will grasp the lever 33 so as to withdraw the detent 31 from the slot 37, allowing the shovel to rotate about its axis into a dumping position, as shown in Fig. 2. It will make a complete revolution as it is being dumped and come back to the position shown in Fig. 1 where it may again be engaged by the dog to make a further cut if desired, or it may be stopped after making half of its revolution and held as shown in Fig. 3, which would be the case where the hole has been filled and it is desirable to move the shovel out of functional position.

The complete revolution of the shovel may take place because the pivots for it are forward of the center of gravity, as clearly shown in Fig. 1, so that when the shovel is tilted in the position shown in Fig. 2, the overweighted rear portion will tend to swing down to the position shown in Fig. 3.

If the detent or dog 32 is not then caused to engage the front edge of the shovel, the rear portion of the shovel will come into contact with the ground, and as the drag and scraper moves forward, the shovel will be turned around so that the rear weighted end will be directed toward the rear of the device. Then the rear end can be raised so that the detent can engage the slot 37 and the pin 34 can be placed in the proper notch in the latch bar 35 to give the proper inclination to the shovel. Of course, it is to be understood that the latch bar 35 will have to be raised into position to be engaged by the pin 34.

It will be understood, of course, that when the shovel dumps itself into the cavity to be filled, the blades on the drag will level off the surface of the road in the cavity during the return movement of the shovel or immediately thereafter.

A device constructed in accordance with my invention will materially improve the method of road building by saving considerable time in building up cavities and in leveling off the road. The drag may function in its normal way without in any manner being effected by the scraper, but when it is desired to accumulate sufficient earth to fill up an objectionable cavity, the scraper can be brought into play instantly and function until its use is no longer required, whereupon it can be again allowed to move into nonfunctioning position, an advantage which will be apparent by reference to the drawings when considered in connection with the previously described construction and operation.

What I claim and desire to secure by Letters Patent is:

1. A road drag having spaced front and rear transverse blades and a pivoted shovel between them, the shovel being mounted for complete rotation about the axis of its pivots, means for engaging the rear portion of the shovel to hold it in operative position so that the normal bottom face of the blade of the shovel will serve as a platform, and means for releasably holding the first named means.

2. A road drag and scraper comprising two transverse blades, means for holding them in spaced relation, a pivoted shovel carried by said means and mounted for complete rotation about the axis of its pivots, the shoved having a detent-receiving portion at its rear end, a yoke carried by the first named means, and a detent carried by the yoke to engage the detent-receiving portion at the rear of the shovel.

3. A road drag and scraper comprising two transverse blades, means for holding them in spaced relation, a pivoted shovel carried by said means and mounted for complete rotation about the axis of its pivots, the shovel having a detent-receiving portion at its rear end, a yoke carried by the first named means, a detent carried by the yoke to engage the detent-receiving portion at the rear of the shovel, the detent having a bifurcated end for engaging the front edge of the shovel to hold it in inverted position rigid with the yoke, and a latch bar carried at the rear of the drag and scraper to hold the yoke against movement.

4. A road drag and scraper comprising two transverse blades, means for connecting them together, a shovel having a bottom and a substantially vertical rear wall, means for pivotally securing the shovel to the means for connecting the blades, a yoke pivoted to said means independently of the shovel, a detent carried by the yoke and having a portion for engaging a slot in the rear wall of the shovel, a pivoted latch bar carried by the rear portion of the road drag and scraper and having notches in its front edge, and a pin carried by the detent for engagement with the notches in the latch bar.

5. A combined road drag and scraper comprising front and rear blades, cross bars connecting them in spaced relation, a shovel pivotally supported by the cross bars and mounted for complete rotation about the axis of the pivots, means for holding the shovel rigid with respect to the blades and in operative position, means for holding the shovel rigid with respect to the blades in inverted position, and means for effecting adjustment of the angular relation of the blades with respect to the surface over which the drag and scraper travels.

In testimony whereof I affix my signature.

EDWARD B. WINTERS.