March 31, 1931. A. HOILAND 1,798,739

ROAD DRAG

Filed June 27, 1928

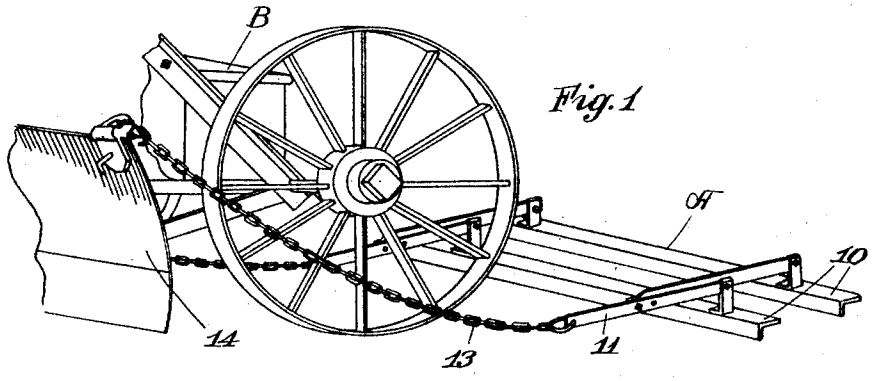


Fig. 1

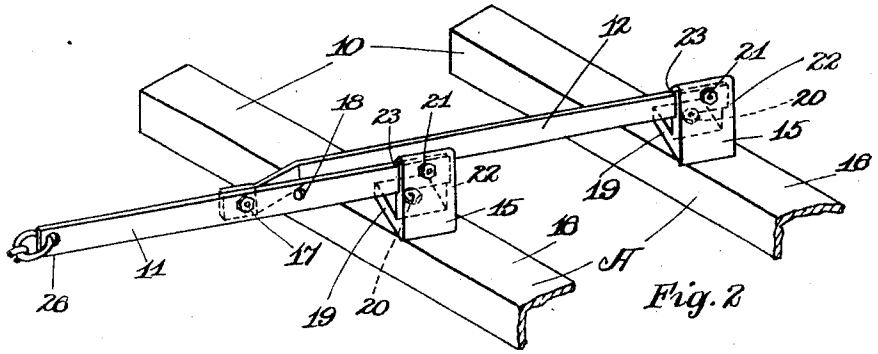


Fig. 2

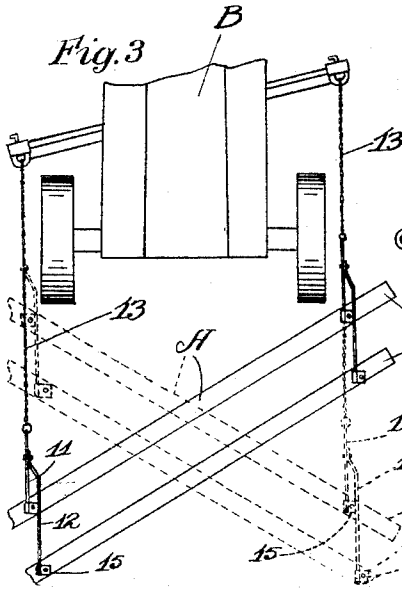


Fig. 3

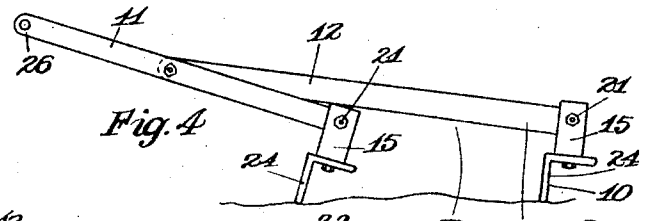


Fig. 4

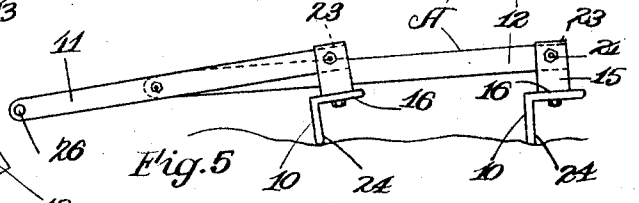


Fig. 5

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Patented Mar. 31, 1931 1,798,739

UNITED STATES PATENT OFFICE

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ROAD DRAG

Application filed June 27, 1928. Serial No. 288,644.

My invention relates to road drags wherein it is designed to provide a flexible adjustable dragging means operable primarily with road graders and scrapers.

A feature of my drag resides in a pair of parallelly disposed angle members which are connected together by operating arms to virtually equally space apart the ends of the angle members and to provide a flexible connection so that the angle members can be positioned in dragging to extend closer to or farther away from each other.

It is also a feature of my drag to provide means wherein the angle dragging members are connected by operating arms, the connecting ends of the operating arms being attached by bracket members which are pivotally adapted to pivot horizontally and permit the drag members to shift so that one end of one of the members projects beyond the end of the other member. The pivoting of the bracket members to swing horizontally permits my drag to be connected so that the angular position of the angle dragging members compensate automatically to adjust the members in relation to the hitch with the road grader with which my drag is particularly adapted to operate.

It is also a feature of my invention to provide connecting arms with the drag angle members which permit the angle members to follow the undulations of the road and at the same time to permit the shifting of the supporting arms horizontally. Thus I provide a drag which adjusts itself to the road in such a manner as to spread and pack the loose particles of the road uniformly back of the road grader and making it unnecessary to follow over the road with a drag. My drag forms a much smoother and more finished road surface than where the grader is used alone.

Under the present means of taking care of roads where a workable surface is adapted to be scraped by the road grader, no flexible follow drag is ordinarily employed. To use a drag with such a road grader it is necessary that the drag be of a simple nature, flexible to the undulations of the road and to the position of the scraping blade of the grader. With this in mind my road drag is designed to fulfill these requirements and to provide not only a means of dragging but packing the loose particles of the road directly back of and in conjunction with the grader without making it necessary to go over the road with a separate operation.

These features and objects together with other details of the invention will be more fully and clearly set forth in the specification and claims.

In the drawings:

Figure 1 is a perspective view illustrating the use of my drag in conjunction with a road grader, only a portion of the grader being illustrated.

Figure 2 is an enlarged detail of a portion of the drag.

Figure 3 is a plan view illustrating a portion of the grader and showing my drag in full and dotted lines associated therewith.

Figure 4 is an end detail of my drag as it would appear in operation.

Figure 5 is an end detail also illustrating the operation and position of the parts of my drag on the road.

In the drawings my road drag A is made up of two angle iron members 10 which constitute the spreading and road packing means of my drag A. The members 10 are in the form of angle iron members. My road drag A is provided with operating arms 11 and 12, the arm 11 constituting the front arm which is connected by means of a chain 13 to the blade 14 of the road grader B, only a portion of the grader being illustrated in the drawings and each of the members 11 and 12 are connected by adjustable brackets 15 to the top leg 16 of the drag bars.

The front end of the arm 12 is pivotally connected at 17 to the front arm 11. The adjustment of this arm may be varied by means of several openings in the arm 11, one of which is illustrated at 18, while the other opening shows the connection at 17 of the front end of the arm 12. A series of openings may be provided in the arm 11 to adjust the position of the arms 11 and 12 in relation to each other.

The drag bars 10 are adapted to support the bracket members 15. These bracket members

15 are provided with a horizontally disposed portion 19 which is pivotally connected by the bolt 20 to the top leg 16 of the drag bars 10, so that the brackets may move horizontally.

The rear ends of the arms 11 and 12 are connected by the bolts 21 to the upstanding portion 22 of the brackets 15. The arms 11 and 12 are adapted to be held by the bolts 21 against a shoulder 23 which extends along below the upper edge of the upstanding portion 22 of the bracket 15. Thus the rear ends of the arms 11 and 12 are rigidly connected to the brackets 15 so that in the operation of my drag A the arms 11 and 12 will function to tilt the downwardly depending leg 24 of the drag bars 10 into the positions illustrated in either Figure 4 or 5. Thus the relative position of the operating arms 11 and 12 will direct the position of the depending leg 24 of the angle drag bars 10.

The flexible chains 13 are adapted to connect the drag A with the grader blade 14 so as to set the angular position of the drag A to the rear of the blade 14 and the length of these chains determines the position of the drag bars 10. In use the drag A functions so that the drag bars 10 remain equally spaced apart at the ends thereof so that these bars are virtually parallel to each other and by lifting the front end 26 which connects with the chains 13 of the arm 11, the operating legs 24 of the drag bars 10 may be tilted into the angle illustrated in Figure 4, while if the connecting end 26 is dropped into a position similar to that illustrated in Figure 5, then the operating legs 24 of the drag bars 10 will assume the position illustrated in Figure 5. Therefore it is apparent that my road drag A may be adjusted very readily in relation to the road and that the drag bars 10 will operate in a manner to follow the undulations and irregularities of the road, also functioning to smooth and spread out the particles of the road which cannot be engaged and smoothed out by the grader blade 14. Neither can the grader blade 14 operate to drag and pack the loose particles of the road bed as can the flexible equalizing drag bars 10 of my grader A. I therefore accomplish a very desirable result with a road grader by providing a simple inexpensive drag means which smooths out and packs the road in one operation with the grader affording a very material saving in labor and time and accomplishing a result very much desired.

In accordance with the patent statutes I have described the principles of operation of my road drag and while I have illustrated a particular formation and construction in the drawings, I desire to have it understood that variations may be made in the design and construction within the scope of the following claims and without departing from the spirit of the invention.

I claim:

1. A road drag including, several drag members, brackets carried by said drag members pivotally connected to move in a horizontal plane, operating arms, means for connecting one end of said operating arms rigidly to said brackets, means for pivotally connecting the adjacent operating arms of each of said drag members, and flexible means connecting the free end of the foremost operating arm with a road grader whereby said drag is adapted to be drawn over the road in a manner to cause said drag members to follow the undulations of the road, spreading and packing the loose road particles back of the grader.

2. A road drag including, angle iron drag members, brackets carried by said drag members and pivoted thereto to move in a plane parallel with the horizontal plane in which said brackets are supported, spaced connecting arms rigidly connected on one end to said brackets and pivotally connected one to the other, and flexible means for connecting said road drag to a road grader to provide a drag flexibly supported to follow the undulations of the road and to permit said drag members to move longitudinally of each other as the drag passes over the road.

3. A drag comprising, a pair of right-angular drag members, brackets pivotally secured to one leg of said right-angular drag members, an operating arm rigidly secured on one end to one of said brackets, a second operating arm rigidly secured on one end to the other bracket on the adjacent drag member, the forward end of said second arm being adjustably and pivotally connected to the first arm between the ends thereof, and a flexible connection extending from the forward end of said first arm adapted to flexibly connect said drag to an operating means for pulling said drag over the road.

4. A road drag including, a plurality of drag members, brackets secured to each of said drag members spaced from the ends thereof, means for pivoting said brackets to said drag members, operating arms connected to each of said brackets, the adjacent operating arms of the adjacent drag members overlapping and connected pivotally to each other, and chain means for connecting the forwardmost arms of said drag with means for pulling the same over the road.

5. A road drag including, parallelly disposed drag members, operating arms for said drag members extending in a manner to space said arms apart, said arms being pivotally connected to each other, means connecting said arms to said drag members rigidly in a vertical plane, and pivotally in a horizontal plane, and flexible pulling means extending from the forwardmost arms of said road drag.

ALBERT HOILAND.