

Sept. 26, 1944.

C. KINNAN

2,359,121

ROAD GRADER

Filed Oct. 19, 1942

3 Sheets-Sheet 1

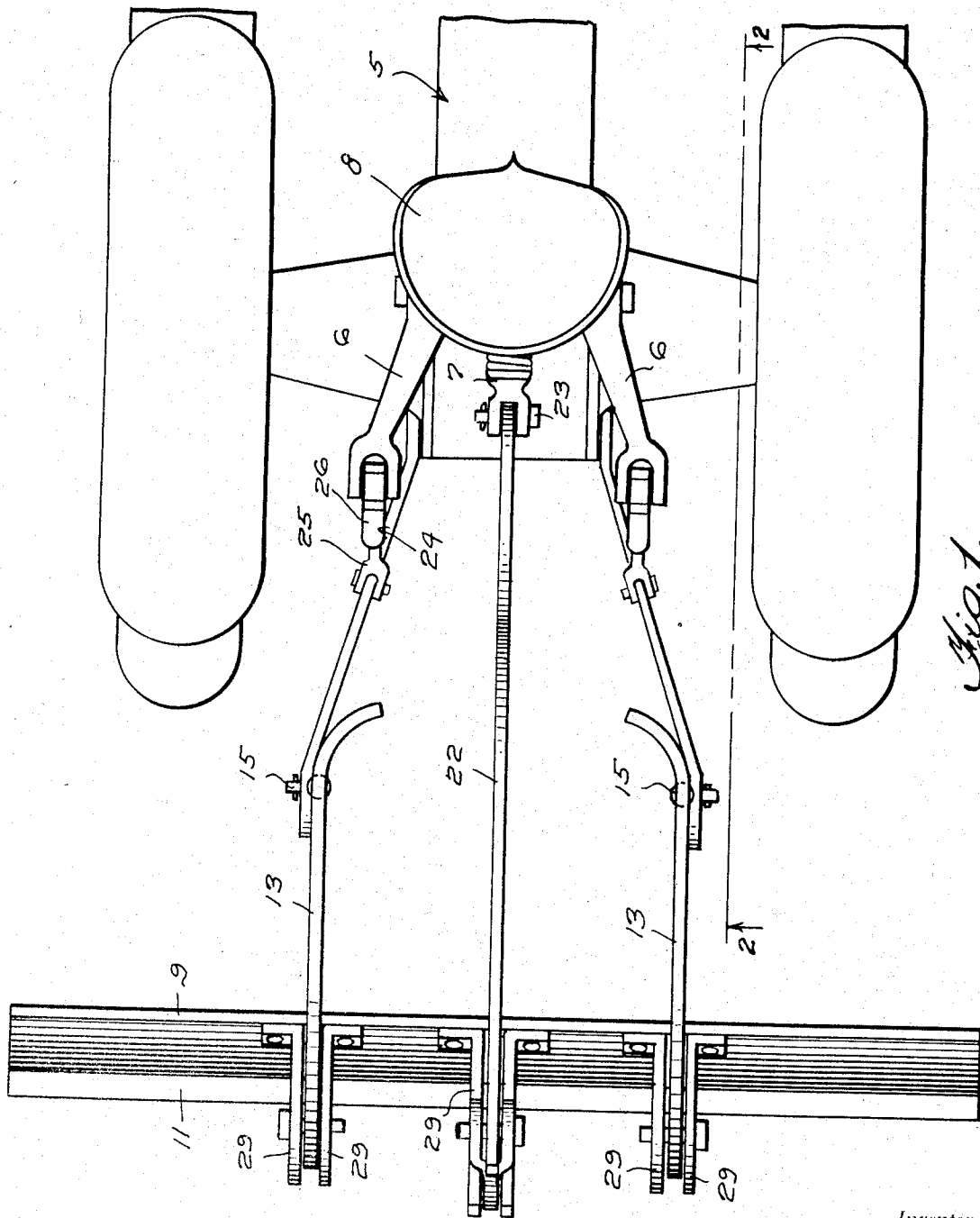


Fig. 1.

Inventor

Carl Kinnan

By

Clarence A. O'Brien
and Harvey B. Jacobson
Attorneys

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3 Sheets-Sheet 2

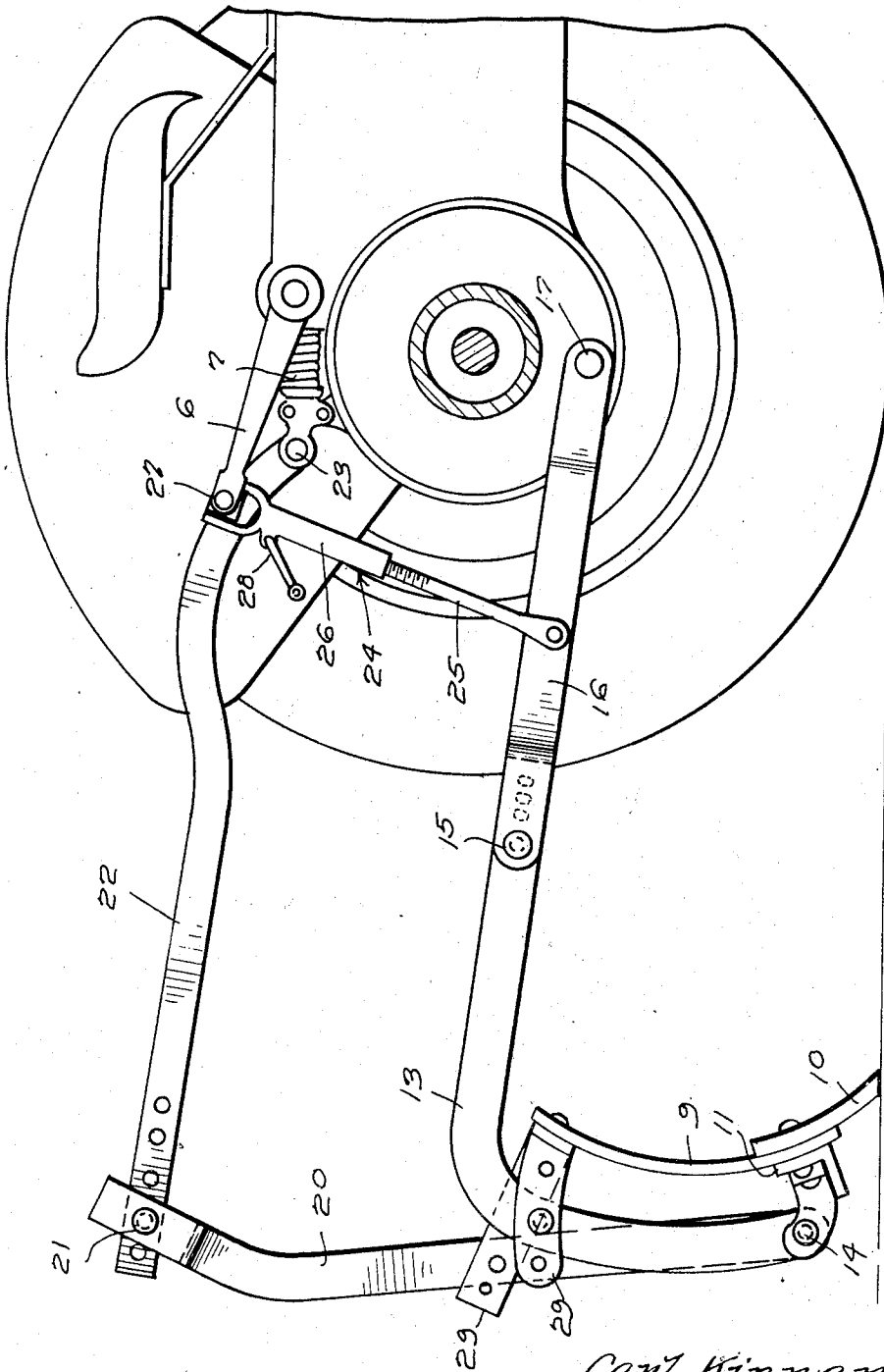


Fig. 2.

Inventor

Carl Kinnan

By

Clarence A. O'Brien
and Harvey B. Jacobson
Attorneys

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C. KINNAN

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3 Sheets-Sheet 3

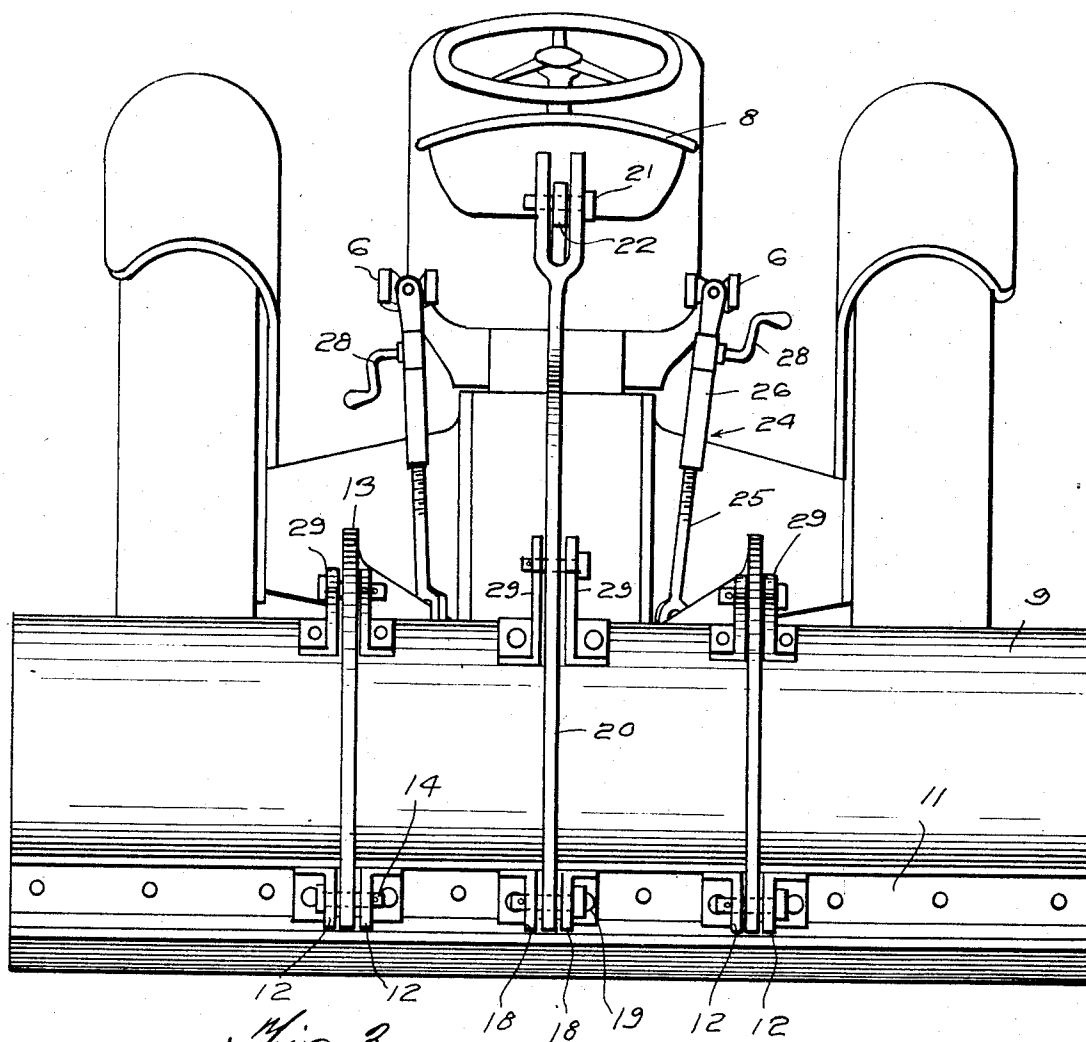


Fig. 3.

Inventor

Carl Kinnan

By

Clarence A. O'Brien

Attorney

UNITED STATES PATENT OFFICE

2,359,121

ROAD GRADER

Carl Kinnan, Morgantown, W. Va.

Application October 19, 1942, Serial No. 462,562

1 Claim. (Cl. 37—153)

This invention relates to new and useful improvements in graders for grading roads and other surfaces, the principal object of the invention being to provide a simplified grader plate and control therefor.

Another important object of the invention is to provide a grading device which can be readily attached to conventional tractors with but a minimum number of connections and parts.

Other objects and advantages of the invention will become apparent to the reader of the following description.

In the drawings:

Figure 1 represents a fragmentary top plan view.

Figure 2 is a fragmentary vertical sectional view showing the grader structure in side elevation.

Figure 3 is a rear elevational view.

Referring to the drawings wherein like numerals designate like parts, it can be seen that numeral 5 generally refers to a Ford-type tractor, this type of tractor being provided with the usual hydraulically operated implement arms 6, 6. A cushion member 7 usually found on these types of tractors is located at the rear of the usual seat 8.

In carrying out the present invention, an elongated transversely arcuate plate 9 is provided at its lower edge with a removable grader blade 10.

To the back side of the lower portion of the plate 9 is a longitudinally extending angle bar 11 from which project two sets of ears 12, 12. For each set of ears 12, 12 an L-shaped bar 13 is provided, as shown in Figure 2, with its lower end pivotally connected, as at 14, to the corresponding ears, while its upper end is pivotally connected, as at 15, to the rear end of an arm 16 which is pivotally connected, as at 17, to the differential housing.

Obviously, by adjusting the connection 15, the blade can be set at various desired angles to the vertical.

A third set of ears 18, 18 also project from the angle bar 11 and pivotally secured to these, as at 19, is the lower end of a bar 20. The upper end of this bar is forked and pivotally secured, as at 21, to the rear end of a beam 22 which pivotally connects at its forward end, as at 23, to the cushioning device 7 of the conventional tractor.

Connections generally referred to by numeral 24 are provided between the intermediate portions of the arm 16 and the lift arms 6. These consist of a threaded rod 25 pivotally secured at its lower end to the corresponding end of the arm 16, this arm being threadedly disposed into an internally threaded tube 26, which in turn is pivotally connected at its upper end, as at 27, to the corresponding lift arm 6. Numeral 28 denotes a leveling adjustment for the connection.

Further, the upper edge portion of the plate 9 has short arms 29 to which the bars 13 and 20 can be adjustably connected.

Obviously, control of the lift arm 16 will result in accurate lifting and lowering of the blade 10.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention, what is claimed as new is:

The combination with a tractor including a pair of vertically swingable lift arms, of a grader blade, and a link motion operative by said arms to raise and lower said blade comprising a pair of side arms at opposite sides of the tractor, respectively, pivoted at one end to the tractor for vertical swinging movement, a pair of bars having ends pivotally connected to said side arms for vertical swinging of the bars on said arms, said blade being swingably connected to the other ends of said bars for variable adjustment thereon to vary the position thereof relative to the bars, the connection between the bars and said side arms being variable to variably incline said blade from the vertical, connections between the blade and bars for maintaining the blade in different adjusted positions relative to the bars, an upright bar pivoted at its lower end to said blade, a beam pivoted at one end on said tractor for vertical swinging movement and having its other end pivoted to the upper end of said upright bar, connections between said blade and the upright bar for preventing relative swinging of the same, and operating connections between said lift arms and said side arms.

CARL KINNAN.