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BULLDOZER

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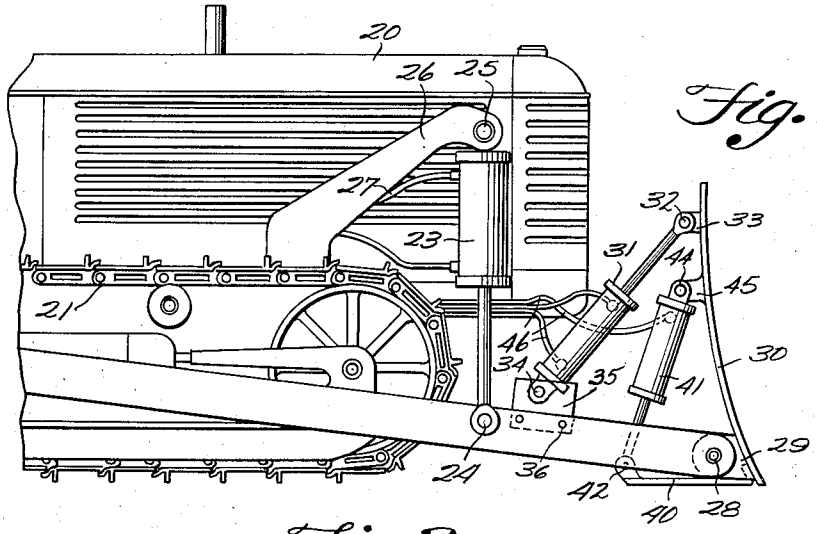



Fig. 1.

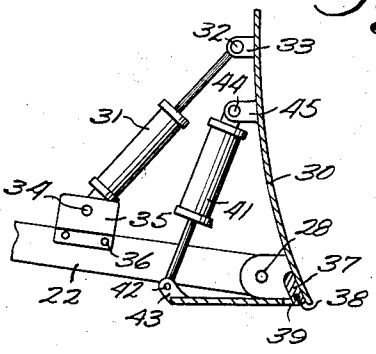



Fig. 3.

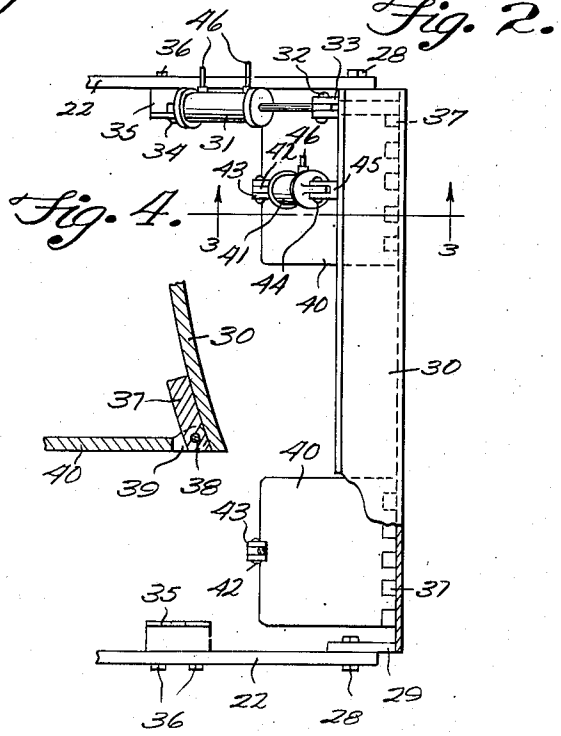



Fig. 2.

Fig. 4.

INVENTOR.

Fred O. Wood,

BY Victor J. Evans & Co.

ATTORNEYS

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## BULLDOZER

Fred O. Wood, St. Louis, Mo.

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2 Claims. (Cl. 37—144)

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This invention relates to an excavating machine which will accomplish the work previously done by a road grader, scoop or bulldozer.

An object of the invention is to provide a machine that has means incorporated therein for controlling the depth of cut of the blade on either side of the swath.

Another object of the invention is to provide a machine having a blade provided with a sectional shearing or cutting edge, so that the depth of cut of the sections may be varied from the center of the swath.

A further object of the invention is to provide a machine that is simple to operate, efficient, durable and will accomplish the work previously done by three different types of machines.

With the above and other objects and advantages in view, the invention consists of the novel details of construction, arrangement and combination of parts more fully hereinafter described, claimed and illustrated in the accompanying drawings in which:

Figure 1 is a side elevational view partly broken away of an embodiment of the invention;

Figure 2 is a top plan view partly in section of one form of blade;

Figure 3 is a sectional view on the line 3—3 of Figure 2; and

Figure 4 is a detailed sectional view of the hinging part of the blade shown in Figure 2.

Referring more in detail to the drawings, the reference numeral 20 designates the tractor or motive power of the invention, which is provided with the conventional endless track 21 for the operation thereof.

Secured to the rear axle of the tractor in the conventional manner, are the side beams 22, the raising and lowering of which is controlled by a hydraulic ram 23, which is pivoted at one end at 24 to the side beams 22, and at the other end at 25 to an arm 26 secured to the tractor. It is to be understood that there is a ram and arm on each side of the tractor, one for each side beam, and conduits 27 control the ram for the raising and lowering thereof.

Pivotally mounted on the front end of the beam 22 by pins 28, are the rearwardly extending projections 29 of the arcuate shaped scraper blade 30. The inclination of the blade 30 is controlled by a hydraulic ram 31 which is pivoted at one end at 32 in the bifurcated apertured rearwardly extending projection or ear 33 adjacent the upper edge of the blade 30, and at the other end at 34 to a plate 35 secured to the side beams

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22 by bolts 36, there being a ram 31 at each side of the blade 30.

Adjacent the lower edge of the blade 30, and at each end thereof, there are secured or formed vertical projections or lugs 37 which are apertured at their lower ends to receive a rod 38 whereby the tooth edge 39 of the sled or shoe 40 is pivoted to the blade. The projections are spaced to receive the toothed edge of the sled 40, and there is a sled at each lower end of the blade.

The movement of the sleds on their respective pivot points is controlled by the hydraulic rams 41 which are pivoted at one end at 42 to the opposed apertured ears or fingers 43 formed centrally of the sled at the rear marginal edge thereof. The rams 41 are pivoted at their other ends at 44 to the bifurcated projections or brackets 45 formed on the rear of the blade 31 inwardly of and lower than the projections 33. Both rams 31 and 41 are provided with conduits 46 for controlling the movements of the blade and sled.

By using any form of the invention, the depth of the swath on either side of the center line of the blade can be controlled. The shearing or cutting edge in one form controls the cut, and the sleds in the other forms control the cut. The rams permit flexibility of the blade so that it can be tilted at many angles.

From the foregoing description, it is believed the structure and operation of the invention will be apparent to those skilled in the art, and it is to be understood that changes in the minor details of construction, arrangement and combination of parts may be resorted to, provided they fall within the spirit of the invention and the scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In combination, a tractor, a pair of spaced, parallel beams secured to the rear end of said tractor, hydraulic means extending between the tractor and the beams for vertically adjusting said beams, an arcuately-shaped blade arranged forwardly of said tractor and pivotally connected to said beams, hydraulic means extending between the top of said blade and said beams for adjusting the inclination of the blade, a plurality of spaced, parallel, vertically disposed lugs arranged adjacent the lower edge of the blade and extending inwardly from the ends thereof, said lugs being provided with aligned openings, a pair of shoes each provided with spaced parallel projections extending into the spaces between

said lugs, there being openings in said projections registering with the openings in said lugs, a shaft extending through said registering openings, apertured fingers arranged centrally on said shoes at the rear marginal edges thereof, a pair of transversely spaced brackets secured to the rear surface of said blade, a pair of hydraulic rams having their lower ends pivotally connected to said fingers and their upper ends pivotally connected to said brackets, and conduits for connecting said rams to a source of hydraulic fluid whereby to provide for independent adjustment of said shoes.

2. The apparatus as described in claim 1, wherein said second named hydraulic means are arranged between said first named hydraulic means and said hydraulic rams.

FRED O. WOOD.



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