

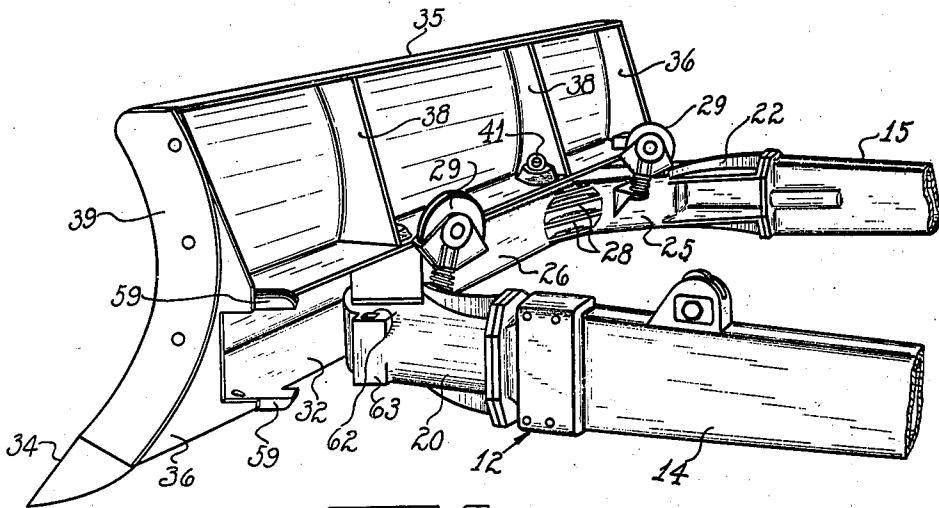
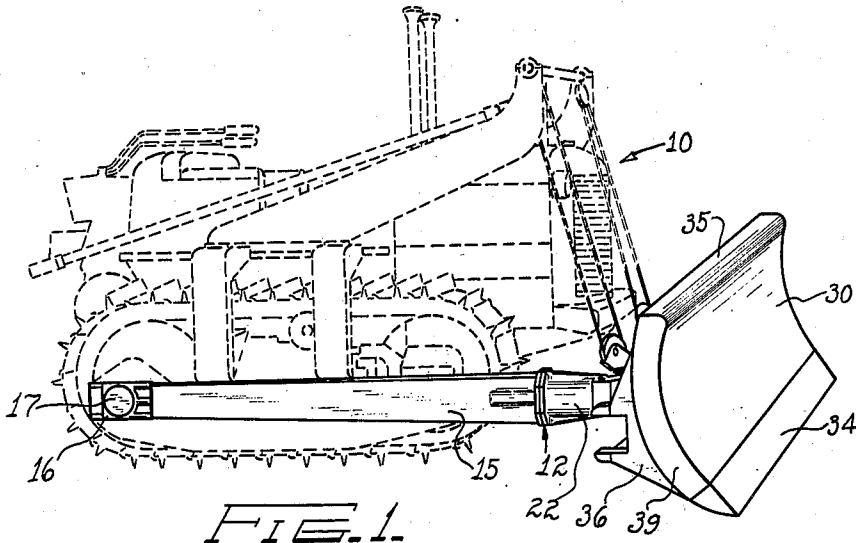
July 21, 1942.

R. B. MAGEE  
COMBINED BULLDOZER AND TRAILBUILDER

2,290,477

Filed May 22, 1941

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

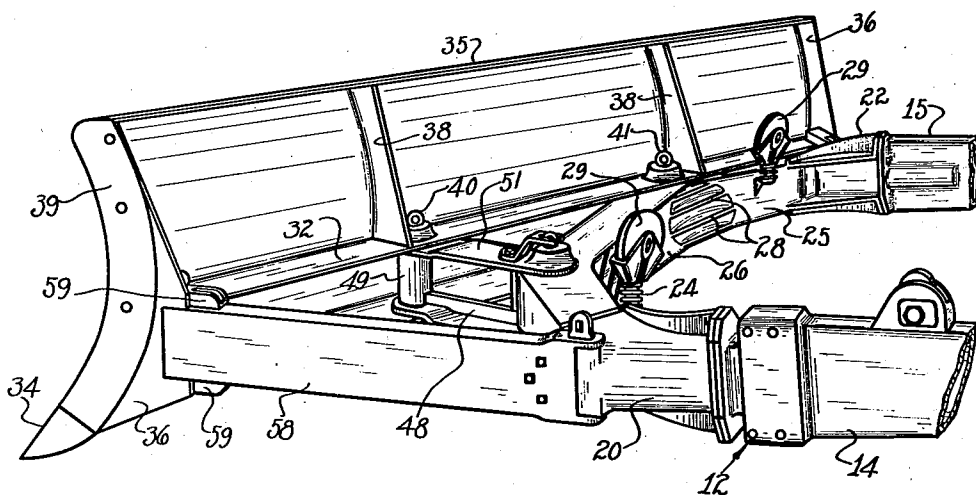


FIG. 3.

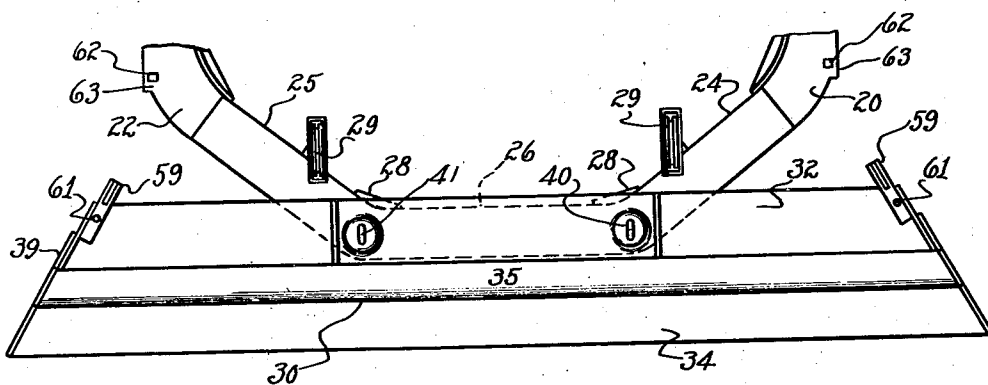


FIG. 4.

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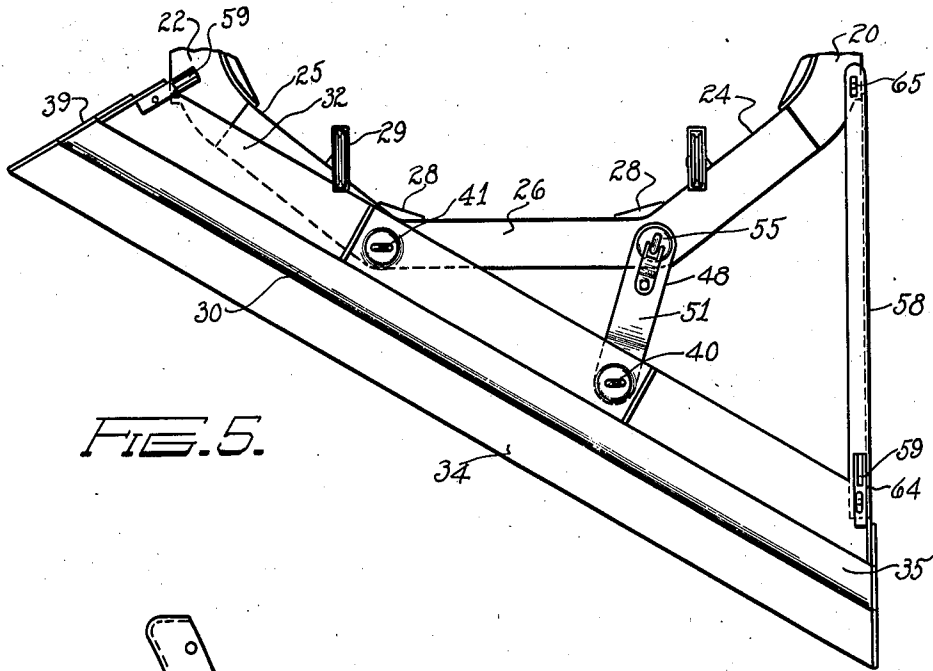


FIG. 5.

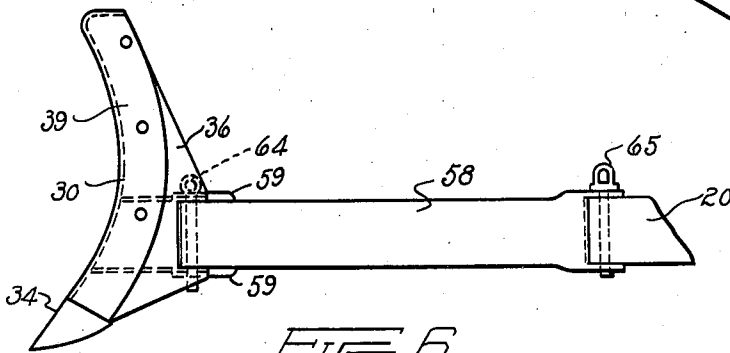


FIG. 6.

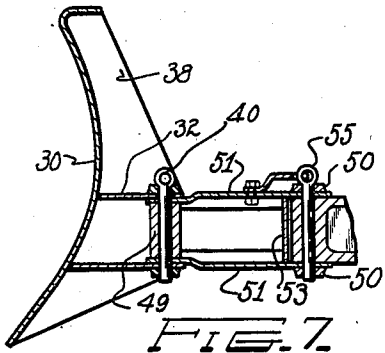


FIG. 7.

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## UNITED STATES PATENT OFFICE

2,290,477

COMBINED BULLDOZER AND TRAIL  
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Application May 22, 1941, Serial No. 394,609

3 Claims. (Cl. 37-144)

This invention relates to a combined bulldozer and trailbuilder and is particularly directed to new and useful improvements in bowl or blade mounting means to which the blade may be attached in various positions of adjustment.

An object of the invention is to provide an attachment means for blades of this type so that the same may be set at desired positions with respect to a tractor or other vehicle. To this end the invention contemplates the provision of means for selectively securing the blade to a supporting structure in such manner that it may readily be angularly adjusted and securely located in such adjusted position.

Another object of the invention is to provide an improved mounting means for the blade enabling the same to be readily elevated when not in use, as well as adjusted in both vertical and transverse positions, and having locating and supporting means of increased strength and rigidity to firmly hold the blade in any of its adjusted positions.

Further objects and advantages will become apparent from the following description when taken in connection with the accompanying drawings, in which

Figure 1 is a perspective view of the implement attached to a vehicle;

Figure 2 is a fragmentary perspective view of the rear of the structure shown in Figure 1;

Figure 3 is a view similar to Figure 2 showing the blade in one of its positions of angular adjustment;

Figure 4 is a fragmentary top plan view of the blade and mounting means;

Fig. 5 is a view similar to Fig. 4, showing the blade in tilted position;

Figure 6 is a side view of the blade and a locating strut; and

Figure 7 is a vertical sectional detail of the blade and locating link assembly.

Referring to the drawings, the numeral 10 designates a tractor or other vehicle to which the implement of the present invention is adapted to be attached. The implement is shown as comprising a frame 12 including side rails or members 14 and 15, the rear ends of which are provided with trunnion bearings 16 connected to trunnions 17 conveniently supported adjacent the rear of the vehicle. The forward ends of the side members are provided with horn brackets 20 and 22 which serve as attaching means for angularly disposed frame members 24 and 25 conjoined by a transverse front frame member 26. A set of reinforcing webs 28 is provided at 55

the inside corners or junctures of the member 23 and the members 24 and 26. The frame structure thus far described is preferably fabricated of box channel members as shown in Figs. 2 and 3 welded together in unitary form to enhance the strength and rigidity of the structure and at the same time reduced the total weight to a minimum. The frame structure, however, may be fabricated of angle iron members. The frame 12 is capable of being elevated and lowered about the trunnions 17 as pivots through pulleys 29 secured to the forward end of the frame, by any suitable mechanism to provide for vertical adjustment as well as to elevate the structure out of its operative position when being moved to a new location.

A bowl or blade 30 is detachably and adjustably mounted on the front frame member 26 having a curvature as shown and provided with a centrally disposed longitudinal reinforcing member 32 of rearwardly open channel form. At the bottom of the blade 30 is a cutting edge member 34, while the top 35 and ends 36 of the blade are turned inwardly or rearwardly as shown. To further reinforce the blade structure, intermediate webs 38 and arcuate end plates 39 are provided and preferably welded in position.

Removable pins 40 and 41 are used to couple the blade to the supporting frame, registering holes being provided at the ends of member 26 and the channel 32. Thus, one set of registering holes receive pin 40 and another set of holes receive pin 41 when the blade is attached in bulldozing position, or set for straight ahead movement of earth, stones or other material. In such position, it is to be noted that front frame member 25 is located within the channel 32 which prevents tilting of the blade with respect to the frame. Due to the fact that the channel 32 embraces or straddles the cross member 26, a particularly rigid connection is provided therebetween.

In order to adjust the blade 30 at an angle to the direction of movement of the vehicle, means are provided in the form of an abutment link 48 insertable between the blade and the cross member and secured therebetween by pins received in bushings 49 and 50 at the ends of the link. Link 48 comprises upper and lower plates 51 spaced at one end by the bushing 49 and at the other end by a plate 52. When it is desired to tilt the blade to the right, the pin 40 is removed from the members 32 and 26 and reinserted through the member 32 and bushing 49, and a pin 55 inserted through bushing 50

and the hole in the member 26 (see Figures 3 and 5). To further brace the blade in tilted position, a strut 58 is inserted between the frame 12 and an outer portion of the blade.

Interposed between the ends 36 of the blade and the ends of the channel 32 are pairs of brackets 59 between which the strut is received to support one end of the latter. The strut is of channel form provided with end apertures adapted to register with holes 61 in the brackets 59 and holes 62 in ears 63 formed on the horn brackets. Pins 64 and 65 are insertable in the registering apertures and holes to secure the strut in position. Thus the link 48 and strut 58 cooperate to firmly locate the blade in adjusted position with respect to the frame. The angularity of the blade may be determined by the length of the link and strut, which it will be understood, may be varied to suit any conditions of operation, the angular frame members preferably serving as abutments for the blade in adjusted positions.

When it is desired to tilt or adjust the blade to the left, the pin 41 is removed and the link 48 inserted between the blade and the other end of the cross member 26. It will thus be noted that a pair of spaced pins or pivots are provided, about one of which the blade is adapted to be horizontally moved when the other pin is removed. Further, a rigid connecting and spacing link is provided for insertion between the blade and frame, and an additional strut member also provided to cooperate with the link to firmly position the blade in either position of angular adjustment.

One important feature of the above construction is that it enables the machine to be readily adapted for different uses. By removing the blade or mold board, another can be substituted for another use, such for example, as a trailbuilder blade which can be replaced by a bulldozer blade or a pusher pad.

What I claim is:

1. An implement of the type set forth, including a frame having side members, a transverse front member, and angular end members between the ends of the transverse member and the front ends of the side members, said transverse and angular end members having vertical front faces and substantially parallel top and bottom faces, a blade at the front of the frame, a channel member having its closed side disposed vertically and secured to the rear of the blade to reinforce same and to engage against said front member, and having its horizontal sides conformably engaged with the top and bottom faces of the front member thereby to rigidly support the blade and to hold the latter against tilting, said horizontal sides of the channel member upon angular adjustments of the blade being engageable with adjacent portions of the top and bottom faces of the angular end members, means to secure the channel member in engagement with the front face of the transverse member and to provide for angular adjustments thereof said securing and adjusting means including a pair of vertical pins extending through the horizontal sides of the channel member and through the transverse front member of the frame, a link composed of spaced top and bottom plates, formed to engage the inner faces of the horizontal sides of the channel member and through the front ends of

which one of the pins engages, a bushing on said one pin engaging the front ends of said plates to hold same spaced, the rear ends of the plates engaging the top and bottom faces of the front member of the frame, a vertical plate connecting the rear ends of the top and bottom plates, and a third pin extending through the rear ends of the plates and through the front member of the frame.

2. An implement of the type set forth, including a frame having side members, a transverse front member, and angular end members between the ends of the transverse member and the front ends of the side members, said transverse and angular end members having vertical front faces and substantially parallel top and bottom faces, a blade at the front of the frame, a channel member having its closed side disposed vertically and secured to the rear of the blade to reinforce same and to engage against said front member, and having its horizontal sides conformably engaged with the top and bottom faces of the front member thereby to rigidly support the blade and to hold the latter against tilting, said horizontal sides of the channel member upon angular adjustments of the blade being engageable with adjacent portions of the top and bottom faces of the angular end members, means to secure the channel member in engagement with the front face of the transverse member and to provide for angular adjustments thereof, means to connect the blade to the frame at an end thereof; horn brackets connecting the ends of the front member of the frame to the front ends of the side members and having perforated ears; perforated brackets connected to the ends of the channel member; a strut perforated and engaged at one end with the brackets of the channel member and having its opposite end perforated and engaged with the ears of the horn brackets, and pins passing through the respective ends of the strut and the perforations of the ears and brackets.

3. An implement of the type set forth, including a frame having side members, a transverse front member, and angular end members between the ends of the transverse member and the front ends of the side members, said transverse and angular end members having vertical front faces and substantially parallel top and bottom faces, a blade at the front of the frame, a channel member having its closed side disposed vertically and secured to the rear of the blade to reinforce same and to engage against said front member, and having its horizontal sides conformably engaged with the top and bottom faces of the front member thereby to rigidly support the blade and to hold the latter against tilting, said horizontal sides of the channel member upon angular adjustments of the blade being engageable with adjacent portions of the top and bottom faces of the angular end members, and means to secure the channel member in engagement with the front face of the transverse member and to provide for angular adjustments thereof, said channel member being provided with upper and lower projections adjacent its ends that engage over and below the top and bottom faces respectively of the angular ends of the frame upon and according to the direction of angular adjustment of the blade.

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