

Dec. 7, 1943.

H. E. PHOENIX
ANGLE BLADE ATTACHMENT

2,336,124

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2 Sheets-Sheet 1

Fig. 1.

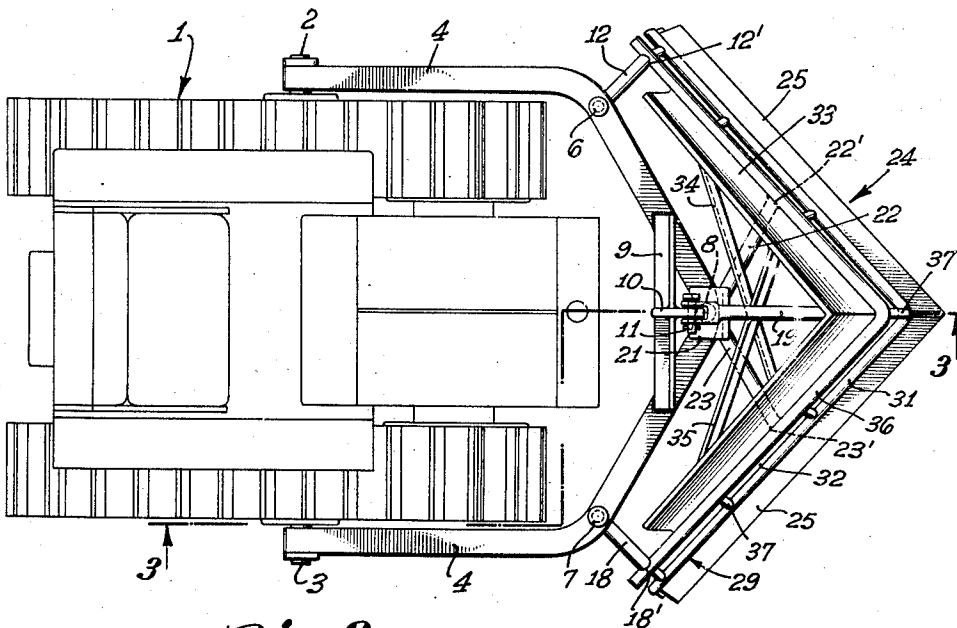
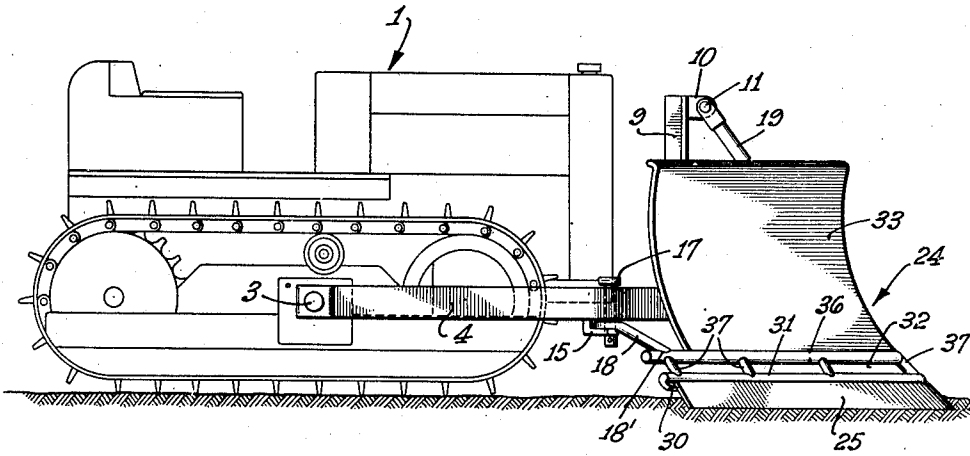


Fig. 2.

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Fig. 3.

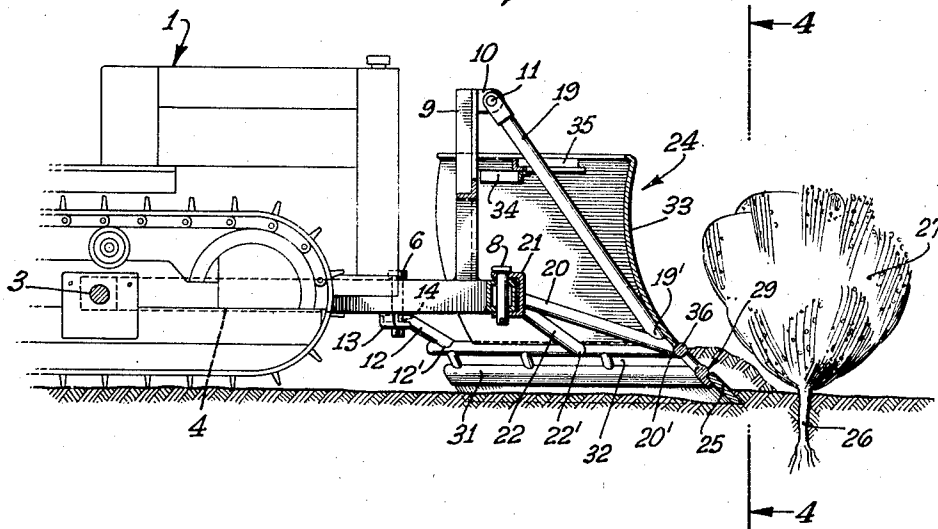


Fig. 4.

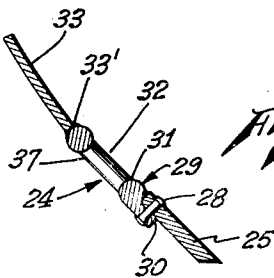
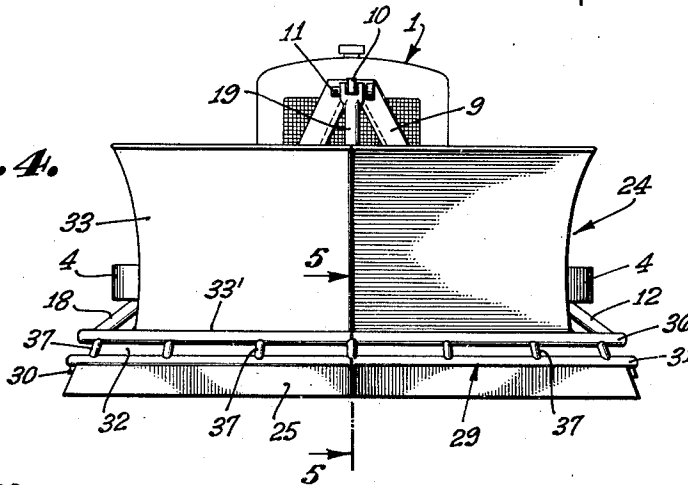


Fig. 5.

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ANGLE BLADE ATTACHMENT

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2 Claims. (Cl. 37-2)

The invention relates to an angle blade attachment for a bulldozer, and particularly to an angle blade attachment suitable for cutting brush in the course of clearing land.

According to prior practice, it has been proposed to scrape the land to be cleared and this has the disadvantage that the dirt and the brush which has been cut are heaped together, making it necessary to later separate the cut brush from the dirt scraped with it, in order to make a separate pile of the brush so that it can be burned.

An object of the present invention is to avoid the disadvantage noted above. This is accomplished by propelling the angle blade slightly under the soil to cut the brush and incidentally to scrape some top soil, and by discharging the soil and brush from the cutter blade in different paths.

For further details of the invention, reference may be made to the drawings, wherein

Fig. 1 is a view in elevation of a tractor having an angle blade attachment according to the present invention.

Fig. 2 is a plan view of the tractor and attachment of Fig. 1.

Fig. 3 is a vertical sectional view on the broken line 3-3 of Fig. 2 looking in the direction of the arrows.

Fig. 4 is a front elevation of the tractor and attachment of Figs. 1 to 3, looking in the direction of the arrows 4-4 in Fig. 3.

Fig. 5 is a partial sectional view on line 5-5 of Fig. 4 on a larger scale.

Referring in detail to the drawings, arrangements are known whereby a tractor such as 1, is provided with trunnions 2, 3 to pivotally support a substantial U shaped tilt frame 4 to which is adapted to be connected various attachments. Also, it is known to use a cable, or hydraulic means not shown, under control of the driver of the tractor 1 for raising and lowering the tilt frame 4. Such a pivotally mounted tilt frame with cable or hydraulic means for raising or lowering it is on the market under the name Le Tourneau. Also, the tilt frame 4, which is commonly in the form of a box channel as shown at 5 in Fig. 3, is provided on opposite sides of the front of the frame with vertical apertures to receive the coupling pins 6 and 7, the front of frame 4 being similarly provided with a vertical aperture to receive the coupling pin 8. Also, the front of frame 4 may be provided with a standard 9 having an apertured lug 10 at the top thereof to receive a coupling pin 11. The post or

standard 9 arises from a base plate 9' resting on and welded or otherwise secured to the branches of the U frame 4. Whatever attachment is to be used with the frame 4 has been provided with a number of coupling devices to be held by the pins 6, 7, 8 and 11. For example, the attachments heretofore employed have been provided with an arm such as 12 adapted to rest on an apertured shelf 13 under frame 4, the end of arm 12 extending underneath the frame 4 and having an aperture 14 through which the pin 6 is adapted to pass to couple the upper end of the arm 12 to the frame 4. A similar apertured shelf 15 on the near side of tilt frame 4 as seen in Fig. 1, is provided to receive the attachment arm 18 which is coupled to frame 4 by the pin 17. Also, the prior arrangements have been provided with an arm such as 19 at the top of the attachment, the upper end of arm 19 being apertured to receive the pin 11 whereby arm 19 is coupled to the lug 10 to support the top of the attachment. Similarly the inside of the middle of the attachment has heretofore been provided with a strut or brace 20 terminating in an U shaped coupling head 21 adapted to embrace the front of the frame 4, the head 21 having apertures to receive the coupling pin 8. The coupling head 21 may have secured thereto a plurality of other struts similar to 20, such as 22 to brace the left side of the attachment and 23 to brace the right side of the attachment.

According to the present invention, the brush cutting tool or implement 24 is in the form of a V shaped cutter blade 25 which in operation is adapted to be supported by the frame 4 a short ways below the surface of the soil as shown in Figs. 1 and 3, in order to cut the trunk such as 26 of mesquite or other brush 27. Blade 25 is secured by rivets or bolts indicated at 28 in Fig. 5 to a blade holder 29 which reinforces blade 25 and extends the full length of the top of the cutter blade 25. The blade holder 29 has a flat portion 30 forming a bearing surface against which the top of the blade 25 rests, the flat portion 30 extending beyond the top of blade 25 and being rounded as shown at 31, and forming a top rail over which the dirt scraped by the blade 25 is adapted to pass, by reason of the fact that slots such as 32 extending the full length across the top edge of the blade 25, are provided by spacing the bottom edge of the mold board 33 above the top edge of cutter blade 25. The mold board 33, of course, serves to deflect the cut brush to either side of the tractor 1 and it comprises an upwardly curved V shaped sheet of metal. The inside of

the mold board 33 may be cross braced by means of angle iron or the like indicated at 34, 35 in Fig. 2. The bottom edge of mold board 33 is welded or otherwise secured to a round rod 36 which is held in spaced relation from the blade holder 29 by means of spaced cross rods indicated at 37. The cross rods 37 are welded or otherwise secured at their opposite ends to the reinforcing rod 36 at the bottom of mold board 33 and to the top of the blade holder 29. The cross rods 37 also serve to prevent brush such as 27 from entering the slot 32, which may be about 6 or 8 inches wide. The rod 36 with the parallel top of blade holder 29 and the cross rods 37 welded thereto comprise a sub frame which is rigidly secured to the tilt frame 4, as the outer ends of the struts 12 22, 20, 23, 18 and 19 are welded or otherwise secured to the rod 36 as indicated at 12', 22', 20', 23', 18' and 19', respectively.

The lower edge of mold board 33 is welded to the top of rod 36 as shown at 33' in Fig. 5, although other types of fastening may be used.

In the operation of the device, the tilt frame is raised or lowered by means not shown and well understood, to follow the contour of the land to keep the lower edge of the cutter blade 25 slightly below the surface of the ground to get a good cutting purchase on the base 26 of the brush 27. Hence, the cutter blade 25 scrapes dirt in the course of cutting the brush 27. The dirt thus scraped is separated from the brush, as the dirt passes through slot 32 over the top of blade 25 to fall back behind the blade 25 in about the same path from which it was removed, while the brush 27 is kept from entering slot 32 because the brush is too small to enter this slot and because of

guards 37, the mold board 33 deflecting the brush 27 and discharging the same in two lines on opposite sides of the tractor.

An advantage of the present invention is that prior to clearing the land, it may be surveyed and stakes set out. The brush cutter of this invention makes it possible to do two things, namely to remove the brush without materially disturbing the contour of the land, and (2) to follow close to the line of surveyor's stakes without disturbing them.

Various modifications may be made in the invention without departing from the spirit of the following claims.

I claim:

1. A brush cutter comprising, a cutter blade, a mold board, a reinforcing strip secured along the bottom edge of said mold board, a reinforcing strip secured along the top edge of said cutter blade, spaced cross members secured to said strips for securing said strips in spaced parallel relation to provide a slot adapted to pass dirt removed by said cutter blade, and means adapted to couple said cutter blade and mold board to a propelling device.

2. A brush cutter comprising an angle blade for cutting brush below the earth's surface, a sub-frame at the top of said blade and having openings for permitting dirt removed by said blade to fall behind said blade and for restricting the passage of brush, a coupling head, struts between said coupling head and said sub-frame, and a cooperating brush deflector above said sub-frame.

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