March 17, 1942. G. R. McINTOSH 2,276,586

BULLDOZER

Filed April 27, 1940

Fig. 1.

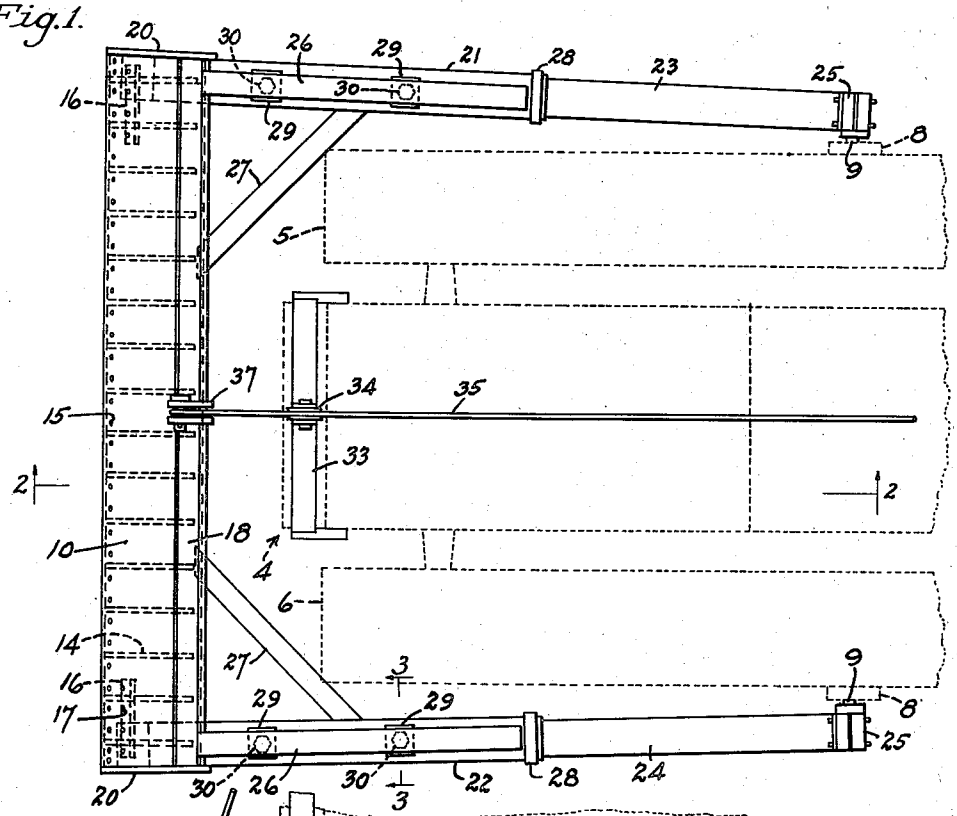


Fig. 2.

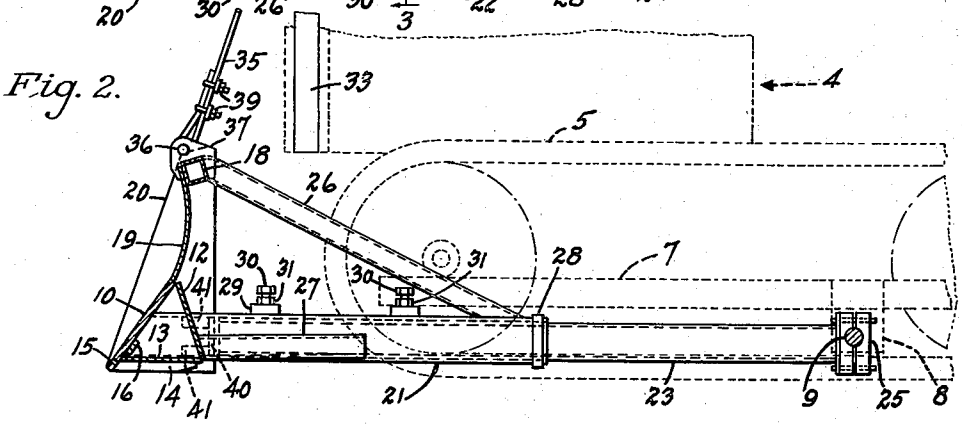
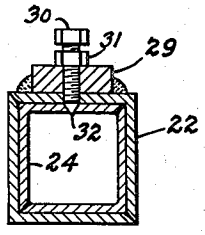


Fig. 3.



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UNITED STATES PATENT OFFICE

2,276,586

BULLDOZER

George R. McIntosh, San Francisco, Calif.

Application April 27, 1940, Serial No. 331,970

1 Claim. (Cl. 37—144)

My invention relates to improvements in that class of machines known in the trade as bulldozers, and the principal object is to provide substantial means for moving dirt and scraping roads and the like, which may be quickly and easily assembled and disassembled for shipping or hauling.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description. However, the drawing merely shows and the following description merely describes an embodiment of the present invention, which is given by way of illustration or example only.

In the drawing, like reference characters designate similar parts in the several views.

Figure 1 is a plan view of an embodiment of my invention applied to a tractor (the tractor is suggested by broken lines).

Figure 2 is a section taken on the line 2—2 of Figure 1, looking in the direction of the arrows.

Figure 3 is an enlarged section taken on the line 3—3 of Figure 1.

Referring more in detail to the drawing, the reference numeral 4 generally designates a tractor provided with tracks 5 and 6. Side frames 7 of the tractor carry plates 8 upon which are mounted trunnions 9. Detailed description and drawings of the tractor are deemed unnecessary, since its construction is well known to those skilled in the art.

The present invention comprises a scraper blade support 10 that is rearwardly inclined with respect to the direction of travel and is braced in such position by a brace 12. A base 13 spans the space between the support 10 and the brace 12 and completes a pyramidal construction (as shown in Figure 2) that is a strong arrangement of parts. Gusset plates 14 support the base 13 and strengthen the blade support 10.

The support 10 is apertured, as shown at 15, for fastening interchangeable and removable cutting blades (not shown) thereto. Plates 16 behind the support 10 afford additional strength and are apertured, as shown at 17, for fastening end scraper plates (not shown).

An angular, hollow beam 18 extends along the top of a moldboard 19 above the scraper blade support 10 and between end plates 20. The end plates aid in providing a pocket at the front of the scraper for holding dirt.

Extending rearward of the scraping mechanism just described, at opposite sides thereof, are female box sections 21 and 22. The inner ends of said box sections are welded to the rear of the pyramidal base hereinbefore described. The outer, open ends of the female sections receive the ends of male beams 23 and 24 respectively. Abutment plates 40 are arranged in the female sections 21, 22, near the inner ends thereof, for end abutment of the male sections 23, 24 therewith. Anchors 41 behind the abutment plates reenforce the abutment plates in their positions. Bearings 25, at the outer ends of the male beams, pivot the scraper mechanism about the trunnions 9.

Vertical braces 26 extend from the hollow beam 18 down to brace the female box sections at the upper side thereof. Horizontal braces 27 extend from the pyramidal construction 12 to the sides of the female box sections. Bands 28 around the ends of the female box sections strengthen such open ends.

Tapped blocks 29 welded on the female box sections 22 provide bearings for cap screws 30. Lock nuts 31 tend to maintain the cap screws in position. The male beam sections 23 and 24 have correspondingly shaped recesses to receive pointed tips 32 of the cap screws.

A yoke 33 upstanding on the front end of the tractor carries a sheave 34 over which passes a cable 35. The forward end of the cable is looped around a bar 36 mounted on plates 37 that are fastened to the hollow beam 18. Said end of the cable is bolted to itself, as shown at 39. The opposite end of the cable is connected to a suitable winch (not shown) on the tractor, so that the blade unit may be raised and lowered at will around the trunnions 9 as pivots. To prepare the present device for use, an interchangeable scraper blade or blades are bolted to the blade support 10 by means of the apertures 15. Separate plates may be used at the ends, where the greatest wear occurs.

For shipping purposes, the present device may be easily and quickly dismantled, by unscrewing the cap screws 30 and separating the telescoping sections 22, 24. At its destination the device may be easily reassembled and mounted on a tractor, by reversing said operation. The hollow, angular telescoping side members, the horizontal and vertical braces and the pyramidal construction at the bottom of the blade support together provide a scraper unit of extra strength and provide a substantially rigid construction for the support of a scraper blade or blades.

It will be noticed from Figure 1 that the telescoping members 23, 24 flare outwardly from the pivotal connections with the tractor, and that

the telescoping members 21, 22, therefore, have angular arrangements with the blade support, other than a right angular arrangement. The braces 26, 27 tend to maintain the telescoping members and the blade support in such arrangement.

While I have illustrated and described what I now regard as the preferred embodiment of my invention, the construction is, of course, subject to modifications without departing from the spirit and scope of my invention. I, therefore, do not wish to restrict myself to the particular form of construction illustrated and described, but desire to avail myself of all modifications which may fall within the scope of the appended claim.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

In a tractor-attached bulldozer of the type including a blade support forwardly and transversely of the tractor, and side beams pivotally connected at their rear portions to the tractor sides and having at their forward portions vertically and horizontally inclined brace members connecting the same with the transverse blade support, forming a rigid U-shaped vertically swingable bulldozer frame, the improvement which consists in forming the side beams in forward and rear sections, the forward sections being in the form of tubes rigidly secured at their forward ends to the blade support and of a length to receive the rear, outer ends of the said brace members, and the rear sections being pivoted at their rear ends to the tractor and having their forward portions telescoping within the forward sections; the said forward sections having an internal abutment plate in each forward section to receive the forward end of the rear section thereagainst, an anchoring member behind each abutment plate to reinforce the abutment plate in its position, and means to rigidly clamp the telescoping portions of the sections together when the rear sections are so engaged with the abutments.

GEORGE R. McINTOSH.