Oct. 22, 1940. L. O. WHITE 2,219,160

COMBINED BULLDOZER AND RIPPER

Filed Oct. 31, 1938

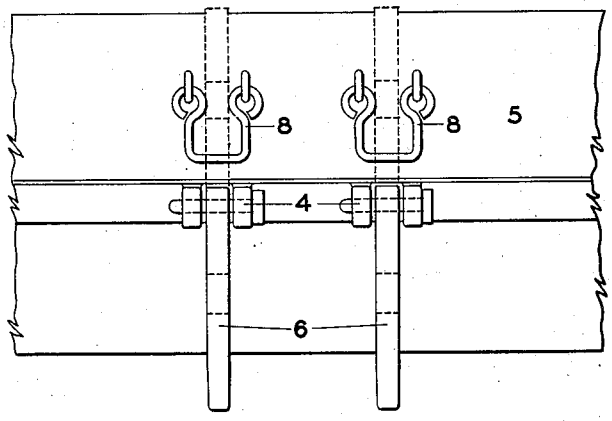


FIG. 1

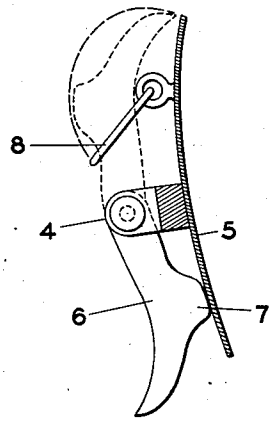


FIG. 2

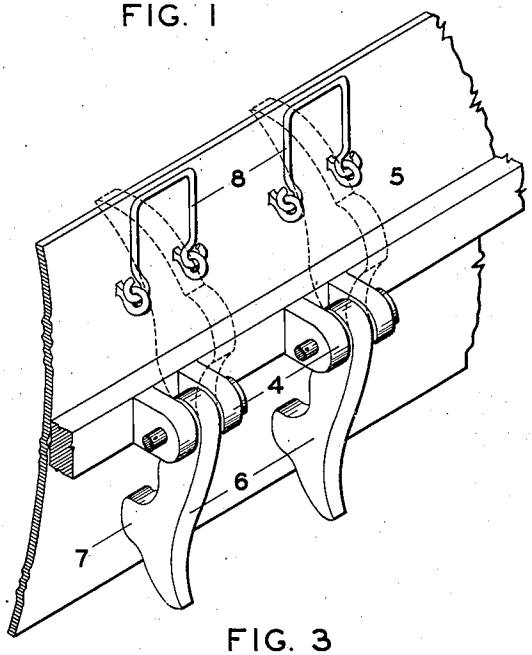


FIG. 3

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COMBINED BULLDOZER AND RIPPER

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Application October 31, 1938, Serial No. 237,960

4 Claims. (Cl. 37—145)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

This application is made under the act of March 3, 1883, as amended by the act of April 30, 1928, and the invention herein described, if patented, may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment to me of any royalty thereon.

This invention relates in general to bulldozers and is more particularly concerned with a novel combination of a bulldozer and a ripper.

This invention has for one of its objects the provision of a device which in combination with any bulldozer blade, permits ripping, without interfering with the positive action of the blade, of surfaces normally impenetrable by the bulldozer blade itself requiring the use of a ripper.

One of the advantages of this invention is that it has a fewer number of parts only one of which is moving. The device is also inexpensive and can be attached to bulldozer blades already on the market.

The following description considered together with the accompanying drawing will disclose this invention more fully, its construction and operation of parts, and further objects and advantages thereof will be apparent.

In the drawing:

Figure 1 is a rear elevational view of a linear fragmentary portion of a bulldozer blade showing an embodiment of my invention mounted thereon.

Figure 2 is a side elevational view of Figure 1.

Figure 3 is an isometric view of Figure 1.

Referring with more particularity to the drawing in which like numerals designate like parts, a plurality of U-brackets 4, 4 are secured in horizontal spaced relation to the rear side of the bulldozer blade 5. To each of these brackets there is hinged a tooth, or ripping member 6, normally projecting below the bulldozer blade and having an optimum shape for entering the surface to be broken. The entering edge considered as the back of the tooth is preferably concave while the front of the tooth is convex, intersecting the concaved portion at the top of the tooth, similar to the general shape of a banana, substantially as shown. However, this invention is not limited to any particular shape of the tooth and other shapes may be employed without departing from the scope of the invention. The shape described is merely illustrative of a satisfactory form. An abutment spacer 7 may form either a part of the tooth or part of the bulldozer blade and provides a bearing surface for the tooth as well as a means for holding it in a proper angular relation with respect to the surface to be broken.

The operation of this invention is as follows:

As the bulldozer blade 5 is lowered to a working position and moved forward by the tractor to which it is attached, the teeth 6, 6 partially revolve about their respective pivots and float or slide behind the blade without affecting the surface, but by reversing the direction of motion of the blade 5, the teeth 6, 6 revolve about their respective pivots in the opposite direction until they come in contact with the bulldozer blade Continued moving of the blade forces the teeth into the surface of the ground. By raising or lowering the bulldozer blade, the desired depth of ripping or loosening of the surface can be accomplished.

While this device will work satisfactorily as above-described, constant floating or dragging of the ripper teeth may cause them to wear unnecessarily. Also, it may develop under certain conditions, such as very tough ground, etc., that it may not be desired to use all of the teeth attached to the blade. To provide for situations of this nature, hinged straps 8, or other similar holding means, are disposed on the back of the blade, one above each of the rippers. By these means the rippers can be individually held out of contact with the ground for any operation of the bulldozer blade. Figure 2 shows in broken lines one of the rippers being held by its corresponding hinged strap.

Having thus described my invention, I claim:

1. A combined bulldozer blade and ripper comprising a bulldozer blade and a plurality of individually hinged teeth secured to the back of and projecting below said blade in spaced relation, whereby the bulldozer blade can be used upon movement in one direction and said teeth can be used independently of said blade upon movement in the opposite direction.

2. In combination with a bulldozer blade a plurality of individually hinged teeth secured on the back of and projecting below said blade and a forwardly projecting abutment spacer on each tooth for holding said teeth in proper operative position against said blade.

3. In combination with a bulldozer blade a plurality of individually hinged ripping teeth disposed on the back of and projecting below the blade, a forwardly projecting abutment spacer on each tooth for holding said teeth in proper operative position against the blade, straps hinged to said blade one above each of said teeth, each strap being adapted to loop over its correspond-

ing tooth when said tooth is elevated in a non-operative position, the point of engagement between the tooth and the strap being below the abutment spacer.

4. An article of manufacture comprising a bulldozer blade, a plurality of individually hinged ripping teeth disposed on the back of and projecting below said blade, a forwardly projecting abutment spacer integral with each tooth for holding said teeth in proper operative position against said blade, loop straps hinged to the back of said blade one above each tooth, each strap being adapted to loop over its respective tooth when the tooth is elevated in an on-operative position and to fall below the abutment spacer of the tooth.

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