April 3, 1956 P. M. HAMBORG 2,740,210

POST PULLER ATTACHMENT FOR TRACTORS

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Fig. 1

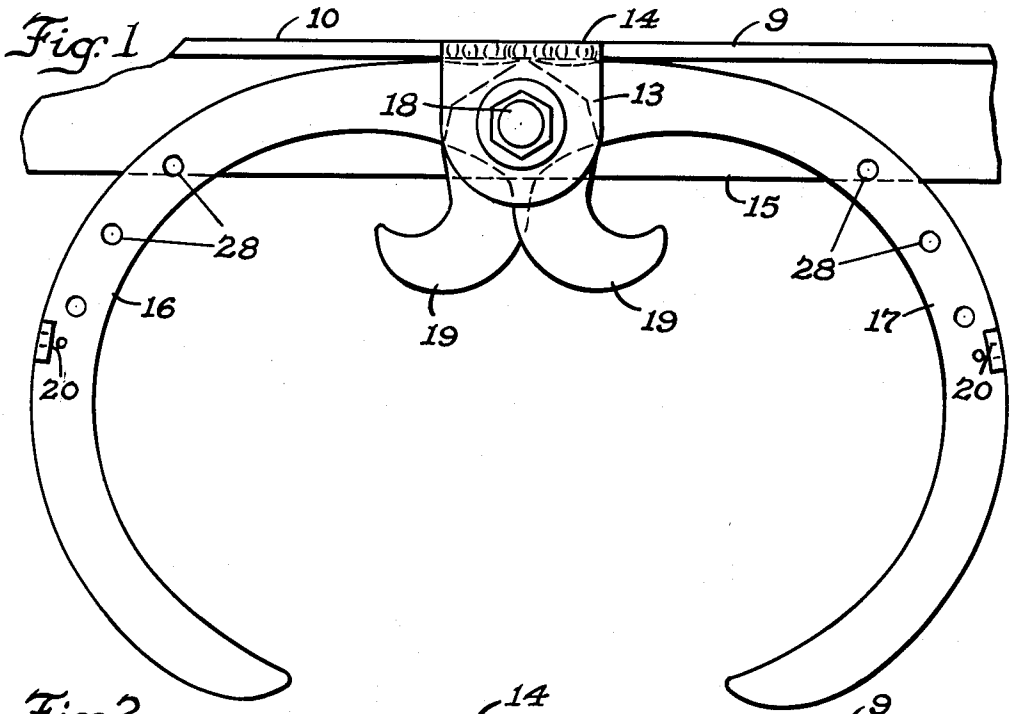
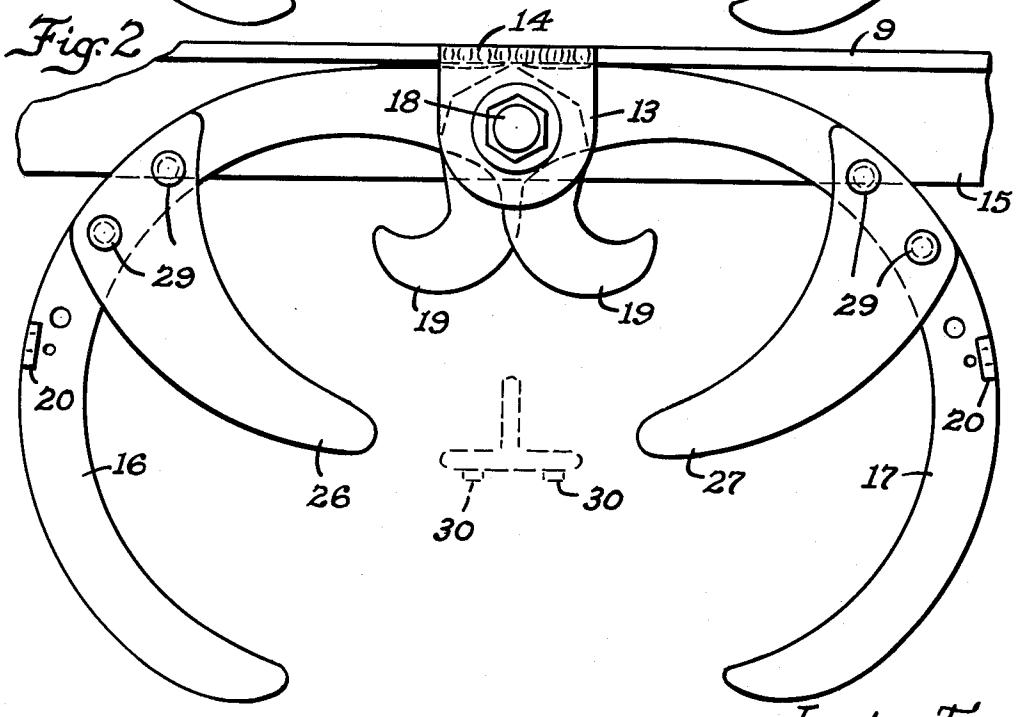


Fig. 2



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Fig. 3

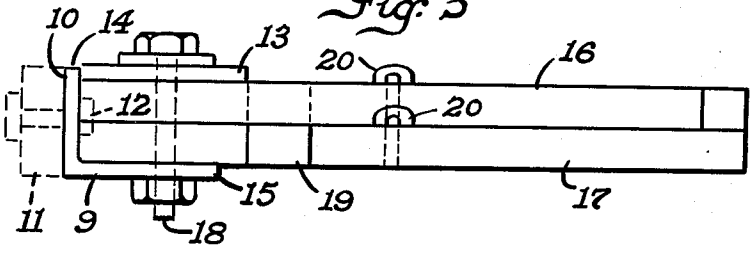


Fig. 4

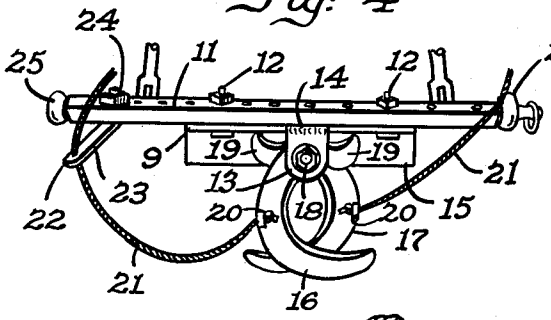


Fig. 5

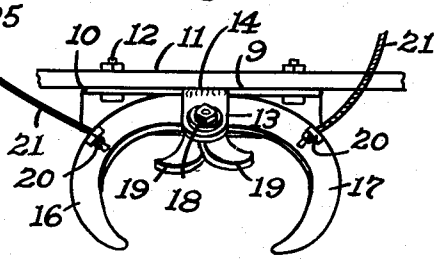


Fig. 6

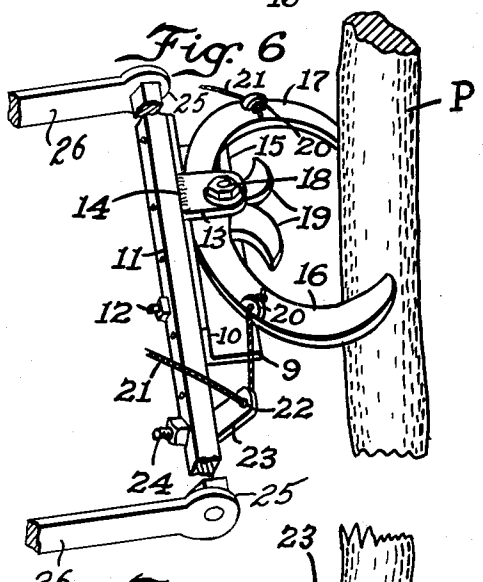


Fig. 7

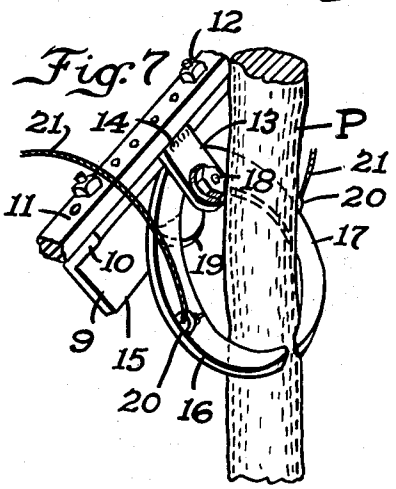
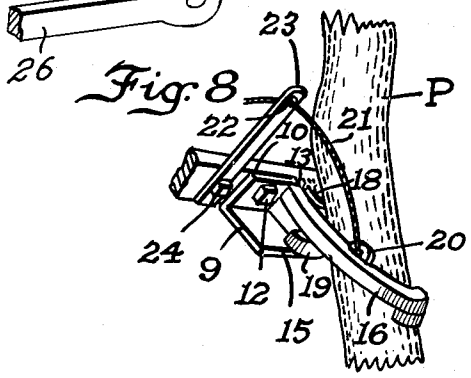


Fig. 8



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POST PULLER ATTACHMENT FOR TRACTORS

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Application May 24, 1950, Serial No. 163,989

9 Claims. (Cl. 37—2)

This invention relates to a new and improved post puller attachment for tractors and the like.

The principal object of my invention is to provide an attachment for the purpose mentioned, designed for easy application to the drawbar on the rear end of a conventional tractor, and consisting of a pair of grapple hooks having cam-shaped extensions on their pivoted end portions, which are so arranged when the hooks are spread open for connection with a post to come into abutment with the post when the tractor is backed up against it, whereby positively to close the hooks automatically on the post and thus make ready for the post to be pulled out upon the forward movement of the tractor, thereby obviating any necessity for the driver getting off the tractor to connect the hooks to a post, and speeding up the post pulling operations all around, the cam-shaped extensions remaining more or less in contact with the post throughout the pulling operation so that the hooks are held closed securely and there is much less likelihood of the post slipping out.

The grapple hooks are carried on a bracket attached to the drawbar, so that the whole assembly tends to swing downwardly by gravity to inclined position when the ropes that are attached to the hooks for remote control from the driver's seat are released after connection of the hooks with the post. The downward inclination is advantageous from the standpoint that the assembly bites into the post on diametrically opposite sides as the tractor moves forward, and there is, therefore, much less likelihood of slippage. The ropes enables the driver to disconnect the hooks from a post after it has been pulled out and to hold the assembly in a substantially horizontal plane with the hooks opened ready to receive a post to be pulled.

Another object is to provide a post pulling attachment in which the grapple hooks are designed to permit fastening auxiliary claws on the shank portions of the hooks intermediate the ends thereof and near enough to their pivoted end portions to better adapt the hooks to the pulling out of steel fence posts, which are conventionally of smaller T-shaped section.

The invention is illustrated in the accompanying drawings, in which—

Fig. 1 is a plan view of a post puller attachment made in accordance with my invention, showing the grapple hooks opened preparatory to connection with a post;

Fig. 2 is a similar view showing auxiliary claws attached to the shank portions of the hooks near their pivoted ends;

Fig. 3 is a side view of Fig. 1, indicating the drawbar in dotted lines;

Fig. 4 is a rear view of the attachment and drawbar assembly showing the hooks as they appear hanging idle;

Fig. 5 is a similar view showing the hooks opened preparatory to being raised for use, and

Figs. 6, 7, and 8 are perspective views illustrating the mode of operation, Fig. 6 illustrating the hooks raised and opened to receive the post, Fig. 7 showing the relative

disposition of the parts intermediate the open position of Fig. 6 and the fully closed post-gripping position of Fig. 8, and Fig. 8 showing the assembly firmly gripping and biting into the post in the pulling operation.

The same reference numerals are applied to corresponding parts throughout the views.

Referring to the drawing and particularly Figs. 1 and 3 to 5, the reference numeral **9** designates an elongated angle iron bracket, which is fastened by its vertical flange **10** to the drawbar **11** of a tractor by means of bolts **12**. A lug **13** is welded, as at **14**, to the upper edge of the flange **10** at the middle of the bracket in substantially parallel relation to the horizontal flange **15**. A pair of grapple hooks **16—17** are pivotally mounted on the bracket **9** on a vertical bolt **18** entered through registering holes in the lug **13** and flange **15**. Each of the hooks **16—17** has a cam-shaped extension **19** on its pivoted end portion, which are so arranged when the hooks are spread open for connection with a post P to come into abutment with the post when the tractor is backed up against it. This positively causes the hooks to swing about their pivot **18** in a closing direction and thus automatically connect the hooks to the post and make ready for the post to be pulled out upon forward movement of the tractor, thereby obviating any necessity for the driver getting off the tractor to connect the hooks to the post and speeding up the post pulling operations all around. Perforated lugs or ears **20** are provided on the hooks **16—17** approximately midway of their length, and to each of these ears is attached a rope **21** for remote control of the hooks **16—17** and the assembly as a whole from the driver's seat, the ropes extending laterally from the hooks **16—17** in opposite directions, as indicated in Figs. 4 and 5, and threaded through suitable guides (not shown) provided therefore on the rear of the tractor, whereby the ropes may be used to pull the hooks apart to the wide-open position shown in Figs. 1, 5, and 6, and at least one of the ropes beign extended through an eye **22** in the outer end of an upwardly reaching radius arm **23** that is bolted, as at **24**, to the drawbar **11**, whereby also to help to swing the assembly upwardly relative to the drawbar bearings **25** that are provided on arms **26** projecting rearwardly from the rear portion of the tractor, as shown in Fig. 6.

In operation, the driver pulls on ropes **21** to swing the hooks **16—17** apart and at the same time swing the whole assembly up to an approximately horizontal plane ready for connection with the post to be pulled. This can be done as the tractor is being maneuvered back toward the post so that there is no time lost. The driver can look down at the hooks as the tractor is backed toward the post, so that there will be very few times that a post to be pulled is missed on the first back-up. The opened-up hooks **16—17** are also spread enough to allow some leeway in steering. See Fig. 6 When the post P comes into abutment with the cam-shaped extensions **19**, they swing the hooks **16—17** in a closing direction to embrace the post. Hence, the hooks **16—17** are closed. The driver releases ropes **21** allowing the assembly to swing downwardly by gravity approximately to the position shown in Fig. 7. If at this point the tractor is backed up a trifle, the cam-shaped extensions **19** will be pressed into firm contact with the post and cause the grapple hooks **16—17** to be closed still farther, as appears in Fig. 8, and then if the tractor moves forward the post is tilted forward and the assembly bites into the post on diametrically opposite sides and there is accordingly very little likelihood of slippage, the cam-shaped extensions **19** by their continued contact with the post on the forward side serving to keep the hooks **16** and **17** closed securely on the rearward side of the post. The hooks **16—17** are therefore forced closed more and

more as the post P presses more and more heavily against the cam-shaped extensions **19** as the tractor moves forward. The hooks **16—17**, which are either heavy malleable iron castings or steel forgings, "bite" into the post on the outer side at a lower elevation, and the lug **13** "bites" into the post on the inner side at a higher elevation in the first portion of the forward travel of the tractor, as indicated in Fig. 8, thereby reducing likelihood of slippage. The greater the pull, the more the assembly bites into the post. As soon as a post is pulled out, the tractor can be backed up a little bit, to help disengage the post from the hooks, and then the ropes **21** can be pulled so as to open the hooks **16—17** and release the post and thus make ready for the next post pulling operation. It is evident from the above that it is not necessary for the driver to get off the tractor to connect the grapple hooks to or disconnect the same from a post. That accounts for a big saving in time and also avoids fatigue for the operator.

In cases where T-section steel fence posts, like that indicated at P' in Fig. 2, are to be pulled out, the same attachment can be used if auxiliary claws **26** and **27** are mounted on the shank portions of the grapple hooks **16** and **17** near their pivoted end portions, holes **28** being provided in said shanks for the reception of bolts **29** for fastening these claws detachably. These claws are adapted to engage under the projecting lugs **30** by means of which wire fencing is secured to the fence posts, whereby slippage is prevented in the pulling out of the posts.

It is believed the foregoing description conveys a good understanding of the objects and advantages of my invention. The appended claims have been drawn to cover all legitimate modifications and adaptations.

I claim:

1. A post pulling attachment for a tractor or the like, comprising a drawbar mounted on the tractor for pivotal movement on a horizontal axis, a bracket secured to said drawbar, a pair of opposed grapple hooks of a size big enough to embrace a post to be pulled and having integral pivotal end portions pivotally mounting the hooks on the bracket, and an extension of appreciable length on the pivotal end portion of each hook extending beyond the pivot, the extensions being arranged to be engaged and moved by contact with the post to be pulled, whereby said hooks are self-actuated in closing on a post, said extensions each being at such an angle relative to the related pivotal end portion so that the extensions are disposed in rearwardly diverging relation toward the opening betwen the free ends of the hooks when the hooks are spread apart to receive a post.

2. A post pulling attachment as set forth in claim 1, including means extending from the tractor and connected to each hook for pulling said hooks to spread-open relationship.

3. A post pulling attachment as set forth in claim 1, wherein said bracket is supported on the drawbar so as to tend to swing downwardly by gravity to a downwardly inclined position, said attachment including means extending from the tractor and connected to said hooks for pulling the same to spread-open relationship, said means being so arranged that the bracket and hooks are also swung upwardly to a substantially horizontal position coincident with the opening of the hooks and held in such position so long as the opening pull on the hooks is not relaxed.

4. A post pulling attachment as set forth in claim 1, including a pair of auxiliary claws on said grapple hooks intermediate the ends thereof adapted to embrace a post of smaller cross-section to be pulled than can be embraced closely by the grapple hooks.

5. A post pulling attachment as set forth in claim 1, including a pair of auxiliary claws on said grapple hooks intermediate the ends thereof adapted to embrace a post of smaller cross-section to be pulled than can be embraced closely by the grapple hooks, and means connected to each hook outwardly from the auxiliary claw for pulling said hooks to spread-open relationship.

6. A post pulling attachment as set forth in claim 1, including a pair of auxiliary claws on said grapple hooks intermediate the ends thereof adapted to embrace a post of smaller cross-section to be pulled than can be embraced closely by the grapple hooks, said bracket being supported on the drawbar so as to tend to swing downwardly by gravity to a downwardly inclined position, said attachment including means connected to said hooks for pulling the same to spread-open relationship, said means being so arranged that the bracket and hooks are also swung upwardly to a substantially horizontal position coincident with the opening of the hooks and held in such position so long as the opening pull on the hooks is not relaxed.

7. In a grapple device applicable to a vehicle that is to do the pulling of the thing grappled, a pair of grapple hooks pivoted on a common axis on a support on the vehicle, and an extension of appreciable length on the pivotal end portion of each hook extending beyond the the pivot onto the other side of the pivot and projecting toward the opening between the free ends of the hooks opened for grappling, but curved away from said opening, whereby the extensions are arranged to be engaged and moved to close said hooks by push contact with the thing to be grappled, the support for the hooks carrying the same on an upright pivotal axis in the coupling operation, but said support being carried on the vehicle with freedom to swing downwardly by gravity to a depending position, and means connected to said hooks for pulling the same to spread-open relationship, said means being so arranged that the support and hooks are also swung upwardly to a substantially horizontal position coincident with the opening of the hooks and held in such position so long as the opening pull on the hooks is not relaxed.

8. In a grapple device applicable to a vehicle that is to do the pulling of the thing grappled, a pair of grapple hooks pivoted on a common axis on a support on the vehicle, and an extension of appreciable length on the pivotal end portion of each hook extending beyond the pivot onto the other side of the pivot and projecting toward the opening between the free ends of the hooks opened for grappling, but curved away from said opening, whereby the extensions are arranged to be engaged and moved to close said hooks by push contact with the thing to be grappled, and a pair of auxiliary claws on said grapple hooks intermediate the ends thereof adapted to embrace a thing of smaller cross-section to be pulled than can be embraced closely by the grapple hooks.

9. In a grapple device applicable to a vehicle that is to do the pulling of the thing grappled, a pair of grapple hooks pivoted on a common axis on a support on the vehicle, and an extension of appreciable length on the pivotal end portion of each hook extending beyond the pivot onto the other side of the pivot and projecting toward the opening between the free ends of the hooks opened for grappling, but curved away from said opening, whereby the extensions are arranged to be engaged and moved to close said hooks by push contact with the thing to be grappled, a pair of auxiliary claws on said grapple hooks intermediate the ends thereof adapted to embrace the thing to be grappled when of smaller girth than can be embraced closely by said grapple hooks, the support for the hooks carrying the same on an upright pivotal axis in the coupling operation, but said support being carried on the vehicle with freedom to swing downwardly by gravity to a depending position, and means connected to said hooks for pulling the same to spread-open relationship, said means being so arranged that the support and hooks are also swung upwardly to a substantially horizontal position coincident with the open-

ing of the hooks and held in such position so long as the opening pull on the hooks is not relaxed.

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