Sept. 18, 1951 B. A. CHAMBERS 2,568,540

POST SETTER

Filed April 3, 1950 2 Sheets-Sheet 1

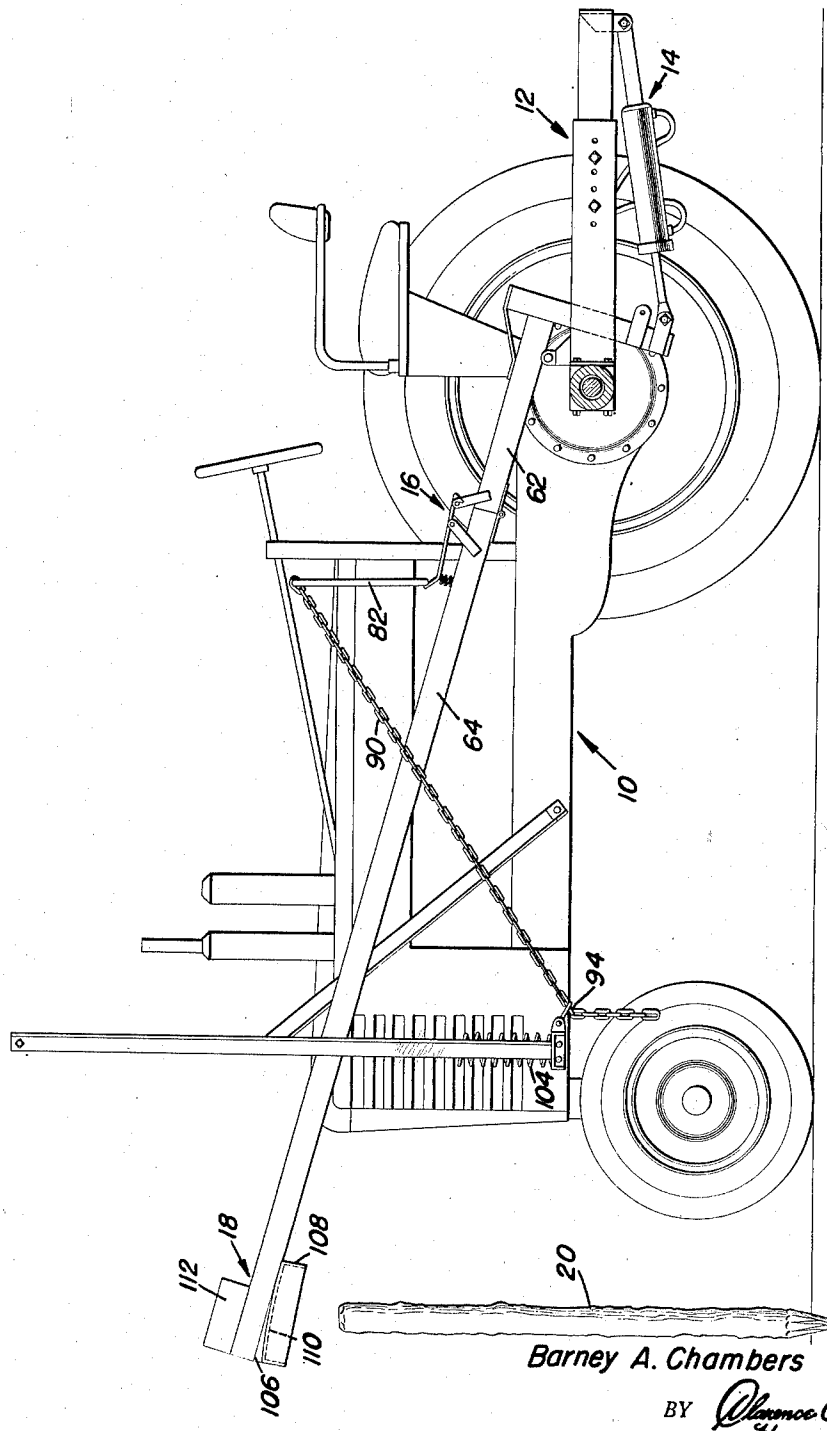


Fig. 1

Barney A. Chambers INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson Attorneys

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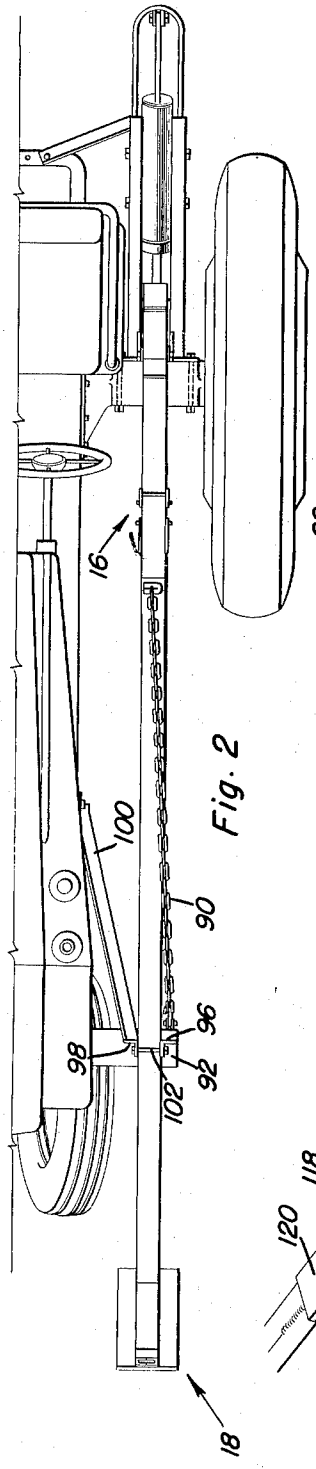


Fig. 2

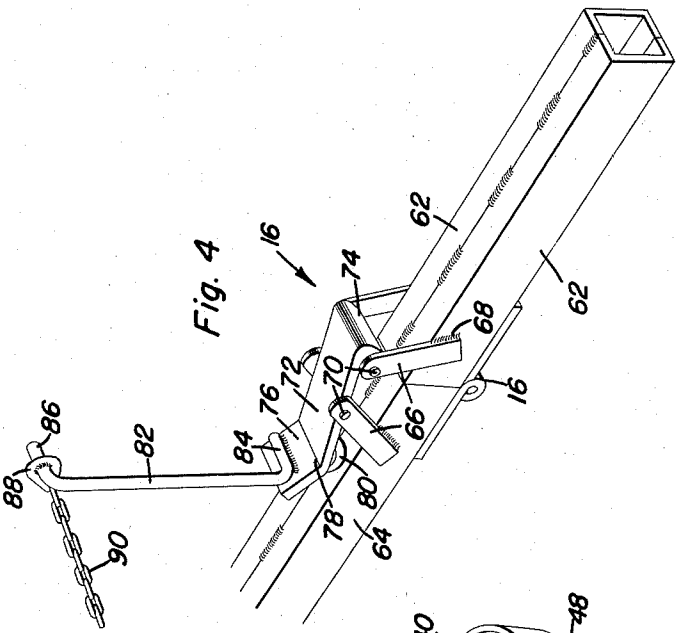


Fig. 4

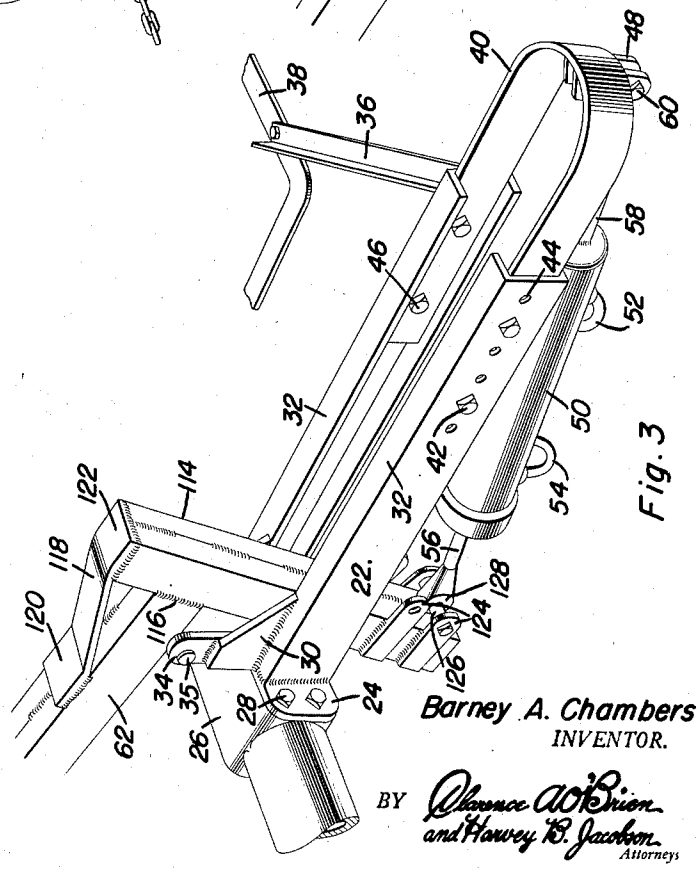


Fig. 3

Barney A. Chambers
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

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POST SETTER

Barney A. Chambers, Milam, Tex.

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10 Claims. (Cl. 61—74)

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The present invention relates to post setters and more particularly to the type adapted to be mounted on a tractor and actuated by the power of the tractor.

An object of this invention is to provide a driving weight for attachment to a driving arm with which a fence post may be driven into the ground.

A further object of this invention resides in the provision of novel means for lifting the arm to raised position, for tripping the driving arm when at raised position, and for preventing the driving arm from swinging past a predetermined point in its downstroke.

A still further object of this invention resides in the novel arrangement of the various means of the invention.

Another object of this invention resides in provision of weight for driving posts that will not tend to split the posts.

Various other objects and advantages will be apparent from the detailed description to follow. In the description as well as in the claims, parts are at times designated by particular names. However, such nomenclature is employed merely for convenience and is intended to be as generic in its application to analogous parts as the prior art will permit.

The best form in which I have contemplated applying my invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a vertical side view of the present invention mounted on a tractor;

Figure 2 is a horizontal top plan view of the post setter in place on the tractor of Figure 1;

Figure 3 is a detail perspective view of the hydraulic cylinder, piston, lever, and means for mounting these elements in cooperative relation; and,

Figure 4 is a detail perspective view of the particular tripping mechanism employed in the present invention and details of the double channel welded arms.

Referring more particularly to the drawings wherein like numerals designate like parts, numeral 10 designates generally the tractor to which the present invention is attached and from which the power for actuating the device is received. 12 designates generally the supporting means, 14 the hydraulic actuating means, 16 the tripping mechanism, 18 the weight attachment, and 20 a post to be driven by the present invention.

Looking now at Figure 3, wherein the details of the hydraulic actuating means and the supporting means are shown, a pair of members 22, preferably channel iron, having end flanges 24

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secured thereto, are fixed to the tractor axle housing 26 by bolts 28 through the end flanges 24. Each of the members 22 have support flanges 30 on their upper surfaces 32 and each of the support flanges has a journal element 34 fixed thereto. The outer end of the support 12 has an angle iron 36 attached thereto for support with respect to a tractor draw bar 38. A U-shaped iron strap 40 has its legs adjustably secured to the support members 22 as by bolts 42 passing through holes 44 in the base of the channel members, and nuts 46. Secured to the strap 40 at the bend are a pair of journal members 48.

The hydraulic actuating means 14 consists of a cylinder having fluid pressure inlet hose 52 an outlet house 54 connected thereto for actuating a piston therein and thus moving the plunger 56 attached to the piston. One end of the cylinder 50 is mounted for pivotal movement with respect to the journal members 48 through the medium of an arm 58 secured to the cylinder end and pivotally mounted on the bolt 60 passing through the journal members.

Looking now at Figure 4 wherein the details of the tripping mechanism 16 of the invention are shown, 64 designates the driving arm and 62 refers to the arm extension. The two arms are connected to each other by a hinge 16. The sides of the arms 62 and 64 each have secured thereto a stirrup consisting of a pair of flat elements 66 shown welded to the arms at one end 68 and having a pin 70 mounted in the other ends. Pivotally mounted on the pin 70 of the driving arm is a tripping plate 72 having a downwardly extending flange 74 adapted to overlie the pin 70 of the arm extension, and having an upwardly angularly disposed portion 76. Disposed below the bend 78 in the tripping plate is a coil spring 80 for normally urging the flange 74 into engagement with the pin 70. A steel rod 82 has its ends bent at right angles and one of its ends 84 secured to the portion 76. The other end 86 has an end link 88 of a chain 90 secured thereto. The other end of the chain 90 is adjustably connected to a channel member 92 which in turn is mounted on the frame of the tractor.

As seen best in Figure 1 the length of chain connecting the rod 82 to the frame is predetermined by selecting an intermediate link 94 for connection to member 92. A pair of guides 96 and 98 are provided for guiding the driving arm 64. An angle iron brace 100 extends from guide 98 to the frame of the tractor 10. The tops of the guides 96 and 98 are bolted together by bolt 102. A spring 104 is positioned between the guides

and on the member 92 for a purpose hereinafter described.

At the outer end of the driving arm 64 a weight 18 is attached. This weight consists of a hollowed impact element 108 angularly positioned relative to the underside of the arm by a spacer 106. The impact element 108 has a curved wall 110 which is adapted to strike the upper end of the post 20 without splitting it. The impact weight 112 is fixed upon the upper side of the arm 64 and it has been found that a weight of approximately 150 pounds is optimum for this purpose.

Looking again at Figure 3, the arrangement of the lever connection between the hydraulic actuating means and the extension arm will be described. A downwardly extending lever arm 114 is secured at one side to the outer end of the arm extension 62, as by weld 116. A brace 118 angularly disposed with respect to the arm and lever has its two parallel end portions 120 and 122 fixed to the arm and lever, respectively. The lower end of the lever 114 has two pairs of journal members 124 with a journal bolt 126 connected to one pair. The end 128 of the plunger 56 is pivotally mounted on the journal bolt 126. The arm 62 has a bolt 35 secured to its underside and is pivotally mounted on the journal elements 34.

As is readily seen, the arrangement is adapted to receive piston and plunger combinations of varying size by simply securing the strap 40 in a convenient position on the support members 22 and connecting the plunger to either of the journals 124.

The operation of the present invention is as follows:

A post is placed where desired and manually held there. The tractor is then positioned with the concaved impact member in line with the top of the post. The hydraulic actuating means is then supplied with fluid pressure from the tractor, causing the plunger to extend and pivoting the lever and extension arm attached thereto on the bolt journaled on the support members. With the tripping mechanism in the position shown in Figure 4, it will be apparent that the driving arm will angularly move with respect to the tractor but will remain in axial alignment with the extension arm. Upon reaching a predetermined height the chain will become taut, and continued pivoting of the extension arm will cause the chain to pivot the tripping plate unlatching the flange from the pin on the stirrup of the extension arm. Thus, the driving arm will be free to pivot with respect to the extension arm by the hinge means and the weight will then strike the post driving it into the ground.

If the tractor has been so positioned that the concaved impact member misses the post the arm will strike a spring located between the guides to absorb the shock and prevent damage to the tractor.

As will be seen by an inspection of the drawings a device has been provided that can easily be made from channel, angle, and strap iron members. The arms may be easily constructed by placing a pair of channel iron members with their edges facing each other and welding along the joint.

Some changes may readily be made in the construction and arrangement of the parts of this device without departing from the real spirit and purpose of the invention, and the claims are intended to cover any modified forms of structure which may reasonably be included within their scope without sacrificing any of the advantages thereof.

Having described the invention, what is claimed as new is:

1. A post setter comprising: an arm having a driving weight attached at one end an arm extension connected to the said first mentioned arm by hinge means, hinge locking means maintaining said hinge means inoperative, both of said arms mounted for angular movement on a tractor, means for actuating the angular movement of said arms, means for tripping the hinge locking means to pivot said first mentioned arm with respect to said arm extension to release said weight and arm for impact movement.

2. A post setter comprising: an arm having a driving weight attached at one end and an arm extension connected to the said first mentioned arm by hinge means, hinge locking means maintaining said hinge means inoperative, both of said arms mounted for angular movement on a tractor, means for actuating the angular movement of said arms, means for tripping the hinge locking means to pivot said first mentioned arm with respect to said arm extension to release said weight and arm for impact movement, in which said actuating means comprises a hydraulic cylinder and plunger, said plunger connected to said arm extension by a lever means, said plunger actuated by fluid pressure provided by the tractor.

3. A post setter comprising: an arm having a driving weight attached at one end and an arm extension connected to the said first mentioned arm by hinge means, hinge locking means maintaining said hinge means inoperative, both of said arms mounted for angular movement on a tractor, means for actuating the angular movement of said arms, means for tripping the hinge locking means to pivot said first mentioned arm with respect to said arm extension to release said weight and arm for impact movement, in which said tripping means comprises a first stirrup member secured to said first mentioned arm, a second stirrup member secured to said arm extension, said stirrups being in juxtaposition to said hinge means, an angular member resiliently engaging said first-mentioned arm and being provided with a flange at one end, said angular member pivotally secured to said first stirrup member and adapted to have said flange overlying said second stirrup member, and means connecting the other end of said angular member to said tractor for tripping said flange from said second stirrup member and permitting said weight and arm to drop.

4. A post setter comprising: an arm having a driving weight attached at one end and an arm extension connected to the said first mentioned arm by hinge means, hinge locking means maintaining said hinge means inoperative, both of said arms mounted for angular movement on a tractor, means for actuating the angular movement of said arms, means for tripping the hinge locking means to pivot said first mentioned arm with respect to said arm extension to release said weight and arm for impact movement, in which said weight has a concavity at its lower face adapted to strike the post.

5. A post setter comprising: an arm having a driving weight attached at one end and an arm extension connected to the said first mentioned arm by hinge means, hinge locking means maintaining said hinge means inoperative, both of said arms mounted for angular movement on a

tractor, means for actuating the angular movement of said arms, means for tripping the hinge locking means to pivot said first mentioned arm with respect to said arm extension to release said weight and arm for impact movement, and spring means on said tractor adapted to engage said first mentioned arm when said weight reaches a predetermined position.

6. A post setter comprising: an arm having a driving weight attached at one end and an arm extension connected to the said first mentioned arm by hinge means, hinge locking means maintaining said hinge means inoperative, both of said arms mounted for angular movement on a tractor, means for actuating the angular movement of said arms, means for tripping the hinge locking means to pivot said first mentioned arm with respect to said arm extension to release said weight and arm for impact movement, and in which the means for mounting the arms for angular movement on the tractor consists of a pair of members secured to the tractor axle housing, a pair of support flanges fixed to said members, a roller fixed to said arm extension and journaled in said support flanges.

7. A post setter comprising: an arm having a driving weight attached at one end and an arm extension connected to the said first mentioned arm by hinge means, hinge locking means maintaining said hinge means inoperative, both of said arms mounted for angular movement on a tractor, means for actuating the angular movement of said arms, means for tripping the hinge locking means to pivot said first mentioned arm with respect to said arm extension to release said weight and arm for impact movement, and in which the means for mounting the arms for angular movement on the tractor consists of a pair of members secured to the tractor axle housing, a pair of support flanges fixed to said members, a roller fixed to said arm extension and journaled in said support flanges, an adjustable strap fixed to the outer ends of said members, a downwardly extending lever arm fixed to the outer end of said arm extension and positioned between said pair of members, a hydraulic cylinder fixed to said strap for pivotal movement, a plunger in said cylinder having its outer end adjustably and pivotally secured to said lever at its lower end, and means supplied by the tractor for actuating said cylinder and piston.

8. A post setter comprising: an arm having a driving weight attached at one end and an arm extension connected to the said first mentioned arm by hinge means, hinge locking means maintaining said hinge means inoperative, both of said arms mounted for angular movement on a tractor, means for actuating the angular movement of said arms, means for tripping the hinge locking means to pivot said first mentioned arm with respect to said arm extension to release said weight and arm for impact movement, and in which the means for mounting the arms for angular movement on the tractor consists of a pair of members secured to the tractor axle housing, a pair of support flanges fixed to said members, a roller fixed to said arm extension and journaled in said support flanges, in which said tripping means comprises a first stirrup member secured to said first mentioned arm, a second stirrup member secured to said arm extension, said stirrups being in juxtaposition to said hinge means, an angular member resiliently engaging said first mentioned arm and being provided with a flange at one end, said angular member pivotally secured to said first stirrup member and adapted to have said flange overlying said second stirrup member, and means connecting the other end of said angular member to said tractor for tripping said flange from said second stirrup member and permitting said weight and arm to drop.

9. A post setter comprising: an arm having a driving weight attached at one end and an arm extension connected to the said first mentioned arm by hinge means, hinge locking means maintaining said hinge means inoperative, both of said arms mounted for angular movement on a tractor, means for actuating the angular movement of said arms, means for tripping the hinge locking means to pivot said first mentioned arm with respect to said arm extension to release said weight and arm for impact movement, and in which the means for mounting the arms for angular movement on the tractor consists of a pair of members secured to the tractor axle housing, a pair of support flanges fixed to said members, a roller fixed to said arm extension and journaled in said support flanges, an adjustable strap fixed to the outer ends of said members, a downwardly extending lever arm fixed to the outer end of said arm extension and positioned between said pair of members, a hydraulic cylinder fixed to said strap for pivotal movement, a plunger in said cylinder having its outer end adjustably and pivotally secured to said lever at its lower end, and means supplied by the tractor for actuating said cylinder and piston, in which said tripping means comprises a first stirrup member secured to said first mentioned arm, a second stirrup member secured to said arm extension, said stirrups being in juxtaposition to said hinge means, an angular member resiliently engaging said first mentioned arm and being provided with a flange at one end, said angular member pivotally secured to said first stirrup member and adapted to have said flange overlying said second stirrup member, and means connecting the other end of said angular member to said tractor for tripping said flange from said second stirrup member and permitting said weight and arm to drop.

10. A post setter comprising: an arm having a driving weight attached at one end and an arm extension connected to the said first mentioned arm by hinge means, hinge locking means maintaining said hinge means inoperative, both of said arms mounted for angular movement on a tractor, means for actuating the angular movement of said arms, means for tripping the hinge locking means to pivot said first mentioned arm with respect to said arm extension to release said weight and arm for impact movement, and in which said arms are formed from a pair of channel members fixed to each other by weld.

BARNEY A. CHAMBERS.

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