March 8, 1955 J. B. RICHARDSON 2,703,479

PORTABLE POST DRIVER

Filed Dec. 17, 1951

Fig. 1

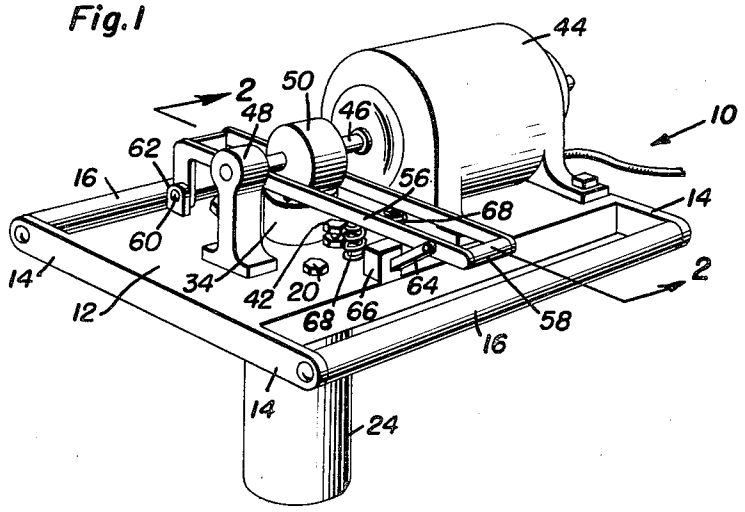


Fig. 2

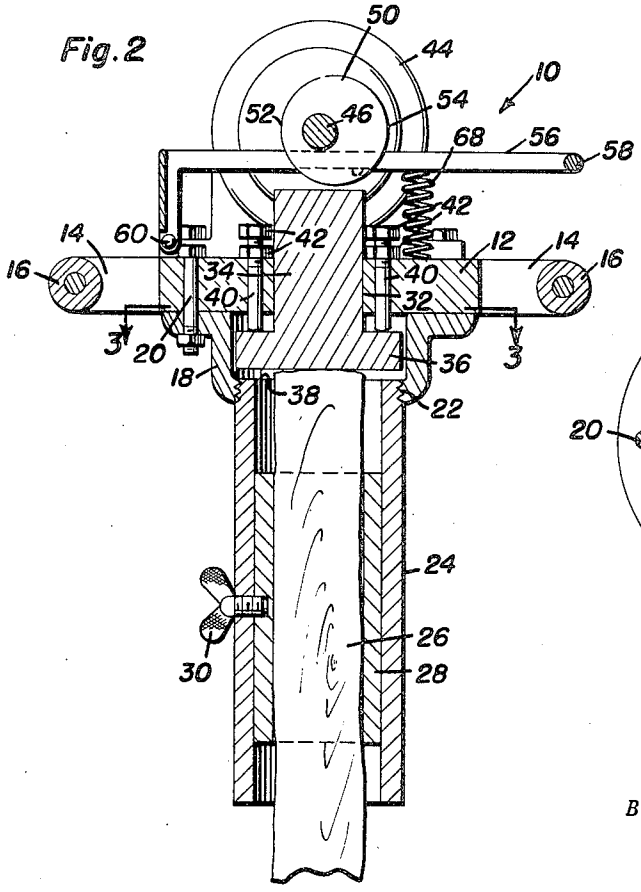
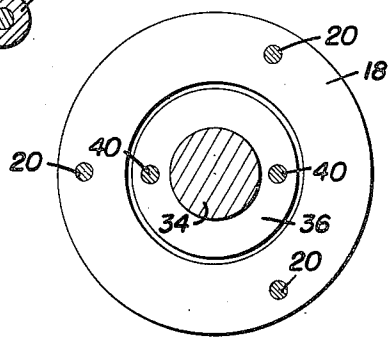


Fig. 3



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PORTABLE POST DRIVER

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4 Claims. (Cl. 61—76)

This invention relates to new and useful improvements and structural refinements in mechanical devices for driving posts into the ground, particularly fence posts, or the like, and the principal object of the invention is to provide a portable device of the character herein described, which may be quickly and easily applied to a post, which may be conveniently controlled so as to effect the post driving operation in a series of successive impacts, and which includes means for accommodating posts of different diameters.

Some of the advantages of the invention reside in its simplicity of construction, in its convenient and expeditious operation and in its adaptability to economical manufacture.

With the above more important objects and features in view, and such other objects and features as may become apparent as this specification proceeds, the invention consists essentially of the arrangement and construction of parts as illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of the invention per se;

Figure 2 is a vertical sectional view, taken substantially in the plane of line 2—2 of Figure 1 and illustrating the invention applied to a post, and

Figure 3 is a horizontal sectional view, taken substantially in the plane of the line 3—3 in Figure 2.

Like characters of reference are employed to designate like parts in the specification and throughout the several views.

Referring now to the accompanying drawings in detail, the invention consists of a portable post driver which is designated generally by the reference character **10** and embodies in its construction a substantially horizontal platform **12** which is provided at opposite longitudinal edges thereof with pairs of ears **14** carrying parallel handles **16**, whereby the entire device may be manually supported.

A flanged adapter **18** is secured to the underside of the platform **12** by suitable screws **20** and has a screw threaded portion **22** in which is secured the upper end of a tubular post receiving socket **24**.

The post to which the invention is applied is indicated at **26**, and it is to be noted that a tubular insert **28** is slidably and removably positioned in the socket **24** and is sustained therein by a set screw **30**, so that by employing inserts **28** of different wall thicknesses, the socket **24** may accommodate posts of different diameters. Needless to say, if the diameter of the post **26** is substantially equal to the inside diameter of the socket **24**, the insert **28** is not employed.

The platform **12** is provided with a circular aperture or opening **32** which is coaxial with the socket **24** and slidably accommodates a cylindrical anvil **34**, having an enlarged head **36** provided at the lower end thereof. The upper end of the socket **24** affords an annular seat **38** which is spaced downwardly from the underside of the platform **12** and the head **36** is reciprocable in the space between the seat **38** and the platform, as will be hereinafter more fully apparent.

The upward sliding movement of the anvil **34** is limited by adjustable studs **40** which extend downwardly through the platform **12** and are provided at their upper ends with suitable lock nuts **42**, the lower ends of the studs **40** being engageable with the head **36** to provide adjustable stop means for the anvil at the upper end of its stroke. At the lower end of its stroke, the head **36** of

the anvil **34** is engageable with the seat **38**, as will be clearly apparent.

A suitable electric motor **44** is mounted on the upper surface of the platform **12**, the armature shaft **46** of the motor being journaled in an auxiliary bearing **48** and carrying a cam **50** which is disposed immediately above the anvil **34**. The cam **50** has a relatively low lobe **52** and a relatively high lobe **54** at the diametrically opposite sides thereof, and it is to be observed that when the head **36** of the anvil **34** is in abutment with the stop screws **40**, the cam **50** is disengaged from the anvil, as shown in Figure 2.

When the invention is placed in use it is applied to the fence post **26** so that the latter is slidably received in the socket **24**, or the insert **28**, as the case may be, and with the head **36** abutting the screws **40** and the cam **50** disengaged from the anvil **34**, the motor **44** is energized so as to rapidly rotate the cam. When the cam is in motion, the relatively high lobe **54** thereof will impact the upper end surface of the anvil **34** and while the inherent inertia of the entire apparatus will tend to sustain the platform **12** stationary, so to speak, in the hands of the user, the anvil **34** will be driven downwardly, thus driving the post **26** into the ground until the head **36** abuts the shoulder **38**. Thereupon, continued rotation of the cam **50** will result in its disengagement from the anvil **34** and, by virtue of its own weight, the entire apparatus will descend, so to speak, relative to the post **26** and anvil **34** so that a position is again reached where, as shown in Figure 2, the head **36** abuts the stop screws **40**. It will be apparent from the foregoing that continued rapid rotation of the cam **50** will result in a series of consecutive impacts being delivered to the post, thereby driving the latter in an "inching" manner into the ground.

Means are provided for conveniently controlling the operation of the motor **44**, these means including a control yoke or lever **56** having a handle portion **58** at one end disposed adjacent one of the aforementioned hand grips **16**, while the other end of the yoke **56** is pivoted at **60** to suitable brackets **62** on the platform **12**. The yoke **56** straddles the cam **50** and is operatively connected by means of a pivoted link **64** to a repeating type electric switch which is alternately closed and opened by successive depressions of the yoke **56**. This switch is mounted on the platform **12** for controlling the motor **44**. The yoke **56** is urged upwardly by a pair of compression springs **68** which are interposed between the yoke and the platform **12**, and when the yoke is in its upper position and the switch **66** is open, the motor **44** is stationary. However, by depressing the handle **58** in the direction of the adjacent hand grip **16** and promptly releasing the handle, the switch **66** will be closed and the motor **44** energized. It is to be noted that in this manner the same hand of the operator may be used for controlling the movement of the yoke **56** as well as for grasping the adjacent of the hand grips **16**, while the second hand grip, of course, is grasped by the other hand.

It is also to be noted that the yoke **56** is engageable with the upper surface of the anvil **34** at the opposite sides of the cam **50**, so that when the device is at rest, downward movement of the yoke will first raise the platform **12** relative to the anvil, so that the anvil is spaced from the cam in readiness for the first impact as soon as the motor is energized by the switch **66**.

It is believed that the advantages and use of the invention will be readily understood from the foregoing disclosure and accordingly, further description thereof at this point is deemed unnecessary.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that minor changes in the details of construction and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

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

1. A portable post driver, comprising a manually supported platform having an opening therein, a substantially cylindrical post receiving socket provided at the

underside of said platform coaxially with said opening, said socket being larger in diameter than said opening and being provided with an annular shoulder spaced downwardly from and opposing the underside of the platform, an anvil reciprocable vertically in said opening and provided at its lower end with a diametrically enlarged post engaging head disposed in the space between the platform and said shoulder, said shoulder constituting an abutment for said head when the latter is at the lower end of its stroke, adjustable stop means for said head at the upper end of its stroke, a motor mounted on said platform, and an impact delivering member actuated by said motor and engageable with the upper end of said anvil thereby imparting a downward impact to said anvil.

2. The device as defined in claim 1 wherein said motor includes a rotatable shaft, said impact delivering member

comprising a cam secured to said shaft and including a low lobe and a high lobe, the low lobe of said cam being spaced upwardly from said anvil when said head engages said adjustable stop means.

3. The device as defined in claim 1 together with a control for said motor provided on said platform.

4. The device as defined in claim 1 together with a control for said motor provided on said platform and including a yoke pivoted to the platform and engageable with the upper end of said anvil.

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