Dec. 28, 1926. 1,612,043

I. W. NONNEMAN

POWER APPARATUS

Filed May 13, 1924 3 Sheets-Sheet 1

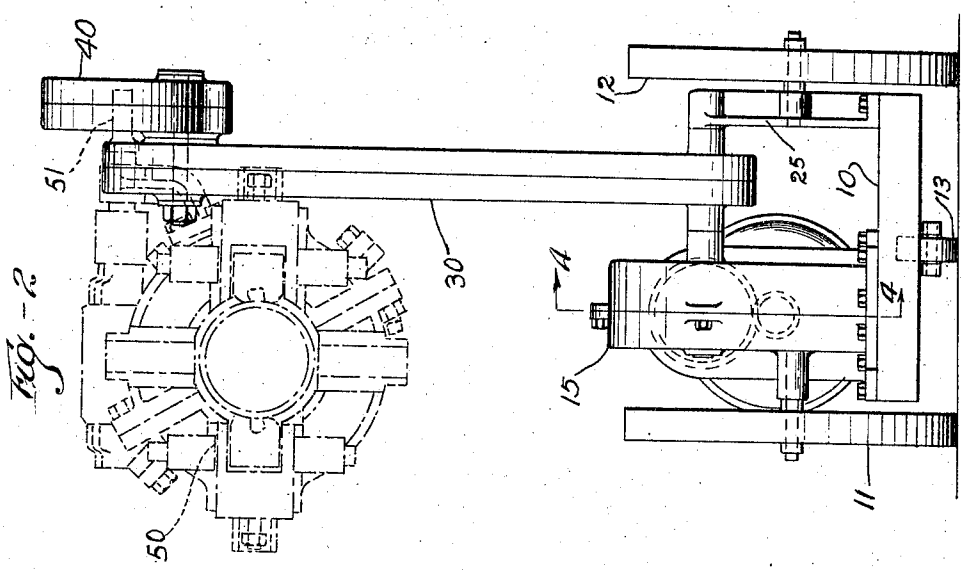


Fig. -2

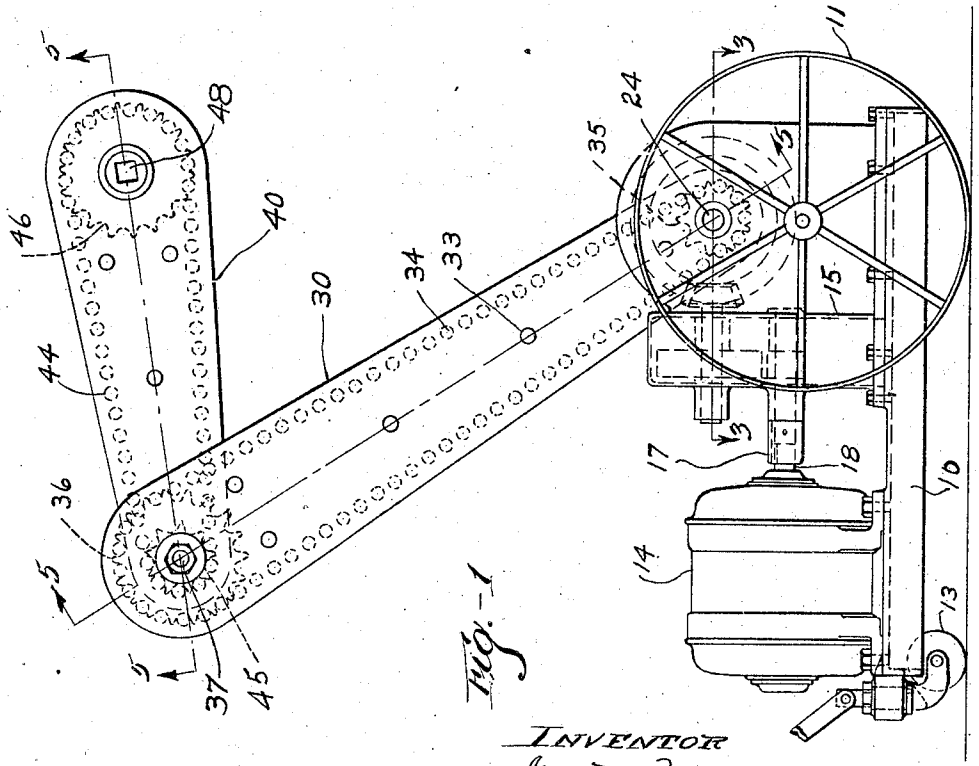


Fig. -1

INVENTOR
Ira W. Nonneman
BY Baker, Macklin, Goodrich & Fear
ATTORNEYS

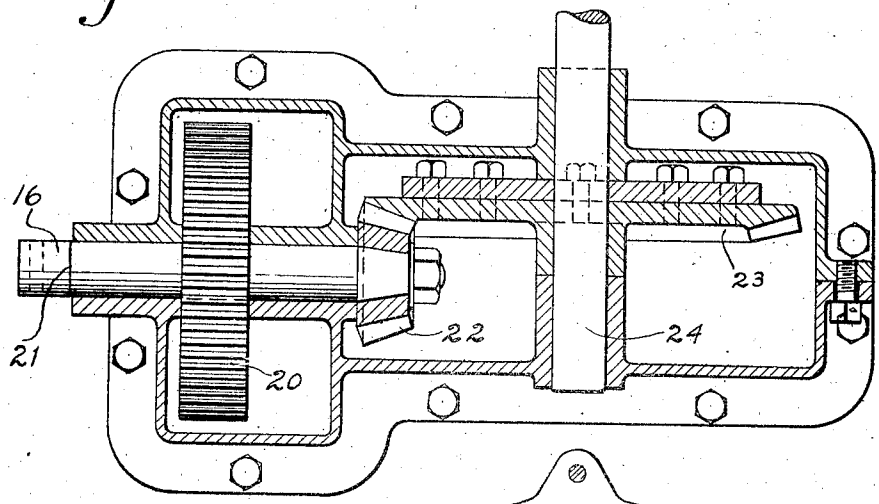
Dec. 28, 1926. 1,612,043

I. W. NONNEMAN

POWER APPARATUS

Filed May 13, 1924 3 Sheets-Sheet 2

Fig. - 3



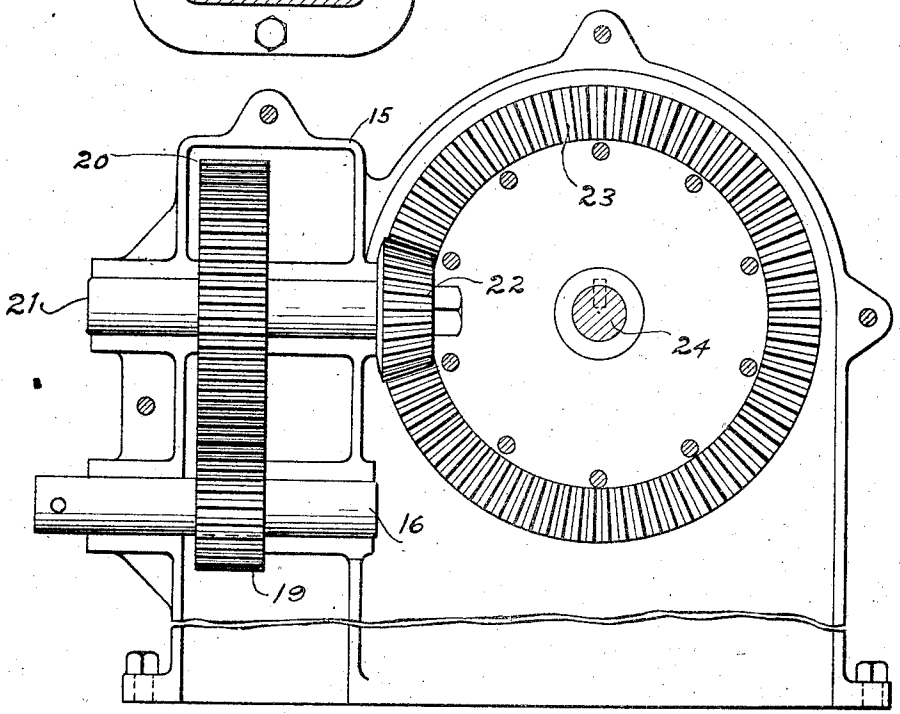


Fig. - 4

INVENTOR.

Ira W. Nonneman

BY Bair, Marlin, Goldrick, Dean

ATTYS.

Dec. 28, 1926. 1,612,043

I. W. NONNEMAN

POWER APPARATUS

Filed May 13, 1924 3 Sheets-Sheet 3

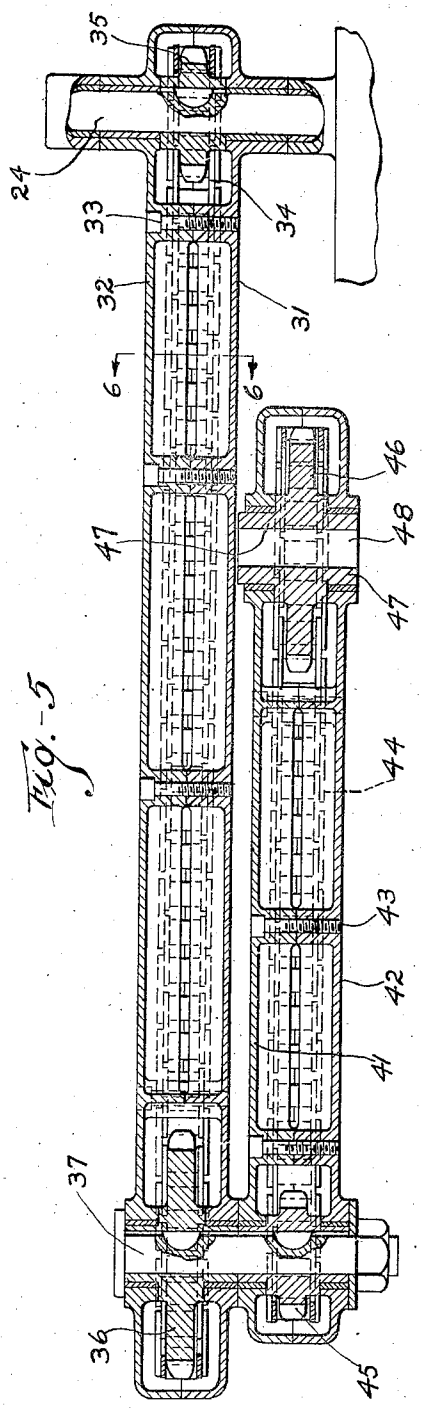


Fig. 5

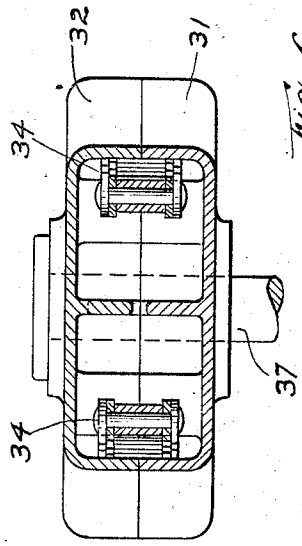


Fig. 6

INVENTOR

Ira W. Nonneman

By Baker Maclin Goldneck Mears

ATTYS.

Patented Dec. 28, 1926. 1,612,043

UNITED STATES PATENT OFFICE.

IRA W. NONNEMAN, OF WARREN, OHIO, ASSIGNOR TO THE BORDEN COMPANY, OF WARREN, OHIO, A CORPORATION OF OHIO.

POWER APPARATUS.

Application filed May 13, 1924. Serial No. 713,110.

This invention relates to portable power apparatus, particularly that which is used for imparting a rotary motion to a driven object, such for example as a thread cutter.

An object of my invention is the provision of a portable power apparatus which shall be comparatively light in weight, yet which is sufficiently rigid to insure stability while operating under heavy loads.

Moreover my invention contemplates the provision of a device which may be moved about as a unit and quickly adjusted to a driven device or tool, and which may be readily disengaged from the tool while in operation. This is advantageous in that the driven device may, if necessary, be disconnected without stopping the motor.

A further object of my invention is the provision of a power apparatus which has a comparatively wide range of position with reference to the work, thus permitting satisfactory operation and facilitating adjustment without necessitating accurate positioning of the apparatus on the ground with reference to the work.

The means for carrying out the above objects is shown in the preferred form in the accompanying drawings as embodying a carriage having a motor mounted thereon which is suitably geared to a shaft which extends transversely thereof. The axis of the shaft forms a pivot about which a pair of pivotally connected arms may swing. One of these arms is provided with means for permitting attachment to a driven tool and is suitably geared to the motor in such manner as not to interfere with the independent movement of the arms while the motor is in operation.

The preferred embodiment of my invention is illustrated in the drawings wherein Fig. 1 is a side elevation; Fig. 2 is an end elevation showing the adaptation to a pipe cutting machine; Fig. 3 is a section on the line 3—3 in Fig. 1; Fig. 4 is a section on the line 4—4 in Fig. 2; Fig. 5 is a section on the line 5—5 in Fig. 1 and Fig. 6 is a section on the line 6—6 in Fig. 5.

My invention is shown as mounted on a carriage embodying a platform 10 which may be supported by traction wheels 11 and 12 by a swivel wheel 13 respectively. The platform as shown supports a motor 14 which furnishes driving power for the apparatus.

A gear casing indicated in general at 15 supports a pinion shaft 16 which may be coupled as at 17 to the armature shaft 18. A pinion 19 rigid with the shaft 16 functions to rotate a gear 20 which is rigidly mounted on a shaft 21. As shown in Fig. 4, the shaft 21 is also mounted within the casing and has a bevel pinion 22 rigidly mounted thereon for meshing with a bevel gear 23 on the shaft 24. This shaft is partially journaled by the gear casing and partially within a standard 25 as shown in Fig. 2.

The shaft 24 provides a pivot upon which an arm indicated in general at 30, is free to move. In the preferred form this arm comprises two cooperating members 31 and 32 which may be joined by securing members 33 in such manner as to provide a hollow interior in which a sprocket chain 34 is free to travel. The sprocket chain passes over sprocket wheels 35 and 36 which are mounted on shafts 24 and 27 respectively.

The shaft 37 extends through the arm 30 and also through an arm indicated in general at 40 and provides a pivot therefor. This last mentioned arm may comprise separable sections 41 and 42 fastened together by suitable securing members 43, so as to provide a hollow interior within which a sprocket chain 44 may travel. This chain passes over wheels 45 and 46 at opposite ends of the arm 40. As shown the wheel 45 is rigidly mounted on the shaft 37 while the wheel 46 has hubs 47 which are journaled in the arm 40. A non-circular opening 48 extends through the sprocket wheel and associated hubs to provide a tool receiving socket. This opening, as shown in Fig. 1, is square in cross-section.

In Fig. 2 I have shown the use of my invention in connection with a pipe cutting tool indicated in general at 50, which is adapted to be operated upon rotation of a shaft having a square shank 51 which fits into the socket 48.

To operate a device made in accordance with my invention, the carriage is moved alongside the work as shown in Fig. 2, whereupon the arm 40 is swung about the shaft 37 as a pivot while the arm 30 is swung about the shaft 24 as a pivot until the socket 48 is aligned with the shank of the tool to be actuated. Thereupon the carriage is moved laterally until the tool shank enters the socket. When the tool is thus positioned,

the motor may be started whereupon the tool is caused to rotate by reason of the gearing and sprocket chain heretofore described. The relatively movable arms which are employed for actuating the driving socket permit ready attachment to the shank of the operating tool without necessitating accurate positioning of the carriage with reference to the work. The absence of means for permitting lateral movement of the arms with relation to the platform, prevents the tool socket from being disengaged inadvertently without moving the entire carriage.

When the apparatus is not in use, the arm 30 may be lowered until the casing engages the platform adjacent the motor wherefore the arm 40 may be lowered alongside the arm 30. This permits the carriage to be moved about as a unit, while the arms are always available for instant use without the necessity for clutches and adjustable locking devices between the source of power and the driven socket.

I claim:

1. In a device of the character described the combination with a portable platform, of an electric motor mounted therein, a shaft extending transversely of the platform, reduction gearing operatively connecting the motor and the shaft, a hollow member pivotally mounted on the shaft and having a transversely extending shaft journalled at the free end thereof, said last mentioned shaft projecting laterally from the arm, means within the hollow member operatively connecting said shafts, and tool engaging means pivotally mounted on the last named shaft.

2. A device of the character described comprising in combination a portable platform, an electric motor mounted therein, a gear casing supported by the platform and having gears therein operatively connected with the motor, a shaft projecting laterally from the casing, a hollow arm pivotally mounted on the shaft, a sprocket wheel within the arm and also rigidly mounted on the shaft, a shaft at the free end of the arm and projecting beyond the side thereof, a second hollow arm mounted on the last named shaft, means associated with the second arm for engaging and operating a tool, and mechanism for effecting a positive driving connection between said shafts.

3. A device of the character described comprising in combination a support, an electric motor mounted thereon, two hollow pivotally connected arms, tool holding means mounted on one of the arms, the other arm being pivotally mounted above the support in such manner that the arms may be swung downwardly and rested on the support when not in use, and an articulated driving means within the hollow arms.

4. A device of the character described comprising in combination a portable platform, an electric motor thereon, a shaft supported by the platform and extending transversely thereof, means operatively connecting the shaft with the motor, a pair of hollow arms, one being longer than the other and pivotally connected thereto, the longer arm being mounted on said shaft, said arms being free to swing downwardly beside the motor and to rest on the platform when not in use, a tool engaging member carried by the short arm, and means extending through the pivotal connection of said arm and also through said shaft for operatively connecting the tool engaging member with the motor.

5. A device of the character described comprising in combination, a platform, an electric motor mounted thereon, a gear casing outside the motor, reduction gearing within the casing and operatively connected to the motor, a shaft journalled in the casing and projecting laterally therefrom adjacent one end of the platform, a hollow arm pivotally mounted on the shaft, a second shaft journalled in said arm adjacent the free end thereof, said last named shaft projecting beyond the side of the arm, a hollow member pivotally mounted on the last named shaft outside the arm, tool engaging means disposed within said member adjacent the outer end thereof, means within the arm operatively connecting said shafts, and means within the member for operatively connecting the second named shaft with the tool engaging member.

6. A device of the character described, comprising in combination a portable platform, an electric motor mounted thereon, a shaft extending transversely of the platform and operatively connected to the motor, two arms mounted to swing in a vertical plane, one of said arms being pivotally mounted on the shaft, and each of said arms having such length that they may rest upon the platform when not in use, tool engaging means carried by one of the arms, and mechanism extending through the arms for operatively connecting said means to said shaft.

7. A device of the character described comprising a wheeled platform, a motor thereon adjacent one side of the platform, a gear casing adjacent that side of the platform and longitudinally aligned with the motor, a standard adjacent the other side of the platform and laterally aligned with the gear casing, a lateral shaft carried by the standard and gear casing, gearing between said lateral and the motor shaft, an arm pivoted on said lateral shaft, a second arm pivoted to the arm first mentioned, a rotary member carried by the final arm and means connecting it with the lateral shaft.

In testimony whereof, I hereunto affix my signature.

IRA W. NONNEMAN.