Sept. 3, 1929. E. H. SUPER 1,727,084

PORTABLE POWER DRIVE FOR DIESTOCKS AND CUTTERS

Filed Sept. 13, 1928 3 Sheets-Sheet 1

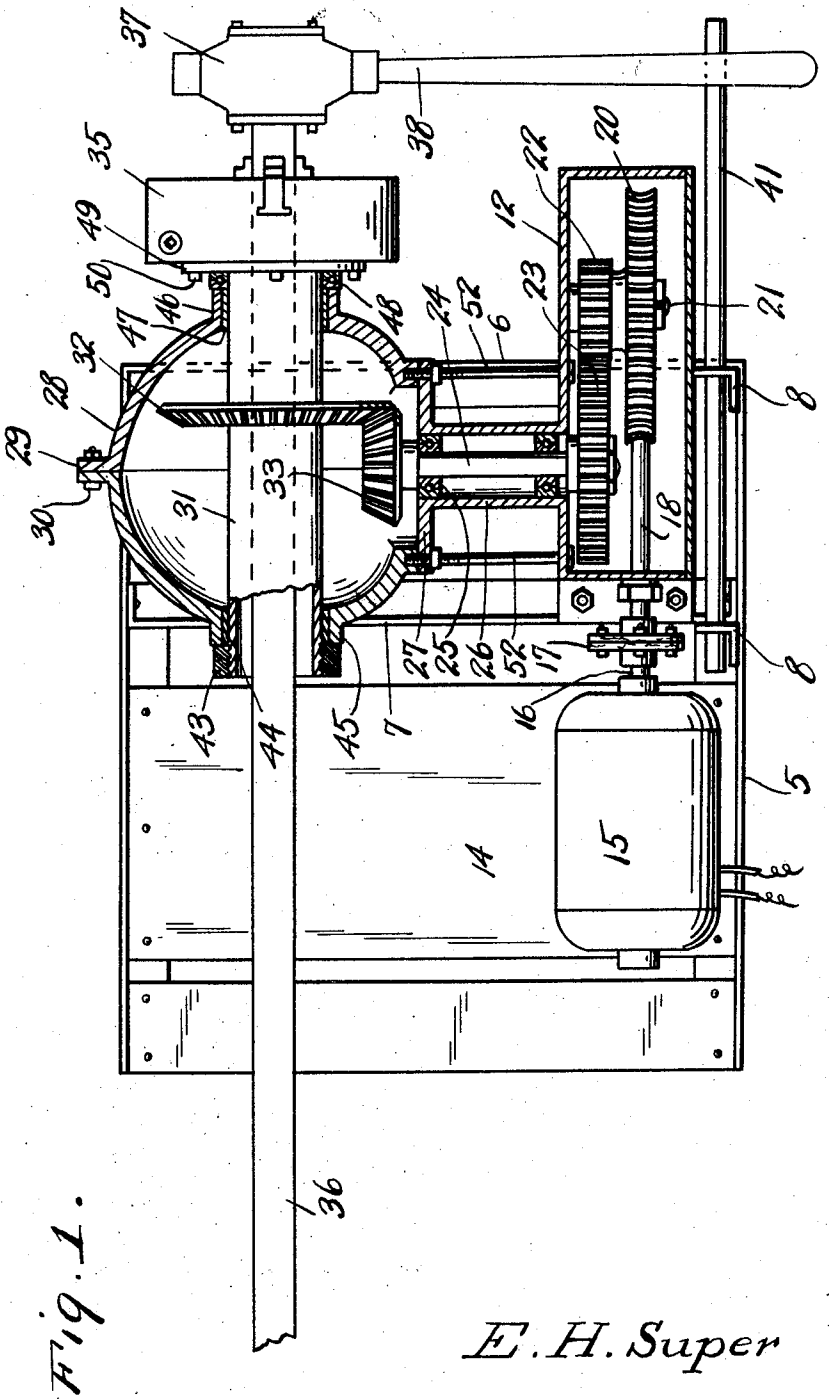


Fig. 1.

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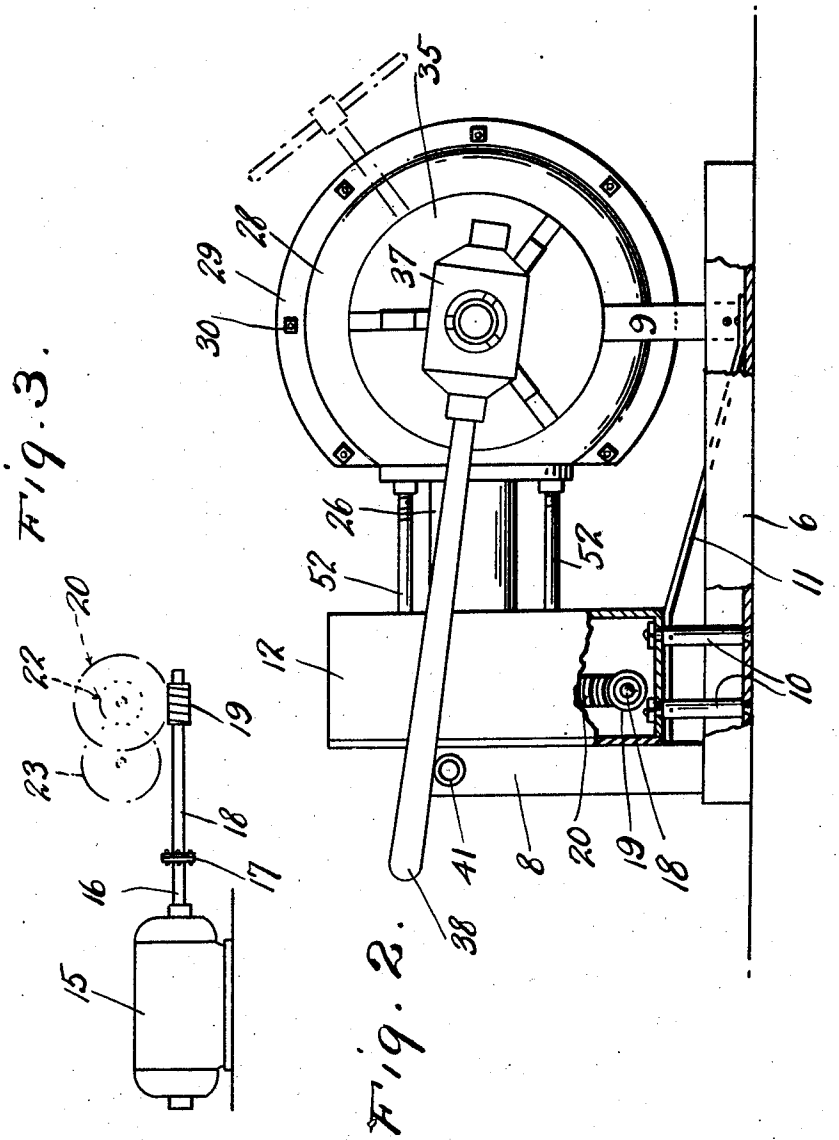


Fig. 2.

Fig. 3.

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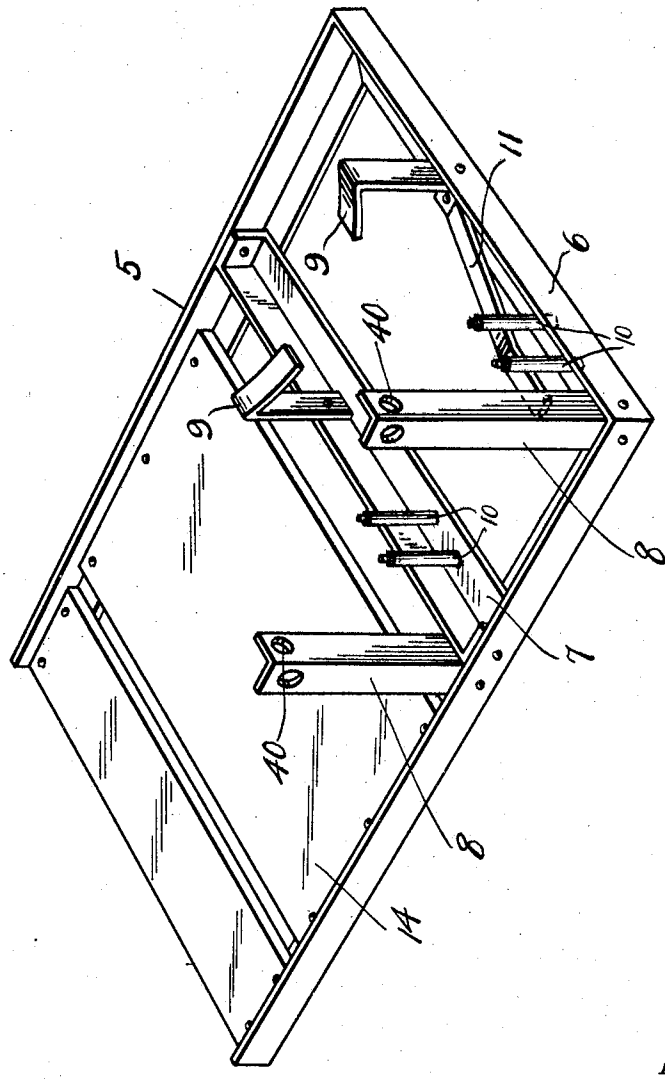


Fig. 4.

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UNITED STATES PATENT OFFICE.

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PORTABLE POWER DRIVE FOR DIESTOCKS AND CUTTERS.

Application filed September 13, 1928. Serial No. 305,692.

The present invention relates to a portable power drive for die stocks and cutters and has for its prime object to provide a mechanism of this nature which is comparatively silent in operation and is possessed of great power and wherein all of the gearing runs in oil to minimize oil and wear, and wherein the frame is constructed of angle iron so as to make the same light in weight, but strong and durable to withstand the rough usage to which the mechanism of this character is naturally subjected when in actual use.

A further very important object of the invention resides in the provision of a mechanism of this nature which is simple in its construction, compact and convenient in its arrangement of parts, inexpensive to manufacture, not likely to easily become out of order, easy to manipulate, thoroughly efficient and reliable in use and operation, and otherwise well adapted to the purpose for which it is designed.

With the above and numerous other objects in view, as will appear as the description proceeds, the invention resides in certain novel features of construction, and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawings:

Figure 1 is a top plan view, partly in section of the mechanism embodying the features of my invention.

Figure 2 is a side elevation thereof, partly in section.

Figure 3 is a detail view of the motor and the shaft and gear driven thereby, and

Figure 4 is a perspective view of my improved frame structure.

Referring to the drawings in detail, it will be seen that the supporting frame is substantially U-shaped in formation and constructed of angle iron bars, 5, forming the sides and the angle bar 6, forming one end or the bight of the frame. A cross angle iron bar 7 is disposed between the side bars 5 in parallelism with the bight bar 6. Angle iron legs 8, rise from one of the side bars 5, and one of these upright bars 8 are located immediately adjacent the bight bar 6 and the other immediately adjacent the cross bar 7. Cradle forming uprights 9 rise one from an intermediate portion of the bight bar 6 and one from an intermediate portion of the cross bar 7. A pair of studs 10 rise in spaced relation to each other, from the bight bar 6, and a brace strap 11 is secured at one end to the bight bar 6 adjacent the cradle forming member 9 thereon and extends toward the side bar 5 on which the upright angle bars 8 are mounted.

A gear casing 12 is supported on the studs 10 and the strap 11. A plate 14 across the side bars 5 supports a motor 15, having an armature shaft 16, flexibly connected as at 17, with a shaft 18 journaled in the rear casing 12. A worm 19 is mounted on the shaft 18 and meshes with a worm gear 20 which is rotatable on a stub shaft 21, in the gear casing 12. A pinion 22 is formed integrally with and to one side of the worm gear 20 and meshes with a gear 23, in the gear casing 12, which is mounted on a shaft 24. This shaft 24 is journaled in bearings 25, mounted in a lateral tubular extension 26 on the gear casing 12 and this extension terminates in an outwardly directed annular flange 27. A gear casing 28 is formed in two parts having flanges 29 bolted together as at 30. A hollow shaft 31 is journaled in the housing 28 and has a gear 32 thereon of the bevelled type meshing with a bevelled pinion 33 on the shaft 24. Outside of the housing 28 at one end of the hollow shaft 31, there is mounted a chuck head 35, so that a pipe 36 may be extended through the hollow shaft 31 and anchored in the chuck, in order that a die stock may be engaged on the end of the pipe. This die stock is conventional and has a handle 38 projecting therefrom.

The upper ends of the upright angle bars 8 are provided with openings 40, and a rod 41 is slidable through these openings, so that it may be extended in the path of the handle 38 to function as a stop for this handle. It will therefore be seen that when the motor is in operation, the pipe 36 will be rotated, so as to thread the same into the die stock 37, this die stock being prevented from rotation with the pipe by the handle 38 engaging the stop rod 41. It will be seen that all of the gears may be run in oil because of the gear casing and the housing. In order to prevent leakage of oil from the housing 28, a packing nut 43 is threaded on one end thereof to hold in place packing 44, in hub 45, of the housing. In the other hub, 46, of the housing, there is packing 47, which is held in place by a bearing 48, in turn held in place by flange 49, to which the chuck head 35 is secured by suitable means 50.

It is thought that the construction, operation, utility and advantages of the invention will now be quite apparent to those skilled in this art, without a more detailed description thereof. It will be apparent that changes in the details of construction, and in the combination and arrangement of parts may be resorted to, without departing from the spirit or scope of the invention as hereinafter claimed or sacrificing any of its advantages.

In this preferred embodiment of the invention, it will be seen that the housing 28 is securely attached in engagement with the flange 27 of the extension 26 by means of elongated bolts 52, projecting from the casing 12 and threadedly engaged through the flange 27 and into the housing 28. It will be further seen that the housing 28 rests on the cradle forming members 9.

Having thus described my invention, what I claim as new is:

1. A mechanism of the class described including a frame of substantially U-shaped formation, including angle iron side bars connected by an angle iron bight, an angle iron cross bar between the side bars, studs rising from the bight, a strap secured at one end to the bight, and projecting upwardly toward the studs, cradle forming members rising one from the bight and one from the cross bar, gear housings mounted on the studs, the straps and the cradle forming members, gearing in the housing, a chuck operatively associated with said gearing.

2. A mechanism of the class described including a frame of substantially U-shaped formation, including angle iron side bars connected by an angle iron bight, an angle iron cross bar between the side bars, studs rising from the bight, a strap secured at one end to the bight, and projecting upwardly toward the studs, cradle forming members rising one from the bight and one from the cross bar, gearing housings mounted on the studs, the straps and the cradle forming members, gearing in the housing, a chuck operatively associated with said gearing, uprights rising from the frame and having openings, a rod slidable in the openings, a pipe adapted to be mounted in the chuck so that the die stock may be engaged thereon and the handle prevented from swinging by the rod.

3. A mechanism of the class described including a frame of substantially U-shaped formation, including angle iron side bars connected by an angle iron bight, an angle iron cross bar between the side bars, studs rising from the bight, a strap secured at one end to the bight, and projecting upwardly toward the studs, cradle forming members rising one from the bight and one from the cross bar, a gear casing mounted on the studs and the straps, a shaft journaled in the gear casing, a motor mounted on the frame, a flexible connection between the motor and the shaft, a worm on the shaft, a worm gear in the casing connecting with the worm, a pinion connected with the worm gear, an extension provided on the casing, a shaft journaled in the extension, a gear in the last mentioned shaft connecting with the pinion, a gear housing connected to the extension and supported on the cradle forming members, a pinion on the second mentioned shaft, a hollow shaft in the housing having a gear thereon meshing with the pinion, and a stock head on the hollow shaft.

In testimony whereof I affix my signature.

EDWARD H. SUPER.