

July 11, 1950

G. GOTTBREHT
DRIVING DEVICE

2,514,857

Filed Nov. 18, 1946

2 Sheets-Sheet 1

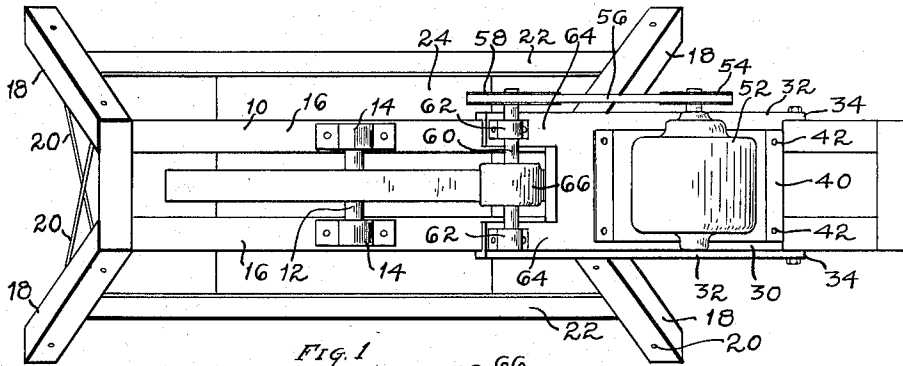


Fig. 1

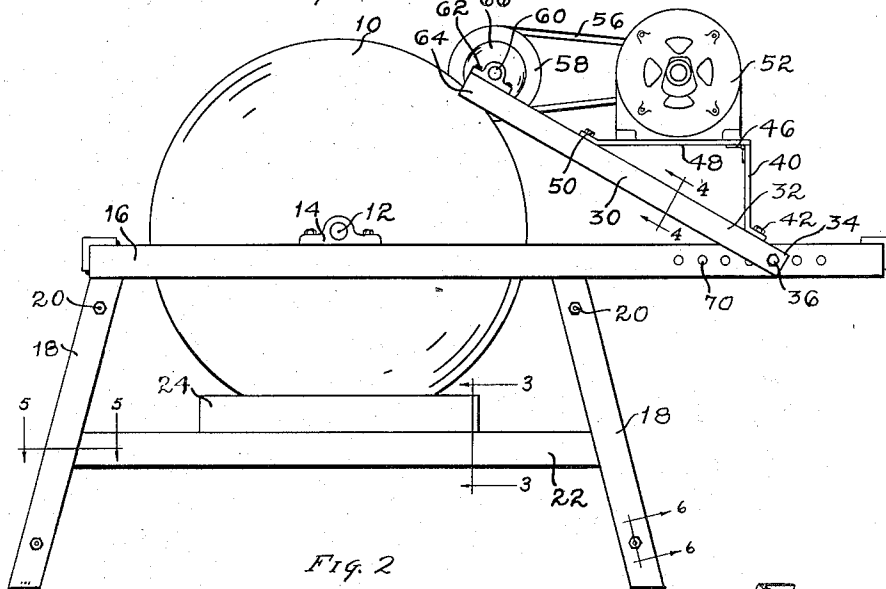


Fig. 2

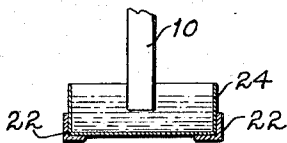


Fig. 3

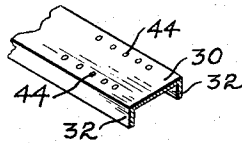


Fig. 4

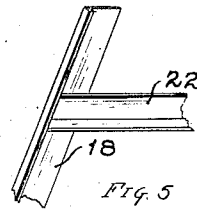


Fig. 5

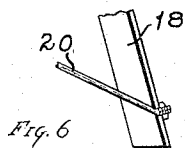


Fig. 6

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2 Sheets-Sheet 2

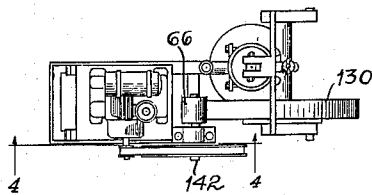


FIG. 7

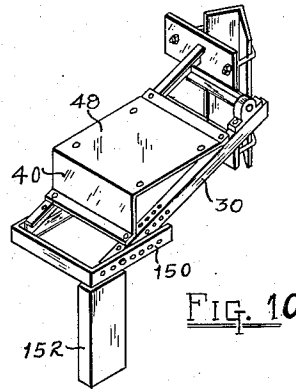


FIG. 10

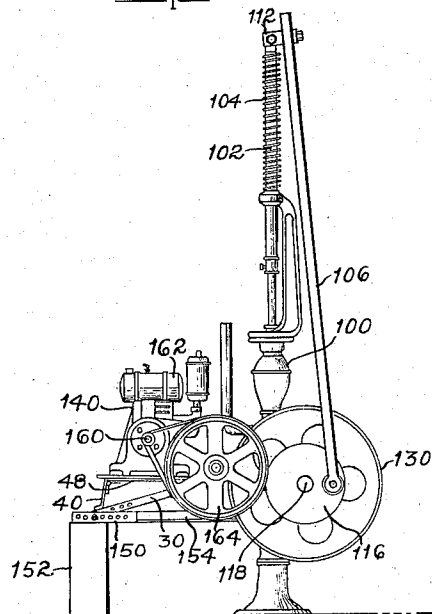


FIG. 8

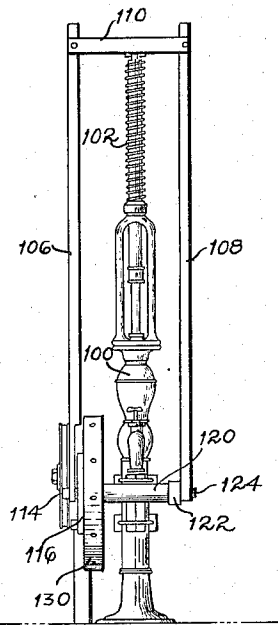


FIG. 9

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UNITED STATES PATENT OFFICE

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DRIVING DEVICE

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4 Claims. (Cl. 74-207)

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This invention relates to a driving mechanism and more particularly to a driving mechanism including a prime mover having its output delivered to a load.

An object of this invention is to provide a power unit for delivering power from a prime mover to a rotating body wherein part of the weight of the prime mover and the driving mechanism is utilized in applying a friction drive to the rotating body.

Another object of this invention is to provide an electric motor or a gas engine drive for a grindstone or the like, wherein a pulley or wheel is used in driving the grindstone by direct engagement therewith, which pulley or wheel also functions as a surfacing tool for the grindstone.

Another object of this invention is to provide a drive for a device wherein the drive is easily applied, easily adjusted and at the same time dependable and efficient.

Another object of this invention is to provide an electric motor drive to be used in driving various types of equipment, as for example, a pump, a churn, a fanning mill for cleaning seed, a washing machine, a cream separator, a bicycle, a power hack saw and numerous other devices.

Other objects and advantages reside in the construction of parts, the combination thereof and the mode of operation, as will become more apparent from the following description.

In the drawings,

Figure 1 is a top plan view of a grinder equipped with the motor drive.

Figure 2 is a side elevational view thereof.

Figure 3 is a fragmentary cross sectional view taken substantially on the line 3-3 of Figure 2.

Figure 4 is a fragmentary cross sectional view taken substantially on the line 4-4 of Figure 2.

Figure 5 is a fragmentary cross sectional view taken substantially on the line 5-5 of Figure 2.

Figure 6 is a fragmentary cross sectional view taken substantially on the line 6-6 of Figure 2.

Figure 7 is a top plan view of a modification showing the power unit applied to a pump jack.

Figure 8 is a side elevational view of the unit shown in Figure 7.

Figure 9 is a front elevational view of the pump jack.

Figure 10 is a perspective view of the frame used in association with a pump jack.

Figures 3 and 4 are drawn to a smaller scale than the other figures.

For the purpose of illustration, the preferred embodiment has been shown as applied to a grindstone, which will now be described.

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Referring to the drawings, the reference character 10 indicates the conventional grindstone mounted upon an arbor shaft 12 mounted in the bearings 14. The bearings 14 are mounted upon the frame members 16 which may consist of a pair of angle irons supported upon legs 18. The legs 18 may be braced by suitable cross rods 20. A pair of longitudinally extending frame members 22 supported upon the legs 18 have mounted thereon a trough 24 for supplying water to the grindstone 10. Aside from the fact that the frame member 16 extends beyond the legs 18 on one end, the grindstone assembly described thus far has been shown as illustrative of conventional grindstone assemblies. The details of this assembly have merely been shown for the purpose of illustration and may constitute conventional grinding wheels or grinding stones used on the average farm.

The grindstone assembly shown herein has been provided with a driving unit. This driving unit includes a supporting channel member 30, provided with laterally disposed parallel flanges 32 forming extensions 34 pivotally mounted at 36 to the extensions of the frame members 16.

The channel member 30 has mounted thereon a motor-supporting bracket assembly including a vertically disposed plate member 40 secured to the channel member 30 by a pair of bolts 42 mounted in selected pairs of holes 44 shown in Figure 4. The upper end of the plate member 40 supports a hinge 46 joining to the plate 40 a horizontally disposed plate 48 having one end secured to the channel member 30 by screws 50.

A motor 52 is adjustably mounted upon the plate 48 in any suitable manner. This motor 52 has mounted thereon a V-belt pulley 54 driving a V-belt 56 passing over a V-belt pulley 58 secured to an arbor shaft 60 journaled in bearings 62 mounted upon an extension 64 of the channel member 30. The shaft 60 has keyed thereto a drive pulley or wheel 66, resting on top of the grinder wheel 10.

When the motor 52 is started, it drives the V-belt 56, which in turn drives the shaft 60 and with it the wheel 66, frictionally driving the grindstone 10. The weight of the parts supported upon the channel member 30 and part of the weight of the channel member 30 are used in applying a pressure between the wheel 66 and the grindstone 10. This wheel 66, which may be made from cast iron or steel or any other suitable material, in addition to driving the grindstone 10, functions as a surfacing wheel for surfacing the grindstone. It has been found

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that even though the contour of the grindstone may be rough and irregular, the wheel 66 will gradually eliminate the irregularities, resulting in a grindstone provided with a uniform grinding surface.

In order to alter the effectiveness of the pressure exerted between the wheel 66 and the grindstone 10, the relative position of contact between the grindstone 10 and the wheel 66 may be adjusted by changing the position of the pivot 36 to one of the other holes 70 in the frame member 16. In so doing, the angle of inclination of member 30 is adjusted. When this is adjusted, the plate 48 slopes, so as to provide a sloping support for the motor 52. For some types of motors it is quite desirable that the motor be mounted on a horizontally disposed support, so that the bearings may be properly lubricated. Upon the angle of inclination of the channel member 30 being adjusted, the horizontal plate 48 may be adjusted by loosening the bolts 42 and changing these to some other hole 44 in the member 30, to thereby level the plate 48. By this arrangement it may readily be seen that the relative position of the wheel 66 may be adjusted with respect to the grindstone 10 and the horizontal support for the motor adjusted so as to remain in a horizontal position.

In the modification disclosed in Figure 7 a similar power unit has been used applied to a pump jack. The pump 100 may be any conventional pump provided with a pump rod 102 that may be urged upwardly by a spring 104, so as to aid the pull, to thereby result in a smoother operating pump. As is well known to those skilled in the art, instead of a pump being actuated by hand, it may be driven from any suitable source of power through a pump jack including the vertical rods 106 and 108, the rods having their upper ends connected to a cross bar 110 connected to the pump rod by a U clamp 112. The lower end of the rod 106 is mounted upon a pintle or crank pin 114 fixed to a rotatably mounted disc 116 keyed to a shaft 118. The shaft 118 is journaled in a frame member 120 and terminates in a crank arm 122 provided with a crank pin 124 actuating the rod 108. The frame 120 is clamped in any suitable manner to the body of the pump 100. The shaft 118 supports a drive wheel or pulley 130 that may be lined with suitable lining material, as for example, rubber, leather or a composition material. This wheel 130 is actuated by an internal combustion engine 140, which engine will not be described in detail, as any suitable engine now appearing on the market may be used.

The internal combustion engine 140 is mounted upon the ledge 48, identical to the ledge described in the preferred embodiment, mounted upon the upright member 142 fixedly secured to the drive wheel 66 resting upon the drive wheel 130, so as to transmit motion thereto. The lower end of the bars 30 are pivotally attached to the U-shaped frame member 150 having one end supported upon the support 152 and the other end 154 connected in any suitable manner to the base of the pump 100. Instead of the motor being mounted for supplying power, the engine 140 drives a V-pulley 160 driving a V-belt 162 actuated by a suitable pulley 164 driving the shaft 142. Instead of using a gas engine, an electric motor can be used for supplying power to the pump.

Various other modifications may be provided within the purview of this invention.

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Although the preferred embodiment of the device has been described, it will be understood that within the purview of this invention various changes may be made in the form, details, proportion and arrangement of parts, the combination thereof and mode of operation, which generally stated consist in a device capable of carrying out the objects set forth, as disclosed and defined in the appended claims.

Having thus described my invention, I claim:

1. A driving attachment for an implement provided with a wheel mounted for rotation in a frame, said driving attachment including a channel member pivotally attached to the frame so as to have the free end of the channel member extend over a portion of the wheel of the implement, a pair of pivotally interconnected plate members, one end of each plate member being attached to the channel member, at least one of said plate members being adjustably attached to the channel member so that one of the plate members is horizontally disposed and the other mounted between the horizontally disposed plate member and the channel member, a prime mover mounted upon the horizontally disposed plate member, and a drive wheel supported upon the channel member and driven from the prime mover, said drive wheel resting upon the wheel of the implement so as to drive the same.

2. A driving attachment for an implement provided with a wheel mounted for rotation in a frame, said driving attachment including a second frame having downwardly directed flanges along the sides thereof, said second frame being pivotally attached to the first mentioned frame so as to have the free end of the second frame extend over a portion of the wheel of the implement, a pair of members having one end of one member attached to the other member and the other end of each member being attached to the second frame, at least one of said members being adjustably attached to the second frame so that one of the members is horizontally disposed and the other member is mounted between the horizontally disposed member and the second frame, a prime mover mounted upon the horizontally disposed member, and a drive wheel supported upon the second frame and driven from the prime mover, said drive wheel resting upon the wheel of the implement so as to drive the same.

3. A driving attachment for an implement provided with a wheel mounted for rotation in a frame, said driving attachment including a second frame, said second frame being pivotally attached to the first mentioned frame so as to have the free end of the second frame extend over a portion of the wheel of the implement, a prime mover, means for supporting the prime mover upon the second frame, said means including a horizontal portion and a substantially vertical portion, each of said portions being attached to the second frame, at least one of said portions being adjustably attached to said second frame so as to hold one of the portions in a horizontal position, and a drive wheel supported upon said second frame and driven from the prime mover, said drive wheel resting upon the wheel of the implement so as to drive the same.

4. A driving attachment for an implement provided with a wheel mounted for rotation in a frame about a horizontally disposed axis, said driving attachment including a second frame, said second frame being pivotally attached to the first mentioned frame about a horizontal pivot

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located in a horizontal plane lower than the axis of rotation of said wheel, said second frame having a free end extending over a portion of the wheel of the implement, a prime mover, means for supporting the prime mover upon the second frame, said means including a horizontal portion and a substantially vertical portion, each of said portions being attached to the second frame, at least one of said portions being adjustably attached to said second frame so as to hold one of the portions in a horizontal position, and a drive wheel supported upon said second frame and driven from the prime mover, said drive wheel resting upon the wheel of the implement so as to drive the same.

GEORGE GOTTBREHT.

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