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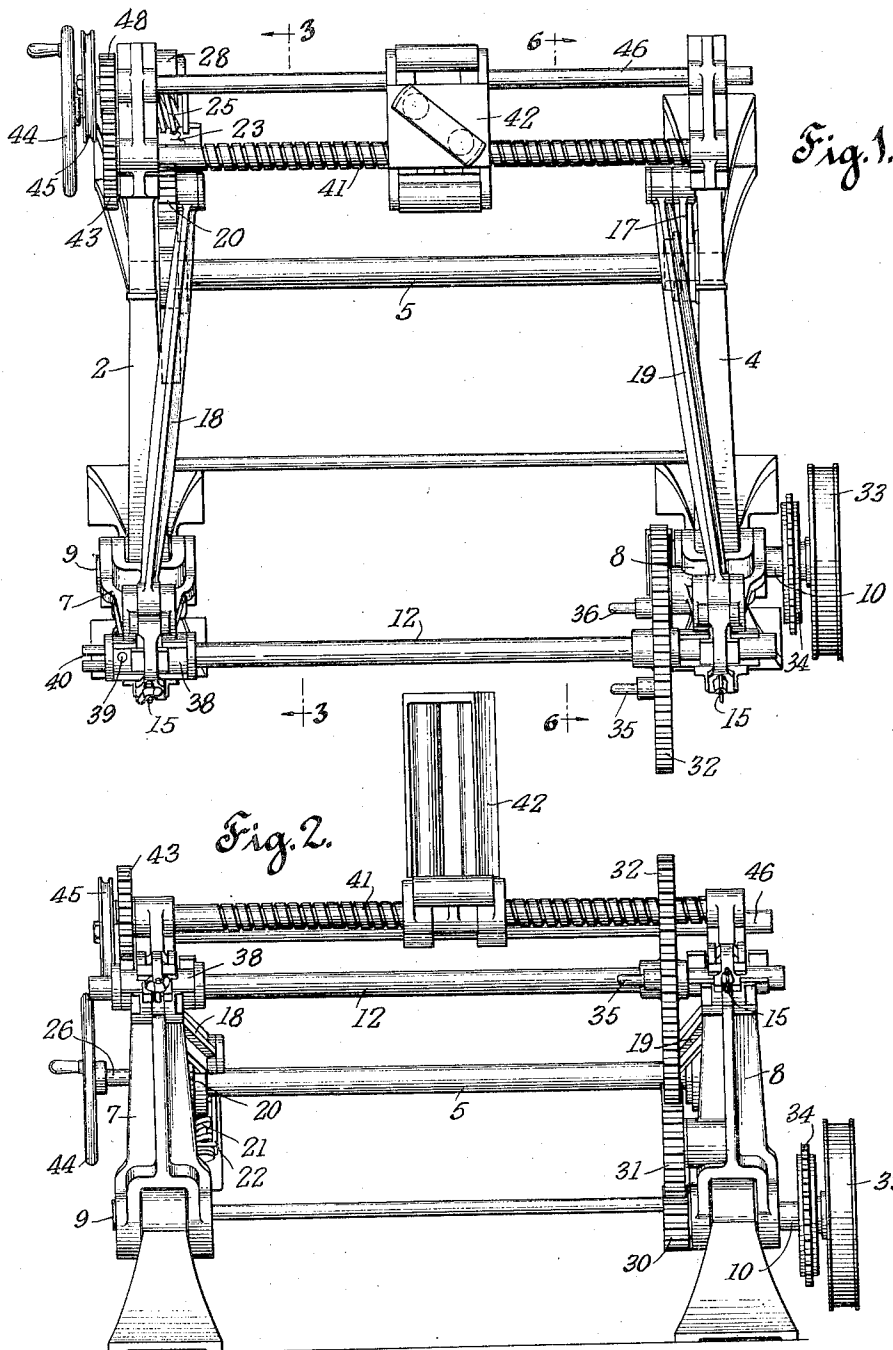
C. F. VAN HOOK

1,775,707

REELING MACHINE FOR CABLES

Filed Aug. 25, 1928

3 Sheets-Sheet 1



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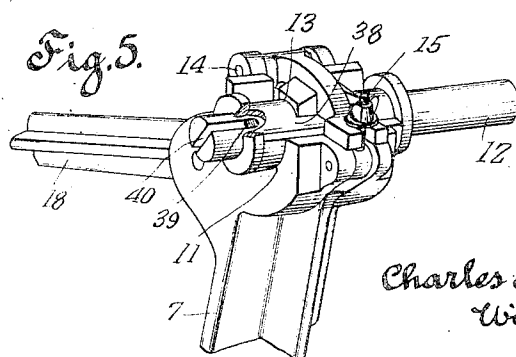
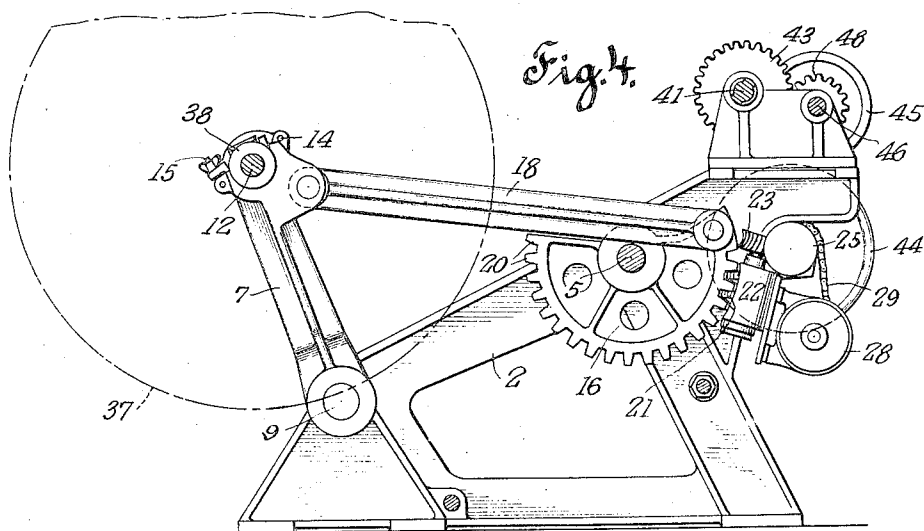
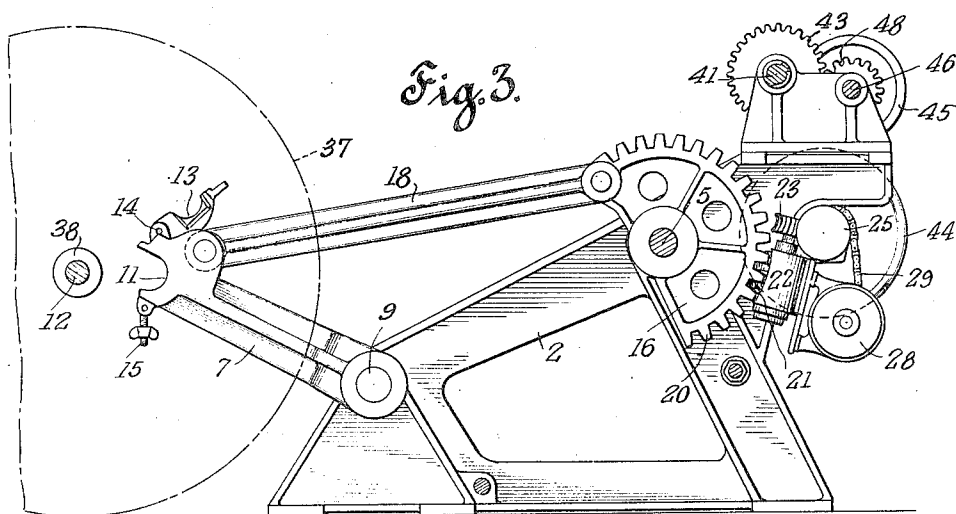
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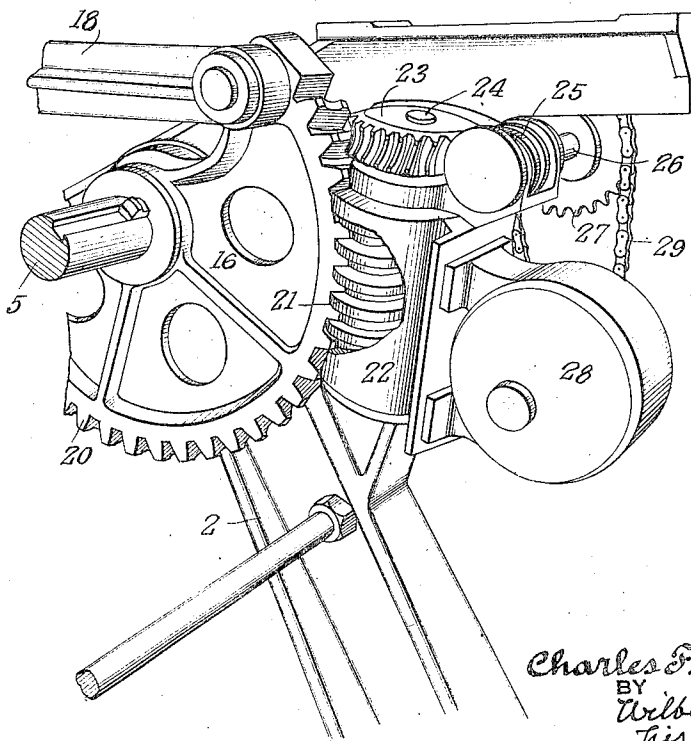
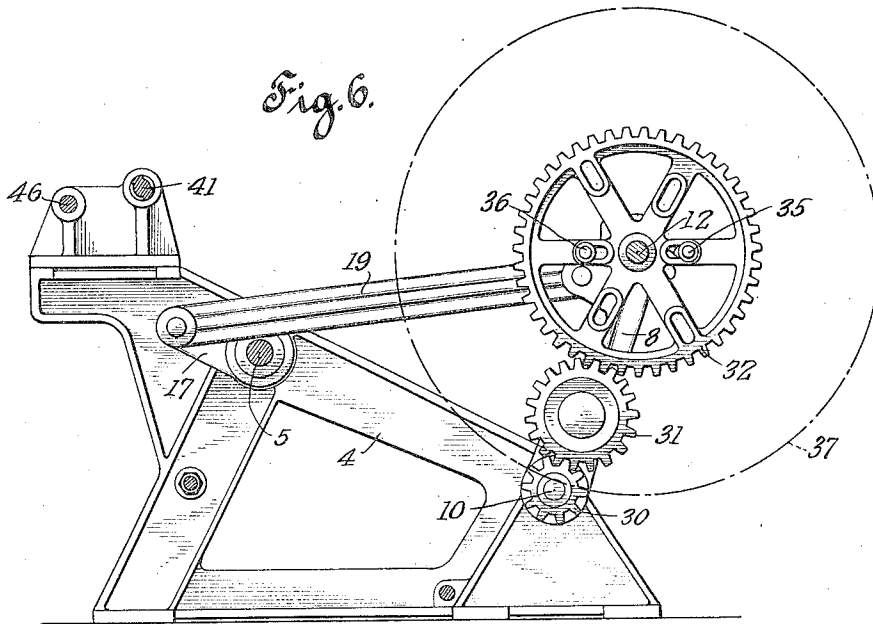
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REELING MACHINE FOR CABLES

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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

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REELING MACHINE FOR CABLES

Application filed August 25, 1928. Serial No. 302,082.

This invention relates to reeling machines for cables and has for its object to provide a machine of the class specified, simple in construction and wherein means are provided for the reception and discharge of reels without the use of extraneous tackle for hoisting the reel.

To these and other ends which will appear hereinafter, my improvements comprise features which are illustrated in what is at present their preferred form, in the drawings accompanying this specification, wherein

Figure 1 is a plan view of my improved machine and Fig. 2 is front elevation thereof.

Fig. 3 is a cross sectional end elevation on line 3, 3 of Fig. 1, looking from right hand of said figure and showing the machine adjusted for the reception of a reel. Fig. 4 is a sectional end elevation similar to that of Fig. 3, showing the machine with a reel mounted therein, ready for the reception of cable thereon. Fig. 5 is a perspective view showing more in detail the construction of one of the boxes for the reel shaft. Fig. 6 is a sectional end elevation on line 6, 6 of Fig. 1 looking from the left hand of said figure. Fig. 7 is a perspective view of the mechanism for raising and lowering the reel on its shaft, looking from the right hand of Fig. 1. The scale of Figs. 1, 2, 3, 4 and 6 is equal while the scale of Figs. 5 and 7 is about twice that of the other figures.

The present machine is particularly useful in the wire rope and electric cable industries, wherein the reels on which the rope and cables are wound are large and clumsy and when wound with rope or cable are very heavy. Heretofore it has been necessary to use stout tackle carried on overhead runways to lift the reels into and out of the machine. This required the work of several men. By my improved machine an empty reel may be put into the machine and a full reel removed therefrom by one man and in less time than heretofore.

My improved machine preferably includes opposite end frames 2, 4 having feet to stand on the floor. In these frames rock-shaft 5 has bearings and remote therefrom and lower down in said frames, opposite upreach-

ing arms 7, 8 are pivoted on shafts 9, 10 respectively. Said arms at their upper ends are provided with bearings as 11 for reel shaft 12. Bearing 11 has a removable cap 13, preferably hinged at 14 to said arm and having latch 15 for securing said cap in its closed position. Fixed to rock-shaft 5 are opposite cranks 16, 17 the outer ends of which are connected with the outer ends of arms 7, 8 by links 18, 19 respectively. Crank 16 takes the form of a segment worm gear whose teeth 20 mesh with worm 21 rotatably mounted in housing 22 of frame 2. At the upper end of said housing worm gear 23 is fixed to shaft 24 of worm 21. This worm-gear 23 is in turn engaged by worm 25, whose shaft 26 has bearings in an extension of housing 22. To the outer end of shaft 26 is fixed sprocket 27 connected to a similar sprocket on the shaft of motor 28, by chain 29. To the other end of shaft 26 is fixed handwheel 44 whereby worm 25 may be rotated and the mechanism thus operated by hand.

Short shaft 10 on which the lower end of arm 8 is pivoted has fixed thereto pinion 30 which meshes with intermediate gear 31, pivoted on arm 8, and which in turn meshes with large gear 32 fixed to reel shaft 12. To that end of shaft 10 opposite pinion 30, is fixed friction drive drum 33 of known character and said friction drum has fixed thereto sprocket 34 which may be rotated from some source of power not shown but which may be connected with the cable laying machine. By this means and through gears 30, 31, 32 shaft 12 is rotated. Large gear 32 is provided with opposite drive pins 35, 36 which are shiftable radially to varying distances from the center of shaft 12 and are secured within slots provided therefor. These pins are adapted to engage corresponding holes in the head of reel 37, of known character, and thereby rotate said reel in unison with shaft 12.

The outboard end of reel shaft 12 is provided with sleeve 38 which can be removably locked thereto by pin 39 of arm 40 pivoted in a slot in shaft 12. Said sleeve 38 has opposite collars for engagement with the

ends of bearing 11 to prevent endwise movement of shaft 12.

The usual traverse device for guiding the rope or cable onto the reel is mounted on brackets at the rear of frames 2, 4 and may comprise a traverse screw 41, to which is fixed gear 43 meshing with gear 48 fixed to shaft 46. Guide carriage 42 engages traverse screw 41 and is supported in traverse by shaft 46. Power is applied from some known source to pulley 45.

The operation of my improvements is as follows: By means of handwheel 44 or by means of a suitable switch, power is applied to motor 28 and through the double set of worm and gear drive, toothed crank 16 is rotated in anti-clockwise direction from the position of Fig. 4 to that of Fig. 3 whereby arms 7, 8 are lowered. Bearing caps 13 are then unlatched and lifted and reel shaft 12, with large gear 32 fixed near one end thereof and sleeve 38 removably fixed near the other end thereof, is lifted out of its bearings in arms 7, 8. Then sleeve 38 is unlocked and removed from shaft 12, and said shaft is thrust through the axial hole in a reel, sleeve 38 is replaced and the reel with shaft 12 therein is rolled into position between arms 7, 8 and shaft 12 seated in bearings 11 in the ends of said arms respectively. Bearing caps 13 are then closed and locked, the motor is reversed and arms 7, 8 are swung upwardly to the position of Fig. 4, when the machine is ready to start winding rope or cable onto the reel. When the reel is filled, shaft 5 is again rotated in anti-clockwise direction and the reel is lowered to the floor and discharged from the machine.

By the peculiar arrangement of gears 30, 31, 32, the first of which is coaxial with the pivots of arms 7, 8 and the last of which is coaxial with the reel shaft, driving connection is maintained at all positions of the reel relative to the floor. Thus for small reels, arms 7, 8 may stand nearly as shown in Fig. 3 while the machine is in operation, while for large reels said arms will be swung up as shown in Fig. 4 to lift the reel free of the floor.

I claim:

1. In a machine of the character described the combination of a shaft adapted for revolvably supporting a reel, opposite arms mounted for oscillation on a common fixed axis, means at the ends of said arms, opposite said axis, for revolvably supporting said shaft and means for oscillating said arms in unison for raising and lowering said shaft.

2. In a machine of the character described the combination of a shaft adapted for revolvably supporting a reel, opposite arms mounted for oscillation on a common fixed axis, means at the ends of said arms, opposite said axis, for revolvably supporting said shaft, a shaft parallel with the axis of said arms,

mounted for oscillation in fixed bearing, opposite cranks fixed to said shaft, means operatively connecting said arms and said cranks and means for oscillating said parallel shaft.

3. In a machine of the character described the combination of a shaft adapted for revolvably supporting a reel, oscillatable means for revolvably supporting said shaft, a shaft parallel with the axis of oscillation of said means for supporting said reel shaft, a crank fixed to said parallel shaft, means operatively connecting said crank with the oscillatable means for supporting the reel shaft and means for oscillating said parallel shaft.

4. In a machine of the character described the combination of a shaft adapted for revolvably supporting a reel, oscillatable means for revolvably supporting said shaft, a shaft parallel with the axis of oscillation of said means for supporting said reel shaft, a crank fixed to said parallel shaft, means operatively connecting said crank with the oscillatable means for supporting the reel shaft, worm and gear means for oscillating said parallel shaft and power actuated means for operating said worm and gear means in opposite directions.

5. In a machine of the character described the combination of a shaft adapted for revolvably supporting a reel, opposite arms mounted for oscillation on a common fixed axis, bearings at the ends of said arms, opposite said axis, for revolvably supporting said shaft, means for oscillating said arms in unison for raising and lowering said shaft, caps to said bearings, means for removably securing said caps in place, a sleeve removably fixed to said reel shaft, said sleeve being revolvably mounted in one of said bearings and means on said sleeve to prevent its endwise movement in said bearing.

6. In a machine of the character described the combination of a shaft adapted for supporting a reel, opposite arms mounted for oscillation on a common fixed axis, means at the ends of said arms, opposite said axis, for revolvably supporting said shaft, means for oscillating said arms in unison for raising and lowering said shaft, means for rotating said shaft and means for rotating the reel from said shaft.

7. In a machine of the character described the combination of a shaft adapted for revolvably supporting a reel, opposite arms mounted for oscillation on a common fixed axis, means at the ends of said arms, opposite said axis, for revolvably supporting said shaft, means for oscillating said arms in unison for raising and lowering said shaft, a gear fixed to the reel shaft and a gear coaxial with the axis of oscillation of said arms, said gears being operatively connected and means for rotating said coaxial gear.

8. In a machine of the character described

the combination of a shaft adapted for rev-
olubly supporting a reel, oscillatable means
for revolubly supporting said shaft, a shaft
parallel with the axis of oscillation of said
5 means for supporting said reel shaft, a crank
fixed to said parallel shaft, means operatively
connecting said crank with the oscillatable
means for supporting the reel shaft, means
for oscillating said parallel shaft and means
10 for rotating the reel shaft.

9. In a machine of the character described
the combination of a shaft adapted for rev-
olubly supporting a reel, oscillatable means
for revolubly supporting said shaft, a shaft
15 parallel with the axis of oscillation of said
means for supporting said reel shaft, a crank
fixed to said parallel shaft, means operatively
connecting said crank with the oscillatable
means for supporting the reel shaft, means
20 for oscillating said parallel shaft, a gear fixed
to the reel shaft and a gear coaxial with the
axis of oscillation of said arms, said gears
being operatively connected and means for
rotating said coaxial gear.

10. In a machine for winding cable upon
25 reels, a shaft adapted for revolubly support-
ing a reel, a support, a pair of arms pivotally
mounted on said support, means at the ends
of said arms for detachably and revolubly
30 mounting said shaft thereon, and means con-
nected with the ends of the arms for oscillat-
ing the latter for raising or lowering said
shaft.

In witness whereof, I hereby affix my sig-
35 nature, this 24th day of August, 1928.

CHARLES F. VAN HOOK.

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