July 7, 1931. A. H. W. WESSLER 1,813,831

WIRE REELING APPARATUS

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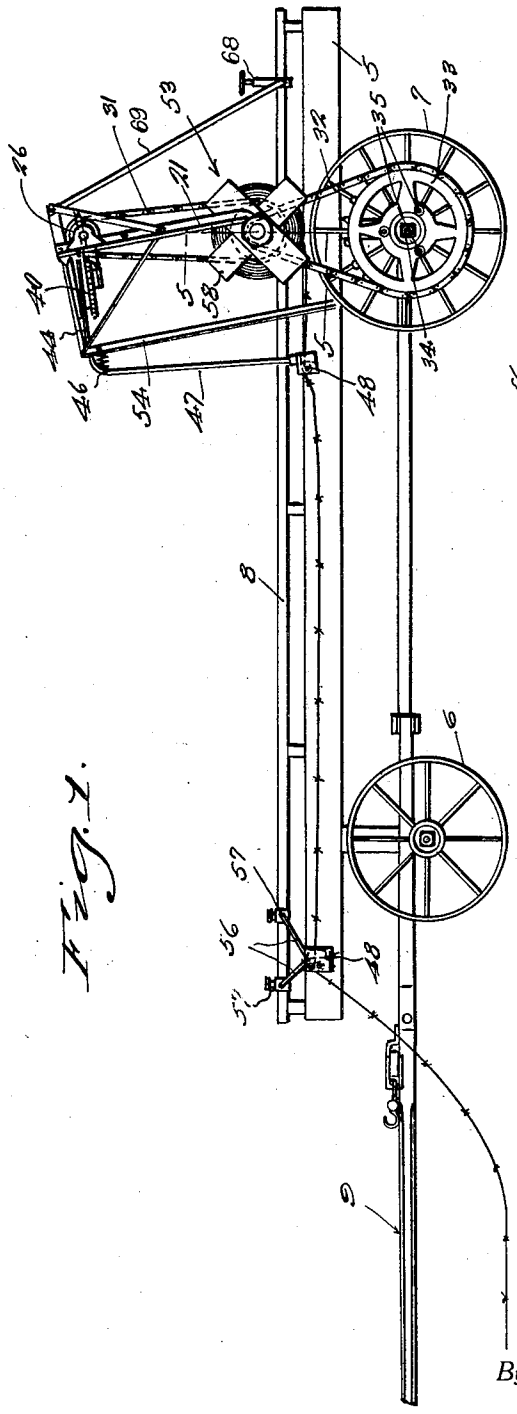


Fig. 1.

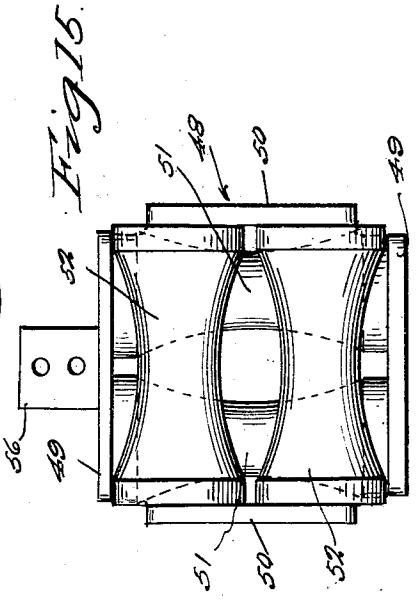


Fig. 1b.

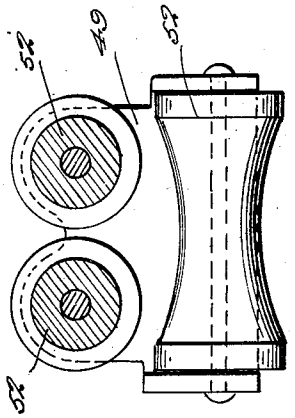


Fig. 1a.

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WIRE REELING APPARATUS

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Fig. 10.

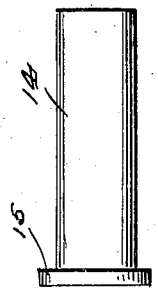


Fig. 11.

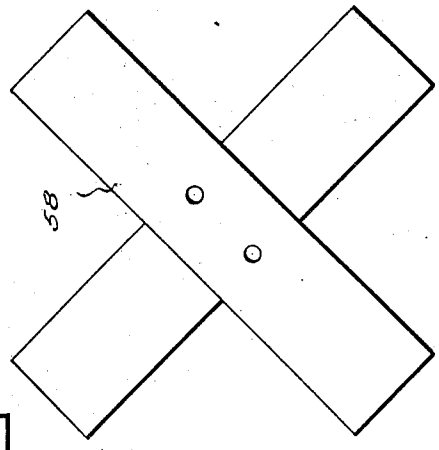


Fig. 9.

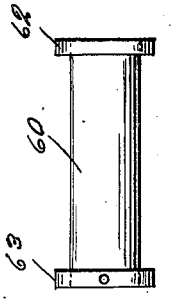


Fig. 8.

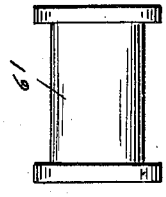


Fig. 12.

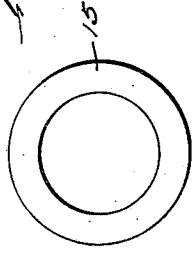


Fig. 7.

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WIRE REELING APPARATUS

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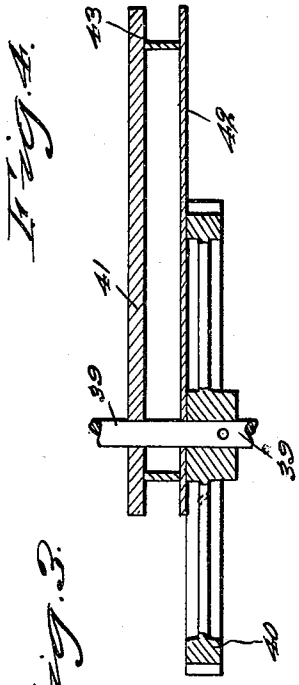


Fig. 4.

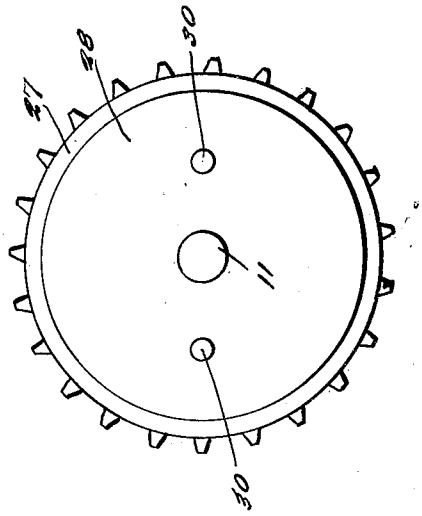


Fig. 5.

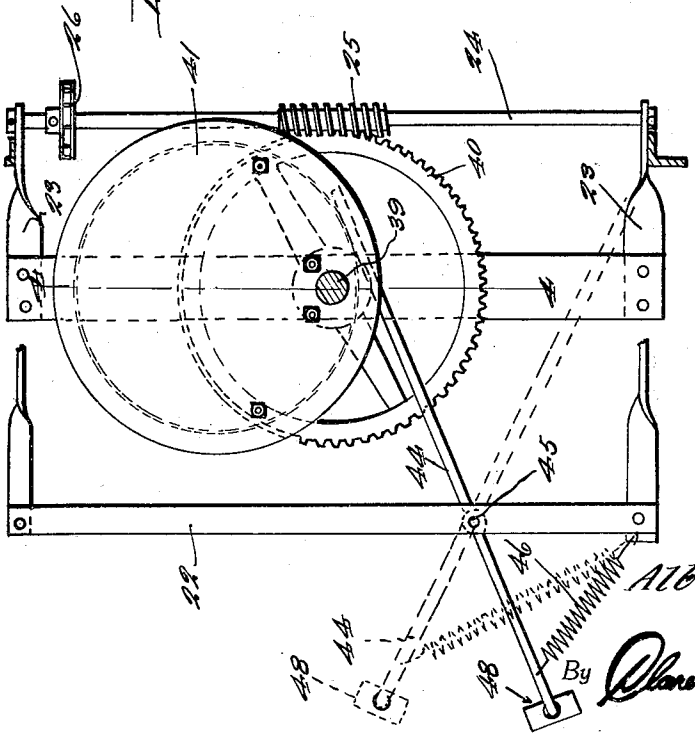


Fig. 3.

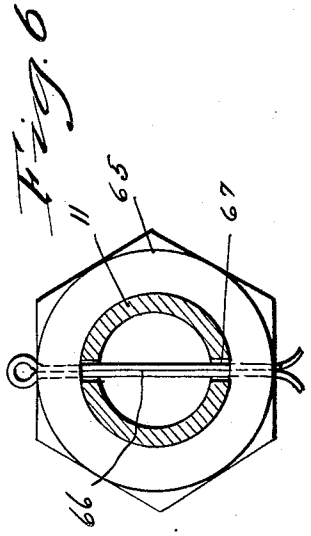


Fig. 6.

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WIRE REELING APPARATUS

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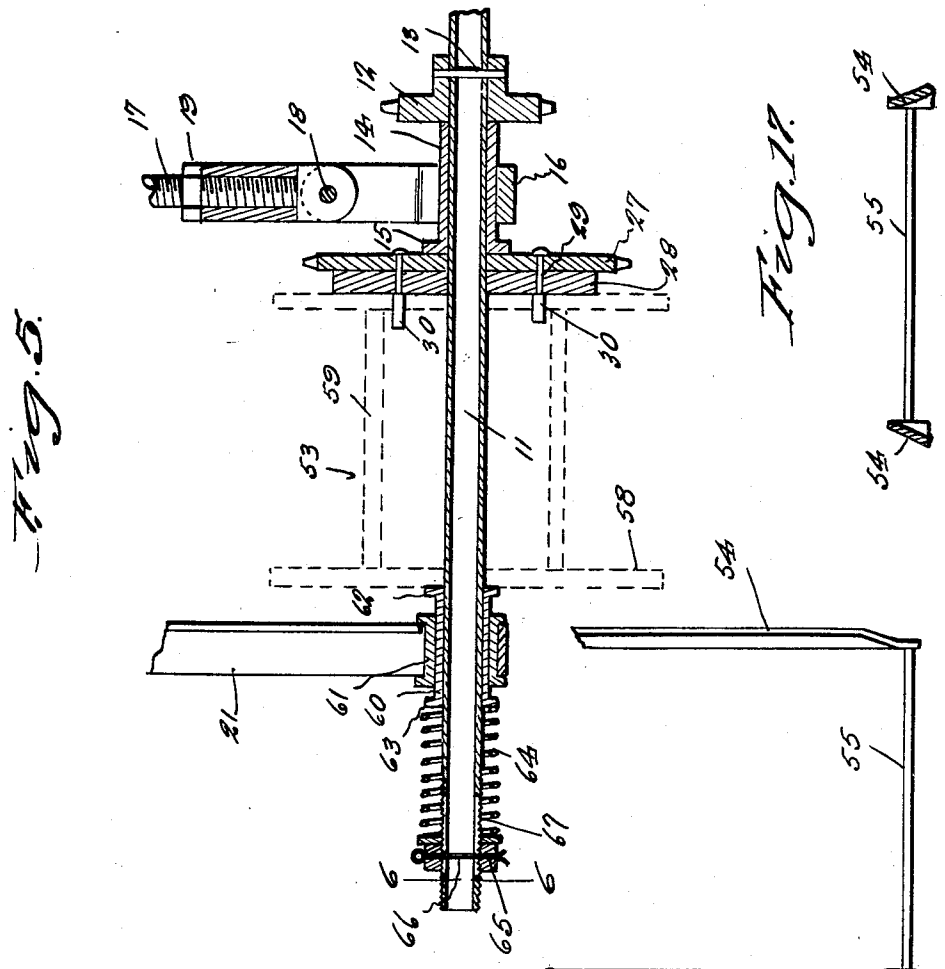


Fig. 5.

Fig. 11.

Fig. 16.

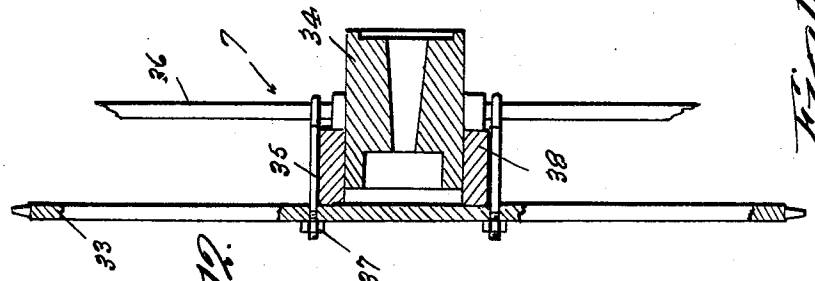


Fig. 12.

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Patented July 7, 1931

1,813,831

UNITED STATES PATENT OFFICE

ALBERT HERMAN WILLIAM WESSLER, OF ARENZVILLE, ILLINOIS

WIRE REELING APPARATUS

Application filed June 7, 1929. Serial No. 369,188.

The present invention appertains to new and useful improvements in the class of invention known as winding and reeling and more particularly the invention has reference to a novel apparatus for winding barbed wire onto spools.

The principal object of the invention is to provide an apparatus for winding barbed wire in a quick and efficient manner without attaching the same.

Another important object of the invention is to provide a winding apparatus of the character mentioned which in use will automatically take care of various conditions that would otherwise need be executed manually.

These and other important objects of the invention will become more apparent to the reader after considering the invention as described and claimed hereinafter.

In the drawings:

Figure 1 represents a side elevation of the improved apparatus.

Figure 2 represents an end view of the apparatus.

Figure 3 represents a sectional view, taken substantially on the line 3—3 of Figure 2.

Figure 4 represents a vertical sectional view, taken substantially on the line 4—4 of Figure 3.

Figure 5 represents a vertical sectional view, taken substantially on the line 5—5 of Figure 1.

Figure 6 represents a sectional view, taken substantially on the line 6—6 of Figure 5.

Figure 7 represents a side elevation of the sprocket and disc unit, indicated in Figure 5.

Figure 8 represents a side elevation of a bearing bushing.

Figure 9 represents a side elevation of a clutch member for slidable disposition through the bushing 8.

Figure 10 represents a side elevation of a spacing member which is shown in use in Figure 5.

Figure 11 represents a side elevation of one of the side members of the winding spool.

Figure 12 represents a fragmentary sectional view through the driving wheel and sprocket of the apparatus.

Figure 13 is a side elevation of a detail.

Figure 14 is a partial sectional view of one of the guide units for the wire.

Figure 15 represents a side elevation of one of the guide units.

Figure 16 represents a side elevation of a guide frame for association with the winding spool.

Figure 17 represents a horizontal sectional view through the guide frame.

Referring to the drawings, wherein like numerals designate like parts, it will be seen that the present invention includes a wagon frame 5, supported by front and rear wheels 6 and 7 respectively. The wagon frame 5 supports a platform 8, while a tongue 9 extends forwardly for connection to a team of horses. Obviously, a slight modification can be made to adapt the vehicle to a tractor, if desired.

At the rear end of the platform 8 and mounted thereon in transverse spaced relation are bearing structures 10—10 through which a shaft 11 is journaled. The shaft 11 projects a substantial distance beyond one side of the wagon and as shown in Figure 5, has a sprocket 12 secured thereon by a pin 13. A spacing sleeve 14 is flanged at one end 15 and this sleeve 14 is slidable on the shaft 11 and disposed through the body 16, which is pivotally connected at its upper end to a screw 17 as at 18, while a jamb nut 19 serves to secure this connection rigidly.

A post 20 extending upwardly from the screw 17 and together with the post 21 supports a horizontally disposed rectangular frame 22. (See Figure 3.) Extensions 23—23 on the frame 22 journally support the ends of the shaft 24. This shaft carries a worm 25 and sprocket 26.

As is shown in Figure 5, a relatively large sprocket wheel 27 has a disc 28 secured to one side by pins 29, which pins are provided with enlarged extensions 30, projecting beyond the disc side of the unit. The wheel 27 is of greater diameter than the disc 28 and trained around the wheel 27 and

sprocket 26 is a chain 31, for driving the shaft 24.

As is shown in Figure 1, a sprocket chain 32 is trained over the sprocket 12, on the shaft 11 and sprocket wheel 33 secured to one of the rear wheels 7. The sprocket 33 is secured to the hub 34 of the wheel 7 by eye bolts 35 which bolts have their eye ends receiving the spoke 36 of the wheel, while their threaded ends are disposed through the central portion of the sprocket wheel and secured thereto by nuts 37, a spacer 38 serving to maintain the sprocket wheel definitely spaced from the hub 34 of the wheel 7.

A stub shaft 39 has a gear 40 keyed thereto while secured to the gear 40 and mounted eccentrically to the shaft 39, is a disc 41, which will be referred to as a cam.

The disc 41 is supplemented by a disc 42, maintained in spaced parallelism with respect thereto by a spacing annulus 43, of less diameter than the diameters of the discs 41 and 42, thus providing a groove way between the edge portions of the disc.

Within this groove way engages one end of a rocker arm 44, which has its fulcrum point at 45 and which projects at its opposite end beyond one side of the frame 22. A spring 46 serves to always maintain the first mentioned end portion of the rocker arm engaged within the aforementioned groove way of the cam. The rocker arm 44 is provided with a depending leg 47, which has one of the guide units generally referred to by numeral 48 secured to its lower end.

The guide unit consists of a frame including top and bottom plates 49—49 connected by side plates 50—50. Interposed between the top and bottom plates 49—49 are grooved rollers 51—51, while interposed between the side plates 50—50 are grooved rolls 52—52. It will thus be seen that a wire will be guided therethrough without likelihood of the same catching on any stationary structure. Furthermore, to guide the wires beyond the guide on the leg 47, and toward the reel generally referred to by numeral 53, the pair of vertical bars 54—54 are provided. The intermediate portions of the bars 54—54 are twisted in the manner shown to assume diverged vertical planes.

The lower ends of the bars are connected by the spacing rod 55. Any suitable bracket 56 may connect the guide units 48 to the legs 47.

Another guide 48 is secured to the forward end of the platform 8 by the arm 56, having clamps 57 for engagement with the platform.

The spool or reel 53 consists in construction of the pair of side pieces in the form of crosses 58 connected together by members 59, around which the wire is to be wound. The spool is to be placed upon the shaft 11, in the manner as shown in Figure 5 and is provided with openings to receive the enlarged ends 30 of the pins 29 extending through the sprocket and disc unit shown in Figure 7. The flanged end 15 of the sleeve 14 bears against the sprocket 27, while the tubular clutch member 60 extends through the bearing bushing 61 and has the flanged end 62 thereof normally abutting the opposite side of the spool from the disc 28. The opposite end of the clutch member 60 has a flange 63 thereon against which the expansible coiled spring 64 impinges. The spring is interposed between the said flange and a nut 65 threadedly engaged on the adjacent end of the shaft 11. The nut 65 is prevented from rotation by a cotter pin 66, disposed through the nut, and a longitudinal slot 67 in the shaft 11. The post 21, which has a bearing on the bushing 61 may be disconnected from the shaft 11, by removing the nut 65 and spring 64, loosening all of the clamps, and then sliding the frame toward the left in Figure 5, until the clutch member 63 and bearing bushing 61 slide off of the shaft 11, after which the frame may be tilted upon its pivotal connection 18 for raising the post 21 clear of the spool 53 which may then be removed from the said shaft by reason of the posts 20 and 21 being mounted on the bushing sleeves 15 and 16 in the manner illustrated, the entire frame structure is rotatable on the shaft and, hence, may be adjusted forward or rearwardly, as conditions require, to maintain the guide 48 in line with the circumference of the wire roll for permitting the wire to be substantially in a straight line from the guide to the roll. The frame is maintained in the position to which adjusted by a clamp 68 gripping the platform 8 rearwardly of the frame and pivotally connected to the frame by a pair of stay rods 69, as shown in Figures 1 and 2.

The clamp 68 is released from the platform when the frame is to be tilted.

Normally the tension of the spring 64 urges the clutch member 63 against the spool 59 and the spool in turn maintains the sprocket 27 snugly against the flanged end of the sleeve 15, thus maintaining all of the parts snugly engaged together, yet ready to be disengaged for the purpose of repair, replacement or demounting.

It will also be readily appreciated that an apparatus of this type may also be successfully employed for unwinding the wire from the spool, since obviously all that is necessary is to insert its ends through the shaft 11 and the frame 8 to maintain the frame against rotary movement after which the chain may be removed from the sprocket 33 to permit rotation freely of the spool upon the shaft for unreeling the wire. The spring clutch will of course keep the spool from unreeling too fast.

It will thus be seen that the structure embodies numerous improvements over apparatus of this nature now in use and especially in view of its peculiar construction, permitting its quick disassembly to render repairs and replacements capable of quick execution.

While the foregoing description has been specific, it is to be understood that numerous changes in the specific shape, size and materials may be resorted to, in the manufacture of this novel apparatus without departing from the spirit or scope of the invention as claimed hereinafter.

What is claimed as new is:

1. A wire winding apparatus comprising a shaft, a removable reel slidably and rotatably mounted on the shaft, an eccentrically mounted disc provided with a grooved periphery, drive means for the disc, a rockable arm, spring means for normally maintaining one end of the arm disposed within the groove of the disc, the opposite end of the arm being disposed angularly and provided at its free end with means for guiding wire onto the reel, a frame slidable on said shaft and composed of relatively fixed and movable section, the said movable section carrying the said disk and rockable arm and being adapted when engaged with the shaft to bridge the said reel and being movable, when released from the shaft, to clear the reel to permit removal of same from the shaft.

2. A wire reeling device comprising a shaft, means for rotating the shaft, a reel loosely mounted on said shaft, a spring clutch fixed on the shaft and including bushing sleeves frictionally engaging opposite sides of said reel, a frame having a bearing on each sleeve and adjustable rotatably of the shaft, means for holding the frame vertically upward of the shaft, guide means carried by said frame and movable transversely of the reel for shunting a wire thereon in layers, a frame having a bearing on each sleeve and adjustable rotatably of the shaft, means for holding the frame vertically upward of the shaft, guide means carried by said frame and movable transversely of the reel for shunting a wire thereon in layers, and means for actuating said guide means.

In testimony whereof I affix my signature.

ALBERT HERMAN WILLIAM WESSLER.