F. W. ELSINGER AND O. SCHMIDT.

REELING AND UNREELING DEVICE.

APPLICATION FILED SEPT. 29, 1919.

1,334,361.

Patented Mar. 23, 1920.

Fig. 4.

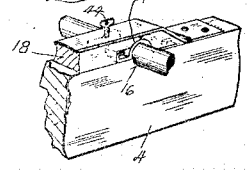


Fig. 5.



Fig. 1.

Fig. 6.

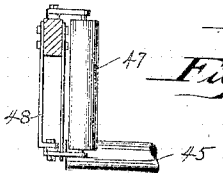


Fig. 2.

Fig. 3

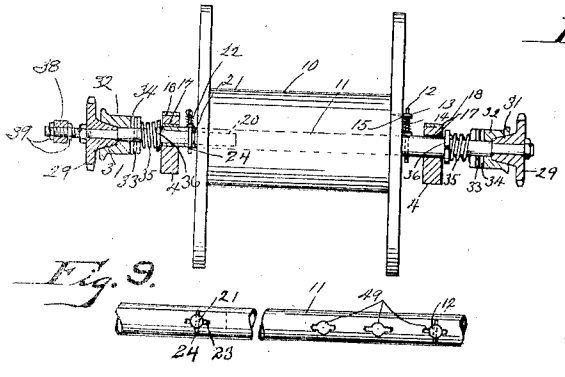


Fig. 8.

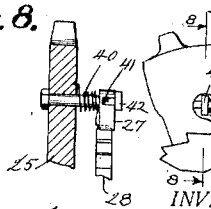


Fig. 7.

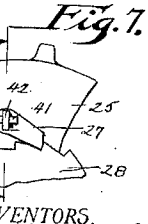


Fig. 9.

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REELING AND UNREELING DEVICE.

1,334,361. Specification of Letters Patent. Patented Mar. 23, 1920.

Application filed September 29, 1919. Serial No. 327,107.

To all whom it may concern:

Be it known that we, FRANCIS W. ELSINGER and OSCAR SCHMIDT, citizens of the United States, and residents of Hartford, in the county of Washington and State of Wisconsin, have invented new and useful Improvements in Reeling and Unreeling Devices, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

The present invention relates to certain new and useful improvements in reeling and unreeling devices for use with fence wire, telephone wires or cables, rope, hose, chain, etc., of that type depicted in Letters Patent Number 1,311,956, issued to us August 5, 1919.

One object of our invention is to provide a reeling and unreeling device of the class described which is so constructed as to accommodate drums of various sizes.

Another object of our invention is to provide means for adjustably applying friction to the shaft for supporting the reel or drum whereby the rotation of the same, when it is free of the driving connections with the truck wheels, may be governed.

A further object of our invention is to provide a series of guide rollers adjacent the drum for guiding the material wound upon the drum irrespective of the direction of travel in which the truck may be moved.

A still further object of the present invention is to provide a dog and ratchet connection between each truck wheel and a sprocket wheel connected with the drum whereby the truck may be moved in a circular course without effecting the drive between the drum and the wheels.

A still further object of our invention is to provide a two-part shaft for supporting the reel or drum having novel means for operatively connecting the parts of said shaft and means for drivingly connecting said shaft with the driving means connected with the truck wheels.

With the above and other objects in view, which will appear as the description proceeds, our invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and claimed, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as come within the scope of the claims.

In the accompanying drawing, we have illustrated one complete example of the physical embodiment of our invention constructed according to the best mode we have so far devised for the practical application of the principles thereof, and in which:

Figure 1 is an elevational view of the device embodying our invention, parts being broken away and parts being shown in section.

Fig. 2 is a plan view thereof, parts being broken away and parts being shown in section.

Fig. 3 is a detail sectional view of the reel or drum taken on the line 3—3 of Fig. 2.

Fig. 4 is a sectional detail perspective view of one of the bearings and friction members for the drum supporting shaft.

Fig. 5 is a detail perspective view of one of the friction members detached.

Fig. 6 is a detail view, part in section and part in elevation, illustrating a portion of the horizontal guide roller and one of the vertical guide rollers.

Fig. 7 is a detail elevational view of a portion of the sprocket wheel, ratchet wheel and dog carried by each truck wheel.

Fig. 8 is a view, part in section and part in elevation, taken through Fig. 7 on the plane of the line 8—8, and

Fig. 9 is a detail sectional view of the two-part shaft illustrating the manner of joining the two sections thereof together, parts of said view being broken away and in section.

In the drawings, the numeral 4 designates the side frame members, 5 the supporting legs secured thereto, 6 the short axles carried thereby, 7 the rear wheels mounted on the axles, and 8 the transverse frame members. The extensions 9 of the frame members 4 form handles so that on lifting the handles upwardly to remove the legs 5 from contact with the ground the device forms a two-wheeled truck which may be pushed along with the wheels moving on the ground.

The reel or drum 10 is mounted upon a shaft 11 and detachably locked thereto by means of a locking pin 12 passing through the shaft and through an eyebolt or receiver 13 on the drum in which it is held by means of a spring 14 interposed between

said shaft and a collar 15 secured to the pin. The shaft 11 is removably journaled in the frame members 4 being seated in bearing grooves 16 in said frame members and friction members 17, to be later described, carried by bearing blocks 18 pivotally secured at one end to the members 4 and detachably secured at their other ends to said members by a sliding bolt lock 19 of usual construction.

As best shown in Figs. 2, 3 and 9, the shaft 11 is substantially tubular and is what may be termed a two-part shaft, having readily removably secured thereon one end of a shaft section 20 secured by means of a releasable pin 21 held in locking position by means of a spring 22. The adjacent end of the shaft 11 and the shaft section 20 have alined keyway slots or openings 23 formed therein through which the locking pin 21 passes, the pin 21 having a pair of oppositely extending ears or lugs 24 formed on its lower end whereby the same may be inserted through the alined openings 23 and when the spring 22 is compressed and the lugs 24 passed outwardly of the remote opening 23 of the shaft 11, the same is turned to bring the ears 24 transversely of the keyway of the openings 23 and thus the locking pin 21 will be held by reason of the tension of its spring against accidental displacement.

The drum 10 is drivingly connected with the wheels 7 of the truck by means of a sprocket wheel 25 rotatably mounted on the hub 26 of each wheel 7 and connected to the wheel by means of a pivoted dog 27 and a ratchet wheel 28, to be later described, is a sprocket wheel 29 loosely mounted on each end of the shaft 11, a detachable chain 30 connecting each adjacent sprocket wheel 25 and 29, and an automatic friction clutch connecting the sprockets 29 with the shaft 11. These clutches each consist of a cone 31 formed integral with the sprocket 29 and engaging a clutch member 32, slidably and non-rotatably secured to the shaft 11 by pins 33 on said shaft, and slots 34 in said member provided with a conical recess receiving the cone 31 and yieldingly held thereagainst by a spring 35 interposed between said member 32, and a collar 36 carried by the shaft. The driving wheels are provided with projecting studs 37 to insure better traction. The drum may also be rotated by means of a hand crank 38 which is secured to the extended outer end of the shaft section 20 by means of suitable lock nuts 39.

With the construction thus far described, the material, such as rope, wire or cable, is wound on the drum by pushing the truck along in the direction of the unwound rope, wire or cable, under which conditions the rotation of the wheels 7 will, through the wheels 25, chain 30, wheels 29 and the clutches above described, rotate the drum to wind the material thereon. As the material is wound on the drum, its diameter increases and to provide for an even winding we have devised the automatic clutch above described, which permits a slippage between the shaft and the sprockets 29.

When the truck is turning a sharp curve, it is necessary that one of the wheels 7 rotate faster than the other, and the dogs 27 and ratchet wheels 28 form what may be termed a differential. The dog 27 of the wheel, which is rotating at the slower rate, ratchets over the teeth of its ratchet wheel as will be obvious. The dogs 27 are normally held in engagement with the ratchet wheels 28 by means of a spring 40, and when it is desired to hold the dogs 27 from engagement with the ratchet wheels, the same are moved against the action of their springs 40 until recesses 41 formed in their outer faces aline with the flattened head 42 of their pivot, when the same will be held inoperative.

With the drum 10 disconnected from the wheels 7 by moving the dogs 27 as above described, the rotation of the drum by reason of the pull exerted on the material being wound therefrom, may be governed by means of the friction members 17. The friction members 17 each consist of a metal member having one end hingedly connected with the bearing block 18, as at 43, and has its other end engaged with an adjusting screw 44 whereby the tension of the portion of the members 17 engaged with the shaft 11 may be increased or decreased at will.

Rotatably mounted at the rear of the truck adjacent the drum 10 is a horizontally disposed elongated guide roller 45 for guiding the material, indicated as at 46, onto the drum. When the truck is turning a sharp curve, the material 46 becomes entangled with the wheels 7 and winds itself on the shaft outside of the drum, and to prevent this, we provide two vertically disposed guide rollers 47 carried by brackets 48 and disposed one at each end of the roller 45.

In order that reels or drums of various sizes may be accommodated on the shaft 11, we provide a plurality of openings 49 adapted to receive the locking pin 12 so that the same may be moved to the position necessary to maintain the size of drum being used centrally of the shaft 11.

What we claim as our invention is:

1. In a device of the class described, the combination with a wheeled truck, of a shaft journally carried by the truck, a drum mounted on and normally free to rotate on said shaft, a keeper carried by the drum, a locking pin carried by said shaft and readily releasably engageable with said keeper to detachably lock the drum to said shaft, said

locking pin being adjustable with respect to said shaft whereby drums of various widths may be accommodated, and a driving connection between said shaft and one of the wheels of said truck.

2. In a device of the class described, the combination with a wheeled truck, of a pair of bearing blocks hingedly carried by said truck, a shaft rotatably mounted on the truck and journaled in said bearing blocks, means carried by said bearing blocks for adjustably applying friction to said shaft, a drum mounted on the shaft, and a driving connection between said shaft and one of the wheels of the truck.

3. In a device of the class described, the combination with a wheeled truck, of a pair of bearing blocks hingedly carried by said truck, a shaft rotatably mounted on the truck and journaled in said bearing blocks, a hinged friction member disposed between each bearing block and the shaft, means connected with said friction members for adjusting the friction between said members and the shaft, a drum mounted on the shaft, and a driving connection between said shaft and one of the wheels of the truck.

4. In a device of the class described, the combination with a two-wheeled truck, of a shaft journally carried by the truck, a drum mounted on the shaft, a sprocket wheel freely journaled on the hub of each wheel of the truck, a sprocket wheel carried by each end of said shaft and in connection with the sprocket wheel carried by the hub of the adjacent truck wheel, a ratchet wheel fixed to the hub of each truck wheel adjacent the sprocket wheel mounted thereon, and a pivoted dog carried by each sprocket wheel carried by the truck wheels and engageable with the teeth of the adjacent ratchet wheel.

5. In a device of the class described, the combination with a two-wheeled truck, of a shaft journally carried by the truck, a drum mounted on the shaft, a sprocket wheel freely journaled on the hub of each wheel of the truck, a sprocket wheel carried by each end of said shaft and in connection with the sprocket wheel carried by the hub of the adjacent truck wheel, a ratchet wheel fixed to the hub of each truck wheel adjacent the sprocket wheel mounted thereon, a pivoted dog carried by each sprocket wheel carried by the truck wheels and engageable with the teeth of the adjacent ratchet wheel, spring means normally urging said dogs into engagement with the ratchet wheels, and means for holding said dogs from engagement with the ratchet wheels against said spring means.

In testimony whereof we affix our signatures.

FRANCIS W. ELSINGER.
OSCAR SCHMIDT.