Sept. 24, 1940. R. C. PIERCE 2,215,651

REEL JACK

Filed May 28, 1938 2 Sheets-Sheet 1

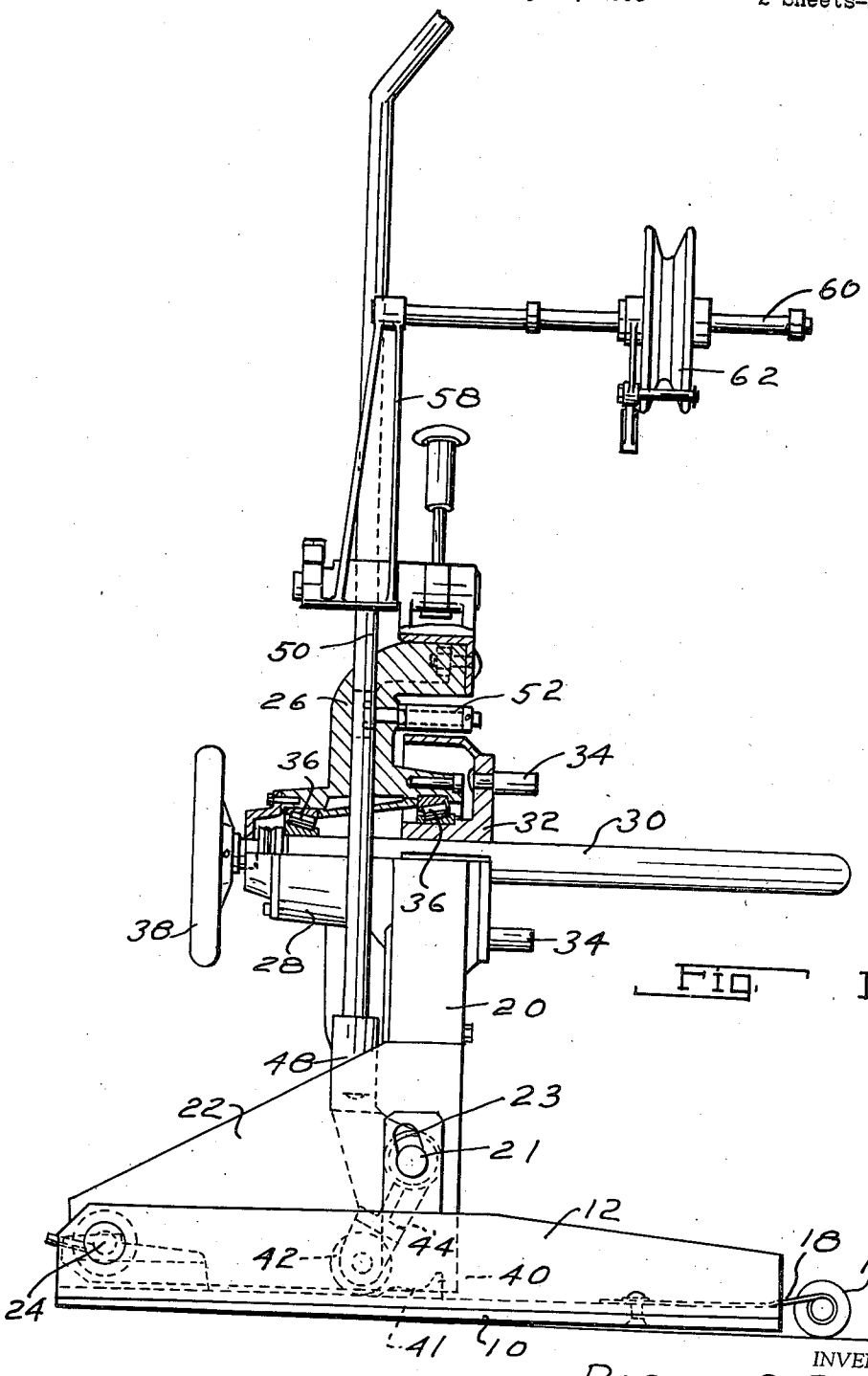


Fig. I

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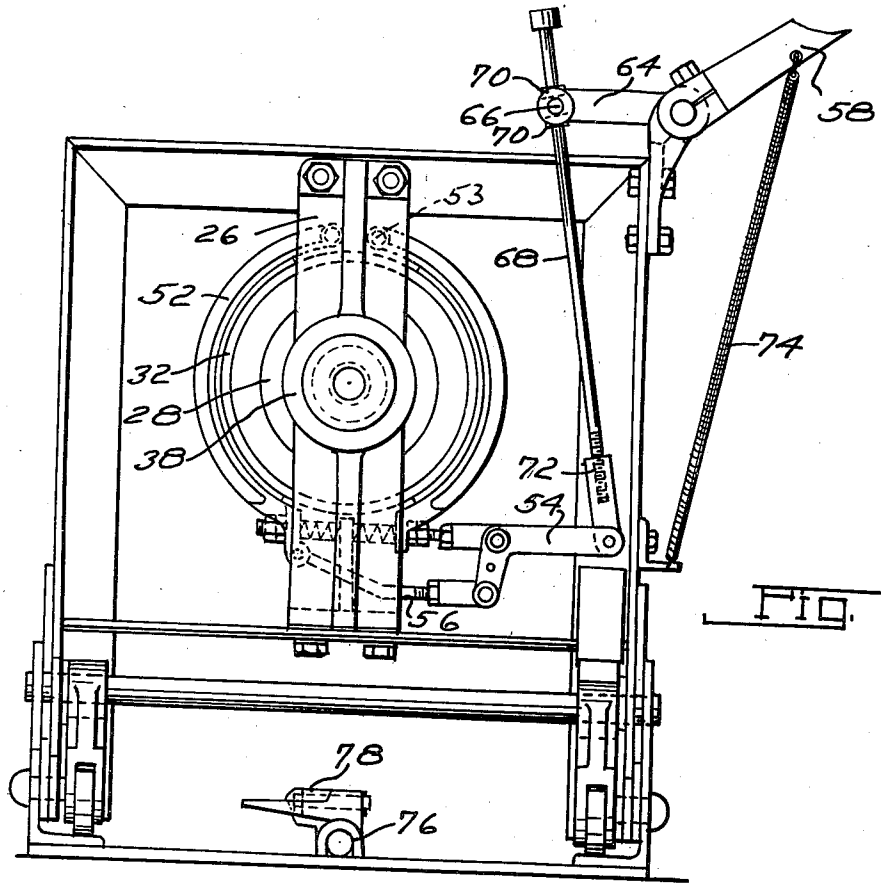


Fig. 2

Fig. 3

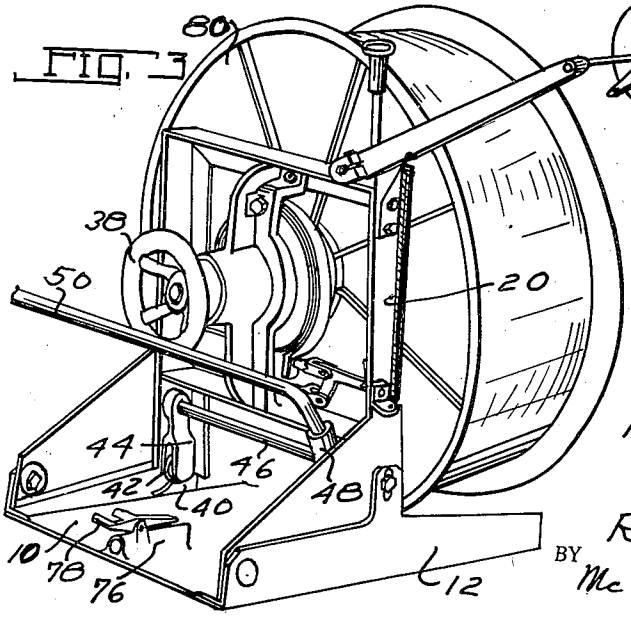
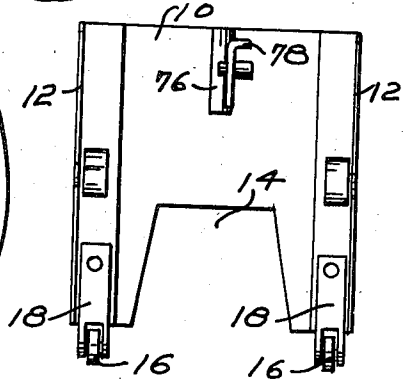


Fig. 4



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UNITED STATES PATENT OFFICE

2,215,651

REEL JACK

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Application May 28, 1938, Serial No. 210,558

5 Claims. (Cl. 242—90)

This invention relates to reel jacks and more particularly to jacks for raising and rotatably supporting reels of wire or the like.

Reels of wire or the like are extremely heavy and cumbersome objects to handle and it is a difficult matter to raise such reels from the floor and support them properly to supply wire processing machinery. The reels may be transported to the desired point of use readily on trucks or by rolling but to raise and support them in a position properly to supply the machinery is difficult.

It is accordingly one of the objects of the present invention to provide a reel jack which will raise and support a reel.

Another object of the invention is to provide a reel jack which may be moved readily when unloaded but which rests solidly on the floor when loaded.

Another object of the invention is to provide a reel jack in which feeding of wire from the reel is automatically retarded to maintain the wire under a predetermined tension. Preferably the retarding means includes an adjustment to vary the tension on the wire.

Other objects and advantages of the invention including novel subcombinations and desirable structural features will be apparent from the following description when read in connection with the accompanying drawings, in which:

Figure 1 is a side elevation with parts in section of a reel jack embodying the invention.

Figure 2 is an end elevation looking from the left in Figure 1.

Figure 3 is a perspective view and Figure 4 is a reduced plan view of the bottom plate or frame.

The illustrated reel jack is constituted by a bottom plate or frame 10 relatively flat on the bottom end having side flanges 12. At one end the frame 10 is cut away as indicated at 14 (Figure 4) so that it may be slid around a reel resting on the floor. Rollers or wheels 16 are carried by springs 18 at the cut away end of the frame, the spring being of sufficient strength to support the jack when it is unloaded by yielding under load so that the jack will rest solidly on the floor.

A second frame 20 has a pair of projecting arms 22 pivoted to the flanges 12 at 24 adjacent the solid end of the frame 10. The frame 20 lies substantially at the center of the frame 10 closely adjacent the cut out portion 14.

Pins 21 carried by the frame 20 are slidable in slots 23 formed in the flanges 12 or suitable extensions thereof to guide the frame 20 and to limit its movement relative to the frame 10.

A center bracket or support 26 is secured to the frame 20 and has a hub 28 in which a spindle or shaft 30 is rotatably mounted. The spindle carries a brake drum 32 formed with a pair of driving pins 34 adapted to register with driving openings in a reel and is supported by spaced bearings 36 in the hub 28. A hand wheel 38 is preferably provided on the spindle 30 so that it may be rotated manually to bring the driving pins 34 into register with driving openings in a reel.

The frame 20 is adapted to be rocked about its pivotal connection with frame 10 to raise a reel by means of inclined cam tracks 40 mounted on the frame 10 and adapted to be engaged by rollers 42 carried at the free ends of yokes 44 which are pivotally mounted on the frame 20. Preferably a pair of yokes 44 are provided at opposite sides of the frame and are connected to move together by means of a rigid shaft 46. The shaft and yokes are actuated by a socket 48 adapted to receive an elongated handle 50 to move the rollers 42 on to or off of the cam tracks 40. When the parts are in the position shown in Figure 1, the rollers 42 rest on the flat part of the frame 10 but when the yokes are rocked counterclockwise to the position of Figure 3, the rollers will ride up on the cam members 40 to raise the frame 20. Thus a reel supported by the spindle 30 will be raised from the floor. The spindle 30 inclines upwardly slightly toward its free end, so that the reel has no tendency to be displaced, even though no support is provided for the free end.

Free rotation of the spindle 30 and of a reel carried thereby is prevented by a brake comprising shoes 52 having at their upper ends anchors mounted on the bracket 26 and which shoes 52 are engageable with the exterior of the brake drum 32. The brake shoes 52 are actuated, as best seen in Figure 2, by a bell crank lever 54 connected intermediate its ends to the lower end of one shoe 52 and having one of its arms connected to the lower end of the other shoe 52 by a rod 56. When the bell crank lever 54 is rocked in a counterclockwise direction the brake shoes 52 will be moved into engagement with the drum 32 to retard rotation of the spindle 30 and when it is rocked in a clockwise direction, the shoes 52 will be released. The anchors of shoes 52 are carried by bolts 53 mounted in a slot so that they can readily be loosened up, adjusted, and then tightened to fix them in place. If desired, the

anchors may be connected by a threaded bolt or turn-buckle or the like to facilitate this adjustment.

The bell crank lever 54 is operated by a lever 58 pivoted at the upper part of the frame 20 and extending at an angle therefrom. A shaft 60 secured to the free end of the lever 58 carries a pulley 62 under which wire from a reel is adapted to pass so that the lever is moved in accordance with tension in the wire to actuate the brake. The pulley 62 can slide freely axially of the shaft 60 as the wire is fed from different parts of the reel. A horizontal extension 64 on the lever 58 carries a cross pin 66 through which a rod 68 rotatably extends, collars 70 being provided to prevent longitudinal movement of the rod relative to the cross pin. At its lower end, the rod 68 is threaded into a yoke 72 which is pivotally connected to the bell crank 54. If the rod 68 is rotated, its effective length will be varied to vary the angular position of the lever 58 thereby to vary the tension maintained in the wire. Preferably a spring 74 is provided to urge the lever 58 downwardly in a direction to apply the brake, the wire passing under pulley 62 and tending to raise it to release the brake.

The frame may be formed with bolt holes on both sides, so that the arm 58 and the shoes 52 operated thereby may readily be reversed so that the wire can be drawn off at either side of the reel.

The jack is readily moved from place to place by inserting handle 50 in a socket 76 on the frame 10, a suitable latch 78 being provided to hold the handle in the socket. By raising the handle, the frame 10 will be supported on the rollers 16 and may be wheeled about as desired.

In use a reel of wire or the like 80 is preferably placed at the desired point of use adjacent a machine and the reel jack is wheeled up to the reel with the rollers 42 in the position shown in Figure 1. At this time the spindle 30 is at the same height as a central supporting opening of the reel and may be inserted therein, the hand wheel 38 being turned to permit the driving pins 34 to enter into driving openings in the reel. The handle 50 may then be placed in the socket 48 and swung downwardly to rock the yokes 44 in a direction to roll the rollers 42 up the inclined cam members 40. This operation raises the frame 20 and jacks the reel off of the floor. If desired, the cams 40 may be provided with recessed set portions as shown at 41 (Figure 1) to hold the rollers in the raised position.

With the reel raised from the floor and supported by the spindle 30, wire may be unwound therefrom and threaded under the pulley 62 and into the machine. As the machine operates to draw wire from the reel, the wire will be tensioned thereby tending to raise the pulley 62 to release the brake 52. Thus the wire will be maintained under the desired tension, any decrease in tension permitting the lever 58 to move clockwise under the influence of spring 74 to tighten the brake.

While one embodiment of the invention has been illustrated and described in detail, it will be understood that numerous changes might be made therein and it is not intended to limit the scope of the invention to the exact form shown nor otherwise than by the terms of the appended claims.

What is claimed is:

1. A reel jack comprising a frame adapted to rest on the floor, a second frame pivoted to the first named frame, a substantially horizontal spindle carried by the second frame at right angles to the pivotal connection between the two frames and adapted to support a reel, cooperating cam means on said frames remote from the pivotal connection therebetween to tilt the second frame in a direction to raise the spindle, and means including wheels and a handle to facilitate moving said jack to insert said spindle into the central opening of a reel.

2. A reel jack comprising a frame adapted to rest on the floor, a second frame pivoted to the first named frame, a substantially horizontal spindle carried by the second frame and extending at right angles to the pivotal connection between the frames and adapted to support a reel, an inclined cam member on the first frame remote from the pivotal connection with the second frame, a yoke pivoted on the second frame and carrying a roller engageable with the cam member to tilt the second frame in a direction to raise the spindle, and means including wheels and a handle to facilitate moving said jack to insert said spindle into the central opening of a reel.

3. A reel jack comprising a relatively flat bottom plate cut away at one end to fit around a reel of wire, a frame movably carried by said plate adjacent said cut-out end, a spindle carried by said frame and extending over said cut away portion towards the open side thereof to enter a central opening in a reel, and means to raise said frame and spindle relative to the plate.

4. A reel jack comprising a relatively flat bottom plate cut away at one end to fit around a reel of wire, a frame movably carried by said plate adjacent said cut-out end, a spindle carried by said frame and extending over said cut away portion towards the open side thereof to enter a central opening in a reel, wheels yieldingly carried by the plate at said one end normally to support the plate, and means to raise said frame and spindle relative to the plate to raise the reel, said wheels being adapted to yield under the weight of the reel so that the plate will rest on the floor.

5. A reel jack comprising a bottom plate cut out at one end to receive a reel, a frame movably mounted on said plate adjacent said cut-out portion, means carried by said frame to engage and support a reel, wheels mounted adjacent said one end of the plate, a socket at said opposite end of the plate to receive a handle for moving the jack, means for raising said frame relative to the plate including a socket to receive an operating handle, and a handle selectively engageable with said sockets.

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