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G. HAUCK ET AL

3,469,801

DEVICE FOR UNWINDING WIRE FROM A REEL

Filed Jan. 15, 1968

2 Sheets-Sheet 1

Fig. 1

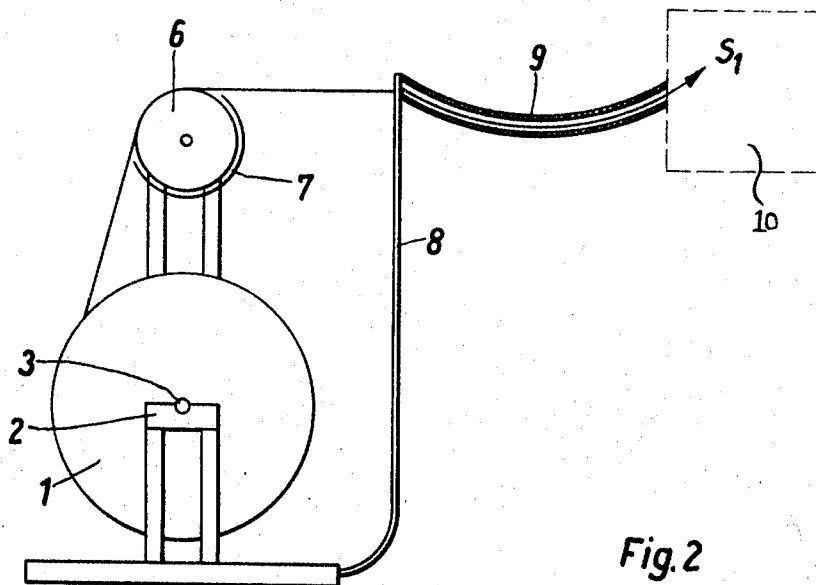
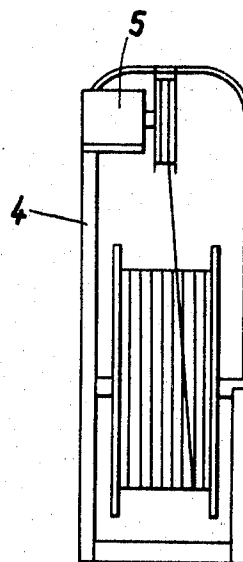


Fig. 2



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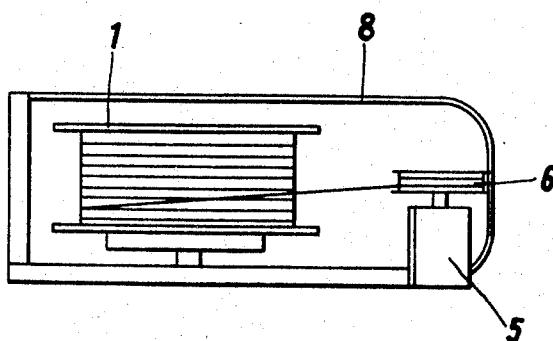
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Fig.3



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DEVICE FOR UNWINDING WIRE FROM A REEL
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8 Claims

ABSTRACT OF THE DISCLOSURE

A device for the unreeling of wire from a rotatably supported reel, in which a drive reel, driven by a motor, is placed between the reel of wire and a utilization device which exerts a pulling force on the wire. Between the drive reel and the utilization device, a resilient bracket is placed which is connected to the utilization device by an elastic, limply suspended hose through which the wire passes from the drive reel to the utilization device.

BRIEF SUMMARY OF THE INVENTION

The invention relates to a device for unreeling a wire from a rotatably supported reel.

According to a known method for unreeling wire, the reel rotates without any additional drive impulse solely under the pulling power exerted by the wire utilization device. Such a method is feasible only with small reels.

In another method, the wire is unreeled from a fixed reel, the axis of which is vertical. Removal of wire from the reel is effected by means of an overhead finger which rotates around the axis of the reel. A disadvantage of this method is that the unreeled wire is turned around its own axis. It therefore receives an undesired twist. Moreover, there is the danger that the coils of wire will spill off the reel, so that there is no certainty of a continued, unhampered removal of wire from the reel.

It is an object of the invention to provide a device avoiding these disadvantages.

In the unreeling device according to the invention, a motor-driven drive reel is provided between the wire reel and the utilization device.

The axles of the wire reel and of the drive reel can be horizontally or vertically supported in suitable bearings.

The mere provision of the drive reel between the wire reel and the utilization device is not itself sufficient and further means are necessary to render the unreeling device trouble-free.

For this purpose, a resilient bracket is added, which is attached to the unreeling device, and is connected to the utilization device by means of a limply suspended elastic hose through which the wire passes from the drive reel to the utilization device. This arrangement, on the one hand, prevents sudden jerky loading of the reel while on the other hand it serves as an intermediary wire storage point between the drive reel and the utilization device.

In order to prevent spill-off of wire from the drive reel, the latter is provided with a guard plate.

BRIEF DESCRIPTION OF THE DRAWING

FIGURE 1 is a schematic side view of the device according to the invention;

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FIGURE 2 is a front view of the device according to the invention; and

FIGURE 3 shows an alternate embodiment of the invention in front view.

DETAILED DESCRIPTION

In FIGS. 1 and 2 there is shown a reel 1 from which wire is to be unwound. The reel 1 is horizontally supported on two bearings 2 attached to a pedestal or frame 4, and the reel 1 is rotatable around its axle 3. One leg of pedestal 4 is extended upwards beyond the level of reel 1 and carries at its upper end a motor 5, to the shaft of which is attached a drive reel 6. Fastened to the base of the pedestal 4 is a resilient bracket 8, which is connected to a utilization device 10 by an elastic hose 9, whose length is greater than the distance between the bracket and the utilization device, whereby the elastic hose is limp and sags. The drive reel 6 is provided with a guard plate 7.

In operation, the reel 1 is placed on the bearings 2 of pedestal 4 by means of a crane, or the like. From reel 1, the wire passes to the drive reel around which the wire is wound several turns. The wire then passes to the bracket 8 and thence through the hose 9 to the utilization device 10. The drive reel 6 is driven by the motor and rotates at a speed corresponding to the maximum speed of wire consumption by the utilization device. If the utilization device pulls on the wire with a given force S_1 , the value of which will depend upon the number of turns of wire around the drive reel 6 and upon the resistive friction inside the hose 9, then the wire turns will lie firmly upon the peripheral surface of the drive reel 6, and the wire is reeled from the reel 1 due to the adhesive friction between the wire and the drive reel. If the utilization device pulls with a force smaller than S_1 , then the wire turns will not adhere to the surface of the drive reel 6, which due to the lack of adhesive friction will be unable to convey any wire.

The resilient bracket 8 and the elastic, limply suspended hose 9, which have been inserted between the drive reel and the utilization device, make it possible to withdraw wire, smoothly and uniformly, from the reel. In order to prevent turns of wire spilling from the drive reel 6, this reel is partially surrounded by its guard plate 7.

In FIG. 3 is shown an alternate embodiment of the invention, in which the axles of reel 1 and drive reel 6 are vertically supported by the bearings of pedestal 4.

The device heretofore described makes possible the trouble-free unreeling of wire from a reel, without giving a twist to the wire and without any danger of wire spillage off the reel.

What is claimed is:

1. A device for the unreeling of wire from a reel comprising means rotatably supporting a reel from which wire is to be unwound, wire utilization means for engaging a free end of wire on said reel to draw the same therefrom, a drive reel between the utilization means and the first said reel and around which the wire passes, means for driving the drive reel, an elastic limply suspended hose connected to the utilization means, the wire passing from the drive reel through the hose and then to the utilization means, and means resiliently supporting the hose.

2. A device as claimed in claim 1 comprising a guard plate partially surrounding the drive reel.

3. A device as claimed in claim 1, wherein said drive reel and the first said reel are rotated about horizontal axes which are vertically displaced.

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4. A device as claimed in claim 1 comprising a frame supporting the first said reel and the drive reel, said means which resiliently supports the hose comprising a resilient bracket supported on said frame, the hose being attached to said bracket.

5. A device as claimed in claim 1, wherein said drive reel and the first said reel are rotated about vertical axes which are horizontally displaced.

6. A device as claimed in claim 1, wherein said wire is wound several turns around the drive reel.

7. A device as claimed in claim 1, wherein said means for driving the reel is a motor, the device further comprising a frame supporting the motor, drive reel, the first said reel and said means which resiliently supports the hose.

8. A device as claimed in claim 1, wherein said utilization means has a maximum speed of wire consumption and said drive reel is driven in rotation at a speed corresponding to the maximum speed of wire consumption.

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LEONARD D. CHRISTIAN, Primary Examiner

U.S. Cl. X.R.

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