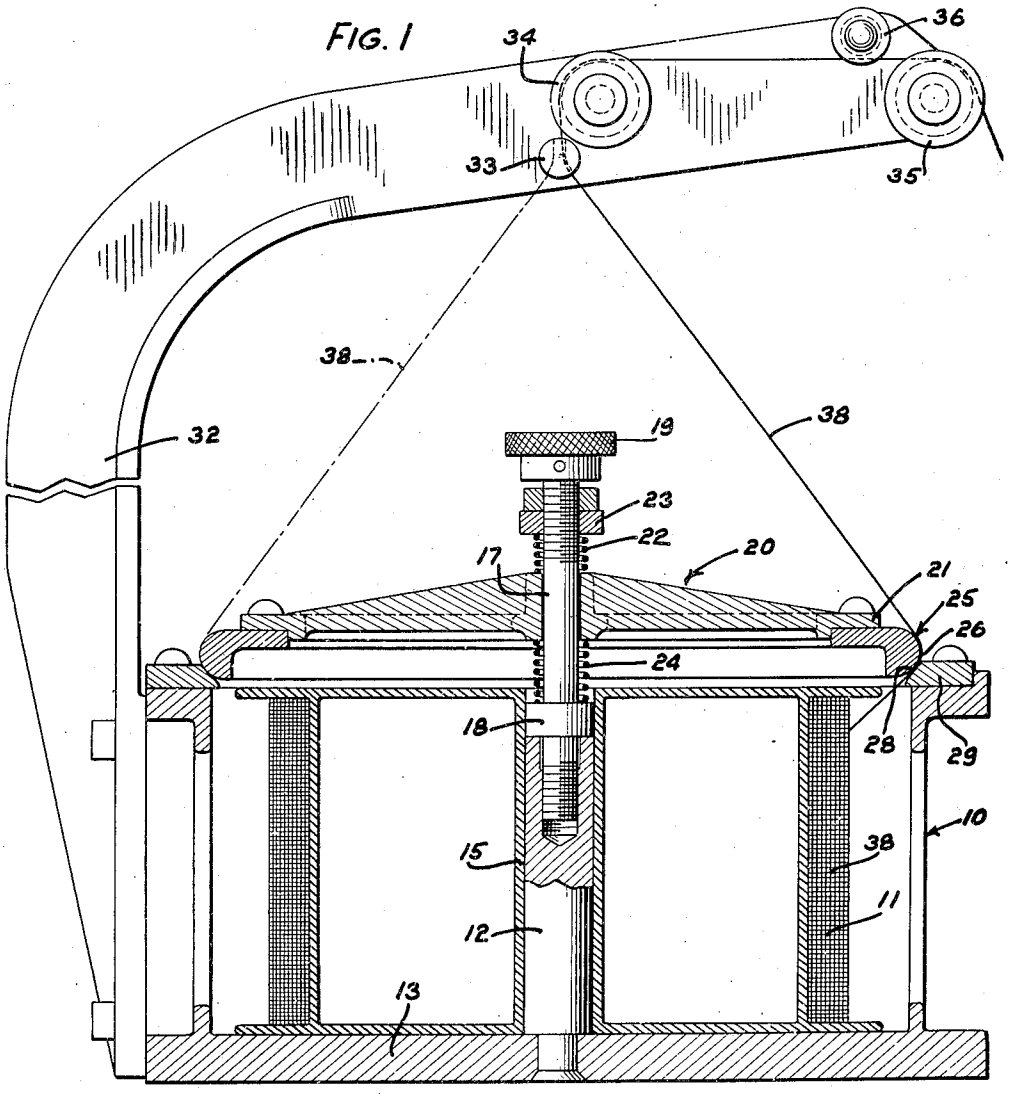
Jan. 4, 1944. A. L. QUINLAN 2,338,539

MATERIAL UNWINDING DEVICE

Filed Dec. 9, 1941

FIG. 1



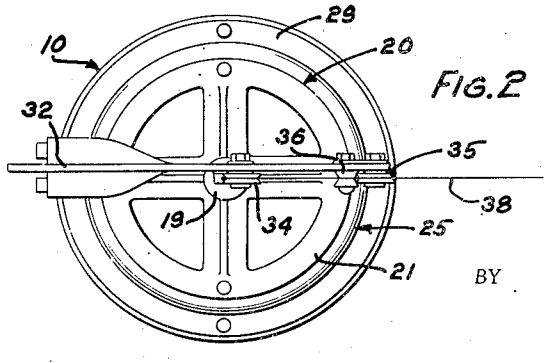


FIG. 2

INVENTOR.
A. L. QUINLAN
BY Harry L. Duff
ATTORNEY

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MATERIAL UNWINDING DEVICE

Amos L. Quinlan, La Grange Park, Ill., assignor to Western Electric Company, Incorporated, New York, N. Y., a corporation of New York

Application December 9, 1941, Serial No. 422,196

8 Claims. (Cl. 242—128)

This invention relates to material unwinding devices, and more particularly to a device for unwinding wire from a stationary spool or reel.

An object of the invention is to provide a simple, inexpensive and efficient device for unwinding strand material from spools, reels, or the like.

In accordance with one embodiment of the invention, there is provided a device for unwinding wire from a stationary spool, in which the wire drawn from the spool passes between two annular rings which coaxially surround the spool and are yieldably pressed together by an adjustable spring to place a predetermined uniform tension on the wire.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which

Fig. 1 is a vertical sectional view of a wire unwinding device embodying the invention, and

Fig. 2 is a reduced plan view thereof.

The device illustrated in the drawing comprises an open top cylindrical housing 10 adapted to accommodate a stationary wire supply spool 11, which is placed on a vertical center post 12 secured to a base plate 13 of the housing. The post is a snug fit for the tubular hub 15 of the spool, and thus serves to prevent lateral displacement of the spool as the wire is withdrawn therefrom.

Removably threaded into the upper end of the post 12 is a vertical stud 17 having a collar-like enlargement 18 intermediate its ends and a knurled knob 19 at its upper end. By means of the knob, the stud is screwed into the post until the collar portion 18 engages the top of the post.

Slidably mounted on the stud 17 between collar portion 18 and knob 19 is a spider 20 having an annular rim 21 which is disposed concentric with the vertical post 12. Above the spider, a coil spring 22 surrounds the stud and is compressed between the spider and an adjustable nut 23 threaded on the stud. A similar coil spring 24 is provided on the stud below the spider, being interposed between the spider and the collar portion 18 of the stud.

To the underside of the spider rim 21 there is secured an annular wire engaging ring 25. This ring has a transversely curved outer peripheral surface 26 which is yieldably pressed by the upper coil spring 22 against a beveled annular surface 28 of a stationary annular ring 29 attached to the flanged upper rim of the housing 10. It will be noted that the two annular rings 25 and 29 are disposed above the upper head or flange of the wire supply spool and are of somewhat larger diameter than the spool head.

Attached to the outside of the housing and extending upwardly therefrom is a bracket arm 32, the upper end of which is bent over so as to overhang the housing. A wire guiding bushing 33, two wire guiding sheaves 34 and 35 and a grooved wire guiding roller 36 are mounted on the overhanging upper end portion of the bracket arm. The bushing 33 is coaxial with the wire engaging ring 25 which, in turn, is coaxial with the wire supply spool. The wire guiding sheave 34 is so positioned with respect to guide bushing 33 that the axis of the latter is substantially tangential to the wire engaging surface of the sheave.

In the operation of the device, a spool 11 containing a supply of wire 38 is placed within the housing 10 on the center post 12, after which the stud 17 with the wire engaging ring 25 thereon is screwed into the upper end of the post, as described above. The outer end of the wire on the spool is passed between the two concentric rings 25 and 29 and is then threaded through guide bushing 33, over the top of guide sheave 34, under guide roller 36 and over guide sheave 35, whence it is directed to its destination.

As the wire is unwound from the spool by being pulled over the overhanging guide sheaves, it travels around the annular ring 25 which, under the pressure of coil spring 22, presses the moving wire against the beveled annular surface 28 of the stationary ring 29. A brake or drag is thus applied to the moving wire, which serves to tension the wire, the tension being adjustable by adjusting the pressure exerted by the spring 22. This is done by means of the spring adjusting nut 23. The lower spring 24 serves to counterbalance the weight of the wire engaging ring 25 when the required braking pressure on the wire is less than would be obtained by the weight of this ring.

From the above description, it will be seen that a simple, inexpensive and rugged device is provided for unwinding wire and the like from stationary spools or reels. Since the spring pressed ring 25 constantly applies a uniform braking pressure to the wire as it is unwound from the spool, the wire is constantly supplied by the device under a uniform tension, which may be varied without interrupting the supply of wire from the spool, by simply turning the spring adjusting nut 23.

It is to be understood that the invention is not limited to the specific embodiment thereof herein

illustrated and described, except in so far as is defined by the appended claims.

What is claimed is:

1. In a device for unwinding strand material from a spool or the like, a member having an annular strand engaging surface coaxially surrounding the spool, an annular ring coaxial with said surface and movable axially of the spool for pressing the strand material against said surface as it is unwound from the spool, and adjustable means for yieldably pressing said annular ring against said annular surface.

2. In a device for unwinding strand material from a spool or the like, a member having an annular strand engaging surface coaxially surrounding the spool, and a spring pressed annular ring coaxial with the spool for pressing the strand material against said annular surface.

3. In a device for unwinding strand material from a stationary spool, a pair of annular rings coaxially surrounding the spool and arranged for the passage of the strand material therebetween as it is unwound from the spool, and means for yieldably pressing one of the annular rings toward the other ring to tension the material.

4. In a device for unwinding strand material from a stationary spool, a stationary annular ring coaxially surrounding the spool, said ring having an annular strand engaging surface, and a spring pressed annular ring coaxial with the first ring and movable axially of the spool for pressing the strand material against the first ring as it is unwound from the spool.

5. In a device for unwinding strand material from a stationary spool, a pair of annular rings coaxially surrounding the spool and arranged for the passage of the strand material therebetween as it is unwound from the spool, and adjustable spring means for pressing one of said rings toward the other ring to tension the material.

6. In a device for unwinding strand material from a stationary spool, a cylindrical housing for coaxially surrounding the spool, said housing having an annular strand engaging surface coaxial with the spool, and spring pressed means for pressing the strand against said surface as it is unwound from the spool.

7. In a device for unwinding wire from a stationary supply spool, a cylindrical open end housing for coaxially surrounding the spool, an annular ring attached to the open end of the housing, said ring having an annular wire engaging surface coaxially surrounding the spool, a movable wire engaging ring disposed coaxial with the first mentioned ring, and an adjustable spring for urging the movable ring toward the other ring to press the wire against said annular surface as it is unwound from the spool.

8. In a device for unwinding strand material from a spool or the like, a member having an annular strand engaging surface coaxially surrounding one end of the spool, a post coaxial with the spool, an annular strand engaging member coaxial with the post and movable axially thereof, and yieldable means for constantly urging said annular member toward said annular surface to press the strand material against said surface as it is unwound from the spool.

AMOS L. QUINLAN.