June 5, 1934. E. J. McILVRIED 1,961,376

LOCKING MECHANISM

Filed April 2, 1930

FIG. 1.

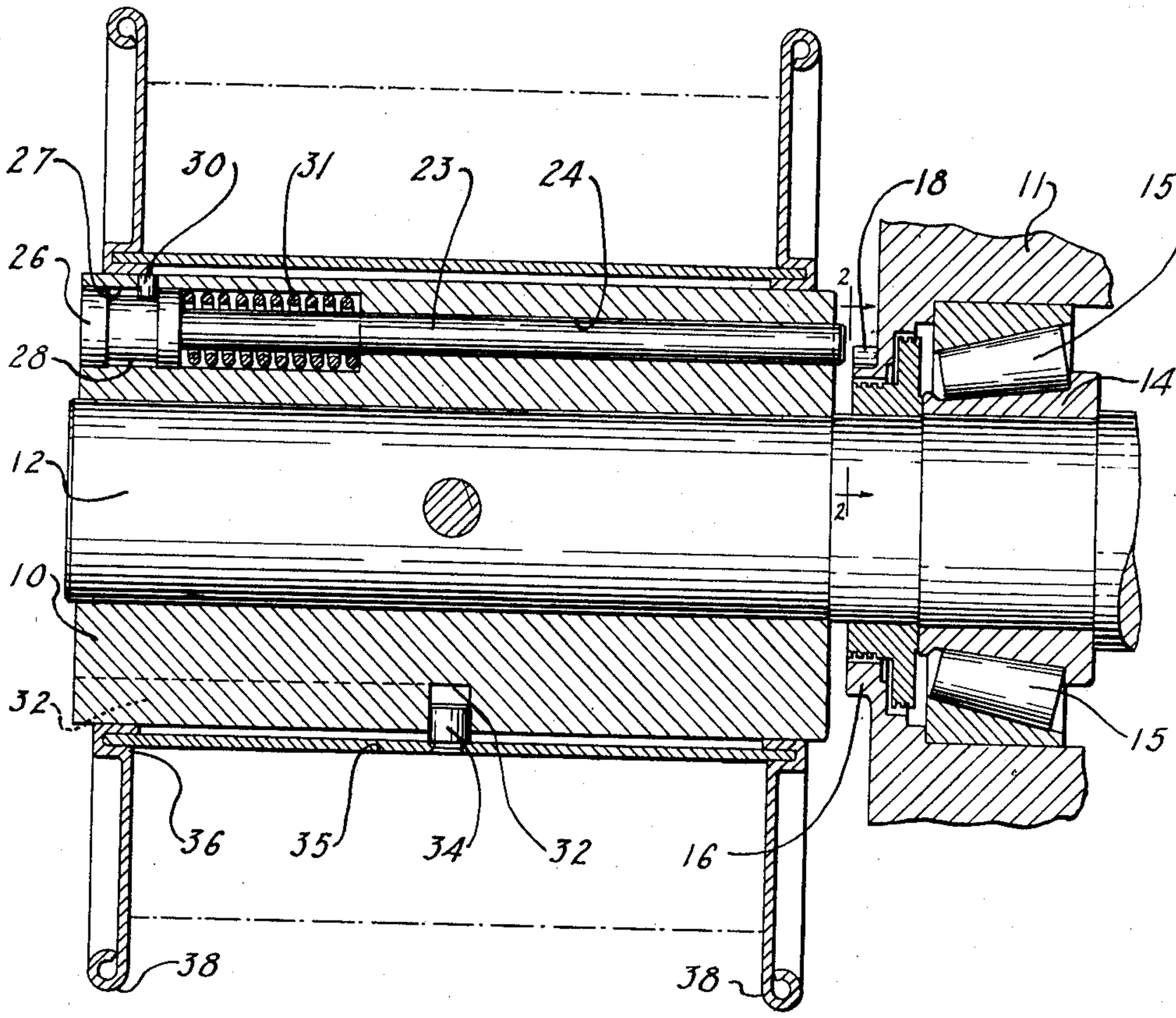
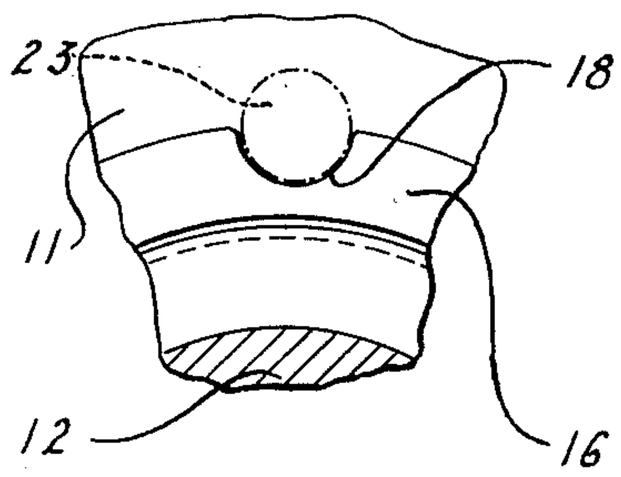


FIG. 2.



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LOCKING MECHANISM

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Application April 2, 1930, Serial No. 440,928

8 Claims. (Cl. 242—68)

This invention relates to a locking mechanism and more particularly to a locking mechanism for reeling devices.

An object of the invention is to provide a simple and efficient mechanism for preventing relative movement between a reel arbor and its support when desired.

One embodiment of the invention contemplates the provision of a slidable bolt mounted longitudinally of a reel supporting arbor, and a notched flange formed on the arbor support. The bolt is spring pressed out of engagement with the notch to permit normally free rotation of the arbor with respect to the support, but is adapted to be moved to operative engagement with the notch when pressure is applied to overcome the spring.

A better understanding of the invention may be had by referring to the following detailed description, taken in conjunction with the accompanying drawing forming a part thereof, in which

Fig. 1 is a fragmentary sectional view, partly in elevation, of one embodiment of the invention; and

Fig. 2 is a fragmentary section taken on the line 2—2 of Fig. 1.

Referring to the drawing, wherein similar parts are indicated by identical reference numerals, a reel supporting arbor 10 is mounted on a shaft 12 rotatably journalled in a stationary supporting housing 11. The shaft 12 extends through the housing 11 in the manner shown (Fig. 1) and is provided with an annular collar 14 which is engaged by suitable roller bearings 15—15. The roller bearings are carried in and freely revolve with respect to the housing 11 to provide a bearing support for the shaft 12 operating with a minimum of friction. The outer face of the supporting housing 11 is formed with an annular flange 16 having one or more spaced notches 18 peripherally disposed therein. In the embodiment shown in Fig. 1, only one spaced notch 18 is shown, but it will be understood that a plurality of them may be disposed at other points in the flange 18 as convenience dictates. An elongated member or bolt 23 is slidably mounted in an aperture 24 which extends longitudinally of the arbor near the periphery thereof. The bolt 23 extends from end to end of the arbor and is provided upon that end farthest removed from the housing 11 with an enlarged head 26. The head 26 is slidable in a recess 27 which constitutes an enlarged portion of the aperture 24 and is concentric therewith. The head 26 is provided with a relatively wide peripheral depression 28 which is engaged by a limiting pin 30, mounted in the arbor, for the purpose of preventing the ejection of the bolt 23 from the aperture 24 due to the pressure of a coil or compression spring 31, which is mounted upon the bolt 23 and seated between the inner end of the recess 27 and the head 26.

On the opposite side of the reel arbor from the bolt 23 is provided a bayonet slot 32 which extends from the outer end of the reel arbor substantially to the center thereof, for the purpose of accommodating a driving pin 34 which is secured to the inner surface of a drum 35, comprising part of a take-up reel 36. The drum 35 is provided at either end with circular reel heads 38 for the purpose of supporting wire or stranded material when the reel 36 is loaded.

The foregoing apparatus is particularly valuable in adjusting the take-up reel 36 with respect to the reel supporting arbor 10, as for instance, when removing a loaded reel from the arbor and substituting an empty reel thereon. When the shaft 12 is being driven by any suitable apparatus (not shown) to wind a strand upon the reel 36, it is controlled by such apparatus. When, however, the shaft has been disconnected from the driving apparatus and its forced rotation has ceased, it is difficult to prevent the shaft 12 from idly rotating in one or the other direction, as when the reel 36 is being handled.

In utilizing the above described mechanism, the services of only one operator are needed, it being merely necessary in removing the reel for him to move the head 26 of the bolt inwardly by the pressure of his thumb. This causes the bolt 23 to slide inwardly against the spring 31 and engage the notch 18 of the housing. The operator is then able, with the other hand, to grasp the reel head 38 and turn the reel with respect to the stationary reel supporting arbor to move the pin 34 from the L to the throat of the bayonet slot, after which the bolt head 26 may be released and both hands employed in removing the reel from the arbor.

In placing a reel upon the arbor, the inner head 38 of the reel is fitted over the outer end of the arbor, and the reel forced on the arbor until the pin 34 contacts with the outer edge of the arbor. Then the operator reaches in through the drum of the reel and with one hand presses the bolt head 26 to cause the bolt to engage the notch 18 while with the other hand the reel is rotated with respect to the stationary reel arbor until the pin 34 is engaged in the throat of the bayonet slot. The reel is then

forced all the way upon the arbor, the pin 34 traveling the length of the bayonet slot throat. The bolt is securely held in engagement with the notch 18 by one hand, while with the other the operator rotates the reel with respect to the stationary arbor to move the pin into the L of the bayonet slot. In every case, when the thumb pressure is removed from the head 26 of the bolt, the pressure of the spring 31 against the head of the bolt thrusts it back into the aperture 24, thus removing it from engagement with notch 18 and restoring the reel arbor to the condition of a freely rotatable body. The shaft may then be reconnected with the source of power and rotated as to load strand material upon the reel 36.

Although the foregoing describes one particular embodiment of the invention in specific terms, it should, of course, be understood that the invention is susceptible of numerous modifications and should therefore be limited only by the scope of the appended claims.

What is claimed is:

1. In a reeling mechanism, a reel arbor, a supporting housing therefor having a notch, and means operative through the reel arbor for engaging the notch to prevent relative movement between the arbor and the housing.

2. In a reeling mechanism, a reel arbor, a housing therefor having a notch, and a bolt slidable through the arbor for engaging the notch to prevent relative movement between the arbor and the housing.

3. In a reeling mechanism, a reel arbor, a housing therefor having a notched flange, and a spring pressed bolt slidable through the arbor for engaging the notch to prevent relative movement between the arbor and the housing.

4. In a reeling mechanism, a reel arbor, a housing therefor having a notch, a bolt slidable through the arbor for engaging the notch to prevent relative movement between the arbor and the housing, and a spring surrounding the bolt for rendering the bolt normally inoperative.

5. In a reeling mechanism, a reel arbor, a housing therefor, a member for preventing relative movement between the arbor and the housing, and a spring surrounding the member for rendering the member normally inoperative.

6. In a reeling mechanism, a normally rotatable reel arbor, a stationary supporting housing therefor having a notched flange, and a spring pressed bolt slidable through the arbor for engaging the notch to prevent rotation of the arbor with respect to the housing.

7. In a reeling mechanism, an arbor, a member mounted in the arbor and slidable longitudinally with respect thereto and having an enlarged head portion, a recess in the arbor for accommodating the enlarged head portion, a compression spring mounted in the recess and bearing against the head portion, and a limit pin mounted in the arbor and projecting into the recess for engaging the enlarged head portion to maintain the member against displacement by the spring.

8. In a reeling mechanism, a rotatable arbor, a stationary support therefor having a notched flange, a bolt slidable with respect to the arbor for engaging the notch to lock the arbor against rotation and having an enlarged head portion, a recess in the arbor for accommodating the enlarged head portion, a coil spring mounted in the recess and seated against the head portion of the bolt for maintaining the bolt out of engagement with the notch, and a pin mounted in the arbor and engaging the enlarged head portion for limiting the action of the spring.

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