Nov. 11, 1924. 1,514,901

J. A. GILMAN

TAPELINE REEL

Original Filed April 26, 1922 2 Sheets-Sheet 1

Fig. 1

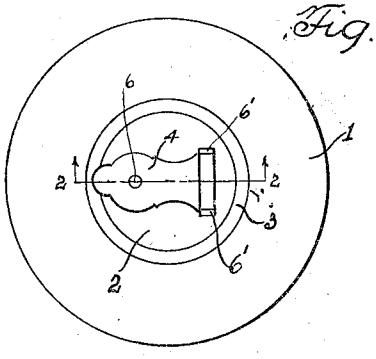
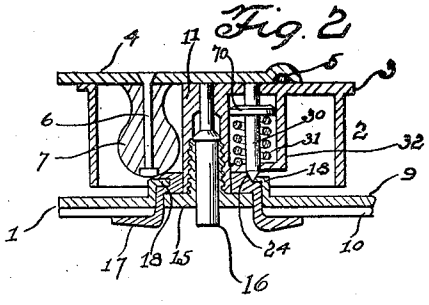


Fig. 2



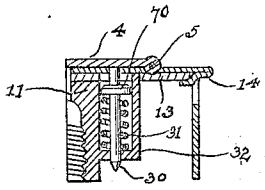


Fig. 3

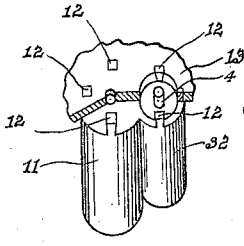


Fig. 4

Fig. 5

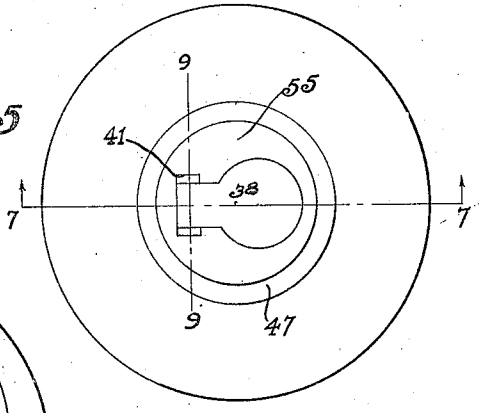
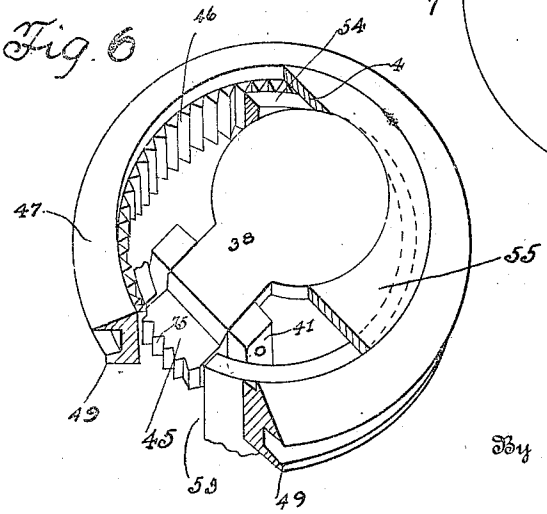


Fig. 6



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Fig. 7

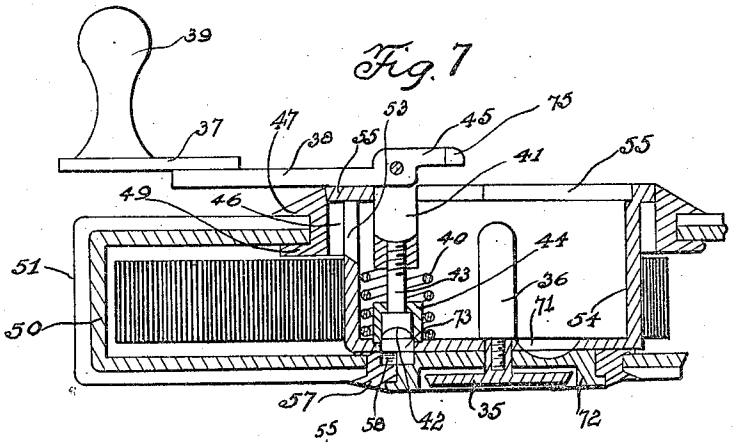


Fig. 8

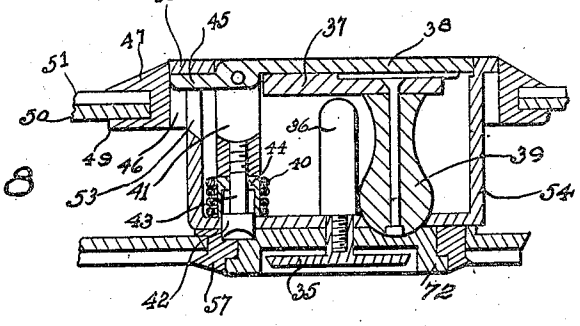


Fig. 9

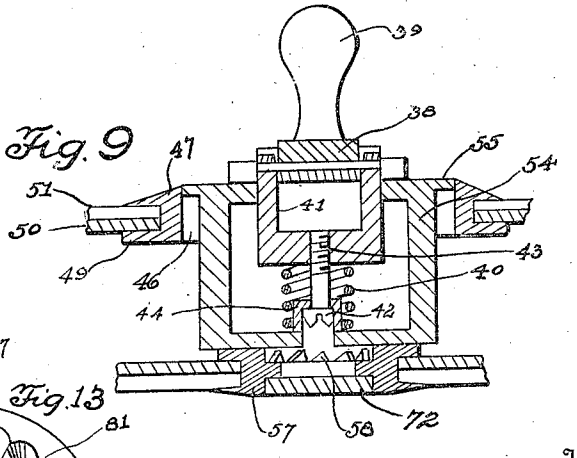


Fig. 10

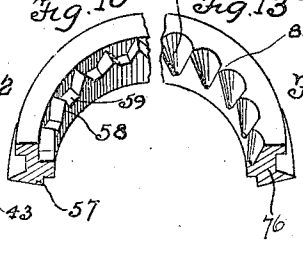


Fig. 13

Fig. 11

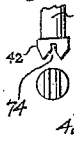


Fig. 12



Fig. 14

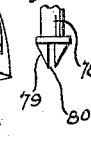
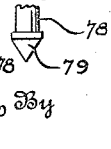


Fig. 15



Inventor

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By

Attorneys

Patented Nov. 11, 1924. 1,514,901

UNITED STATES PATENT OFFICE.

JOHN A. GILMAN, OF SEATTLE, WASHINGTON.

TAPELINE REEL.

Original application filed April 26, 1922, Serial No. 556,561. Divided and this application filed April 29, 1924. Serial No. 709,803.

To all whom it may concern:

Be it known that I, JOHN A. GILMAN, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Tapeline Reels, of which the following is a specification.

The object of this invention is to provide novel means whereby a tape line reel will be locked against rotation when the tape line has been wound or when it is desired to hold it against rewinding, the present application being a division of an application filed by me April 26, 1922, Serial No. 556,561. The invention resides in certain novel features which are illustrated in the accompanying drawings and will be hereinafter first fully described and then particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a plan view of one form of tape line reel having my invention applied thereto;

Fig. 2 is an enlarged diametrical section on the line 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 2 showing one half the reel and illustrating a slight modification;

Fig. 4 is a detail perspective view illustrating certain features of construction;

Fig. 5 is a plan view showing a form of tape line reel differing in some respects from that shown in Fig. 1;

Fig. 6 is an enlarged perspective view of the upper portion of a tape line reel with parts broken away and parts removed;

Fig. 7 is an enlarged section on the line 7—7 of Fig. 5 showing the reel arranged for rotation;

Fig. 8 is a view similar to Fig. 7 showing the reel locked against rotation;

Fig. 9 is a section on the line 9—9 of Fig. 5;

Fig. 10 is a detail perspective view of a portion of the lower ring shown in Figs. 7, 8 and 9;

Figs. 11 and 12 are detail views of the locking pin shown in Figs. 7, 8 and 9;

Fig. 13 is a view similar to Fig. 10 and showing a modification of the ring, and

Figs. 14 and 15 are detail views showing a modification of the locking pin.

The casing 1 is of the usual construction and includes an inner metal shell 9 and an outer covering 10 of leather or fiber now ordinarily employed. The reel 2 shown in Fig. 2 has an open inner side and has a top 3, the edge of which is adapted to overlap the inner circular edge of one side of the casing, the circular opening through the bottom of the casing being of less diameter than the reel and having a ring or collar 17 fitted therethrough and connected with the collar or annular flange 18 of the casing by having its edge rolled over the edge of the said flange or collar, as shown in Fig. 2. In the upper side of the ring 17 and the flange 18, I provide a circular series of notches or recesses, indicated at 24, which are concentric with the said collars or rings. The reel is provided with a hub 11 which extends inwardly or downwardly from the top 3 thereof and fits rotatably within the collar 17, as shown in Fig. 2. This hub 11 is centrally bored and it may be secured to the top of the reel by having lugs 12 formed on its upper end and upset through openings provided therefor in the top of the reel, as shown in Fig. 4, although the hub may be formed integral with the top, as indicated in Fig. 2. The lower end of the bore of the hub is internally threaded and a screw 15 is engaged in the lower threaded end of the hub and provided with a head adapted to fit within the edge or rim portion of the collar 17 and bear against the central body portion thereof whereby to retain the hub in proper assembled relation with the casing. The reel handle 4 is hinged to the top of the reel, as shown at 5, and the hinge or pivot pin may be mounted in lugs 6′ upon the top of the reel shown in Fig. 1. A pin 16 is slidably mounted through the bore of screw 15 and plays in the bore of the hub 11 to bear against the under side of the handle 4 so that pressure upon this pin may be utilized to swing the handle or crank from the closed position shown in Fig. 2 to open position, as will be understood. The knob or handle 7 is secured to the crank 4 by a pin 6 and when the reel is closed this knob fits within the reel, as shown clearly in Fig. 2, and may engage notches formed in the upper side of the collar 17 so as to hold the crank and the reel against rotation. Slidably fitted in the top of the reel and in a support 32 carried thereby and by the hub is a pin 30 which is constructed with a head or abutment 70, and between the said

head or abutment and the lower end of the support 32 a spring 31 is coiled around the pin, as shown. The lower end of the pin 30 is tapered and adapted to engage any one of the recesses or notches 24 so as to hold the reel against rotation. The spring 31 tends constantly to expand and thereby holds the upper end of the pin against the inner side of the crank 4 so that, when the crank is swung to open position, the pin will be at once withdrawn from the notch 24 in which it is engaged and the reel will be then free to rotate. When the crank is again swung to closed position, the pin is, of course, forced inwardly against the tension of the spring and will again engage one of the notches 24 to hold the reel stationary. It will be readily noted that I have shown the support 32 as a cylindrical chamber but the circular wall thereof may be omitted and merely the lower end employed.

The reel, including the hub and the support 32, may be formed in one integral structure but it may be preferred sometimes to employ lighter material and the construction indicated in Figs. 3 and 4 may then be employed, the hub and the support 32 being riveted to the top of the reel, as shown and described and the top of the reel being reinforced by a lining 13 which may be secured in place by striking from the circular wall of the reel tongues 14 which are crimped under and against the edge of the lining, as shown in Fig. 3.

In the form of reel shown in Figs. 5 and 9, the case consists of the inner shell 50 and the outer shell 51 corresponding to the shells 9 and 10 of the first described form, an upper ring or collar 47 being fitted in the opening through the top of the case and a ring 57 being fitted in the opening in the bottom of the case, as shown. These rings may be secured to the case in any preferred manner and I have shown them as secured by having their edges rolled over the edges of the case in the same manner that the ring or collar 17 is secured. The reel 54 in this type has an open top and a closed bottom, although the bottom is provided with an opening 71 to accommodate the end of the knob or handle 39 and is reinforced by a flange plate 72 fitting within the ring 57 and having tongue and groove engagement therewith whereby the reel and the said reinforcing plate may rotate within the ring or collar but cannot move axially thereof. The handle in this type of reel comprises two slidably connected sections 37, 38, and the member or section 38 is pivotally mounted in the upper end of a yoke 41 slidably fitted through the top 55 of the reel. Secured in the inner or lower end of the yoke 41 is a locking pin 43 having a head 42 at its lower end which is guided by a boss or housing 44 on the bottom of the reel and is limited in its outer movement by coming into contact with the upper end of the said housing, as clearly shown in Fig. 7. A spring 40 is disposed between the yoke 41 and the bottom of the reel and encircles the said pin 43 and the housing 44 and tends normally by its expansion to project the yoke to the open position. The head 42 of the locking pin is adapted to project through an opening 73 in the bottom of the reel and engage locking elements provided on the flange of the ring 57, these elements, in the form shown in Fig. 10, being tapered teeth 58 with spaces 59 intervening between adjacent teeth. The heads 42 have downwardly tapered sides and are also provided with central diametrical grooves or recesses 74. If the reel should come to rest at a point where the head is disposed between adjacent teeth 58, it will fit within the space 59 and engage the adjacent teeth so that the reel will be locked against movement but, if the head should be alined with one of the teeth 58, the groove 74 will fit over the end of the tooth and lock the reel against rotation.

The inner crank section 38 is provided with an extended lug 45 which, when the reel is closed, is adapted to swing through the yoke 41 and engage under the top 55 of the reel, as shown in Fig. 8. The free end edge of this lug or extension 45 is constructed with notches 75 adapted to engage teeth or projections 46 formed on the inner circumference of the ring 47 and thereby cooperate with and supplement the locking pin 43 to hold the reel against rotation. An opening 53 is formed in the circular wall of the reel to accommodate the swinging movement of the lug or extension 45, as will be readily understood. Fitted slidably through the bottom of the reel at the center thereof is a releasing pin 36 having a detachable head 35 connected therewith, which head is disposed within the central recess of the reinforcing flange plate 72. When the reel is closed, the inner end of its pin 36 will be disposed adjacent the crank section 37, as shown in Fig. 8, so that a slight pressure upon the head 35 will swing the crank from the reel a sufficient distance to permit it to be easily grasped and withdrawn and swung to the open position shown in Fig. 7.

In Fig. 13, I have shown a ring 76 corresponding to the ring 57 but in which the teeth 58 are not employed and a series of conical recesses 77 are substituted therefor, the locking pin 78 having a tapered or conical head 79 so as to fit within any one of the said notches 77, and this conical head 79 is provided with a slot 80 so that, if the head should happen to be alined with the point 81 between adjacent notches, it may span said point and thereby lock the reel against rotation.

When the reel is closed, as shown in Fig. 8, the yoke 41 is forced inwardly and the locking pin 43 thereby carried into engagement with one of the locking elements upon the ring 57 or the ring 76, as the case may be, the spring 40 being placed under compression. As the reel is opened, the spring expands and the locking pin is automatically withdrawn from its engagement with the locking element. The engagement or disengagement of the teeth 75 with the teeth 46 is also automatically effected. My improvements positively lock the reel against rotation and are housed within the reel so that they do not necessitate the reel being made any larger or more bulky than is necessary with the reels now on the market.

Having thus described the invention, I claim:

1. The combination of a case having an annular series of internal recesses, a reel rotatably mounted in the case concentrically with the series of recesses, a foldable handle for operating the reel, and a pin actuated by the folding of the handle to engage one of the recesses whereby to hold the reel against rotation.

2. The combination of a case, a ring fixed in the case and provided with a series of recesses in its inner surface, a reel rotatably mounted in the case, a foldable handle for operating the reel, and a pin extending at an angle to the handle to engage one of the recesses when the handle is folded whereby to hold the reel against rotation.

3. The combination of a case having an annular series of internal recesses, a reel rotatably mounted in the case concentric with the recesses, a handle pivotally mounted on the reel, a pin mounted on the reel and engaging one of the recesses in the case when the handle is closed, and yieldable means for disengaging said pin when the handle is open.

4. The combination of a case, a ring fixed in the case and having a series of stops on its inner face, a reel rotatably mounted in the case, and a handle pivotally mounted on the reel and having an extension at its pivoted end adapted to engage one of the stops when the handle is closed.

5. The combination of a case having a series of internal stops, a reel rotatably mounted in the case and having an opening through its wall, a handle pivotally mounted on the reel adjacent said opening, and a spur on the handle adapted to swing through said opening and engage one of the stops.

6. The combination of a case, a plurality of fixed stops therein, a reel rotatably mounted in the case, a handle pivotally mounted on the reel, a slidably mounted pin carried by the reel and operated by the handle to engage one of the stops when the handle is closed, yieldable means for releasing the pin as the handle is open, and means for limiting the releasing movement of the pin.

7. The combination of a case, a ring fixed in the case, teeth on said ring, a reel rotatably mounted in the case, a handle pivotally mounted on the reel, and a locking member actuated by the handle and having a slotted head adapted to engage one of said teeth or engage in a space between two teeth.

8. The combination of a case provided with a circular series of internal recesses, a reel rotatably mounted in the case, a handle pivotally mounted on the reel, and a locking member slidably mounted on the reel and operated by the handle, said locking member having a tapered head and having a slot across the head.

9. The combination of a case, a reel rotatably mounted in the case, a handle pivotally mounted on the reel, and a locking member slidably mounted in the reel and moved by the handle to engage the bottom of the case.

In testimony whereof I affix my signature.

JOHN A. GILMAN. [L. S.]