Aug. 8, 1939. H. A. LOFGREN ET AL 2,168,675

CLOTHESLINE REEL

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Fig. 2

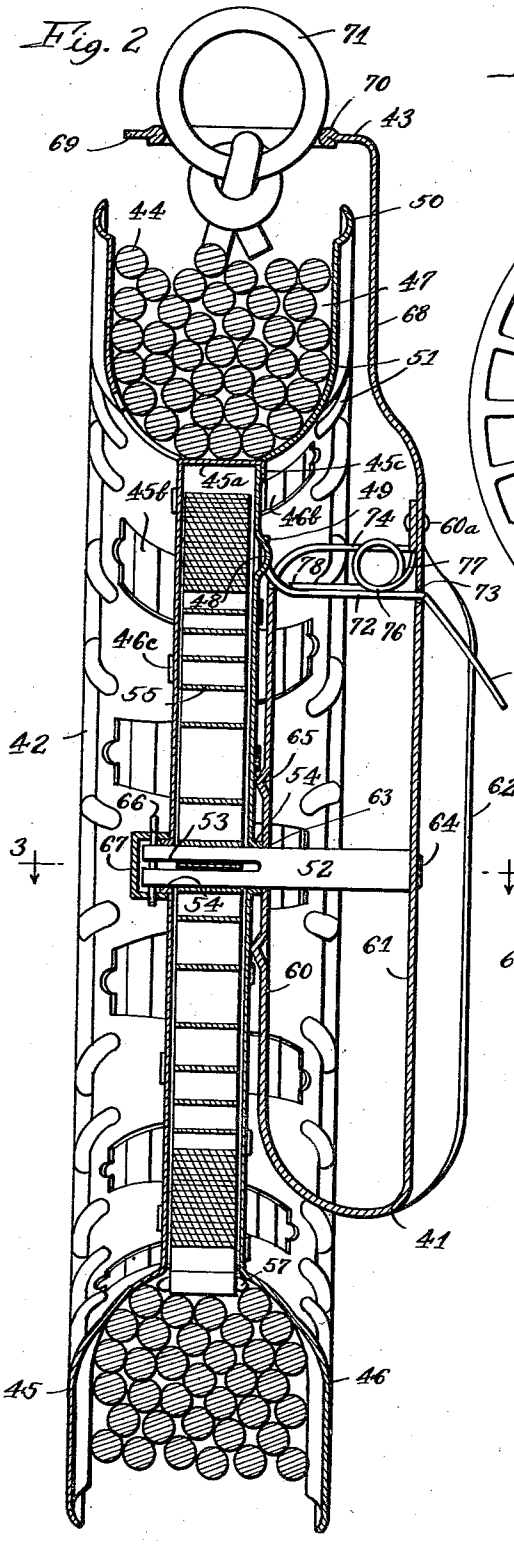

Fig. 1

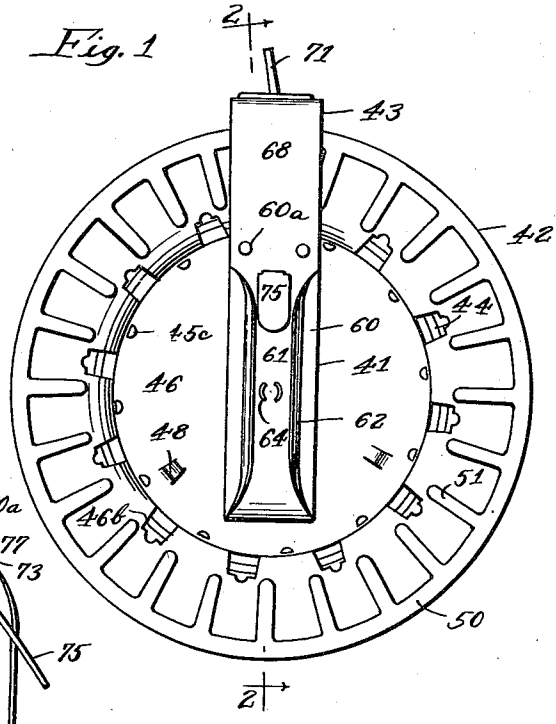

Fig. 3

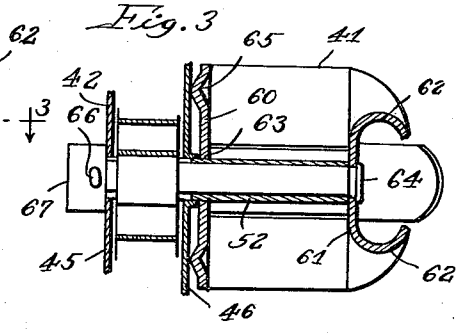

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Fig. 4

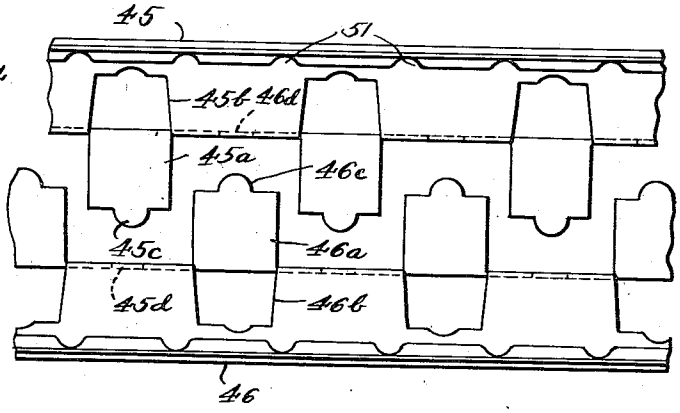


Fig. 5

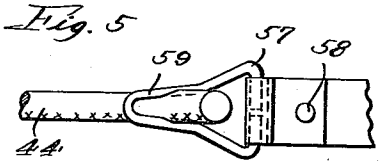
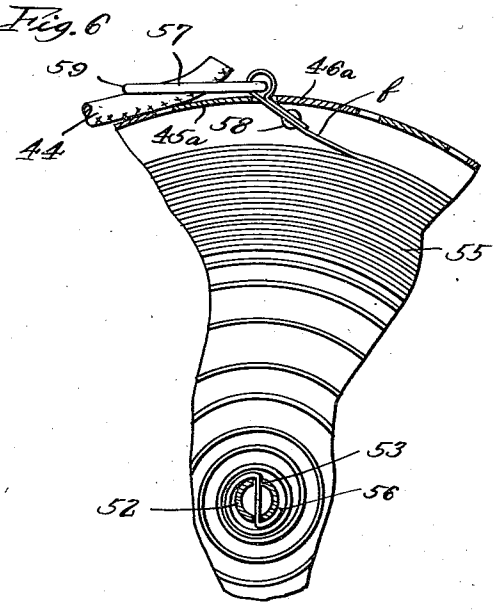


Fig. 6



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CLOTHESLINE REEL

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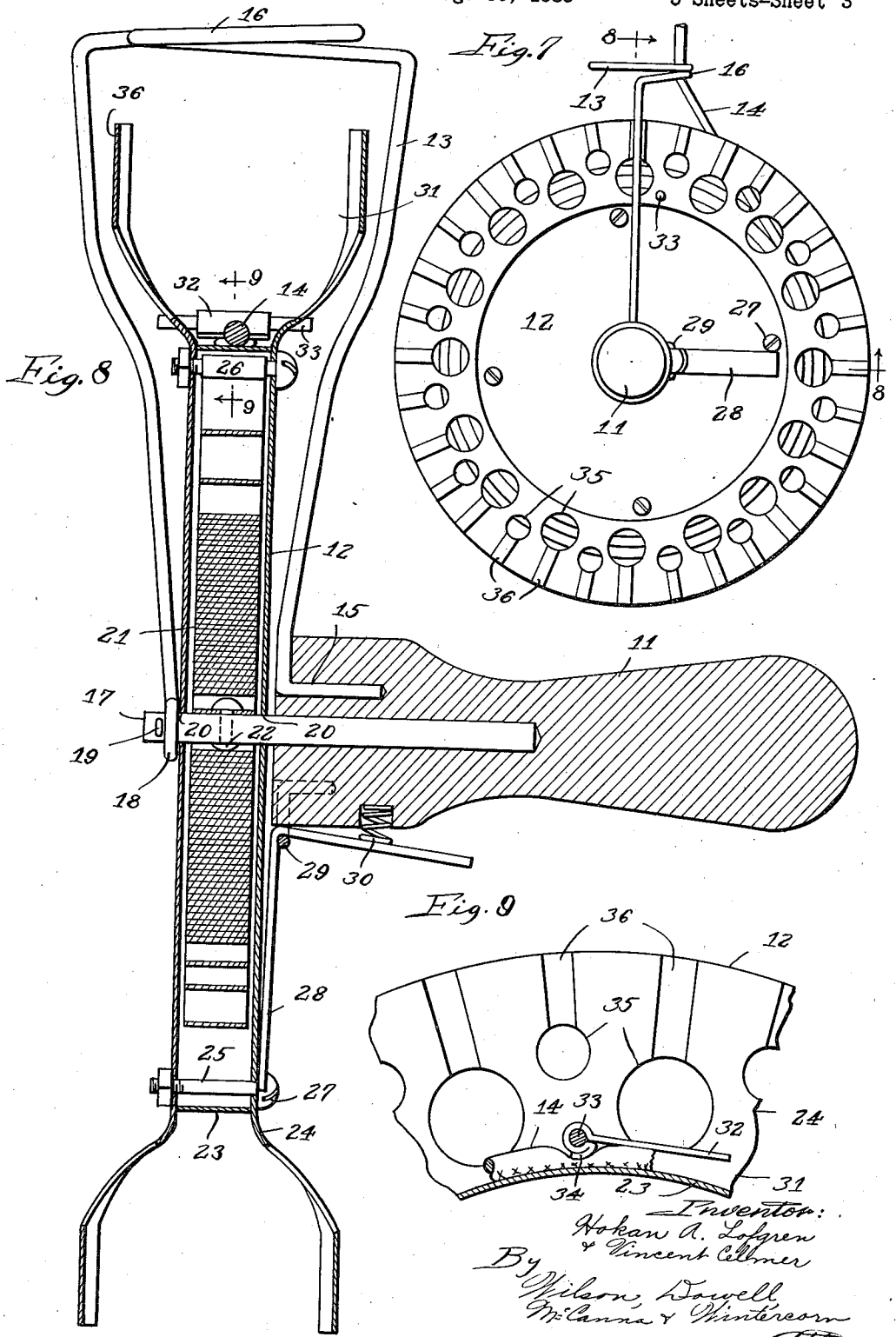

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Patented Aug. 8, 1939 2,168,675

UNITED STATES PATENT OFFICE

2,168,675

CLOTHESLINE REEL

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Application August 30, 1935, Serial No. 38,518

10 Claims. (Cl. 242—102)

This invention relates to reels generally, and has particular reference to an improved clothesline reel.

The principal object of our invention is to provide a reel of the spring recoil type of light and economical sheet metal construction, and so designed to accommodate the required length of line and permit winding and unwinding the same quickly and easily.

Among the more important features embodied in the reel of our invention may be enumerated the following:

1. The sheet metal body of the reel is made up of two dished plates which are of substantially identical construction, thus simplifying manufacture and effecting a saving in die costs.

2. The reel body is perforated so as to afford ample opportunity for the line to dry out if it happens to be damp or wet when wound on the reel.

3. The handle is formed from a single piece of sheet metal to provide a handle loop diametrically disposed with respect to one side of the reel, and an extension reaching from one end of the loop over the periphery of the reel and having an opening therein serving as a guide for the clothesline in winding and unwinding the same. The handle, incidentally, is formed to provide a comfortable grip.

4. The trigger for locking the reel against turning with respect to the handle is mounted on the handle for convenient operation by the thumb, and is disposed for engagement with projections on the side of the reel.

5. A specially formed eyelet is provided on the outer end of the spring to anchor the same to the reel, and it serves the additional purpose of a fastener for the inner end of the clothesline.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a clothesline reel made in accordance with our invention;

Fig. 2 is a cross-section on a larger scale taken on the line 2—2 of Fig. 1;

Fig. 3 is a sectional detail on the line 3—3 of Fig. 2;

Fig. 4 is a fragmentary plan view of the two plates that form the reel, the plates being shown in spaced relation with their ears in staggered relation preparatory to the assembling operation;

Fig. 5 is a plan view of the clothesline fastener on the end of the spring;

Fig. 6 is a fragmentary sectional detail illustrating how the eyelet serves both as an anchor for the spring and as a fastener for the clothesline;

Fig. 7 is a side view of another reel of somewhat similar form;

Fig. 8 is an enlarged cross-section on the broken line 8—8 of Fig. 8, and

Fig. 9 is a sectional detail showing the clothesline fastener, the view being taken on the line 9—9 of Fig. 8.

Similar reference numerals are applied to corresponding parts throughout the views.

The reel shown in Figs. 7 to 9 generally resembles the reel disclosed in the copending application of Hokan A. Lovegran, Serial No. 11,306, from the standpoint that it has an elongated handle 11 axially disposed with respect to and projecting from one side of the reel 12, and a guide 13 for the clothesline 14 is carried on the end of the handle next to the reel. The guide 13, however, is formed from a single piece of wire having one end 15 bent and driven into a hole in the end of the handle, the wire being extended from this point radially outwardly and bent into a loop 16 extending across and in spaced relation to the periphery of the reel, and bent again to extend radially inwardly to the axle 17, where the wire terminates in an eyelet 18 received on the projecting end of the axle behind a cotter pin 19. The axle is driven into an axial hole in the handle 11, and provides bearing support for the reel 12 at 20, and between these points has the spiral spring 21 suitably secured thereto as by a rivet 22. The spring is enclosed by a sheet metal ring 23 which spaces the two sheet metal plates 24 forming the sides of the reel 12. Bolts 25 are passed through the plates to clamp the same against opposite sides of the ring 23, and one of these bolts has the looped outer end 26 of the spring 21 received thereon. The bolt heads 27 provide striker projections for engagement with the trigger 28 which is pivoted on the staple 29 and normally urged toward the reel and into the path of the bolt heads by a coiled compression spring 30 seated in a recess in the handle 11. The clothesline 14 is wound on the reel in the annular recess 31 for which the ring 23 forms the bottom. The inner end of the line 14 is clamped onto the ring 23 by means of a lever 32 pivoted on a cross-pin 33 at the bottom of the winding recess. The gripping end 34 of the lever is formed in such a way that the greater the pull exerted on the line the more tightly the lever 32 fastens the line, as should be clear in Fig. 9. The side plates 24 have holes 35 punched therein in circumferentially spaced relation at the sides of the wind-

ing recess 31, whereby to expose the clothesline wound on the reel and give it an opportunity to dry out thoroughly in the event it happens to be damp or wet when wound. The radially extending, outwardly struck ribs 36 formed in the rim portions of the side plates serve to stiffen and reenforce the same so as to insure against having the reel get bent out of shape with rough handling.

The reel just described offers many advantages. It permits holding the reel with one hand and operating the trigger 28 with the thumb of the same hand, thus leaving the other hand free to handle the line and fasten it to the posts or hooks. The reel is locked against rewinding by simply releasing the thumb pressure on the trigger. The reel 12 affords a large enough space therein to accommodate a spiral spring of sufficient length to rewind a clothes-line of the usual length, or longer. However, the reel illustrated in Figs. 1 to 6, which will now be described, offers many advantages over this reel from the standpoints of better appearance, easier and more convenient operation, and lighter and more economical sheet metal construction throughout.

Referring now mainly to Figs. 1 to 3, the handle 41 supports the reel 42 and has a guide 43 extending therefrom through which the clothesline 44 is extended and wound on the reel. The latter is formed from a pair of dished sheet metal plates 45 and 46 having ears 45*a* and 46*a*, respectively, punched therefrom resulting in holes 45*b* and 46*b* in the opposite side walls of the annular winding channel 47. The ears 45*a* and 46*a* are bent at right angles to the plates and project toward each other and are disposed in staggered relation, as indicated in Fig. 4, to form the bottom of the channel 47 when the lugs 45*c* and 46*c* are entered through slots 45*d* and 46*d* provided therefor in the companion plates. The projecting portions of the lugs 45*c* and 46*c* are bent over against the outside of the plates to complete the assembly. This manifestly enables the use of practically identical plates for both sides of the reel, and there is a proportionate saving in die costs, and manufacture of the reel is simplified. The only difference between the plates 45 and 46 lies in the fact that the plate 46 will have small humps 48 punched therefrom to provide striker projections for engagement with the trigger 49, but, of course, we may provide these humps on both plates so as to make the plates identical and interchangeable. The openings 45*b* and 46*b* expose the clothesline at points alongside the bottom of the winding channel, and the clothesline can therefore dry out in the event it is wet or damp when wound on the reel. The openings are furthermore of such a shape, corresponding to the shape of the ears, that the appearance of the reel is not impaired but really enhanced. An annular bead 50 is formed in the rim of each plate to lend stiffness and strength and also improve the appearance of the reel. Radial ribs 51 are also formed in the plates extending inwardly from the annular bead to further stiffen and strengthen the reel, and also improve its appearance. From this much description, it should be evident that the two-piece sheet metal body of the reel is of light, strong, and economical construction.

A tubular axle 52, mounted on the handle 41, is slotted longitudinally from one end, as at 53, and this slotted end is entered through bearings 54 formed at the centers of the plates 45 and 46 by the piercing and swedging of these parts. As the slotted end of the axle is inserted through one bearing, it is caused to straddle the end of a spring steel ribbon 55 that has been entered into the reel radially between two of the ears 45*a* and 46*a*. A short length of this ribbon has been previously annealed so that it will bend easily and will retain the bent shape, and can therefore be wrapped around the axle 52 to permanently connect the spring to the axle. Just as soon as the annealed portion of the ribbon has been wrapped around the axle tightly, the ribbon is coiled by simply engaging either the reel or the handle frictionally with a power driven head provided for the purpose, and in that way the full length of the spring steel ribbon is coiled within the reel. The remote end of the spring has an annealed portion *f* (Fig. 6) which is looped around a portion of an eyelet 57 and riveted, as at 58, for a permanent connection with the eyelet, and this eyelet forms a stop to prevent the end of the spring from being pulled into the reel in the coiling operation, the space between two adjacent ears 45*a* and 46*a* being too small to permit the eyelet 57 and the looped end of the spring 55 to pass through.

The eyelet 57, in accordance with our invention, is bent to provide an acute angled crotch portion 59 similar to what is provided on a garter clasp for the retaining head, and into this crotch the end of the clothesline 44 is inserted and wedged tightly. We have found that this fastener holds the line very securely, due to the fact that the more the line is pulled the more it is worked into the smaller end of the crotch, and is therefore wedged tighter and tighter. In that way, the eyelet is made to serve a double purpose—as an anchor for the outer end of the spring 55 and as a fastener for the inner end of the clothesline 44.

The handle 41 is preferably formed from a single piece of sheet metal bent to provide an elongated loop, one side 60 of which is disposed next to the reel and the other side 61 in substantially parallel outwardly spaced relation thereto and formed with the edges curled outwardly, as at 62, to form a grip that is both comfortable and secure to hold. One end of the wall 60 is riveted or otherwise suitably secured to the wall 61, as at 60*a*, to close the handle loop. The axle 52 is shown extending through a hole 63 in the wall 60 of the handle and riveted, as at 64, to the opposite wall 61. However, it should be understood that we may shorten the axle and have it welded in or onto the wall 60 of the handle, so as not to extend into the loop of the handle. The construction shown is of advantage from the standpoint of a more solid mounting for the axle, due to the spaced bearings therefor in the walls 60 and 61, and we have not found it an objection to have the axle enter between the second and third fingers of the hand grasping the handle. The wall 60 has a circular bead 65 formed therein for engagement with the side of the reel to hold the reel in spaced relation to the handle and also provide outboard bearing for the reel on the handle to prevent wobbling. The same effect would, of course, be secured by forming a similar bead on the plate 46 to engage the wall 60 of the handle. The reel is held in engagement with the bead 65 by a cotter pin 66 which is entered through holes in the side walls of a thimble 67 registering with holes in the end of the axle. The thimble 67 is made to fit telescopically over the outwardly swedged bearing portion 54 on the plate 45, and

in that way provides an enclosed construction of pleasing appearance.

The handle 61 it will also be observed has an integral extension 68 from the wall 61, the outer end of which is bent at right angles, as at 69, over the periphery of the reel. This bent end is perforated and swedged, as at 70, to provide a guide opening with nicely rounded edges for the clothesline to pass through. A ring 71 on the outer end of the line is slightly larger in diameter than the opening in the guide, and therefore acts as a limiting stop in the winding of the line.

We provide the trigger 49 in the form of a single piece of sheet metal, the reduced inner end portion 72 of which extends through a slot 73 in the wall 61 and has its bent striker end working freely in a slot 74 provided in the wall 60, the wider outer end 75 of the trigger being disposed at one end of the handle for convenient operation thereof by thumb pressure. A coiled spring 76 is entered in the slot 74 with one end 77 entered between the end of the wall 60 and the wall 61 where these walls are joined by rivets 60*a*, whereby to permanently assemble the spring on the handle. The other end 78 of the spring bears on the trigger in the manner shown, and tends normally to urge the same in a counterclockwise direction toward the reel and into the pair of projections 48.

It should be clear from the foregoing description that the reel of Figs. 1 to 6 operates similarly as the reel of Figs. 7 to 9, but is easier to handle because of the fact that the handle 61 is disposed at right angles to the axis of rotation of the reel, thus avoiding the necessity for bending the wrist. The fact that the metal punched from the side plates 45 and 46 to provide air holes for ventilation of the line coiled on the reel is used to form the bottom of the winding channel and as a means of fastening the two plates together, makes for a simpler and cheaper construction and one which is both stronger and lighter. The novel method of coiling the spring greatly reduces the cost of manufacture both by reason of cheapening the spring and simplifying the assembling operation.

While the reel herein shown is of a size and weight suitable for use with clotheslines, it should, of course, be understood that we may utilize the same features in similar reels of different sizes for other purposes, as for plumb lines, measuring tapes, string or cord, etc.

The appended claims have been drawn with a view to covering all legitimate modifications and adaptations.

We claim:

1. A reel comprising a pair of spaced side plates, each having a plurality of laterally projecting circumferentially spaced ears provided thereon in radially inwardly spaced relation to the periphery of the plate, the ears of one plate being in staggered relation to the ears on the other plate and entered between the ears of the other plate with clearance spaces left therebetween and the ears engaged with the inner sides of said plates to locate the plates in fixed spaced relation, the two sets of ears together forming an annular wall onto which the material to be put on the reel may be wound, means for fastening the plates together, an axle passing through the centers of said plates for rotary support of the reel, a spiral spring surrounding the axle between said plates and attached at one end to the axle and having the other end extending out between two adjacent ears in the aforesaid annular wall, and means on the projecting outer end of said spring for retaining the same in assembled relation to the reel.

2. A spring-recoil type reel comprising a body formed by two spaced side plates, each having a plurality of laterally projecting circumferentially spaced ears provided thereon in radially inwardly spaced relation to the periphery of the plate, the ears of one plate being entered between the ears of the other plate with the ears engaged with the inner sides of said plates to locate the plates in fixed spaced relation, the ears of one set when entered between the ears of the other set leaving spaces therebetween through which access may be had to the space in the hollow center of the body, for the purpose described, the two sets of ears together forming an annular wall onto which the material to be put on the reel may be wound, means for fastening the plates together, a supporting axle extending freely through the center of said body permitting rotation of the reel relative thereto, a spiral spring inside the hollow center of said body formed by a ribbon small enough to pass through one of the aforesaid spaces, a connection between the inner end of said spring and said axle inside the body, and means on the other end of said spring for engagement with said ears adjacent one of the spaces aforesaid, whereby to establish an operating connection between the reel body and the spring.

3. A reel as set forth in claim 2, wherein the last mentioned means comprises a fastener for the inner end of the material to be wound upon the reel.

4. A reel of the class described comprising a reel support, a reel thereon, spring means tending normally to turn the reel in one direction relative to the support, a handle formed from a single piece of sheet metal to provide a loop having substantially parallel side walls, one of which is disposed next to the reel and the other of which is outwardly spaced with respect to the reel and conformed in cross-section to provide a hand grip, the handle being suitably secured to said support in transverse relation thereto with approximately one-half the length of the handle on one side of the center of said reel and the rest on the other side of center, the reel and first mentioned wall of said handle being conformed with respect to one another to provide an annular bearing substantially concentric with the reel support on a radius with respect thereto, whereby to space the handle with respect to the reel and provide outboard bearing support with respect to the reel support by inter-engagement of the reel and handle, and detent means carried on the handle and releasable by the same hand grasping the hand grip for releasably locking the reel against turning.

5. A reel of the class described comprising a handle, a reel-supporting axle extending therefrom, a reel comprising spaced sheet metal side plates centrally dished with the dished portions projecting toward one another and disposed in spaced relation to define therebetween a spring chamber substantially concentric with the axle, and, outwardly with respect to the peripheral wall of said chamber, a wider winding recess between the marginal portions of said plates, said plates having registering central openings provided therein receiving the axle, the openings being defined by outwardly projecting circular flanges forming bearings for the reel engaging the axle, the handle being fixed to one end of said axle

spaced from the adjacent side plate of the reel by the flange thereof, a thimble enclosing the other end of said axle and telescoping on the flange of the other side plate, means for securing the thimble to the axle, a spiral spring in the spring chamber acting between the axle and the reel to turn the reel normally in one direction, and manually releasable detent means on the handle for locking the reel against turning.

6. A reel of the class described comprising a reel support, a reel thereon, spring means tending normally to turn the reel in one direction relative to the support, a handle formed from a single piece of sheet metal to provide a loop having substantially parallel side walls, one of which is disposed next to the reel and the other of which is outwardly spaced with respect to the reel and conformed in cross-section to provide a hand grip, the handle being suitably secured to said support in transverse relation thereto and arranged to engage the reel so as to provide outboard bearing support with respect to the reel support, and detent means carried on the handle and releasable by the same hand grasping the hand grip for releasably locking the reel against turning.

7. A reel of the class described comprising a handle, a reel-supporting axle extending therefrom, a reel comprising spaced sheet metal side plates centrally dished with the dished portions projecting toward one another and disposed in spaced relation to define therebetween a spring chamber substantially concentric with the axle, and, outwardly with respect to the peripheral wall of said chamber, a wider winding recess between the marginal portions of said plates, said plates having registering central openings provided therein receiving the axle, the opening in the outer plate being defined by an outwardly projecting circular flange forming a bearing for the reel by engagement with the axle, the handle being fixed to one end of said axle, a thimble enclosing the other end of said axle and telescoping on the aforesaid circular flange, means for securing the thimble to the axle, a spiral spring in the spring chamber acting between the axle and the reel to turn the reel normally in one direction, and manually releasable detent means on the handle for locking the reel against turning.

8. A reel of the class described comprising a handle, a reel-supporting axle extending therefrom, a reel comprising spaced sheet metal side plates centrally dished with the dished portions projecting toward one another and disposed in spaced relation to define therebetween a spring chamber substantially concentric with the axle, and, outwardly with respect to the peripheral wall of said chamber, a wider winding recess between the marginal portions of said plates, said plates having registering central openings provided therein receiving the axle, the opening in the inner plate being defined by an outwardly projecting circular flange forming a bearing for the reel by engagement with the axle, the handle being fixed to one end of said axle and spaced from said inner plate by the flange thereof, means on the other end of the axle having engagement with the reel to retain it on the axle, a spiral spring in the spring chamber acting between the axle and the reel to turn the reel normally in one direction, and manually releasable detent means on the handle for locking the reel against turning.

9. A reel of the class described comprising a reel support, a reel thereon, spring means tending normally to turn the reel in one direction relative to the support, an elongated handle grip providing one longitudinal portion next to the side of the reel and another longitudinal portion outwardly spaced therefrom, said support being secured to said handle, the first-mentioned longitudinal portion of said handle having projections on opposite sides of the reel support engaging the side of the reel to space the handle relative to the reel and also provide outboard bearing support for said reel with respect to the reel support, and means for releasably locking the reel against turning.

10. A reel of the class described comprising a reel support, a reel thereon having a central depression in one side thereof defined within a widened peripheral portion providing an annular channel therein for the purpose described, spring means tending normally to turn the reel in one direction relative to the support, a handle relative to which the reel is adapted to turn constructed in the form of a loop disposed to a large extent within the aforesaid depression on the side of the reel and having substantially parallel sides, one of which is disposed next to the reel and the other of which is outwardly spaced therefrom and constitutes a hand grip, the handle being secured to said support in transverse relation thereto, and detent means carried on the handle and releasable by the same hand grasping the hand grip for releasably locking the reel against turning.

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