

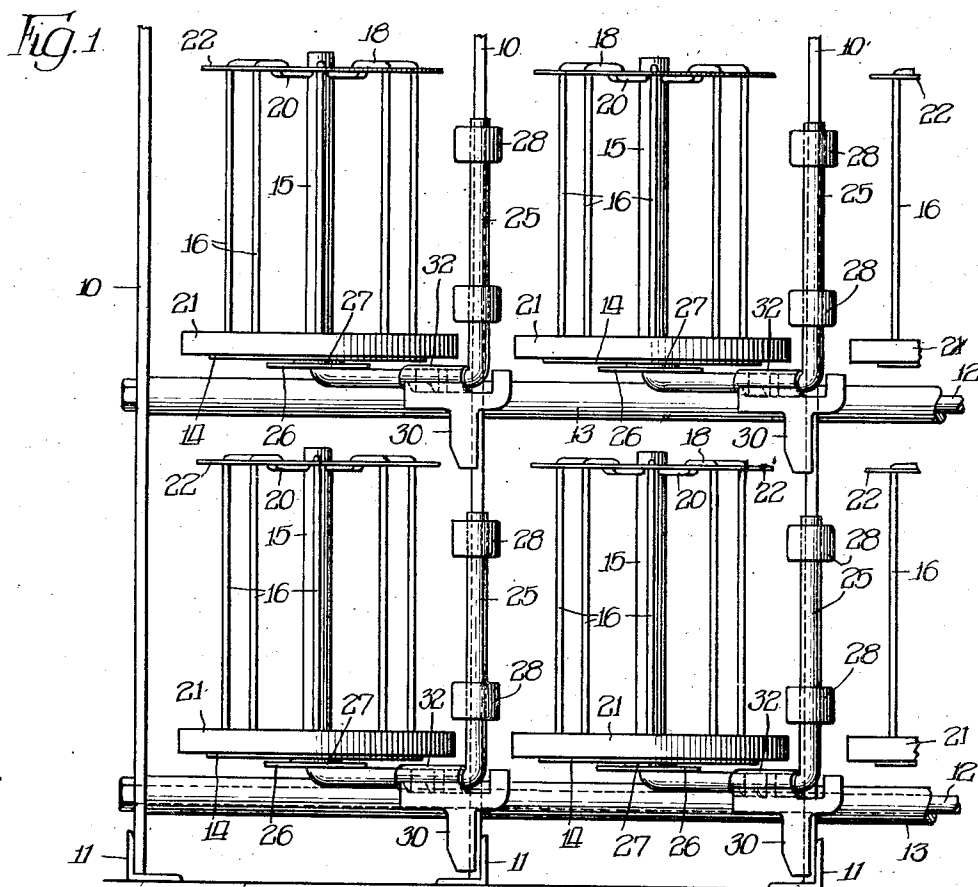
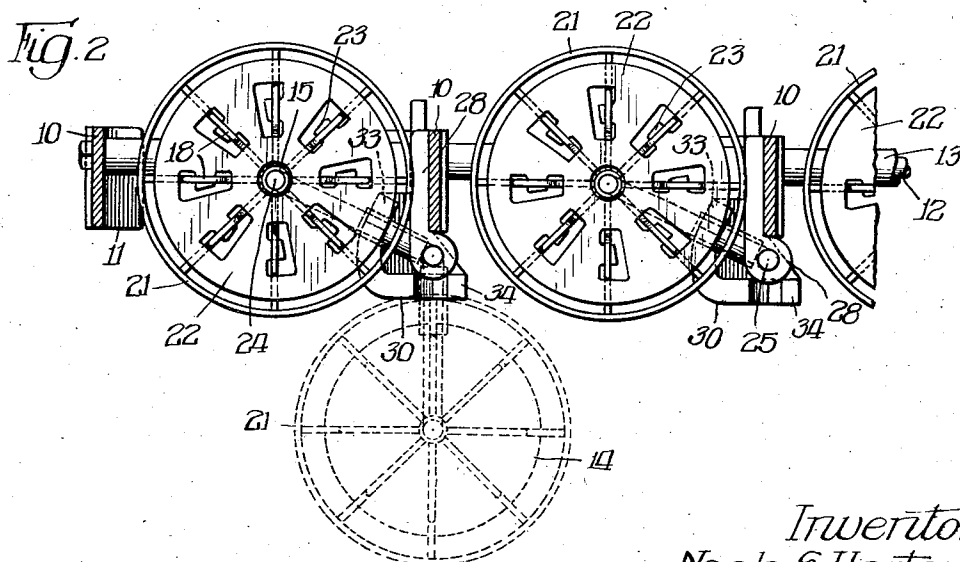
June 30, 1936.

N. S. HARTER
WIRE RETAINING SPOOL

2,046,290

Filed May 26, 1934

2 Sheets-Sheet 1



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June 30, 1936.

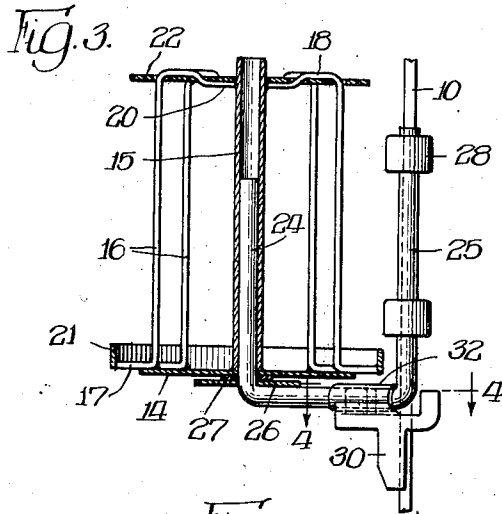
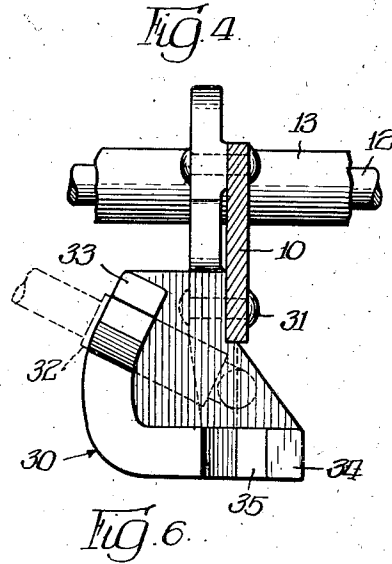
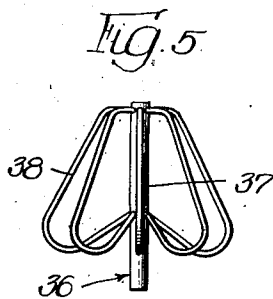
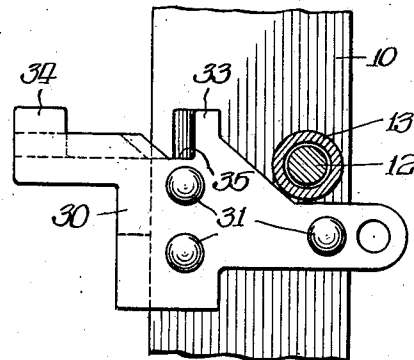
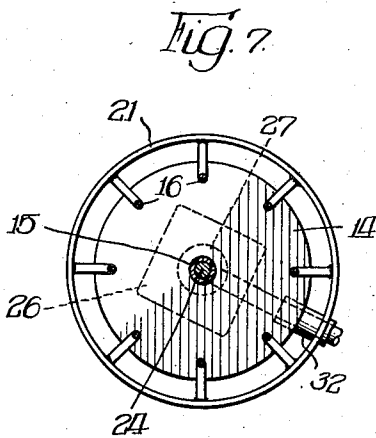
N. S. HARTER

2,046,290

WIRE RETAINING SPOOL

Filed May 26, 1934

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,046,290

WIRE RETAINING SPOOL

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Application May 26, 1934, Serial No. 727,793

5 Claims. (Cl. 242—129)

The invention relates to spools of the spindle type and has reference more particularly to a wire retaining spool and mounting therefor that can be arranged in multiple to feed a plurality of wires to a weaving machine.

An object of the invention is to provide a spool of strong and rigid construction, that will be light in weight and which can be cheaply manufactured.

Another object is to provide a mounting for the type of spool described which will facilitate the loading of the spool and yet retain the coil on the spool while permitting the wire to unwind and which will make a compact yet sturdy arrangement, particularly suited to the construction of racks for feeding wires to weaving machines where a large number of spools must be confined within a limited space.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation as will be more fully described and particularly pointed out in the specification, drawings and claims appended hereto.

In the drawings which illustrate an embodiment of the invention and wherein like reference characters are used to designate like parts—

Figure 1 is an elevational view showing an arrangement of a plurality of spools constructed in accordance with the invention;

Figure 2 is a plan view of the structure of Figure 1;

Figure 3 is an elevational view, parts being shown in section, of a single spool and its mounting means;

Figure 4 is a sectional view taken substantially along line 4—4 of Figure 3;

Figure 5 is an elevational view of an attachment for use in loading a spool;

Figure 6 is a fragmentary sectional view taken transversely of the multiple spool arrangement and showing in elevation the bracket for supporting and positioning the hinge member of a spool; and

Figure 7 is a horizontal sectional view taken substantially through the center of a spool.

In the multiple spool arrangement of Figure 1 a number of vertical standards 10 having base angle members 11 are connected by horizontal tie rods 12 and tubular spacing members 13. This provides a simple arrangement of rigid vertical supports for mounting the spool in accordance with the invention. The spools supported in multiple arrangement as shown are associated with

weaving machines for weaving wire mesh fabric and are adapted to retain coils of wire for convenient access to facilitate loading and from which the wire is withdrawn for feeding to said weaving machine. Referring more particularly to Figures 3 and 4 a spool is shown as comprising a base plate 14, a center tubular member 15 secured to the base and a wire cage consisting of a plurality of wire supports 16. Each wire support has a bent end 17 forming a right angle with the body of the wire and riveted to plate 14 to position the supports vertically and which are spaced around the circumference of said plate as shown in Figure 7. The upper end of the wire supports is also bent at right angles, the ends continuing and being secured to the tubular member 15. This upper bend of each wire support is offset to provide a section 18 slightly above the ends 20 secured to the center member. The base of the spool is completed by a ring 21 which is welded to the ends of portion 17 and the top of the spool is completed by a flat cap member 22. As it is necessary to frequently load the spool with a coil of wire the cap member is made detachable with respect to the wire cage. As shown in Figure 2 channel-shaped openings are provided in the cap member in spaced relation to align with the spacing of the wire support 16. The particular formation of the openings forms a lug 23 which is received under the offset 18 when the cap member is placed on the tubular member 15 and rotated counter-clockwise. Figure 2. This locks the cap member to the spool although the same is readily releasable and removable from the spool for loading purposes.

The spool is rotatable on a hinge member of U-shape having spaced legs 24 and 25. The tubular member 15 is telescoped over leg 24 rotatably mounting the spool on the hinge member which is held in proper vertical position thereon by a disc 26 suitably secured as by welding to the hinge member at the base of leg 24. A washer 27 of rubber or leather is positioned between base plate 14 of the spool and disc 26, spacing the spool with respect to the disc to permit free rotation thereof and which rotation is controlled to a certain extent by the material of the washer. The spools rotate as the wire is withdrawn, which necessarily places tension on the wire which may be varied to suit conditions by the frictional resistance of the washer. The leg 25 of the hinge member is rotatably secured to a vertical standard 10 by means of the hinges 28 suitably secured transversely of the standards. The bracket 30 also suitably secured to the vertical standard by

rivets 31 is positioned below the hinge member and therefore forms a support for the same and for the spool. Rotation of the hinge member to locate the spools within or outwardly of the space provided for them by the vertical standards 10 and spacing members 13 results in the hinge member moving on bracket 30. To facilitate this rotation the hinge member is provided with a sleeve 32. Upwardly projecting lugs 33 and 34 serve to limit the rotation of the hinge member and the arcuate recesses 35 formed in the bracket adjacent said lugs releasably hold the hinge member in either of several positions which, as will be understood with reference to Figure 2, locates the spool within the space provided by the vertical standards or positions the spool outwardly of the structure. The recesses are spaced from each other by an angle somewhat greater than ninety degrees.

When the spools are carrying a coil of wire they assume the position shown in Figure 1 where they are located within the space formed by the vertical supporting means and out of the way of the operator whose duty it is to see that the spools are at all times supplied with wire and in proper position where the wire can be withdrawn from the spool for feeding to the weaving machine. When the supply on any particular spool becomes exhausted and it is necessary to reload the same the hinge member is rotated to position the spool outwardly where the sleeve 32 will engage the recess adjacent the outside lug 34. It will be appreciated that the spool is thus conveniently positioned and that the operation has not interfered with the adjacent spools. The cap member 22 is removed and the loading device indicated in its entirety by 36, Figure 5, is associated with the cage formed by the wire support 16. The loading device consists essentially of a center supporting rod 37 to which are secured a plurality of wire members 38 having sloping sides as shown. The supporting rod is inserted within tubular member 15 of the spool which associates the sloping wires 38 with the wire cage of the spool. The coil of wire is placed on the loading device 36 and is easily forced down into place around the wire cage of the spool. The same is then returned to its original position by rotating the hinge member and the operation of loading the spool is completed.

It is to be understood that I do not wish to be limited by the exact embodiment of the device shown, which is merely by way of illustration and not limitation, as various and other forms of the device will of course be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claims.

I claim:

1. In a reel structure for a coil of wire, a tubular center member, a base secured to said center member, a wire cage secured to said base and center member respectively and surrounding the same, a hinge member extending within the tubular lower end of the member for rotatably mounting the reel, and a loading device adapted to be attached to the reel to facilitate the placing of a coil of wire on said reel, said loading device having a center supporting rod adapted to fit within the upper end of the tubular member to properly associate the loading device with said reel.
2. In a reel structure for a coil of wire, a tubular center member, a base secured to said center member, a wire cage secured to said base and center member respectively and surrounding the same, and a loading device including a center supporting rod adapted to extend within the tubular member to properly associate said loading device with the reel, said device including a tapering wire cage to facilitate placing a coil of wire on the reel.
3. In a reel for supporting a coil of wire, a center member, a base secured to said center member, a wire cage secured to said base and center member respectively, and surrounding the center member, said cage including a plurality of wires each having a vertical portion and a horizontal portion forming the body and top of the cage, and a cap plate detachably secured to the horizontal portion of the wire cage.
4. In a reel for supporting a coil of wire, a center member, a base secured to said center member, a wire cage secured to said base and center member respectively, and surrounding the center member, said cage being substantially cylindrical and including a plurality of wires each having a vertical portion and a horizontal portion forming the body and top of the cage, and a cap plate having means interconnecting with the horizontal wires for detachably securing the cap plate to the cage.
5. In a reel for supporting a coil of wire, a tubular center member, a base secured to said tubular center member, a wire cage secured to said base and tubular center member respectively, and surrounding the tubular center member, said cage being substantially cylindrical and including a plurality of wires having a vertical portion and a horizontal portion forming the body and top of the cage, and a cap plate provided with openings forming lugs for detachably connecting the cap plate with the horizontal wires of the cage.

NOAH S. HARTER,

CERTIFICATE OF CORRECTION.

Patent No. 2,046,290.

June 30, 1936.

NOAH S. HARTER.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, second column, line 6-7, claim 1, strike out the word "tubular" and insert the same before "member" in line 7, same claim; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 8th day of September, A. D. 1936.

Leslie Frazer

(Seal)

Acting Commissioner of Patents.