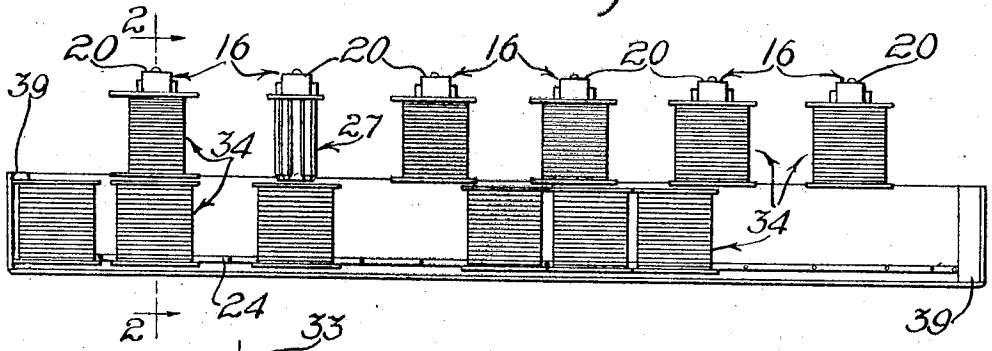
Jan. 18, 1927. 1,614,595

H. J. BOE

REEL SUPPORTING APPARATUS

Filed July 18, 1925

Fig. 1.



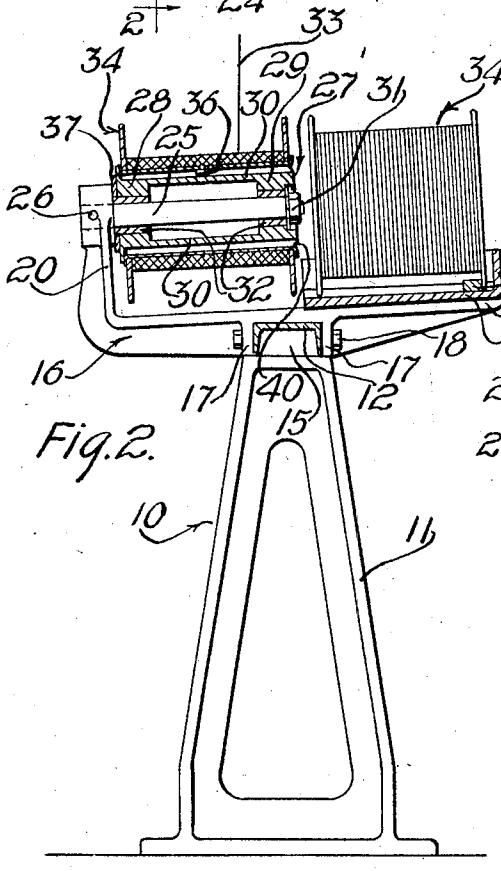
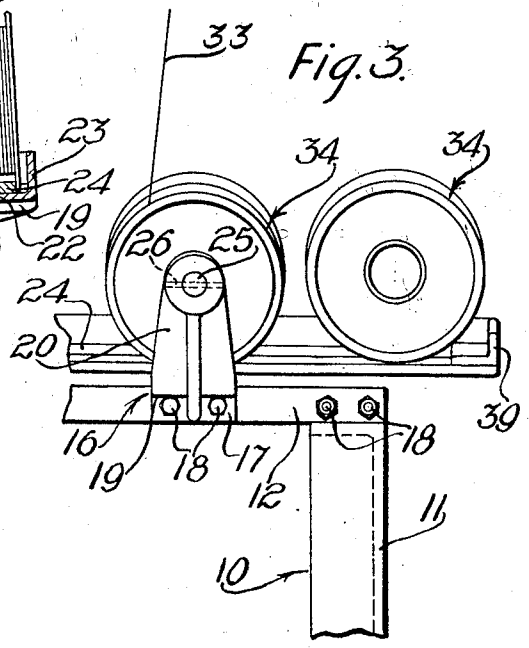




Fig. 2.

Fig. 3.




Inventor
Helmer J. Boe
by Halvorsen.
Att'y.

Patented Jan. 18, 1927. 1,614,595

# UNITED STATES PATENT OFFICE.

HELMER JOHN BOE, OF CHICAGO, ILLINOIS, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## REEL-SUPPORTING APPARATUS.

Application filed July 18, 1925. Serial No. 44,465.

This invention relates to reel supporting apparatus, and more particularly to an apparatus for supporting reserve and active reels.

The primary object of this invention is to provide an apparatus of the hereinbefore mentioned type wherein the replacement of a reel upon the completion of its reeling or unreeling operation by a reserve reel may be readily accomplished with a minimum of manual labor by an operative and without materially interrupting the continuity of the supply of material to the associated machine.

In accordance with the general features of this invention there is provided in one embodiment thereof, a supporting frame having an inclined upper surface with a guide rail at one side thereof adapted to retain a plurality of reserve supply reels by engaging one head of each reel. A plurality of arbors are mounted upon the frame above the inclined upper surface thereof with their axes disposed at right angles to the length of the rail and so arranged that the axis of any reserve reel may be brought into alignment with the axis of any arbor. When so aligned the reel upon its release from the retaining rail is guided into position upon the arbor by the inclined surface.

Other objects and advantages of the invention will more fully appear from the following detailed description taken in connection with the accompanying drawings which illustrate one embodiment thereof, and in which—

Fig. 1 is a plan view of a reel supporting apparatus embodying the features of this invention;

Fig. 2 is an enlarged vertical section taken upon the line 2—2 thereof looking in the direction indicated by the arrows, and

Fig. 3 is a fragmentary side view looking toward the right of Fig. 2.

Referring to the drawings wherein like reference numerals designate like parts throughout the several views, 10 indicates a frame comprising a plurality of vertically disposed floor brackets 11 suitably spaced along the length of the support. Spanning the row of brackets 11 and secured to the top surfaces thereof is a channel member 12, the flanges thereof disposed upon opposite sides of upwardly extending lugs 15 formed upon the brackets 11 and secured thereto in any suitable manner. A plurality of brackets 16 are mounted upon the channel member 12, such brackets being suitably spaced to meet the requirements of a strand working machine being supplied with material (Fig. 1). The strand working machine may be of any well known type and since it is not essential to the understanding of the invention it has not been shown on the drawings. The brackets 16 are each secured to the channel member 12 by a pair of downwardly extending lugs 17 formed thereon and arranged to engage the outer faces of the flanges of the channel member 12, bolts 18 serving to secure the lugs 17 to the member 12. The brackets 16 each comprise a long arm 19 and a short arm 20 arranged at right angles to each other and angularly disposed slightly from horizontal and vertical directions, respectively (Fig. 2), the purpose of which will be made clear as this description progresses. Secured to the arms 19 of the brackets 16 upon the upper surface and at the right hand side thereof as viewed in Fig. 2 is a plate 22, preferably of steel, provided with an upwardly extending right angled extension 23 upon the right hand side thereof. Integral with the upper surface of the plate 22 and spaced from the inner vertical face of the extension 23 a suitable distance is a thin strip 24 which extends the entire length of the plate 22. Each of the short arms 20 of the brackets 16 is equipped with an arbor spindle 25 which is secured to the upper end of the arm by a pin 26, the axis of the spindle being parallel with the upper surface of the plate 22. Rotatably mounted upon each spindle 25 is a spool arbor 27. The arbor 27 comprises a drum like member having heads 28 and 29 interconnected by a plurality of longitudinally extending equally spaced ribs 30. The arbor 27 is retained upon the spindle 25 by a nut 31 and an associated washer, the nut being screw threaded upon the end of the spindle. Suitable anti-friction bushings are indicated at 32 upon which the arbor 27 rotates when the strand working machine is withdrawing a strand, indicated at 33, from a supply spool 34 which fits over the periphery of the arbor 27 as clearly shown in Fig. 2. A pin 36 extends from the bore of the spool in the space between two of the ribs 30 whereby upon drawing the wire 33 from the spool the pin 36 acts

as a driving means for the arbor 27 which rotates upon the spindle 25. A thrust washer 37 interposed between the inside face of the arm 20 and the head 28 serves to place the strand being drawn from the spool under a suitable tension and to prevent the free rotation of the spool upon the spindle 25. Due to the inclination from horizontal of the spindle 25 the arbor 27 presses against the washer 37 thereby causing a drag upon the spool and also preventing it from moving off the spindle.

In using apparatus constructed as hereinbefore described it is positioned adjacent the strand working machine (not shown) which generally comprises a plurality of units, the wire 33 being led upwardly and over guide pulleys (not shown) to either the right or left hand side of the apparatus as viewed in Fig. 2 and to the several machine units. In loading the apparatus the spools 34 are first positioned upon the plate 22 with one head of each spool resting in the rail formed by the space between the strip 24 and the right angled extension 23 of the plate 22, as clearly indicated in Fig. 2, whereupon they may be readily rolled to either end of the stand. Upon the plate 22 at either end thereof are secured angle members 39 which serve as stops to prevent the spools from rolling off the support. To place a spool upon a selected one of the arbors 27 it is rolled upon the plate to a point opposite such arbor and with its axis substantially aligning with the axis thereof whereupon the right hand end of the spool (Fig. 2) may be tilted upwardly a slight distance until the spool head clears the thin strip 24, the operative not being required to lift the entire weight of the spool. Thereafter, due to the weight of the loaded spool and the inclined plane offered by the plate 22 the spool will readily slide upon the plate and onto the arbor 27. It will be observed that the peripheral surface of the arbor 27 at the right hand end thereof (Fig. 2) is slightly tapered as indicated by the numeral 40 to guide the spool into position when not actually in axial alignment with the arbor as will be readily understood. Upon mounting a loaded spool upon each of the arbors 27 and guiding the free end of the wire to the correct unit of the machine the machine may be set in operation. The operative may then proceed to position a plurality of reserve spools of wire upon the plate 22 ready for the replacement of empty spools with full ones as they become exhausted. Upon the exhaustion of the material upon a spool, the spool is removed from the arbor and one of the reserve spools is rolled into the replacement position whereupon it is mounted upon the arbor as previously described.

It is obvious that by employing a reel supporting apparatus embodying the features of the invention, the labor and time incident to the handling by the operative of supply spools of wire or other strands in mounting them upon their arbors initially or in the replacement operation is materially reduced, thereby increasing the output of the machine over a certain period.

What is claimed is:

1. In an apparatus for supporting reels, means for supporting a reel in a working position, and means for supporting a reel in reserve and replacement positions, said means designed for guiding a reel from the reserve position to the replacement position and therefrom to the working position.

2. In an apparatus for supporting reels, means for supporting a plurality of reels in working positions, a rail for engaging a head of a reserve reel, and a plate member cooperating therewith to support and guide the reserve reel into a selected one of working positions.

3. In an apparatus for supporting reels, means having an axis in a plane bearing a predetermined angular relation to the horizontal for supporting a reel in a working position, and a plate member below and having a surface in a plane parallel to the plane of such axis for guiding a reel to the first-mentioned means.

4. In an apparatus for supporting reels, means having an axis in a plane bearing a predetermined angular relation to the horizontal for supporting a reel in a working position, a plate member below and having a surface in a plane parallel to the plane of such axis, and a rail mounted upon said member and cooperating therewith to support a reserve reel, said rail being designed to engage the inner surface of one head of and thereby guide the reserve reel into a position wherein the axis thereof is in alignment with the axis of the first-mentioned means, and said plate designed to solely support the reel during and subsequent to the disengagement of the head thereof from the reel and to guide the disengaged reel to the first-mentioned means in the working position.

In witness whereof, I hereunto subscribe my name this 8 day of July, A. D., 1925.

HELMER JOHN BOE.