July 27, 1926. 1,593,781

G. W. SEE

REEL

Filed Sept. 29, 1924 2 Sheets-Sheet 1

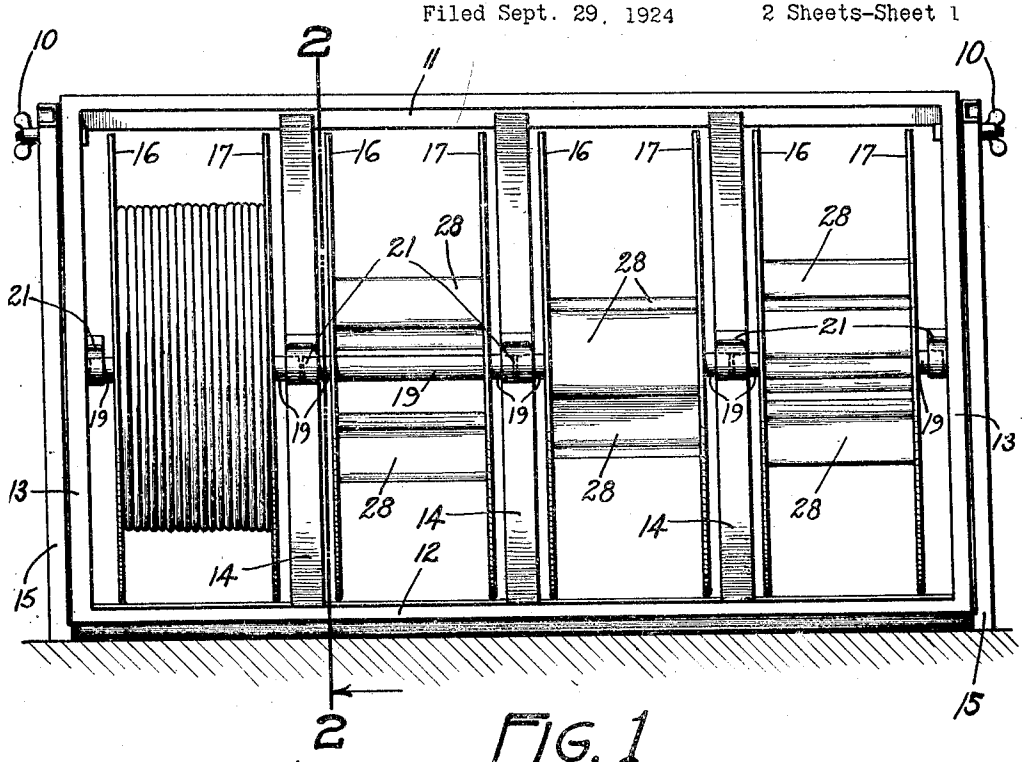


FIG. 1

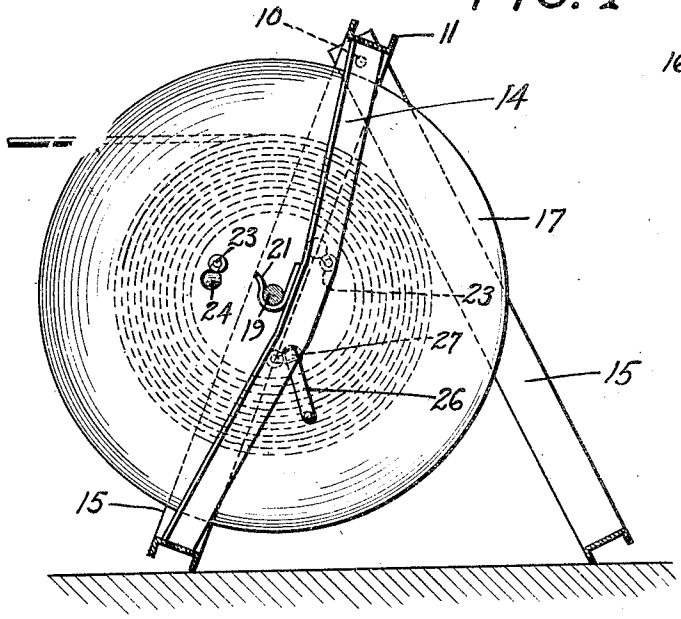


FIG. 2

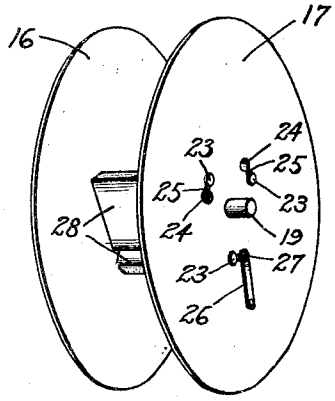


FIG. 3

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July 27, 1926. 1,593,781

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REEL

Filed Sept. 29, 1924 2 Sheets-Sheet 2

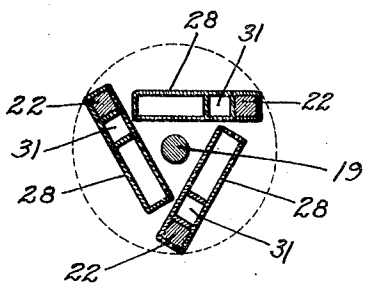


FIG. 6

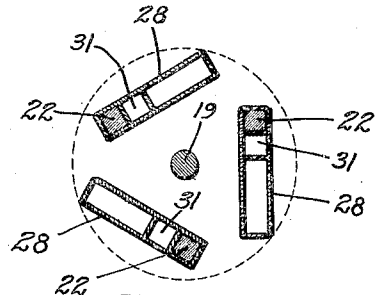


FIG. 7

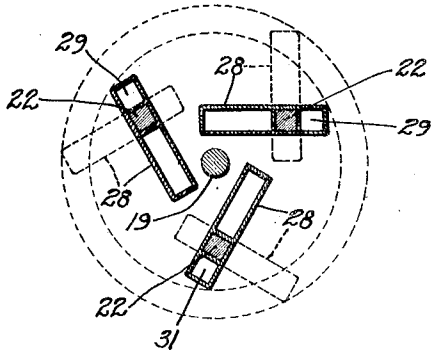


FIG. 8

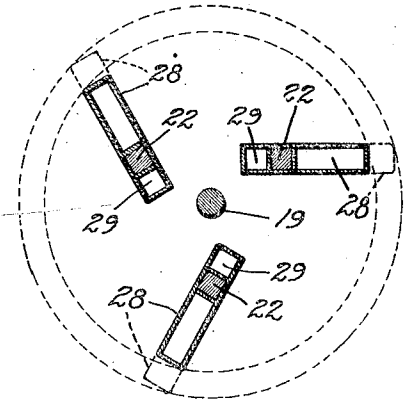


FIG. 9

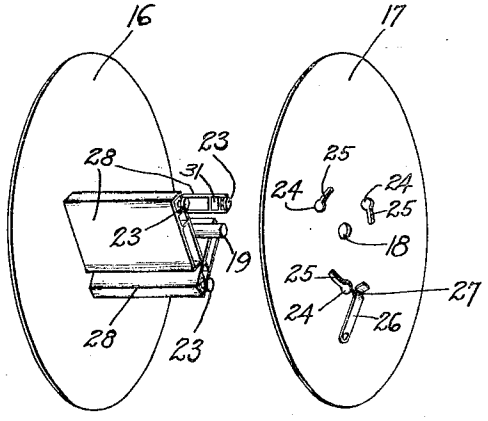


FIG. 4

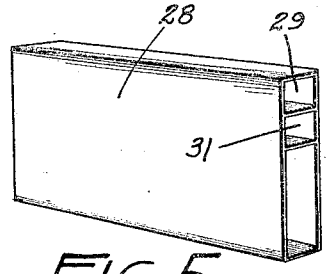


FIG. 5

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Patented July 27, 1926. 1,593,781

UNITED STATES PATENT OFFICE.

GUY W. SEE, OF MINNEAPOLIS, MINNESOTA.

REEL.

Application filed September 29, 1924. Serial No. 740,580.

This invention relates to new and useful improvements in reels particularly adapted for use to hold or support a coil of wire while it is being unwound for use.

The particular object of the invention is to provide a reel having an adjustable coil-supporting means which may quickly and readily be adjusted to the inside diameter of different wire coils.

Other objects of the invention will more fully appear from the following description and the accompanying drawings, and will be pointed out in the annexed claims.

In the drawings there has been disclosed a structure designed to carry out the various objects of the invention, but it is to be understood that the invention is not confined to the exact features shown, as various changes may be made within the scope of the claims which follow.

In the drawings:

Figure 1 is a view in front elevation of a wire-reel supporting frame adapted to support a plurality of reels;

Figure 2 is a cross-sectional view on the line 2—2 of Figure 1;

Figure 3 is a perspective view of one of the reels removed from the frame;

Figure 4 is a similar view showing one of the end plates removed therefrom in order that a coil of wire may be mounted on the reel;

Figure 5 is an enlarged detail view of one of the coil-supporting sleeves removed from the reel; and

Figures 6, 7, 8 and 9 are diagrammatic views showing how the coil-supporting sleeves may be positioned to adapt the reel to the inside diameter of the wire coil.

In the selected embodiment of the invention here shown, for purposes of disclosure, there is illustrated a reel-supporting frame, preferably of metal, comprising upper and lower frame members 11 and 12, end members 13 and the intermediate cross-rails 14, having their ends suitably secured to the upper and lower frame members 11 and 12. A substantially U-shaped standard or frame-supporting leg 15 has its upper ends pivotally connected to each end of the frame adjacent the upper corners thereof by such means as the wing nuts and bolts 10. This leg is adapted to be swung outwardly to provide a support for the upper portion of the frame when in inclined operative position, as shown in Figure 2. When the frame is not in use, or is being transported from place to place, the U-shaped supporting leg 15 may be folded so as to be substantially in alinement with the reel-supporting frame.

An important feature of this invention resides in the novel means provided for supporting a coil upon the frame. Such means consists preferably of a reel comprising two circular disks or end-plates 16 and 17 having central apertures 18 provided therein and adapted to receive a short shaft or axle 19 which outwardly projects through the end plates 16 and 17 and is carried in brackets 21 secured to the intermediate cross members 14 of the frame, as shown in Figures 1 and 2. The shaft 19 is preferably secured to the plate 16, while the plate 17 is loosely mounted on the shaft so that it may readily be demounted therefrom when it is desired to mount a coil of wire between the plates or on the reel.

Coils of wire such as are commonly used by electricians in wiring buildings, for lighting etc. often vary greatly in inside diameter and it is therefore desirable that means be provided whereby the coil-carrying portion of the reel may be adjusted to the diameter of the coil to be mounted thereon. Such means consists preferably in the provision of a plurality of spacing elements or studs 22, preferably three in number which are suitably secured to the end plate 16 and outwardly project therefrom in spaced relation. These studs are preferably irregular or angular in cross-section (being here shown as square) and are provided with heads 23 adapted to be inserted into locking apertures 24 provided in the other end-plate 17 after which this plate is rotated so that each head 23 passes into the relatively constricted portion 25 of each aperture 24. A leaf spring 26, having a depression or hook 27 formed on one end thereof is pivotally mounted on the plate 17 adjacent one or more of the aperture 24, so that the depressed portion 27 of the spring, may normally rest within the aperture 24, as shown in Figure 3, thereby locking the plate 17, against relative rotation with reference to the plate 16. When it is desired to remove the end-plate 17 from the reel, each spring 26 may be swung to the position shown in Figure 4, thereby permitting the disk 17 to be relatively rotated upon the axle 19 until heads 23 pass into the

relatively larger portions 24 of the locking apertures, thereby unlocking the plate and permitting its removal from the studs 22 and shaft 19.

In order that the coil-carrying portion of the reel may quickly and readily be adjusted to fit the inside diameter of the coil of wire, a series of coil-supporting members are provided upon the reel. These members are here shown as sleeve-like metallic members 28 which are divided into a plurality of elongated compartments or sockets 29 and 31 which are adapted selectively to be mounted upon the studs 22 between the end-plates 16 and 17. When the sockets are so positioned, the coil of wire may be mounted thereabout. This division of the sleeve-like members into sockets permits a plurality of different arrangements of these members upon the studs. Further, these sockets are preferably disposed adjacent one end of the members so that with one arrangement the short end of the member will outwardly extend while with a reversed arrangement upon the studs, the longer end will outwardly extend which obviously alters the effective coil-supporting diameter of the reel.

In Figures 6 to 9, inclusive, a plurality of such different arrangements are diagrammatically indicated, it being understood that the sleeve-like members 28 are readily demountable for rearrangement simply upon removal of the end-plate 17.

In Figure 6, the members 28 are shown as positioned to provide the smallest reel diameter which is therein indicated by a dotted line. In such position, the studs are received within the end-sockets 29 with the major portions of the members extending substantially inwardly.

In Figure 7, the members are shown as positioned to provide a slightly larger reel diameter. Therein, the studs are received within the same end-sockets as in Figure 6, but the angular socket has been rotated ninety degrees so that the relatively longer end of the member functions as the means for determining the effective coil-supporting diameter.

In Figure 8, the members 28 receive the studs 22 within the intermediate sockets 31 while the members are positioned substantially in the manner shown in Figure 6, i. e., with the major portions of the members extending substantially inwardly. An increased effective reel-diameter is thus produced. This corresponding circumference is indicated by the inner dotted line in this Figure 8 which it may also be noted shows, in dotted lines, a different position of the members to provide an increased diameter, the circumference of which is indicated by the outer dotted line in this figure. That is accomplished by rotating the members 28 upon the studs 22 from the position shown in full lines to the position shown in dotted lines wherein the major portions of the members are angularly projected outwardly.

In Figure 9, different arrangements of the members upon the studs are suggested in order to effect still greater reel-diameters. In the full line showing therein, the members are shown with the studs 22 in the intermediate sockets as in the preceding figure, but with the major portions of the members extending in directions opposite to the corresponding full line showing in Figure 8. The largest circumference shown may be obtained by placing the members in the dotted line positions indicated in Figure 9 wherein the studs 22 are received within the terminal sockets 29 and each has its major portion outwardly extending to achieve a reel-circumference shown by the outer dotted line in this figure.

Thus, it will be readily seen that by simply removing the end-plate 17 from the reel and by relatively changing the positions of the members upon the studs 22, the reel may quickly and easily be adapted to fit the inside diameter of widely variant sizes of coils at present in common use. It is to be understood that the dimensions of the reel and its parts may likewise be varied to accommodate series of larger or smaller coils.

Having thus described my invention what I claim as new and desire to secure by Letters-Patent is:

1. In a reel, the combination of a member adapted to be mounted for rotation, elements angular in cross-section carried by the rotatable member and projecting therefrom parallel to its axis of rotation, and coil-supporting devices carried by the angular elements and removable and replaceable thereon to project either a greater distance therefrom or in a different direction as desired to vary the effective coil-supporting diameter of the reel.

2. In a reel, the combination of a member adapted to be mounted for rotation, elements angular in cross-section carried by the rotatable member and projecting therefrom parallel to its axis of rotation, and coil-supporting devices formed each with a plurality of recesses to receive the angular elements in different positions of the coil-supporting devices to vary the effective coil-supporting diameter of the reel.

3. In a reel, the combination of a member adapted to be mounted for rotation, elements carried by the rotatable member and projecting therefrom parallel to its axis of rotation, and coil-supporting devices carried by said elements and formed each with a longitudinally directed cavity to receive one of said elements, and means associated with each coil-supporting device to secure it to its sustaining element in one of several directions of projection of which it is capable to

vary the effective coil-supporting diameter of the reel.

4. In a reel, the combination of a pair of end members adapted to be mounted in spaced relation, a plurality of spacing elements adapted demountably to connect the end members together, and coil-supporting devices adapted to be carried by the spacing elements and extend laterally therefrom, said devices being shaped to assume a plurality of adjusted positions relatively to the cross-sectional area of the elements whereby the effective coil-supporting diameter of the reel may be varied.

5. In a reel, the combination of a pair of end members adapted to be mounted in spaced relation, a plurality of spacing elements adapted to connect the end members, and coil-supporting devices adapted to be carried by the spacing elements and project laterally therefrom, each device being interiorly recessed to receive an element, and means to permit each device to be selectively positioned relatively to its carrying element to vary the effective coil-supporting diameter of the reel.

6. In a reel, the combination of a pair of end members adapted to be mounted in spaced relation, a plurality of elements projecting from one end member toward the other, each element having an angular cross-section, and coil-supporting devices adapted to be carried by the elements, each device being interiorly recessed to receive an element, each recess substantially corresponding in cross-section to that of its element whereby the devices may be selectively positioned to vary the effective coil-supporting diameter of the reel.

7. In a reel, the combination of a pair of end members adapted to be rotatably mounted in spaced relation, a plurality of spacing elements adapted demountably to connect the end members together, coil-supporting devices mountable in variable positions upon the spacing elements to extend outwardly from the axis thereof to provide a coil-support and vary the effective coil-supporting diameter of the reel.

8. In a reel, the combination of a shaft, a rotatable disk thereon, a plurality of studs of irregular cross-section mounted on the disk, a coil-supporting member adjustably mounted on each stud, and means adapted terminally to engage the studs to retain the coil-supporting members in adjusted coil-supporting position.

9. In a reel, the combination of a shaft, a rotatable disk thereon, a plurality of studs of irregular cross-section mounted on the disk in spaced parallel relation, coil-supporting members adjustably mounted on the studs, an end member mounted on the shaft in abutting relation to the coil-supporting members, with means for locking the end member in operative coil-supporting position.

10. In a reel, the combination of a pair of disks, one of the disks having a plurality of spaced paralled coil-supporting studs secured thereto and the other disk having locking apertures therein to receive the ends of the studs to lock it in reel-forming position by rotation of one disk relatively to the other after a coil is mounted on the studs.

11. In a reel, the combination of a disk having a plurality of studs secured thereto, a coil-supporting member adjustably mounted on each stud to vary the effective coil-supporting diameter of the reel, an end-plate adapted to be demountably attached to the studs and to abut the coil-supporting members to retain a coil thereon, with means for locking the end-plate in operative coil-supporting position.

In witness whereof, I have hereunto set my hand this 24th day of September, 1924.

GUY W. SEE.