

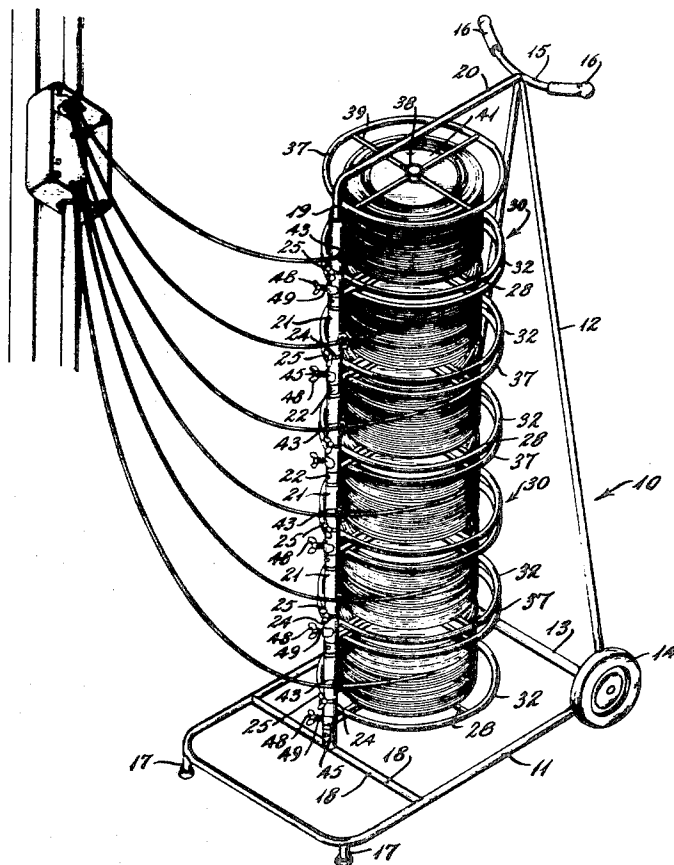
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 [21] Appl. No. **866,595**
 [22] Filed **Oct. 15, 1969**
 [45] Patented **Sept. 7, 1971**

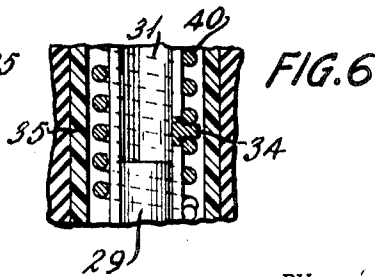
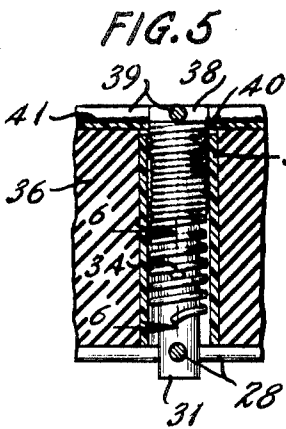
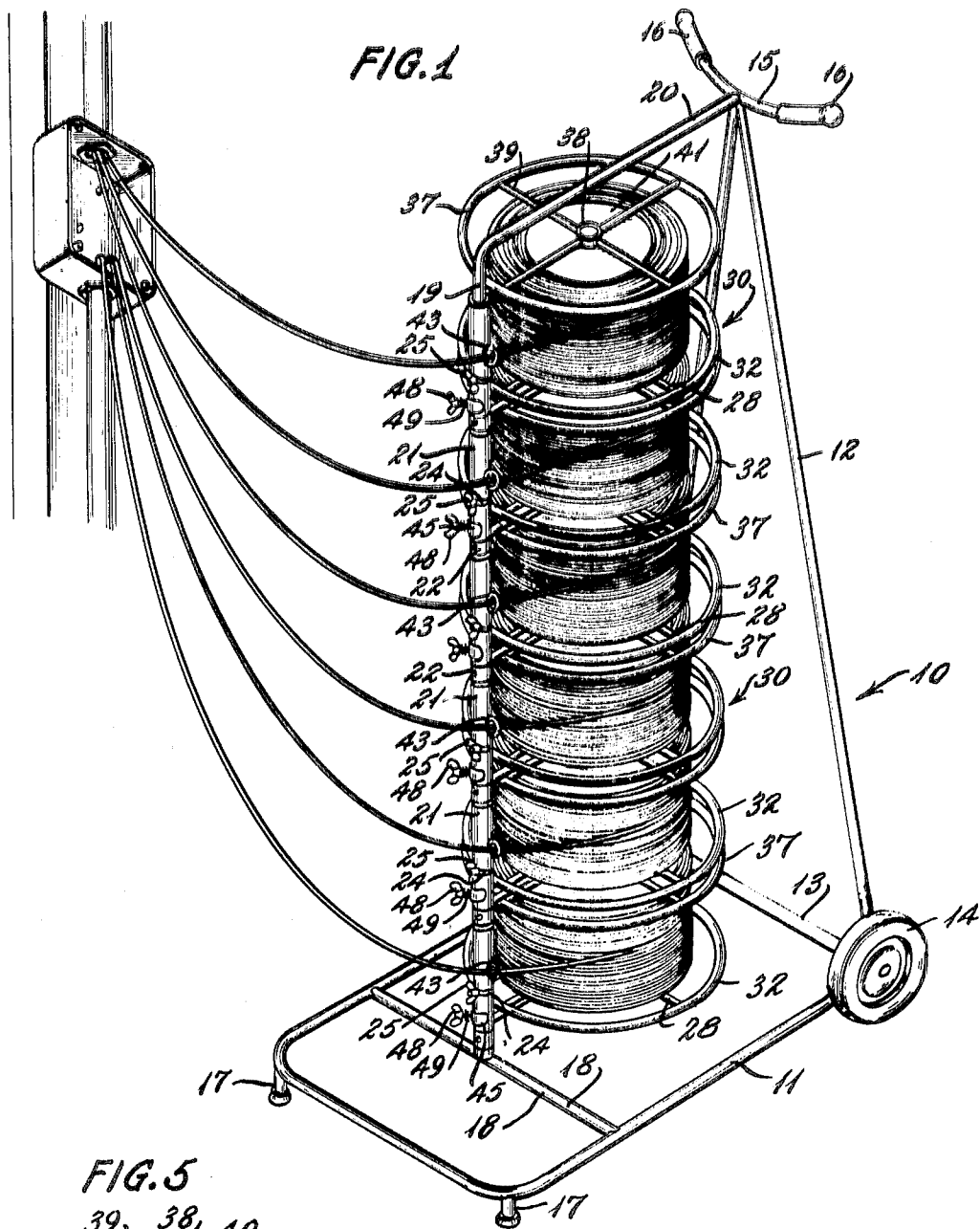
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[54] **PORTABLE WIRE HOLDER RACK**
6 Claims, 8 Drawing Figs.
 [52] U.S. CL..... **242/129.8,**
242/139, 242/156
 [51] Int. Cl..... **B65h 49/00**
 [50] Field of Search..... **242/55.3,**
129, 129.5, 131.1, 139, 156, 211/13

ABSTRACT: Portable apparatus for supporting elongated objects of various sizes in such a manner that the objects can be easily applied to the apparatus and arranged so that an undetermined amount of one or more desired sizes can be easily removed without kinking or snarling. The apparatus includes a support post having a plurality of adjustable reels mounted in one position for dispensing the objects and rotatable to a second position for ease of assembly and disassembly.





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FIG. 2

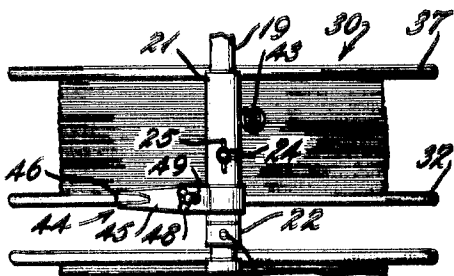


FIG. 3

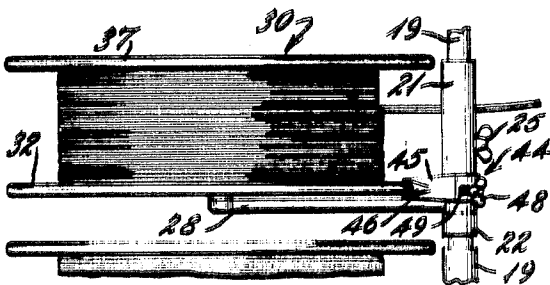


FIG. 4

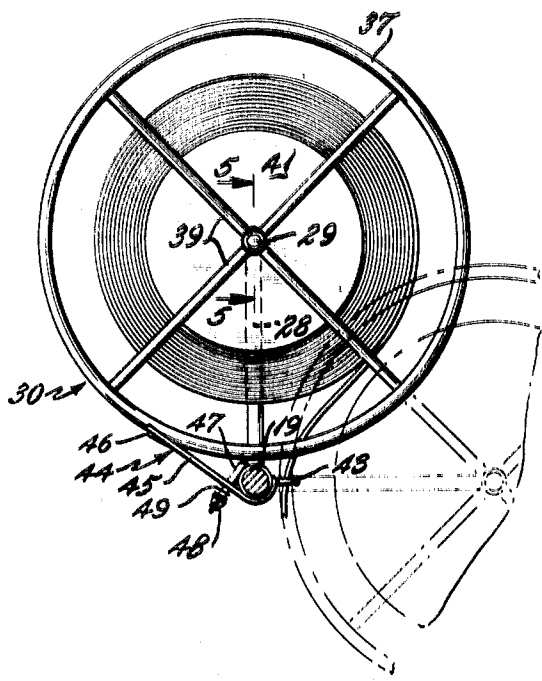


FIG. 7

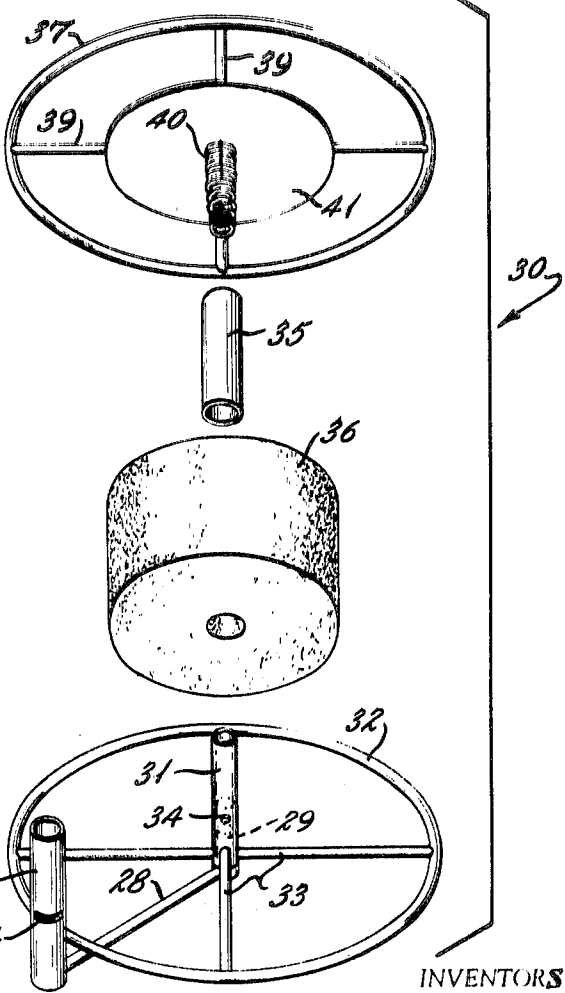
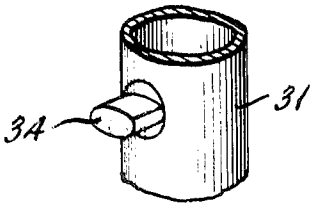


FIG. 8



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PORTABLE WIRE HOLDER RACK

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to the holding, transporting and dispensing of elongated objects of indeterminate length and relates particularly to a portable rack adapted to contain a plurality of rotatable reels each of which contains an article of undetermined length which can be easily dispensed without kinking.

2. Description of the Prior Art

Heretofore racks of various kinds have been provided for holding, transporting and dispensing elongated objects such as electric wires, rope, cord and the like; however, most of these racks have been able to accept only preformed reels on which the articles have been previously wound. In recent years most manufacturers of elongated objects and coiled materials have packaged their products in cardboard containers to facilitate shipping and storage, as well as to reduce expenses. Accordingly, it has become necessary for contractors and other users of large amounts of the elongated material to either dispense the material directly from the container or to wind the material onto a reel from which it can be dispensed in desired amounts. When the material has been dispensed from the containers, such material has had a tendency to kink and become snarled and otherwise has been difficult to handle. Also each container carries only one size of material and therefore it has been necessary to provide a separate container for each size of material likely to be used in a particular job.

When the material has been wound on a reel, it has been necessary for a person to first obtain a reel of an appropriate size and then to remove the material from the container and wind such material onto the reel before the reel could be placed on the rack for dispensing. This has involved a substantial amount of hand labor and for other reasons has not been satisfactory. In some racks a plurality of reels have been rotatably mounted on the same axis and therefore it has been necessary to remove several reels which have material thereon before an empty reel can be removed and another reel having material of an appropriate size can be placed in position.

SUMMARY OF THE INVENTION

The present invention is a portable wire holder rack including a wheeled frame with a support post on which a plurality of adjustable rotatable reels are independently mounted. The support post can be disposed in either a generally upright or generally horizontal position so that material can be removed from one or more reels simultaneously. Each of the reels is mounted on a support arm and each reel includes separable side members disposed on opposite sides of a flexible core which can be collapsed to receive a coil of material and then permitted to expand into engagement with the inner periphery thereof. Thereafter the core with the material thereon and the reel are reassembled and placed on the support arm, after which the reel is moved generally into alignment with a plurality of other reels.

It is an object of the invention to provide a portable wire holder rack adapted to rotatably support a plurality of separable reels each of which has an undetermined length of material thereon and each of such reels can be easily removed and refilled without disturbing adjacent reels.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective illustrating one application of the invention.

FIG. 2 is a fragmentary front view of one of the wire holding units.

FIG. 3 is a side elevation thereof.

FIG. 4 is a top plan view.

FIG. 5 is an enlarged fragmentary section on the line 5—5 of FIG. 4.

FIG. 6 is an enlarged section on the line 6—6 of FIG. 5.

FIG. 7 is an exploded perspective of one of the wire holding reels, and

FIG. 8 is an enlarged fragmentary perspective of a portion of the reel sleeve.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With continued reference to the drawings, the wire holder track of the present invention includes a frame 10 having a base portion 11 and a side portion 12. The frame includes an axle or shaft 13 on the opposite ends of which are mounted wheels 14 by means of which the frame can be moved easily from place to place. At one end of the side portion 12, a slightly arcuate shaped handle-forming member 15 is welded or otherwise attached and if desired the opposite ends of such handle may be covered by rubber handgrips 16.

The base portion 11 is generally U-shaped and preferably has a pair of downwardly extending feet 17 at the outer end. A cross brace 18 is welded or otherwise connected to opposite sides of the base portion 11 and forms a support for an elongated post 19. Such post extends outwardly from the brace 18 substantially parallel to the side portion 12 and has a right-angular portion 20 connected to the side portion 12 in any desired manner, as by welding or the like.

As illustrated in FIGS. 1, 2 and 3, the post 19 has a plurality of sleeves 21 and each of such sleeves is retained in position by at least one collar 22 connected to the post by a setscrew 23. In order to permit partial swinging of the sleeves 21 about the post 19, each of such sleeves has a slot 24 adapted to receive a thumbscrew 25 threadedly received within the post 19 and adapted to releasably hold the sleeve 21 in fixed adjusted position. Adjacent to one end of each of the sleeves 21 an outwardly extending reel-supporting arm 28 is welded or otherwise attached. At its outer end the arm 28 is provided with a spindle 29 disposed at a right angle to the arm and adapted to freely rotatably receive a reel 30.

The reel 30 is separable to provide for the easy application of a coil of wire or other flexible elongated material. The lower portion of the reel includes a center sleeve 31 rotatably mounted on the spindle 29 and forming the hub of a first or lower reel side or wheel 32 connected to such sleeve by spokes 33. Approximately midway of its length the sleeve 31 is provided with an outwardly projecting generally elliptical stud 34 for a purpose to be described later.

Spaced from the center sleeve 31 and generally concentric therewith is an outer sleeve 35 located generally centrally of a flexible core 36 preferably constructed of resilient material such as foam rubber or the like. At the outer end of the center sleeve 31 a second or upper wheel 37 is provided having a central hub 38 connected to the second wheel by spokes 39. Mounted on the hub 38, an adjustable tension connecting member 40 is provided and such member may include a spring having a plurality of coils adjacent to the wheel 37 which are welded together to form a solid tubular member and with the coils at the opposite end being spaced apart as in a conventional spring. A smooth lightweight plate 41 of plastic, sheet metal, pressed board or other material is mounted on the spokes 39 exteriorly of the connecting member 40.

In order to place a coil of wire or other elongated material on the reel, such reel is disassembled, as illustrated in FIG. 7, after which the core 36 is collapsed to receive a coil of material. After the coil of material is in place, the core 36 is permitted to expand into engagement with the interior surface of the coil and thereafter the material and the core are placed over the center sleeve 31 of the wheel 32. The connecting member 40 of the wheel 37 then is inserted between the center sleeve 31 and the outer sleeve 35 and the second wheel 37 is moved toward the first wheel until the connecting member 40 engages the stud 34. Upon engagement of the stud, the wheel 37 is rotated so that the lower coils of the connecting member 40 engage the stud 34 and function as a screw thread to move the second wheel toward the first wheel. Continued rotation of the second wheel will cause the plate 41 to engage

the core 36 and squeeze the sides of the core together causing the periphery to expand into intimate engagement with the coil of material. The second wheel is rotated until the desired tension is applied by the connecting member 40.

An eye or fair-lead 43 is welded or otherwise attached to each of the sleeves 21 and after the material is placed on the reel, the end of the material is passed through the eye so that the eye will function as a guide as the material is removed from the reel.

In order to prevent undesired rotation of the reel 30, a friction brake 44 is provided including an elongated plate 45 having one end welded or otherwise attached to the sleeve 21 and the opposite end is provided with a curvature 46 generally complementary to the periphery of the wheel 32 and engageable therewith. To vary the tension on the friction brake 44, a stud 47 is welded or otherwise attached to the sleeve 21, as illustrated in FIG. 4, and such stud projects through an opening in the plate 45. The opposite end of the stud is threaded to receive a thumbscrew 48. If desired a spring 49 can be located between the plate 45 and the thumbscrew 48 for better control of the tension applied to the wheel 32.

In the operation of the device, wire or other material is placed on each of the reels 30 and the reels are rotated about the post 19 to a position substantially centrally of the frame 10, as illustrated in FIG. 1. The material on the reels may be of different sizes, or may be of the same size and different colors, such as is commonly used in electrical wiring. After the reels are in place, the frame 10 is tilted so that most of the weight of the device is carried by the wheels 14 and the device is rolled to a place of use after which either the frame can be lowered so that the feet 17 are in engagement with the floor and the post 19 is in a generally vertical position, or the side portion 12 of the frame can be lowered until the handgrips are in engagement with the floor at which time the post 19 will be in a substantially horizontal position. Thereafter material is removed from one or more reels until a desired amount of material has been used.

When a supply of material has been exhausted from one of the reels, such supply must be replenished, and in order to do this the thumbscrew 25 is loosened to permit the sleeve 21 and the reel 30 carried thereby to be rotated about the post 19 out of alignment with the remaining reels. Thereafter the second wheel 37 is rotated in a reverse direction so that the connecting member 40 unscrews from the stud 34 after which the

second wheel 37 and the core 36 are removed. The core is then collapsed to receive a new coil of material and the reel is reassembled as previously described. The reel 30 and sleeve 21 then are rotated so that the reel again is in alignment with the other reels and the thumbscrew 25 is tightened so that the reel remains in position.

We claim:

1. A portable wire holding rack comprising a frame, a post fixed to said frame, a plurality of sleeves selectively rotatably mounted on said post, means for retaining said sleeves in fixed adjusted position, each of said sleeves having an outwardly extended arm with a spindle, a reel rotatably mounted on each of said spindles, each of said reels including separable side members located generally parallel with each other on opposite sides of a core, whereby a plurality of reels are mounted on said post substantially in alignment with each other and each of said reels can be selectively moved out of alignment with the other reels so that the reel can be removed and replaced.

2. The structure of claim 1 in which said core is flexible and the connecting means for said separable side members includes adjustable tension connecting means.

3. The structure of claim 1 including adjustable friction brake means mounted on said sleeve and engageable with said reel.

4. A separable reel for supporting flexible material of undetermined length, said reel comprising a first side member having a central member with an axis disposed normal to the plane of said first side member, a projection extending outwardly from said central member, sleeve means disposed about said central member and spaced therefrom, a second side member adapted to be located generally parallel to said first side member, said second side member having an adjustable tension connecting member extending outwardly therefrom along an axis generally normal to the plane of said second member, said connecting member being of a size to be received between said central member and said sleeve, and said connecting member adapted to adjustably engage the projection on said central member to connect said first and second sides together in assembled relationship.

5. The structure of claim 4 in which said adjustable tension connecting member includes a spring means.

6. The structure of claim 4 including a flexible core mounted on said sleeve and located between said first and second side members.

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