United States Patent

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[72] Inventor **Charles W. Lewis**
4537 E. 8th, Tucson, Ariz. 85711

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[54] **WIRE DISPENSER**
7 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** **242/129,**
206/52 W, 220/23, 220/83, 242/138
[51] **Int. Cl.** **B65h 49/00**
[50] **Field of Search** 242/129,
137, 137.1, 138, 146; 206/52 W, 59 A, 65; 220/97;
221/92, 112, 114; 222/129

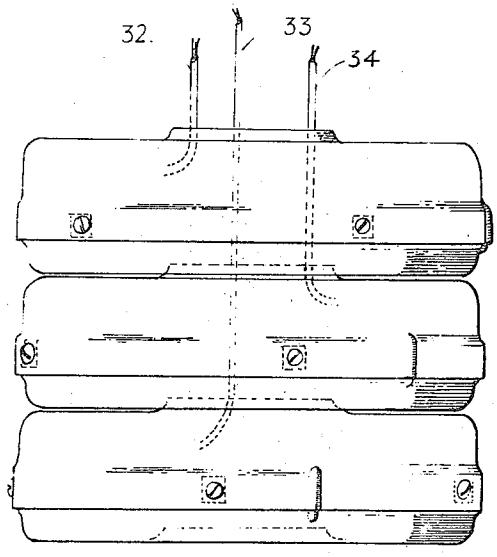
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Primary Examiner—Leonard D. Christian
Attorney—James A. Eyster

ABSTRACT: The dispenser consists of two dishes secured together at their edges to contain a 500-foot roll of insulated wire. The lower dish has a large central hole with a reentrant coaming fitting the center of the wire roll. The upper dish has a similar central hole except that the coaming extends outward to form a smooth edge through which the wire can be drawn. The outward coaming also forms a hub on which another dispenser can be stacked, with both wire ends from the two dispensers drawn through the uppermost hole.



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SHEET 1 OF 2

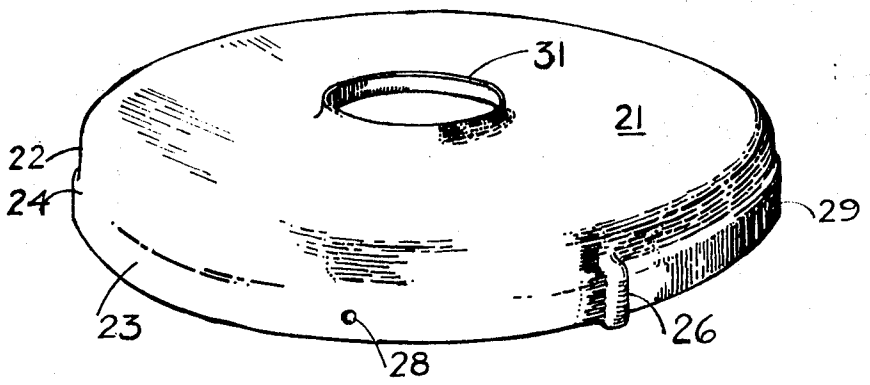


FIG. 2

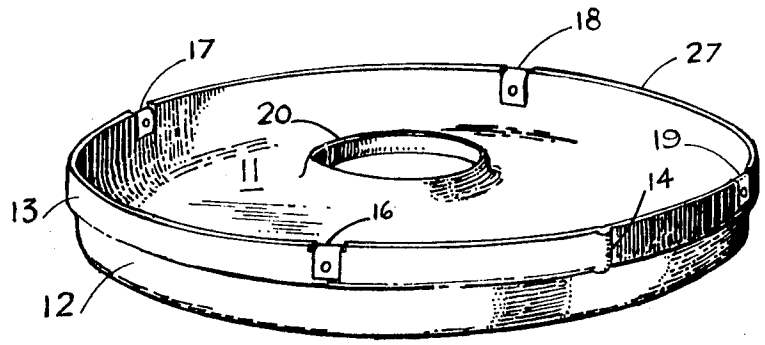


FIG. 1

CHARLES W. LEWIS INVENTOR.

BY

James R. Eyster
Agent

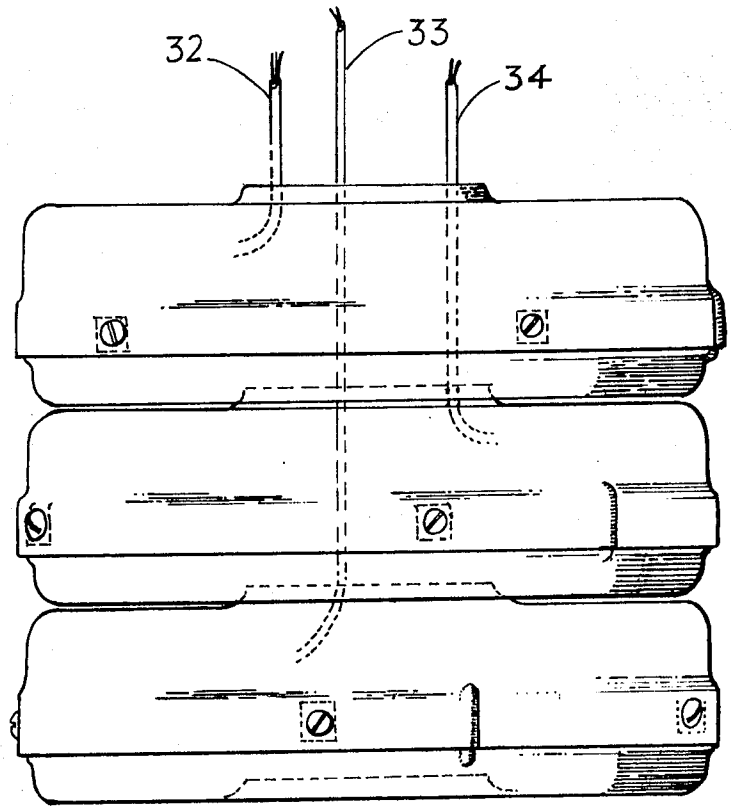


FIG. 3

CHARLES W. LEWIS INVENTOR.

BY

Frances R. Egerton
Agent

WIRE DISPENSER

BACKGROUND OF THE INVENTION

This invention relates to receptacles for containing and dispensing insulated wire, with provision for convenient withdrawal of the wire.

Insulated wire is used, usually in 10, 12 and 14 AWG sizes, in installing electrical wiring in buildings, equipments and switchboards. Such wire is normally purchased by the user in 500-foot rolls contained in perishable cardboard boxes. In drawing the wire from the roll the wire is difficult to manage and may easily become tangled and kinked. Often the roll of wire becomes a tangled mass before it is all used. Usually two or more color-coded rolls are used at the same time, and not only may each get tangled, but the two may become tangled together.

SUMMARY OF THE INVENTION

This invention provides a light, strong box for dispensing insulated wire in roll form. The box is separable into two halves each in the form of a shallow, circular dish having a center cutout. When the halves are fitted together they form a toroidal-shaped box. The edge of the upper half of the box is flanged out to form a shoulder, so that when the box is assembled the edge of the lower half meets the shoulder of the upper half.

In using the box, it is opened and a roll of wire is laid in the lower half. The upper half is then laid on the lower half and the two halves are fastened together with screws. Because of the flanged toroidal construction in which the edge of the lower half of the box meets the shoulder formed in the edge of the upper half, and because of the kind of material used, the dispenser is very strong and can withstand much abuse.

The inner end of the roll of wire is now drawn through the center hole of the upper half of the box and the wire is ready for utilization.

The center openings of the two boxes are circular and have the same diameter. The opening in the lower half has its edge turned up or inward to form a hub around which the wire roll can be fitted, and the opening in the upper half has its edge turned upward to form a smooth, curved coaming, so that the wire can be easily pulled from the box with minimal friction.

Additionally, because of the way in which the hole edges are turned, boxes can be stacked one on top of the other, and locked together by the hole edges or coamings. Moreover, in shipping as separate halves, by reversing the upper halves, upper and lower halves can be compactly stacked.

One purpose of this invention is to provide a sturdy and lightweight dispenser for insulated electrical wire.

Another purpose is to provide a dispenser from which any length of insulated wire up to its capacity can be conveniently drawn, as required, while eliminating tangling of the wire.

Another purpose is to provide dispensers which can be compactly stacked when several are in use at once.

BRIEF DESCRIPTION OF THE DRAWING

A further understanding of this invention may be secured from the detailed description and the drawing, in which:

FIG. 1 is a perspective view of the lower half of the dispenser.

FIG. 2 is a perspective view of the upper half of the dispenser.

FIG. 3 is an elevation view of three wire dispensers nested to form a stack.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to FIG. 1, a dish is formed preferably of plastic which is strong and has no memory. For example, acrylonitrile-butadiene-styrene commonly termed ABS, may be employed. The thickness for sufficient strength may be in the range of 0.078 inch to 0.125 inch, depending on the size of the box. The dispenser will have a diameter and height suitable for containing a roll of wire of a selected size.

The circular dish of FIG. 1, constituting the lower half of the dispenser, comprises a floor 11 and a wall 12. The wall is flanged out to form an edge portion 13 having a radius slightly larger than that of the body of the wall. The edge portion 13 is pressed out at one point of its circumference to form an external spline 14. Four-speed nuts of the locking type, made of tempered sheet metal, are placed on the edge portion at equally spaced locations 16, 17, 18 and 19. At each location the edge of the edge portion is notched to receive the nut so that it will not project above the edge, and the edge portion is drilled to permit a machine screw to be inserted in the nut during assembly.

In the center of the floor 11 a circular hole is located having a diameter of roughly one-third of the dish diameter. The edge 20 of the hole is formed upward, as shown in the drawing, projecting as a coaming into the interior of the dish and joining the floor in a gentle curve. The amount of coaming projection is roughly one twenty-fifth of the diameter of the dish.

The circular dish of FIG. 2, constituting the upper half of the dispenser, is made of the same material as is the lower half, and the material has the same thickness. The dish consists of a roof 21 and a wall 22. The wall 22 is flanged outward to form a cylindrical edge flange 23 having an axial dimension approximately equal to the axial dimension of the edge portion 13, FIG. 1. The junction of the wall and edge flange forms an internal shoulder, externally indicated at 24. The flange 23 is pressed outward at the position 26 to form an external ridge and an internal slot. The size of this slot is such that the spline 14, FIG. 1, will fit easily into the slot. The diameter of the edge flange is enough larger than the diameter of the edge portion 13, FIG. 1, to allow the edge flange 23 easily to slide over and fit on the edge portion 13. The diameter of the wall 22, FIG. 2, is substantially equal to the diameter of the edge portion 13 so that, when the dispenser is assembled, the edge 27 of the lower dish abuts on the internal shoulder 24 of the upper dish.

The internal depth of the upper dish, FIG. 2, from shoulder 24 to the roof 21, plus the internal overall depth of the lower dish, FIG. 1, is sufficient to permit the assembled dispenser to contain a roll of wire.

Four holes, such as holes 28 and 29, are drilled at equidistant positions around the edge flange 23, FIG. 2, and are so positioned with relation to the slot 26 and the edge of the edge flange that, when the dispenser is assembled with spline and slot engaged, the four holes in the upper dish register in position with the holes in the speed nuts of the lower dish.

The roof 21, FIG. 2, is provided with a circular central hole having approximately the same size as the central hole in the lower dish. The edge 31 of the hole in roof 21 is formed upward in a coaming similar to that of FIG. 1, except that in FIG. 2 the coaming protrudes outward from the dish while in FIG. 1 the coaming protrudes inward. The coaming of FIG. 2 meets the roof in a gentle curve.

In using the wire dispenser a roll of insulated wire, for example No. 12 AWG, is laid in the lower half shown in FIG. 1. The upper half, FIG. 2, is then placed, concave downward, on top of the lower half so that the spline 14 slides into the slot 26 and the circular shoulder 24 rests on the edge 27. Machine screws are then inserted in the four screw holes, such as holes 28 and 29, and tightened into the four speed nuts 16, 17, 18 and 19. Now, by reaching into the center opening in the upper half, the user grasps and pulls out the inner end of the coiled wire, ready for use.

If, as is generally the case, two or three colors of wire are required in an operation, the electrician can stack the several dispensers one on top of the other, as shown in FIG. 3, with the dispensers locked together by the upper coamings. The inner ends of the three wire rolls contained by the three dispensers are brought through the middle of the stack and out of the center hole of the top dispenser, as shown by the three wire ends 32, 33 and 34, FIG. 3.

What is claimed is:

1. A wire dispenser comprising:

a lower circular dish having a floor, a cylindrical wall and a central aperture, said aperture having an inwardly extending coaming;

an upper circular dish having a roof, a cylindrical wall and a central aperture, said aperture having an outwardly extending coaming, said cylindrical wall having an edge flange with an inner diameter larger than the outer diameter of the edge of said lower dish and in which the wall of the upper dish meets said edge flange to form a circular shoulder having inner and outer diameters equal to the respective inner and outer diameters of the wall of said lower dish at its edge; and

means for fastening said upper dish, concave downward, onto said lower dish in a concave upward position.

2. A wire dispenser in accordance with claim 1 in which the edge of the wall of said lower dish is expanded into a cylindrical edge portion having a diameter greater than that of the wall.

3. A wire dispenser in accordance with claim 2 in which said cylindrical edge portion contains an external axial spline and in which said edge flange of the upper dish contains an internal slot matching said spline.

4. A wire dispenser in accordance with claim 1 in which said central apertures in lower and upper dishes are circular and have the same diameters.

5. A wire dispenser in accordance with claim 1 in which said means for fastening comprises a plurality of speed nuts and matching machine screws.

6. A wire dispenser in accordance with claim 1 in which the upper and lower dishes are made of a moldable plastic material having a high impact strength and having negligible memory.

7. A wire dispenser comprising

a lower dish made of acrylonitrile-butadiene-styrene having

a thickness in the range 0.078 inch to 0.125 inch, said dish having a flat floor and a cylindrical wall having a selected inner radius;

a cylindrical edge portion of said wall having an inner radius exceeding said selected radius;

a central circular opening in said floor having a diameter equal to approximately one-third of the diameter of said lower dish;

an inwardly extending coaming on said central circular opening, said coaming being curved and faired into said floor;

an axial spline in said edge portion;

four speed nuts placed at equally spaced locations on the edge of said edge portion;

an upper dish made of the same material as said lower dish and having the same thickness, said upper dish having a flat roof and a cylindrical wall having the same radius as that of said edge portion of the lower dish;

a cylindrical edge flange of said upper dish wall having an inner diameter greater than the outer diameter of said edge portion;

a central circular opening in said roof having the same diameter as the opening in said lower dish;

an outwardly extending coaming on said central circular opening of the upper dish, said coaming being curved or faired into said roof;

an axial slot in the inner surface of said edge flange; and

four holes placed equidistantly around said edge flange and bearing the same angular relation to said slot as the four speed nuts on the lower dish bear to the spline, whereby when the upper dish is placed on the lower dish, with slot-fitting spline, the four holes in the upper dish register with the four speed nuts on the lower dish.