July 11, 1950 E. F. GUEST 2,514,542

DEVICE FOR STORING AND DISPENSING MATERIAL IN FILAMENT FORM, SUCH AS METAL OR ALLOY WIRE, STRING OR THE LIKE

Filed May 10, 1948

FIG. 1.

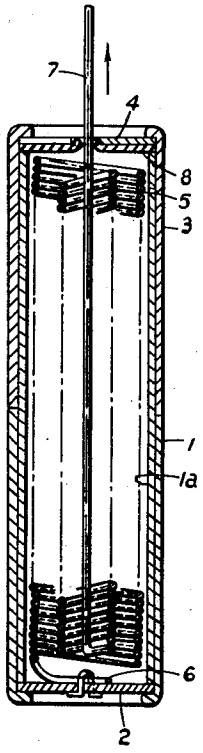



FIG. 2.

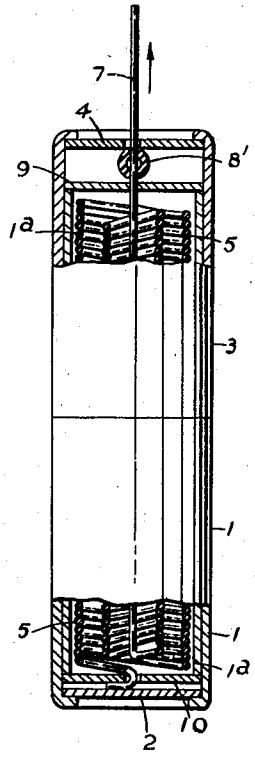
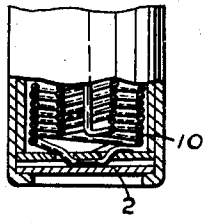



FIG. 3.




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## DEVICE FOR STORING AND DISPENSING MATERIAL IN FILAMENT FORM, SUCH AS METAL OR ALLOY WIRE, STRING OR THE LIKE

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5 Claims. (Cl. 206—56)

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This invention relates to the storing and dispensing of material in filament form, such as metal wire, solder wire, string and the like.

The device of the present invention is particularly applicable to the use of solder in wire form. Solder wire is usually stored in considerable length on reels and immediate or daily requirements are drawn off and severed and used in the bare state. This practice has many disadvantages, among which may be mentioned the high percentage of waste due to discarded ends and inadvertently kinked, dented, or otherwise damaged wire, the inefficiency due to the collection of dirt and grease on the wire surface, the loss of identification between wires of different grade and the liability of inadvertent or careless short circuiting, or intercontacting, by laying the bare solder wire across groups of closely associated connection points, e. g. the terminal strips equipped in the horizontal plane on telephone exchange apparatus racks and the local side of intermediate distribution frames, or radio apparatus assembled in groups, the servicing and circuit adjustment of which, in common everyday practice, is carried out upon circuits in an electrically live condition.

According to the present invention a storage and dispensing device for material in filament form is provided, comprising a closed container shaped to serve as a handle and having one end formed or equipped to exercise a resilient restraint on the withdrawal of lengths to suit immediate requirements from a bulk of the material housed in continuous form inside the container in a state easy to unravel. The container is preferably formed of electrically insulating material such as cardboard, or synthetic resins, including transparent material, as when so formed it insulates the user from electrical shock, and also insulates live apparatus being worked upon from contact through the solder wire with adjacent metallic parts normally at earth potential.

It will be understood that such a device may be used for filamentous material in general and that the resilient restraining means serves to check the withdrawal of the material in unnecessary lengths, also to prevent the free end from recoiling into the container, and to prevent the exit orifice from becoming frayed or otherwise damaged or enlarged. The device is, however, particularly useful in the storage and dispensing of metal wire, especially solder wire, both cored and solid.

The container is conveniently elongated in form and of a diameter suited to convenient handling between finger and thumb or by grasping in one hand. If cylindrical, the container may be provided or formed with means for preventing it from rolling when laid aside. The exit end having a central hole may be formed as a friction or screw-fitting cap or it may be fitted permanently in position by inwardly turning the adjacent rim of the body wall.

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The resilient restraining means at the exit orifice of the device may take various forms. A particularly effective restraining device is a disc of resiliently flexible material such as rubber pierced by the wire close to the exit, such disc clinging to the wire and being secured to or clamped just beneath the exit end wall of the device. Alternatively, the wire may be embraced just beneath the end wall of the device by a short length of rubber tubing trapped in position beneath the said end wall.

Containers of different capacity may be provided according to the gauge of the material being stored and the estimated daily requirements of the user, and they may be labelled or otherwise marked to identify the contents. If the container is made of transparent material, the contents and the amount available can always be seen.

The wire itself is preferably stored in the container as a helix or a plurality of co-axial helices one within the other, the length available for immediate use preferably extending axially from the far end, then through the orifice and protruding beyond only so far as is convenient for immediate use. The remote end of the coiled length of wire is preferably anchored to the remote end wall of the device or to an additional or false end wall.

Embodiments of the invention are illustrated in the accompanying drawings, in which:

Fig. 1 is a longitudinal sectional elevation of a helix of solder wire housed in a dispensing container according to the invention, and

Fig. 2 is a similar view of a modification;

Fig. 3 is a fragmentary view of a further modification,

The container, preferably made of cardboard, comprises the cylindrical lower portion 1 with disc-shaped end wall or bottom 2, and the cylindrical lid portion 3 with disc-shaped end wall or top 4. 5 is a helix of solder wire, the remote end 6 of which is secured to the bottom disc 2, and the paying-out end 7 of which passes through a hole in the top 4. On the underside of the top 4 is fixed in any convenient manner. as by glue or cement, a disc 8 of rubber or similar resiliently flexible

material, the centre of which is pierced by the wire 5, so that the material of this disc exerts a resilient restraint on a pull or push exerted on the wire 5, by reason of temporary distortion of the material in the region of its grip on the wire.

In the modification illustrated in Figure 2 the resilient restraint is exercised by a short length of rubber tubing 8' which embraces the wire 5 and is confined between the top disc 4 and a supplementary disc 9 spaced therefrom. This figure also shows a supplementary or false bottom disc 10 to which the bottom end of the wire helix is anchored instead of to the main bottom disc 2.

Figure 3 is a view of a slight modification in the manner of anchoring the bottom end of the wire helix namely, by being threaded through two holes in the false bottom disc 10.

The drawings illustrate a very convenient construction of container owing to fewness of parts and ease of assembly and disassembly. It comprises a liner 1*a*, extending from top to bottom of the container, the bottom portion 1 and the top portion 3 being each equal to just over half the length of the liner and firmly slidable thereon. The end discs 2 and 4 may be free, being normally held in place by being clamped peripherally between an inturned lip or bead on the adjacent end of each of the cylindrical portions 1 and 4 and the abutting end of the lining 1*a*. It will thus be understood that this container consists merely of two equal cylindrical portions 1 and 3, two equal end discs 2 and 4 and a liner 1*a*, and that these are easily assembled and disassembled and that the end discs are normally held in position without cement, wire stitches or other fastening means.

It will be understood from the foregoing description that the improved device overcomes the disadvantages hereinbefore mentioned in the use of wire and the like drawn off and severed from reels carrying wire in large bulk. The container keeps the wire clean and protected from damage, it serves as an insulating handle and, if desired, it can easily be fixed in a bench clamp or the like, leaving the operator free to use both hands on the work. The device also enables quantities of wire of conveniently short length for daily requirements to be transported and stored neatly and in readiness to be handed out by a storeman, and the wire in each container can be used up to within quite a short distance from its far end, thereby avoiding waste. Also the wire when laid aside in a kit-bag is protected from dirt and damage and is readily identifiable and ready for further use.

What I claim is:

1. A closed container shaped to receive and act as a handle for manipulating a helically coiled filament such as solder wire the end of which is threaded through a hole in the container lid, said container comprising two tubular body portions open at both ends but having each an internal lip or bead at one end, a pair of discs insertable respectively down the interior of the body portions and seating against the said lips or beads, one of said discs having a hole therein, a tubular lining member substantially equal in length to the sum of the lengths of the aforesaid two tubular body portions and fitting neatly within them, and a third disc insertable down the interior of the body portion containing the perforated disc to take up a position close against said disc, the discs being held in position by being clamped peripherally between the end rims of the lining member and the internal lips or beads of the body portions, and the third disc being composed of resiliently pliable material to exert a drag on the filament when threaded through said hole.



2. A closed container according to claim 1 having its parts composed of electrically insulating material.

3. A closed container according to claim 1, having its parts composed of transparent material.

4. A closed container according to claim 1, in combination with means for anchoring the non-protruding end of the filament near to the end wall of the body portion having the non-perforated end disc.

5. A closed container shaped to receive and act as a handle for manipulating a helically coiled filament such as solder wire the end of which is threaded through a hole in the container lid, said container comprising two tubular body portions open at both ends but having each an internal lip or bead at one end, a pair of discs insertable respectively down the interior of the body portions and seating against the said lips or beads, one of said discs having a hole therein, a tubular lining member substantially equal in length to the sum of the lengths of the aforesaid two tubular body portions and fitting neatly within them, the discs being held in position by being clamped peripherally between the end rims of the lining member and the internal lips or beads of the body portions, and means located adjacent the said disk having the hole therein for exerting resilient restraint upon the filament when threaded through said hole.

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