

Nov. 29, 1960

F. P. ROY ET AL

2,961,691

GROMMET FOR GUIDING WIRE AND THE LIKE

Filed Feb. 27, 1958

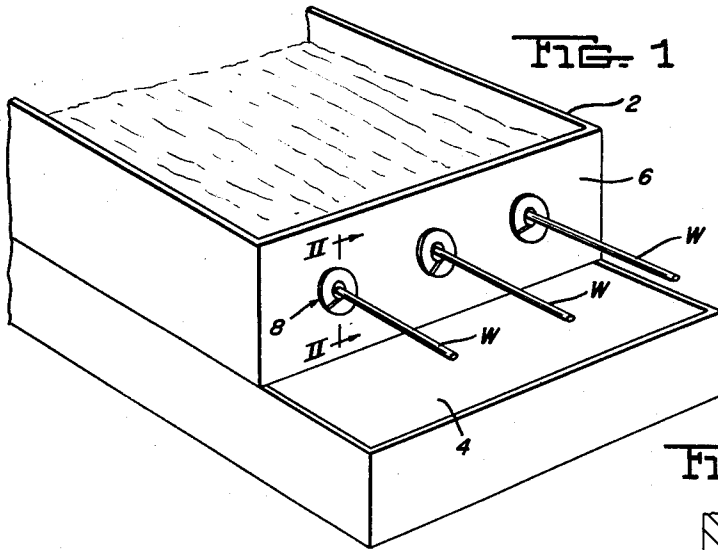


FIG. 1

FIG. 2

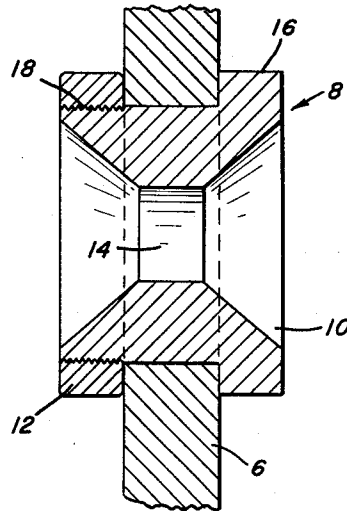


FIG. 4

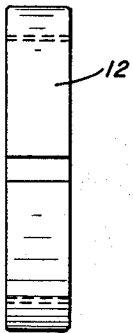


FIG. 3

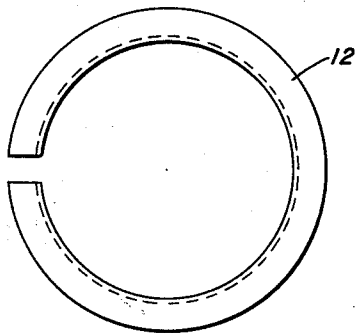


FIG. 5

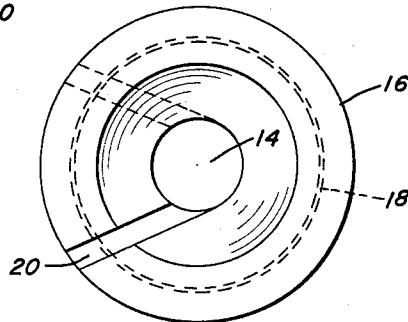
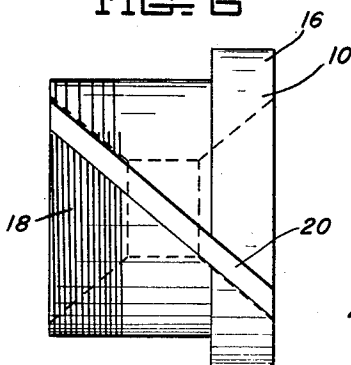


FIG. 6



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GROMMET FOR GUIDING WIRE AND THE LIKE

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Filed Feb. 27, 1958, Ser. No. 718,049

1 Claim. (Cl. 16—2)

The present invention relates generally to guides for continuous attenuated material and more particularly to an improved grommet for guiding wires and the like through apertures of continuous-wire processing equipment.

It is the primary object of the present invention to provide a separable grommet which can be easily and quickly replaced in continuous-wire processing equipment without the necessity of severing or otherwise disturbing the wire.

This and other objects will become more apparent after referring to the following specification and attached drawings, in which:

Figure 1 is a partial view in perspective showing grommets of the invention installed in electroplating equipment;

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

Figure 3 is an end elevational view of the split ring portion of the grommet of the invention;

Figure 4 is a side elevational view of Figure 3;

Figure 5 is an end elevational view looking at the flanged end of the main body portion of the grommet of the invention; and

Figure 6 is a side elevational view of Figure 5.

Referring more particularly to the drawings reference character 2 designates the electroplating tray of a continuous wire electroplating line. Tray 2 is mounted on an electrolyte tank 4 in a conventional manner.

The endwall 6 of tray 2 is provided with apertures through which pass strands of wire W. A grommet of the invention, designated generally by reference character 8, is fitted into each of the apertures to guide the wire and prevent it from cutting into the endwall of the tray.

Grommet 8 is separable and includes a main body portion 10 and split ring portion 12. Main body portion 10 is cylindrical in shape and is provided with an axial bore 14 having counterbored ends. An integral circumferential flange 16 is formed on one end of body 10. The outside diameter of the flange is greater than the diameter of the aperture into which the grommet is to be fitted. The opposite end 18 of the body 10 is threaded to accommodate the split ring portion 12 which is internally threaded.

A slit 20 is provided through the wall of body 10 and extends from one end thereof to the other at an angle of approximately 45 degrees to the longitudinal axis of the body 10. The width of the slit 20 is greater than the diameter of the wire W. The slit 20 is disposed at an angle to the longitudinal axis of the body 10 to prevent wire W from riding in the slit or escaping from the bore 14. The angle at which slit 20 is displaced from the longitudinal axis of body 10 may be more or less than 45 degrees so long as it is not parallel with the axis of the body.

In operation, the main body portion 10 of the grommet is strung on the wire by means of the slit 20 and then fitted into the aperture through which the wire is passing. When the grommet is fitted into the aperture, the threaded end 18 projects beyond the aperture and the flange 16 abuts the wall surrounding the aperture. The split ring portion 12 is then strung on the wire W adjacent the end 18 of body 10 by means of the split in the ring. The ring is then threaded on the projecting end 18 of body 10 to firmly anchor the grommet in position in the aperture. The outside diameter of ring portion 12 is greater than the diameter of the aperture into which the grommet is fitted so that ring 12 abuts the endwall to lock the grommet securely in position when the ring is threaded onto the projecting end 18 of body 10.

The separable construction of the grommet and the slit 20 make it possible to install the grommet as described above without the necessity of a time consuming, cumbersome restringing operation with a free end of the wire.

It will be noted that although the grommet of the invention has been shown as used for guiding wire through an electroplating tray its use is not restricted to such use. It may be used to advantage in any other installations involving processing of continuous lengths of attenuated material. The grommet can be made of any wear-resistant material suitable for the operation involved. For example, when used in electroplating equipment as described above, the grommets should be made of porcelain, silimanite or other suitable dielectric materials. Such material must also be inert to chemical attack by the solutions involved since the electrolyte flows from tray 2 through the grommets 8 into tank 4 from whence it is pumped back into tray 2 in the conventional manner.

While one embodiment of our invention has been shown and described, it will be apparent that other adaptations and modifications may be made without departing from the scope of the following claim.

We claim:

A grommet formed of two separable complementary portions for an aperture in a wall adapted to guide attenuated material through the aperture which comprises a cylindrical main body portion having an axial bore therethrough, an integral circumferential flange on one end of said main body portion and external threads on its other end, said circumferential flange having an outside diameter greater than the diameter of said aperture, the length of said main body portion being greater than the length of said aperture, said main body portion having a slit through the wall thereof extending from one end of said main body portion to the other at an angle to the longitudinal axis thereof, said slit having a width greater than the diameter of said attenuated material, and an internally threaded split ring portion threadable on the threaded end of said main body portion, the width of the split in said split ring being greater than the diameter of said attenuated material, said split ring having an outside diameter greater than the diameter of said aperture.

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