Dec. 19, 1944. A. E. WINSLOW 2,365,660

FLYER

Filed Aug. 21, 1943

Fig. 1.

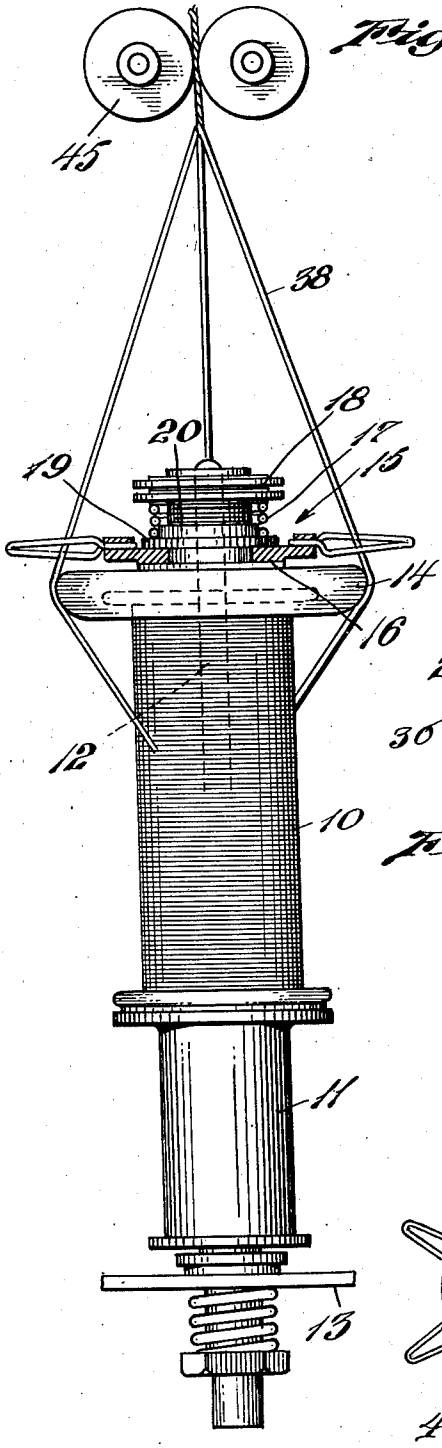


Fig. 2.

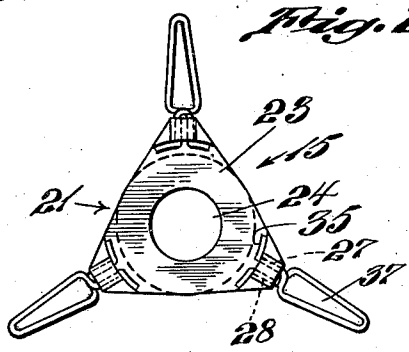


Fig. 3.

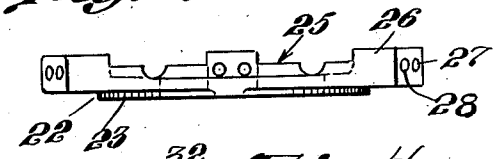


Fig. 4.

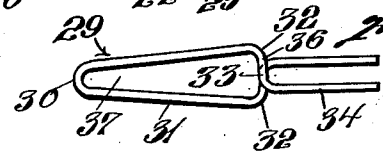


Fig. 5.

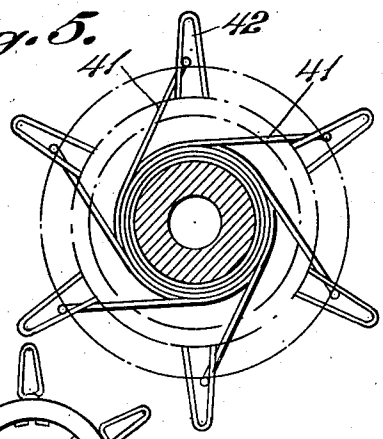
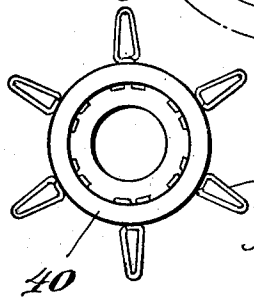


Fig. 6.



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FLIER

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Application August 21, 1943, Serial No. 499,574

3 Claims. (Cl. 57—116)

This application relates to a flier for guiding strand material from a package to cause the strands to be laid in a helical formation one about the other or a plurality so laid about a core.

The flier which is the subject of this application has particular use in the method of stranding cable as described in my co-pending application Serial No. 499,576 and may be used in combination with a cap for the supply package of a plurality of strands as shown in my co-pending application Serial No. 499,575 where the structure controlling the movement of the flier relative to the package and cap is more specifically set forth.

One of the objects of this invention is to provide a flier which will individually guide each of several of a plurality of strands which are wrapped in parallel relation or spooled in parallel relation upon the supply package from such package.

Another object of this invention is to remove each of a plurality of strands tangentially from a supply package at equal angular distances about its periphery.

Another object of this invention is to provide a flier which will be nicely balanced by reason of the guide arms being spaced at equal angular distances about the axis of rotation of the flier which also serves to guide the strands about a conical path so as to lay the strands evenly in uniform helical relationship one about the other or uniformly about a core which may be passed centrally through the formed cable.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawing:

Fig. 1 is an elevation illustrating a supply package with cap and flier mounted thereon and showing the feed rolls drawing the strand material from the package;

Fig. 2 is a top plan view of the flier alone;

Fig. 3 is an elevation of the body of the flier with the arms removed;

Fig. 4 is a top plan view of one of the arms of the flier before positioning in the body;

Fig. 5 is a sectional view illustrating diagrammatically the manner of unwinding the strands from the supply package and indicating the arms of the flier for accommodating several of the strands; the view is a modification with reference to the number of arms on the flier from that heretofore shown;

Fig. 6 is a top plan view of a six-arm flier such as indicated in Fig. 5.

The flier which is the subject matter of this application is provided with a plurality of equally angularly spaced arms and is used for taking off several strands of material wound in parallel relation upon a supply package, there being one arm for each of the parallel strands wound on the package. The package is driven so that the strands which are taken from the package will be twisted one about the other in helical fashion. The number of twists for any given linear dimension will be the differential between the number of turns of the package and the number of turns of the flier through which the material is guided.

With reference more particularly to the drawing 10 designates the supply package which has been wound with parallel strands in this particular instance wire. The number of parallel strands is, for example, shown to be three and the number of arms of the flier will correspond and be three as illustrated in Figs. 1 to 3. The package is driven by a whirl 11 which is attached to the spindle designated 12 which is suitably mounted for rotation and supported in the rail 13. A cap designated generally 14 is positioned on the package and the flier designated generally 15 is supported on the washer 16 on the cap while the spring 17 engaging the under side of the abutment member 18 exerts pressure downwardly on the flier through the washer 19 having a collar 20 about which the spring engages.

The body of the flier 15 designated generally 21 is a metal casting which has a slightly raised boss 22 having a finished engaging surface 23 which is circular or annular in shape. An opening 24 provided in the flier enables it to encircle the hub portion of the cap for mounting thereon. This finished surface 23 faces downwardly and engages the friction washer 26 as shown in Fig. 1 while the opposite surface 25 of the flier is also finished to be engaged by the washer 19. In plan view (see Fig. 2) the flier is symmetrical in shape and is here shown as generally triangular so as to be in dynamic balance when rotated. At each of the blunt corners of the triangle and located beyond a point where engagement with the washer 19 will occur the flier is thickened to provide block-like portions 26 which are provided with parallel openings 27 and 28 extending therethrough from a point inwardly of the flier outwardly therefrom. The arms of the flier designated generally 29 and shown in Fig. 4 are formed of wire bent into the shape shown in Fig. 4 by doubling the wire on itself as at 30 with portions

31 flaring somewhat from this bend and then sharply bent as at 32 to one cross the other as at 33 with the legs 34 extending parallel and passing through the opening 27 and 28 where they are then bent in opposite directions as at 35 (see Fig. 2) with the shoulder portions 36 snugly against the outer surface of the block 26 so as to hold the arm firmly in position in the body as shown in Fig. 2.

Each of the arms provides a loop portion 37 through which strand material 38 may extend, there being three arms three strands of material will be taken off the package 10 one through each of the loops of the arms 37 in equally angular relation.

In Fig. 6 I have shown a structure similar to Fig. 2 but provided with six arms 42 instead of three arms. These arms are equally spaced about the body designated generally 40, which body is of generally circular shape. In this case, however, there will be a supply package on which six parallel strands are wound.

The showing in Fig. 5 illustrates the several strands 41 being led from the package each tangentially from the body thereof through one of the arms 42 of the six arms to equally space the six strands both as to tangential relation in being drawn from the package and as to angular relation from being laid in helical shape or twisted one about the other at a point close to the guide rolls 45 as shown in Fig. 1. It will, of course, be apparent that any number of strands may be utilized depending upon the cable which is to be formed.

The arrangement as here shown will place each of the strands in helical form without putting any twist or torsion in each of the strands themselves.

I claim:

1. A flier comprising a symmetrically shaped body having a central opening therein and a surface adapted to be frictionally engaged by a portion carried by the strand package with which the flier is to be associated so as to have a frictional contact therewith, and a plurality of guide arms formed of wire and extending outwardly from the body and in equally spaced angular relation one from another, said arms bent to provide an outer bight with spaced portions with said arms being all of the same shape to maintain the flier in dynamic balance.

2. A flier comprising a symmetrically shaped body having a central axial opening therein and pairs of radially outwardly extending openings with each pair equally spaced from each other, a plurality of guide arms extending outwardly from the body and in equally spaced angular relation one from the other, each of said guide arms comprising a length of wire bent into substantially U-shape to provide a guiding loop for a strand to pass therethrough, the free end portions of each of said guides extending through the said outwardly extending openings and there secured in place.

3. A flier comprising a symmetrically shaped body having a central axial opening and a plurality of equally spaced thickened portions at the peripheral edge portion thereof, each of said portions having outwardly extending openings therein, a plurality of guide arms extending outwardly from the body and in equally spaced angular relation one from the other, each of said guide arms being bent to provide a guiding loop for a strand to pass through, said guide arms having a portion extending through the said openings in said thickened portion and there secured in place.

ALBERT E. WINSLOW.