

May 6, 1969

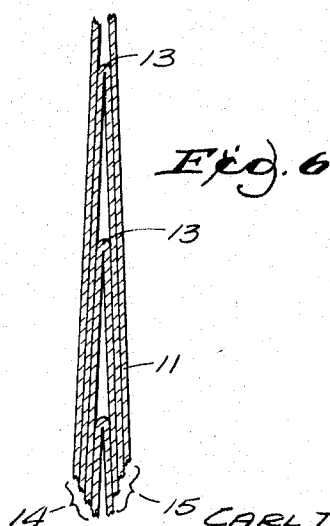
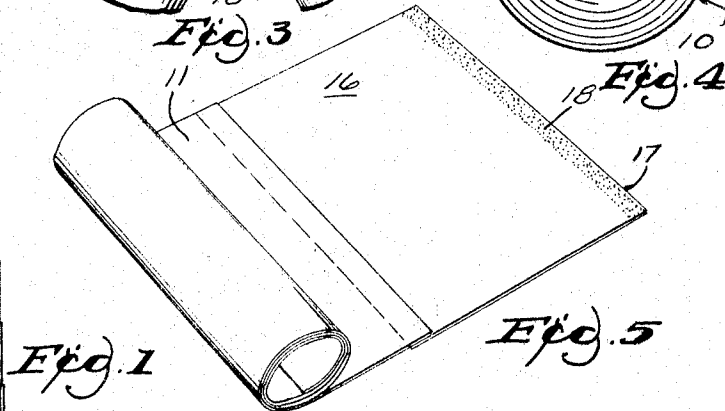
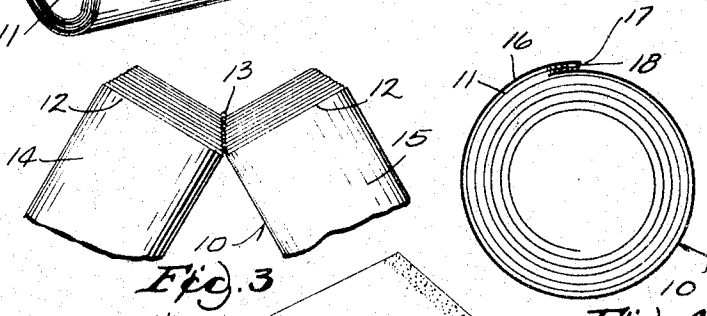
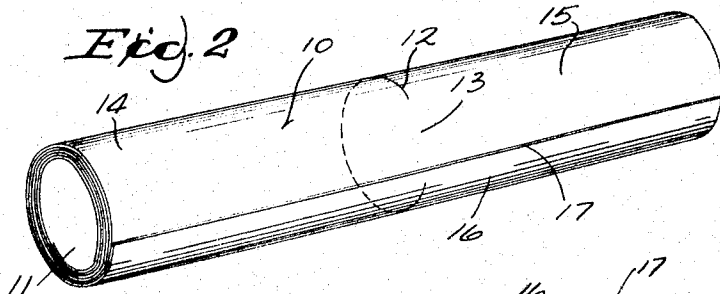
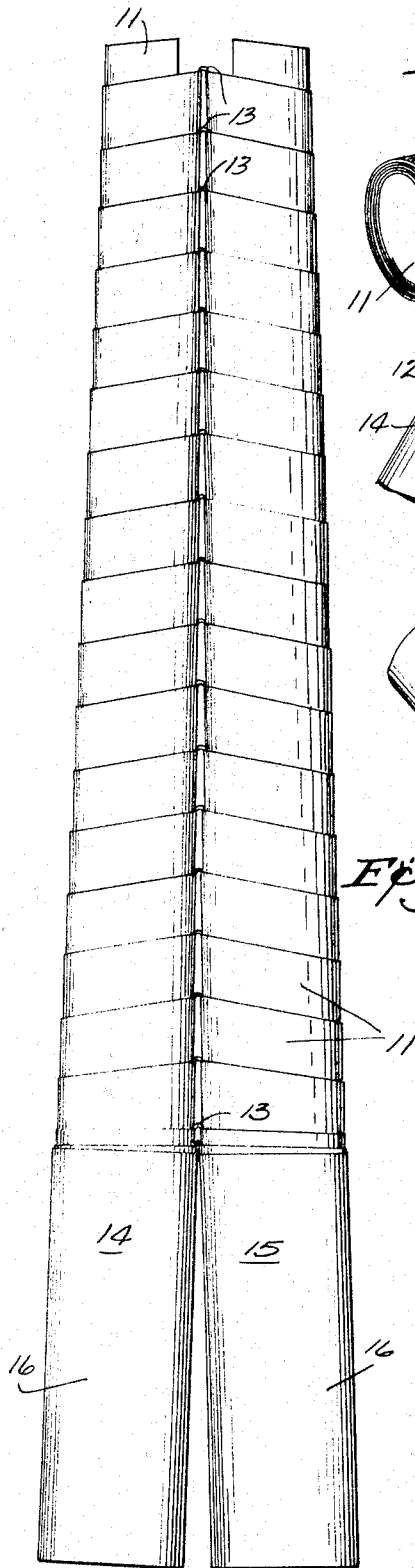
C. T. OSTERBERG

3,442,247

EXTENSIBLE DOUBLE WAND

Filed June 24, 1966

Sheet 1 of 2



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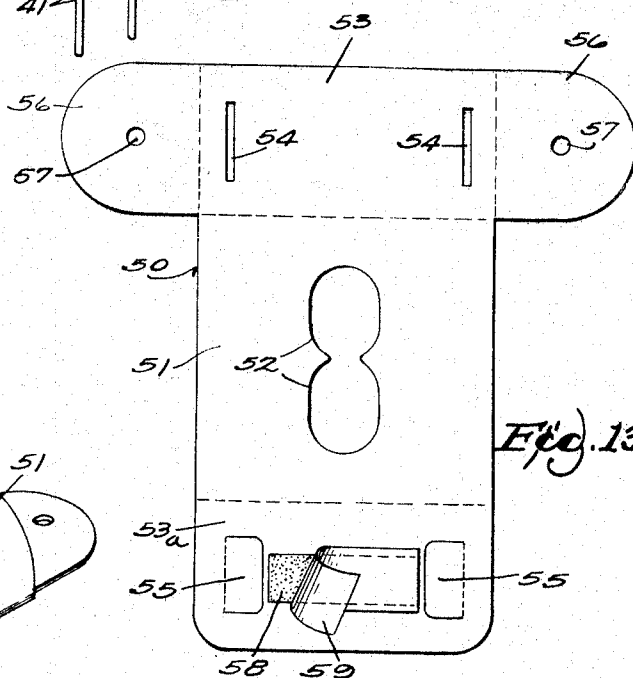
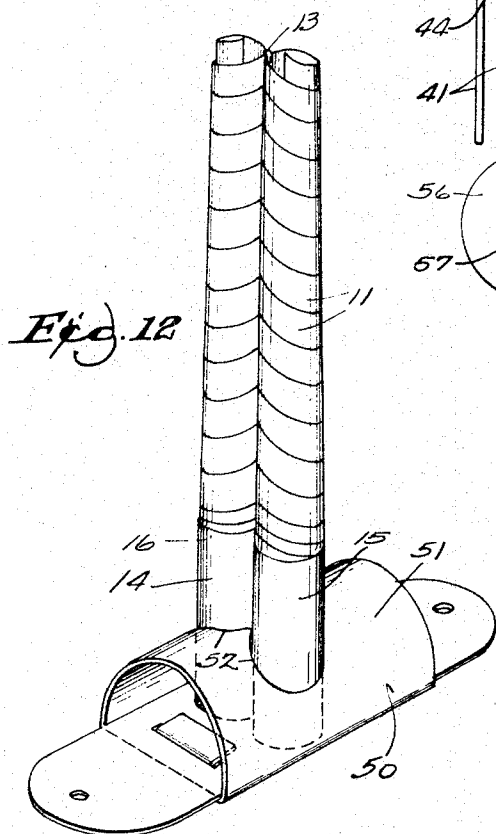
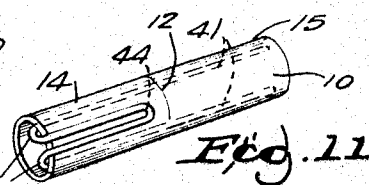
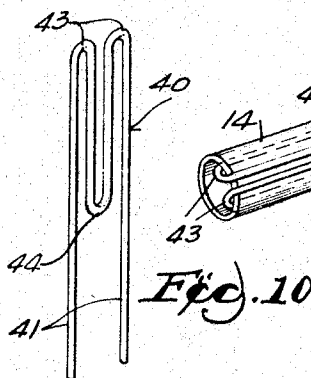
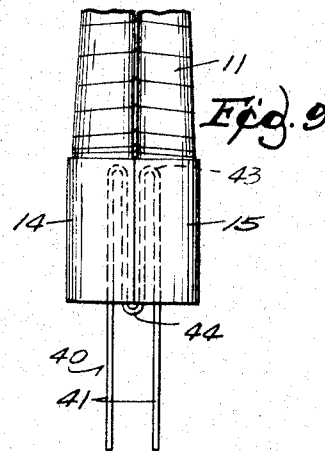
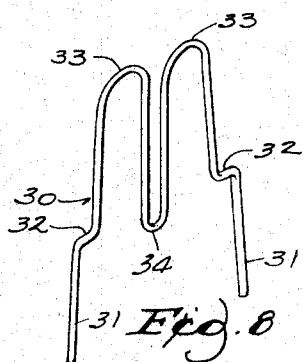
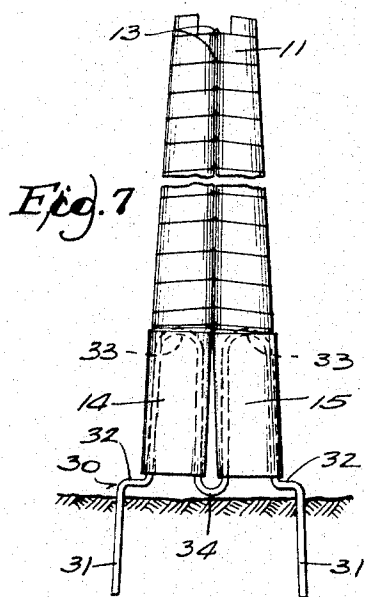
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Sheet 2 of 2



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3,442,247

EXTENSIBLE DOUBLE WAND

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10 Claims

This invention relates to an extensible double wand.

The device of my invention is an extremely simple and inexpensive traffic safety device comprising a wand which may be used for directing traffic or for warning of safety hazards, such as a detour or a stopped motor vehicle. The wand itself consists of a roll of fluorescent or otherwise brightly colored paper or similar thin, flexible material which has been laterally slit almost through the roll substantially at its center, leaving each ply of the almost severed cylinders connected to the corresponding ply of the other half of the cylinders by a narrow strip which serves as a hinge. The roll is then bent at the hinge and the central plies are pulled or pushed out of the roll to form parallel helices, the corresponding turns of each helix being joined by one ply of the hinge. The moment the extension of the helices begins, the two ends of the cylinders are locked in near parallel relationship, because the plies of the hinge are now separated and serves as braces rather than as hinges.

For use with my wand, I have provided a number of modifications of convenient bases which hold the two free ends of the cylinders, and provide the supporting means to hold the wand upright or in a variety of other positions, according to the needs of the user. Two forms of this base consist of generally M-shaped wires having free ends which may be inserted in the ground, placed between a pair of objects, or the like. One of these forms can also be used to hold the roll in its closed cylindrical form. The central portions of the loops are connected, and have parallel loops which embrace the ends of the folded roll in its open position to support it securely. In one form of the base, the outer margin also assists in supporting the roll. A third form of base consists of a blank which may be made of cardboard, and which has a generally D-shaped end in its erect position, the curved portion of the D being provided with a pair of connected openings to receive the pair of cylindrical ends of the wand.

In the drawings:

FIG. 1 is a side view of my device fully extended.

FIG. 2 is a perspective view of my device in its closed position.

FIG. 3 is a fragmentary side view of my device partially opened.

FIG. 4 is an end view of my device greatly enlarged.

FIG. 5 is a perspective view showing my device partially unassembled.

FIG. 6 is a greatly enlarged detail view in axial cross section of the joint between the helices of the extended wand.

FIG. 7 is a side view of my device mounted on one form of base therefor.

FIG. 8 is a perspective view of the base as shown in FIG. 7.

FIG. 9 is a side view of my extended wand mounted on a modified base.

FIG. 10 is a perspective view of the base shown in FIG. 9.

FIG. 11 is a perspective view of the base shown in FIG. 9 applied to my wand in the closed position.

FIG. 12 is a perspective view of a further alternate form of base applied to my extended wand.

FIG. 13 is a plan view of the blank used to manufacture the base shown in FIG. 12.

As shown in the drawings, my wand consists of a roll

10 of sheet material 11. The roll is provided with a cut 12 which extends laterally of the axis of the roll from one side nearly through the roll, so that every ply of roll 10 has an uncut portion 13 which joins ends 14 and 15 of the roll. As best shown in FIG. 5, the outer portion or ply of roll 11 is desirably formed of a sheet 16 of protective material, such as glazed paper. Sheet 16 is joined to sheet 11, as by gluing, to form a continuation of sheet 11 and is further secured at its free edge upon completion of the rolling operation, as by gluing, sheet 16 being long enough to completely cover roll 10 when the free edge 17 is secured by means of the glue 18.

After the roll 10 has been formed (as illustrated in FIG. 4 and FIG. 5), it is cut at 12 (as illustrated in FIG. 2) from one side of the tube 10 to a point adjacent to the inner wall of the other side of tube 10, leaving each layer of material in the tube with an uncut portion 13.

The tube 10 may then be folded, as in FIG. 3, about the hinge portion 13. As shown in that figure, the inner plies of tube ends 14 and 15 immediately move axially to project from the centers of the respective ends, because of the increasing distance of the central hinges 13 from the edges of cut 12. When ends 14 and 15 are nearly parallel, the innermost hinge portion 13 may be grasped and pulled axially to result in the structure shown in FIG. 1, in which 14 and 15 have become oppositely pitched helices connected at each turn by hinges 13 to form a rigid structure which holds its form well. FIG. 6 is a greatly enlarged axial cross section through the hinges, showing the relationship of the plies in end 14 of roll 10 to the plies in end 15 when the ends of the roll are in the position of FIG. 1.

The extended wand may be held in the hand for the purpose of directing traffic or otherwise emphasizing hand movement, as is done now by various police departments using a solid wand which is not collapsible. In the alternative, the wand may be used with a base which enables it to be placed as a marker to indicate an emergency condition or a change of lanes.

As shown in FIGS. 7 and 8, the base of my device may take the form of a bent wire device, designated generally as 30, having a pair of legs 31, whose upper ends terminate in shoulders 32. Shoulders 32 serve to support the wand itself in use, as shown in FIG. 7. At the inner ends of shoulders 32, the wire 30 is again bent upwardly from each leg to form a downwardly opening loop 33. The two downwardly opening loops are connected at the center by an upwardly opening loop 34.

The two adjacent legs of loops 33 (which are also the legs of loop 34) are spaced just enough to singly receive the side walls of the two halves of cylinder 10 in its extended state. Downwardly opening loops 33 are sufficiently large as to push a substantial number of turns of roll 10 ahead of them when they are inserted into the ends of the folded cylinders 10; thus further assisting in maintaining the wand in its open position. Preferably, loops 33 are each slightly wider than roll 10 so that the roll is distended to an oval and held firmly by the base.

With base 30 inserted, as shown in FIG. 7, the wand may be held in the hand, or the legs 31 may be inserted in the ground, clamped in the window of a car, or otherwise supported to give a warning to approaching motorists of some condition requiring special alertness. Of course, it may also be used to direct traffic.

The base 40 shown in FIGS. 9 through 11 generally similar, except that the downwardly opening loops 43 are very narrow, rather than filling the entire width of cylinder 10. The central connecting loop 44 is offset from legs 41, and the shoulders 32 are absent, since legs 41 are near the center of my device rather than at the outside. The center of the roll 10 is supported by connecting loop 44. As shown in FIG. 11, this form of my device has the ad-

vantage that the base may be stored inside of the straightened cylinder 10, where it helps to maintain the cylinder in storage position. Furthermore, it will be apparent that it may be stored the same way while the wand is in the position of FIG. 1, in the event that it is not desired to use the base with the wand. It must, however, be removed from the position of FIG. 11 before the wand may be extended to the position of FIG. 1, after which it may be returned to its storage position. As in the case of the base of FIG. 7, it will be apparent that legs 41 may be placed in the ground, or wedged or otherwise supported to give warning of a dangerous condition, in addition to permitting the wand to be held in the hand for giving warnings or directing traffic.

The base of FIGS. 12 and 13 is substantially different from those of FIGS 7 through 11. It is made of light cardboard or the like. As shown in FIG. 12, it has a substantially D-shaped end (or cross-sectional) configuration and the curved portion of the D is provided with a pair of intersecting openings to receive the base of the wand, comprised of ends 14 and 15 of cylinder 10. The base is generally designated as 50 and the curved portion as 51. FIG. 13 shows the formation of holes 52 in curved portion 51 to receive cylinders 14 and 15. The base 53 is desirably provided with slots 54, while base portion 53a is desirably provided with tabs 55 to enter slots 54 when the device is erected to maintain it in its erect position. End flaps 56 are provided as mounting means and have holes 57 to assist in that purpose. For instance, the unit may be pinned to a surface using holes 57, or tabs 56 may be inserted in the window of an automobile and the window may be closed to hold it in place. In addition, base portion 53a is desirably provided with a double-surfaced adhesive strip 58 which is covered by a protective layer 59 so that in case of need, the unit may be stuck to any surface which will receive and adhere to the adhesive.

Accordingly, it will be seen that I have provided a novel wand structure and a number of novel bases for use with the structure, all of which are extremely useful and cheap to produce.

I claim:

1. A safety device consisting of a cylindrical roll of a first sheet material comprising a multiplicity of turns of said sheet material, said cylinder being provided with a lateral cut substantially at right angles to the axis of said roll and extending from one side of the cylinder to a point close to the other side of the cylinder to leave each ply of said single sheet with an uncut portion, said cylinder being adapted to be bent double about said uncut portion as a hinge to form adjacent cylinders side by side and hinged to each other at the uncut portion, and being further adapted to be grasped at the hinge and pulled axially to extend the successive layers of said cylinder in a double helical pattern having each turn of the helix extending from one cylinder joined to the corresponding turn of the helix extending from the other cylinder by the uncut portion of the sheet whereby to form an extensible and collapsible wand.

2. The device of claim 1 in which said cylinder is provided with an outer layer of a protective sheet material.

3. The device of claim 2 in which the protective sheet is glazed paper extending once around said cylinder, said glazed paper being secured to said first sheet of material at one edge and being secured to itself at the other edge, said first sheet of material being brightly colored.

4. The device of claim 1 further comprising a base provided with means for securing the ends of said cylinder together remote from said hinge portion, said base being provided with means adapted to supportingly engage said wand.

5. The device of claim 4 in which said base consists of a flexible but strong sheet of material provided with a central portion adapted to be bowed and further provided with a pair of connected openings in the said central portion to receive the ends of said cylinder, and a

pair of base portions provided with complementary fastening means adapted to secure one base portion to the other base portion with said central portion bowed, said base portions being on opposite sides of said central portion.

6. The device of claim 4 in which said base consists of a single piece of wire which is generally M-shaped, said base having a pair of free ends adapted to engage a supporting surface and a pair of downwardly opening loops intermediate said free ends adapted to engage the ends of said cylinders, the sides of said loops adjacent to the connection there-between being parallel and close together, whereby to securely grip the sides of said ends of said cylinder.

7. The device of claim 6 in which the free ends of the base wire are parallel to each other and to the loops but are offset from the plane of the central connected portion of the loops whereby when said safety device is folded to its original cylindrical form the connected portions of the loops may be disposed outside of said cylinder with said free ends of said legs inside said cylinder to prevent folding of the cylinder.

8. The device of claim 6 in which free ends of the base wire are separated by a distance greater than twice the diameter of the cylinder and greater than the distance between the outer sides of said loops whereby to form shoulders upon which the outer margins of the double cylinder rest, the loops being each substantially as wide as the diameter of the inside of the cylinder whereby when said base is inserted in said folded cylinder each loop distends the end of the cylinder into which it is inserted into an oval and pushes the multiple plies of the cylinder ahead of it to form said double helix, the width of each loop of the base being slightly greater than the diameter of the unstressed cylinder.

9. A method of forming an extensible wand comprising:

- (a) rolling a sheet of thin flexible material into a cylindrical roll,
- (b) securing the free edge of said cylindrical roll to the layer of said flexible material next adjacent said edge,
- (c) cutting said roll at a point intermediate the ends of the roll in a direction substantially at right angles to the axis of the roll until said cut extends substantially to the inner wall of the opposite side of said roll from the side from which said cut began,
- (d) bending said roll about said uncut portion as a hinge to form a pair of connected substantially parallel cylindrical rolls, and
- (e) extending the inner plies of said roll in a double helix from said pair of substantially parallel cylinders,
- (f) whereby to form a double helical wand of said thin plies, the successive turns of said helices being linked by said uncut portions.

10. The method of claim 9 wherein step (a) is preceded by the step of

- (g) forming said sheet from a major portion of brightly colored material and a minor portion of protective material glued to the end of said major portion.

References Cited

UNITED STATES PATENTS

340,009	4/1886	Shepherd	116—136.5
2,114,635	4/1938	Marshall.	
2,275,711	3/1942	Ybamez.	
2,954,005	9/1960	Cioffi et al.	116—63
3,021,755	2/1962	Karchenes.	

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U.S. Cl. X.R.

40—129; 248—43; 343—901