July 8, 1941. E. V. EFFERT 2,248,818

PINLESS DISPLAY AND CLOTHESLINE

Filed Dec. 29, 1939

Fig. 1.

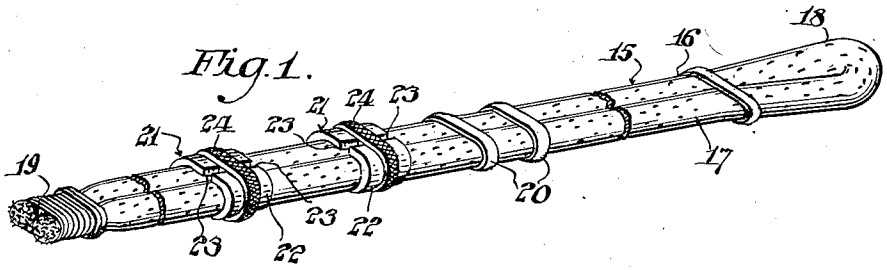


Fig. 2.

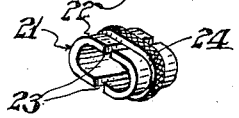


Fig. 3.

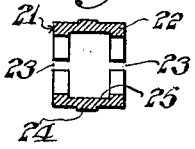


Fig. 4.

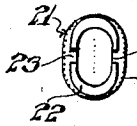


Fig. 14.

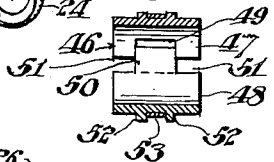


Fig. 5.



Fig. 6.

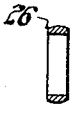


Fig. 7.

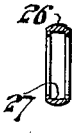


Fig. 13.

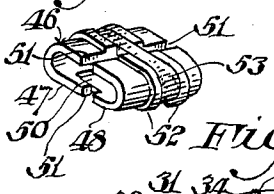


Fig. 8.

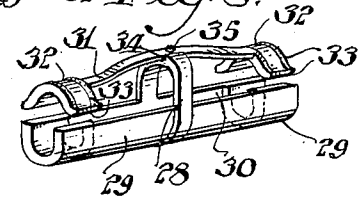


Fig. 9.

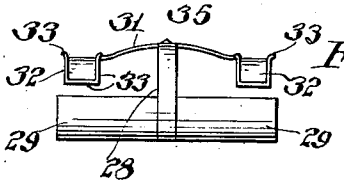


Fig. 10.

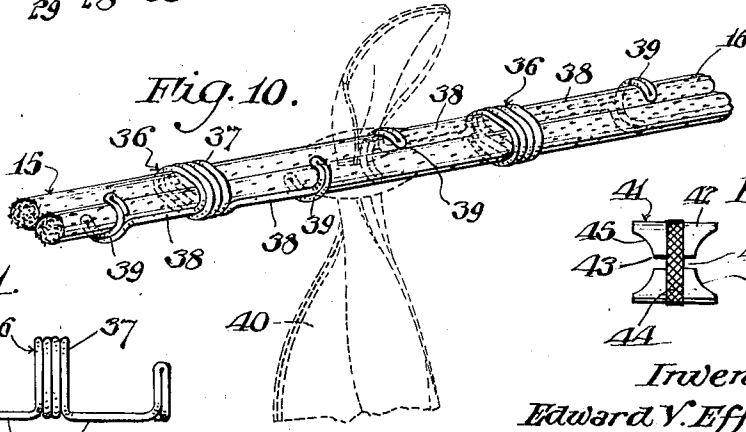


Fig. 11.

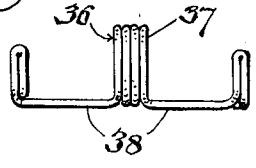


Fig. 12.

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PINLESS DISPLAY AND CLOTHESLINE

Edward V. Effert, Philadelphia, Pa.

Application December 29, 1939, Serial No. 311,528

9 Claims. (Cl. 211—119.13)

My invention relates to a new and useful pinless display and clothes line, and has for one of its objects to provide an exceedingly simple and effective line of this character that permits the housewife to readily hang clothes and other articles thereon without the use of clothes pins thereby eliminating the inconvenience, possible loss and handling of the said clothes pins.

Another object of the invention is to provide a line that can be used by farmers, merchants and others for displaying poultry and other articles of merchandise.

Another object of the invention is to provide a line of the character mentioned comprising two strands side by side and retained in their cooperative relation by stationary bands and sliding rings or clutch members which latter produce a clamping effect upon all articles inserted between the strands.

Another object of the invention is to so position the stationary bands as to permanently hold the line strands together at two adjacent points and at predetermined intervals thereby permitting a long line to be severed, if desired, into shorter lines without the strands becoming separated and without displacement of the clamping or clutching members.

Another object of the invention is to provide clamping clutch members for the line strands which will compensate for any swelling or lateral expansion and contraction.

A further object of the invention is to construct the clutch members in a fashion that they can readily pass about a pulley or other round object without interference.

With the above and other objects in view this invention consists of the details of construction and combination of elements hereinafter set forth and then designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same I will describe its construction in detail, referring by numerals to the accompanying drawing forming a part hereof, in which:

Fig. 1 is a perspective view of a section of pinless display and clothes line constructed in accordance with one form of my invention.

Fig. 2 is a perspective view of one of the clutch members or rings.

Fig. 3 is a sectional view thereof.

Fig. 4 is an end view of the same.

Fig. 5 is a perspective view of another form of ring or clutch member.

Fig. 6 is a sectional view of Fig. 5.

Fig. 7 is a similar view of a ring or clutch member having a cored or grooved interior.

Fig. 8 is a perspective view of another modification.

Fig. 9 is a side elevation thereof.

Fig. 10 is a perspective view of a section of a line showing the manner of using a further modification.

Fig. 11 is a plan view of one of the clutch members or rings shown in Fig. 10.

Fig. 12 is a plan view of a clutch member or ring similar to the one illustrated in Figs. 1 to 4 with the ends concaved.

Fig. 13 is a perspective view of a two piece or sectional ring or clutch member in which the sections are urged together by resilient means so that the clutch member may expand or contract with the line.

Fig. 14 is a sectional view thereof.

In carrying out my invention as herein embodied 15 represents a line consisting of two strands 16 and 17 positioned side by side. The two strands can be two separate lines or one line folded back upon itself, as in Fig. 1, the latter manner of providing the line forming a loop 18 which is bound or banded. Where free ends of strands come together they may be bound in any suitable way, one example of which is shown at 19 in Fig. 1. This arrangement can also be used at the loop 18.

This mode of making a line gives double the strength over the ordinary single line and is capable of being stretched very tightly without the possibility of breaking. For best results the line should be hung in a taut manner although not absolutely essential since the sliding members, to be presently described, can be adjusted to maintain the line strands contiguous one another. Whenever the line is to be used over pulleys both strands at one end are folded back and secured in place to form a loop and both of the strands at the other end are passed through said loop and folded back and secured in place thus attaching the ends of the line together to provide an endless structure. This method of fastening the ends retains the strength of both strands throughout their entire lengths.

At suitable intervals along the line 15, for instance every twenty-five or fifty feet, two bands 20 are fixed in adjacent spaced relation to bind the two strands of the line together. These bands should be spaced a sufficient distance to permit the line to be severed with any suitable instrument within the small space between said bands. The provision of fixed bands holds the ends of the strands together when the line is cut into smaller

or shorter lengths. Such an arrangement is highly advantageous for the manufacturer and merchant selling the line because it permits the line to be made up in long strips and then cut off between any adjacent two bands without the necessity of then securing the strand ends together with the possibility of having them uneven. The bands **20** are to be securely fixed in place to prevent slipping thereof or disengagement of the line strands therefrom so they may be serrated, knurled or cleated on the inside to accomplish the desired result. Where the resultant bands are of endless formation they may be squeezed or pressed to the line or they may be molded directly on the line. If such bands are of split formation the ends are welded, soldered or otherwise joined together. In lieu of the bands equivalent securing means may be utilized, such as bindings of wire, cord or the like. The bands or bindings in addition to securing the line strands to one another act as stops to prevent disengagement of the rings or clutch members, to be presently described, from the line or the shifting of the same from one section of the line to another.

The rings or clutch members are of several formations, one of which is particularly illustrated in Figs. 2, 3 and 4 and numbered **21**. This ring or clutch member **21** has a body **22** of tubular formation and elliptical in cross section so as to snugly embrace the two strands of the line and provide finger space so that it may be readily grasped for sliding it. The two longer or substantially flat sides have slots **23** extending inwardly from both ends suitable distances but not far enough to unduly weaken the structure. Preferably the slots terminate at or adjacent the sides of the ribs **24** on the outside of the ring body and the ends of said ribs merge or blend into the curved portions of the body. While the ribs may be plain or smooth it is desirable that they be knurled or otherwise roughened to easily distinguish the rings or clutch members from the fixed bands **20** and give a good gripping surface thereto for sliding them along the line. In order to relieve some of the friction between the line and ring its body may have a groove or cored portion **25** formed around the inside intermediate the ends as shown in Fig. 3.

In practice a considerable number of the rings or clutch members **21** are mounted on the line and particularly on each section of the line between stops. These rings or clutch members are slidable longitudinally on the line and by separating adjacent ones of said rings, articles of any or various kinds may be inserted between the strands of the line and the rings then slid up close to and on each side of an article to draw the line strands taut and thereby clamp the article on the line.

Where the article being hung up is pliable, such as an item of clothing, portions of said article will enter the slots **23** of the rings or clutch members and be even more securely held in place. Since the rings or clutch members can be moved back and forth along the line a large portion of the line strands can be freed to permit of a thorough cleansing or wiping of said strands.

The rings or clutch members above described and the modifications to be referred to hereinafter can be produced from any suitable metals or alloys, wood, fibre, hard rubber, bone, compositions, Celluloid, "Bakelite" or desirable materials and can be plated, polished, painted, galvanized, enameled or otherwise given any appropriate finish.

In Figs. 5, 6 and 7 I have shown a clutch member **26** which is also tubular and elliptical in cross section with a knurled exterior. The interior of this member may be plain as shown in Figs. 5 and 6 or it may have cored portion or groove **27**, as in Fig. 7, to relieve it of a certain amount of the friction which is caused by an extended contact surface. Like the previously described form of the invention the present one is also slidably mounted on the line in suitable numbers between two stops such as the bands **20**, the binding **19** or the looped end **18**.

Another form of clutch member is illustrated in Figs. 8 and 9 wherein **28** is the hollow elliptical body in which the bore is formed with or without the use of a core and said body has oppositely projecting arms **29** extending from one of the curved portions of the body and of concavo-convex cross section to bear against one strand of the line. The arms and part of the body with which said arms are joined are cored, grooved or recessed between points a short distance inside of the ends of the arms as indicated at **30** to reduce friction between cooperating parts.

On the body **28** is mounted a spring **31** opposite the arms **29** and at both ends of said spring are curved contact shoes **32** all edges of which are rounded as at **33** to permit easy sliding of the clutch member along the line, and said spring **31** preferably is set in a notch **34** formed in the body and secured in place at **35** by a fastening device or spot welding or other equivalent means. In this construction the interior of the body **28** should be slightly larger than the combined areas of the two strands of the line but the spring will provide the necessary tension to maintain the line strands in juxtaposition while permitting lateral expansion of said strands when the line is wet.

In order to obtain results similar to those secured from the structure illustrated in Figs. 8 and 9 and provided for the clutch member to pass around a pulley I have shown in Figs. 10 and 11 a clutch member **36** produced from spring wire. The wire is coiled to form an elliptical body **37** with arms **38** projecting therefrom in opposite directions and having curved contact shoes **39** at the outer ends thereof. The contact shoes are made, preferably, by bending two strands of the wire into parallel planes. In this particular formation the coil body will readily bend to the curvature of a pulley so that such clutch members can be used on a traveling line. A number of the clutch members **36** are used on a line and adjacent ones are placed in reverse positions as shown in Fig. 10 so that when an article **40**, indicated by dotted lines, is placed between the line strands and the clutch members moved into clamping or holding positions, pressure will be applied from opposite sides of the line. I believe it will be obvious that one arm and its contact shoe might project from one curved part of the body and the other arm with its contact shoe might project from the other or opposite curved part of said body or the arms and contact shoes can be duplicated so there will be a pair of arms and contact shoes on both sides of the line when the clutch member is in use.

The clutch member **41** illustrated in Fig. 12 is similar to the one shown in Figs. 2, 3 and 4 and comprises a tubular body **42** elliptical in cross section with slots **43** running in from the ends of the body to the ribs **44**. In addition the ends of the body are cut away to provide

enlargements or entrances **45** to the slots permitting the clutch member to grip a larger portion of the article hung on the line and possibly more firmly hold such article in place. In other words the construction described provides a long clutch member to give an extended clamping surface and at the same time decreasing the line engaging surface so it may freely travel over pulleys with less likelihood of breaking.

The clutch member **46** illustrated in Figs. 13 and 14 is so constructed as to provide an expansible device and comprises two body sections **47** and **48** of elongated semi-elliptical shape which together produce the tubular body of elliptical cross section. One body section, as **47**, has grooves **49** in its inside face to receive tongues **50** projecting from the other body section, as **48**. The inner faces of the tongues are flush with the inner face of the body section on which said tongues are formed so there will be no interference with the line and by limiting the approaching movements of the body sections towards one another, slots **51** will be provided similar to those previously described. Each body section has two parallel spaced ribs **52** leaving a channel between them in which is located any suitable contractable means **53**, such as a split spring, to urge said body sections towards each other. This arrangement produces a small or compact and very efficient clutch member having the advantage of always hugging the line and still capable of yielding when the line expands laterally due to dampness.

It is to be understood that the exact details of construction herein shown and described are to be taken only as examples of preferred forms of the invention and that various changes relative to material, sizes, shapes, colors and arrangements of parts may be made or resorted to without departing from the spirit of the invention and the scope of the depending claims.

Having thus described my invention what I claim as new and useful is:

1. A pinless display and clothes line consisting of a line having two separate strands side by side, stationary means to hold the strands together, some of which are arranged in pairs with the elements of each pair spaced to permit severance of the line between them, and a multiplicity of clutch members slidably mounted on the line and retained thereon by the stationary means.

2. The structure in claim 1 wherein the clutch members are of tubular formation elliptical in cross section with slots in the wider sides extending inward from opposite ends.

3. In a device of the kind described, a line consisting of two strands side by side, and clutch members slidably mounted thereon, each clutch member comprising a tubular body elliptical in cross section, and ribs on the exterior of the body intermediate its ends, said body having slots in the wider sides extending from the body ends to the ribs.

4. The structure in claim 3 wherein the body has an interior groove and the ribs are knurled.

5. The combination with a line consisting of two strands side by side, holding means at intervals along the line to hold the strands together, and a multiplicity of clutch members slidably mounted on the line between the holding means, each clutch member comprising a tubular body elliptical in cross section, lateral ribs along the wider sides of the body with their ends merging into the body walls, said body having slots in both of its wider sides and extending inward from the ends thereof to the ribs.

6. The structure in claim 5 wherein the interior of the body has a groove running entirely around the same intermediate the ends.

7. The structure in claim 5 wherein the ends of the body are partly cut away to provide entrances leading to the slots.

8. The combination with a line consisting of two strands side by side, holding means at intervals along the line to hold the strands together, and a multiplicity of clutch members slidably mounted on the line between the holding means, each clutch member comprising two semi-elliptical sections, one of said sections having grooves on the inside thereof, tongues projecting from the other section for sliding movements in said grooves, and means to urge the sections towards each other.

9. The structure in claim 8 wherein the means to urge the sections towards each other is a split generally circular spring embracing the sections and the sections have ribs thereon to prevent displacement of the spring.

EDWARD V. EFFERT.