June 23, 1936. R. W. MEYERKORT 2,044,805

UMBRELLA

Filed Jan. 16, 1935

Fig. 1.

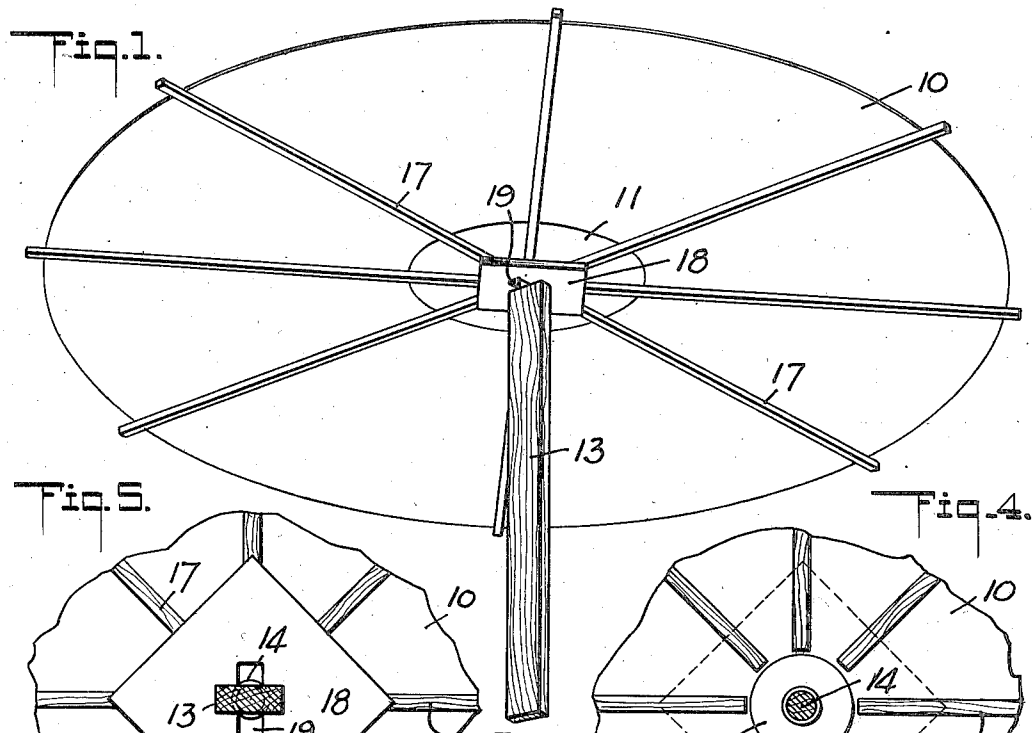


Fig. 5.

Fig. 4.

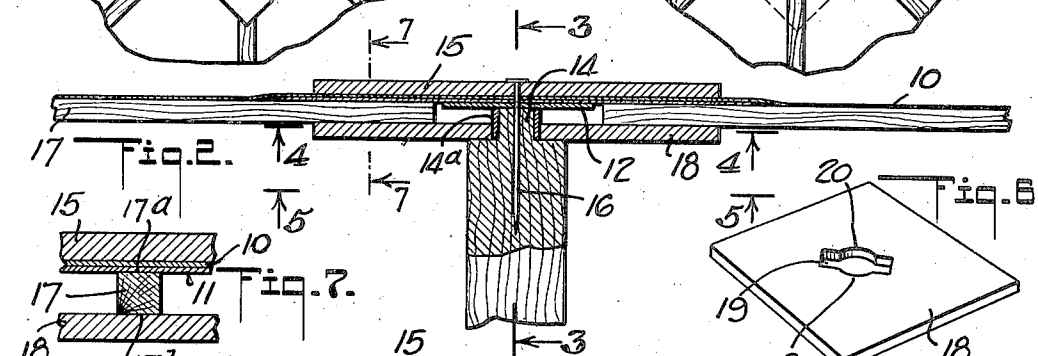


Fig. 2.

Fig. 7.

Fig. 6.

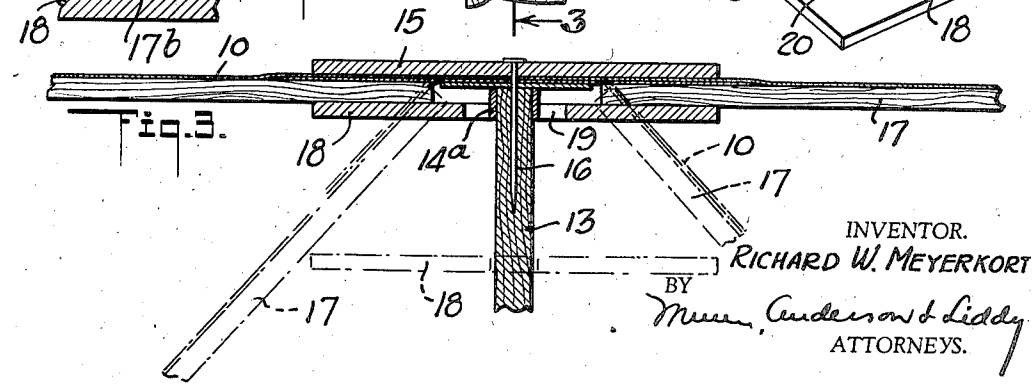


Fig. 3.

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UMBRELLA

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9 Claims. (Cl. 135—20)

This invention relates to umbrellas, and particularly to those intended for use in an emergency, such as when one is caught in a sudden rain storm without an umbrella of usual construction.

An object is to provide an umbrella, the form and construction of which will enable most of the parts employed to be formed from inexpensive materials and easily and quickly assembled into the finished article at a cost of production which is so negligible that the article can be sold for a few cents and thrown away when it has fulfilled the specific purpose for which it is designed.

A further object is to provide an umbrella in which all parts thereof are capable of standardization to thus further simplify the work of handling and assembling same, and in which the parts when assembled will function in a highly satisfactory manner and enable the cover to be easily and quickly opened when desired.

Another object is to provide an umbrella which, when folded and arranged on sale, will be exceedingly compact, but nevertheless is provided with a cover, the area of which, when open, will render it entirely suitable and effective as a shelter and protecting means for the clothes of the person of the user.

A still further object is to provide novel and effective means which will function respectively like the runner and notch of an umbrella of more expensive design, said means being such that when the runner element thereof is moved on the stick to a position to raise the cover it will co-act with means on the stick to prevent accidental closing of the cover and co-act with the notch forming element to afford a high measure of lateral stability to the cover and enable it to satisfactorily withstand the weight of water thereon.

Another object is to provide an umbrella which, if desired, can be constructed almost entirely of non-metallic parts and be entirely devoid of springs or like latch devices for holding the cover open.

Another important feature of the invention resides in the forms, constructions and arrangements of parts employed, enabling use to be made of a very thin, cheap grade of paper for the cover of the umbrella and without fear of the cover being accidentally pierced or otherwise injured by the ribs when the cover is closed.

To enable others skilled in the art to fully comprehend the underlying features of the invention that they may embody the same in various modifications in structure and relation contemplated, drawings depicting a preferred form have been annexed as a part of this disclosure and in such drawings similar reference characters denote corresponding parts throughout all the views, of which

Figure 1 is a perspective view of the umbrella showing the cover raised;

Figure 2 is a vertical section through the umbrella with the cover raised;

Figure 3 is a section taken on the line 3—3 of Figure 2, showing in dot-and-dash lines a partly folded condition of the umbrella;

Figure 4 is a horizontal section taken on the line 4—4 of Figure 2;

Figure 5 is a horizontal section taken on the line 5—5 of Figure 2;

Figure 6 is a perspective view of the runner, and

Figure 7 is a section on line 7—7 of Figure 2.

In carrying the invention into practice, use is preferably, but not necessarily made of a circular cover 10 of paper or other well known flexible, sheet material of thin, cheap stock, to the central under surface of which is firmly cemented a circular reinforcing disk 11 of similar material, and to the under surface of the disk 11 is preferably cemented a circular but somewhat smaller reinforcing disk 12 of stiff material such as cardboard or other suitable well known strengthening material. The cover 10 may be water-proofed, if desired. For practical purposes, the cover should be about two and a half feet in diameter when raised to the position shown in Figure 1. The disk 11 may be about six inches in diameter and the disk 12 about an inch and a half or two inches. The reason for describing these specific proportions of the parts just referred to will be appreciated as the description proceeds. However, it is to be clearly understood that except for particular functional purposes of certain of the parts employed, I do not intend to limit myself to specific proportions of either the parts just named or others of the parts employed. I particularly suggest that these proportions be followed because, in practice, it is found that proper strength and durability will thereby be given the central portion of the cover to enable it to withstand the strains and stresses imposed thereon when the cover is raised while contributing substantial reinforcement to the cover to prevent it from being torn or otherwise injured by the adjacent ends of the ribs of the umbrella when the cover is closed.

The stick 13 may consist of a short stiff strip of wood, fiber board, or any other well known, light, tough material of a cheap grade, the same being of rectangular form in transverse section, as shown in Figures 1 and 5. The stick is a little

more than a foot in length and the free handle end thereof is intended to project slightly from the open end of the cover when the latter is closed, whereby to enable it to be conveniently manipulated when raising the cover. The opposite end of the stick is formed with a substantially, but not necessarily circular tang **14** which is shown as being embraced by friction inducing material **14***a* such as a strip of adhesive tape, cloth, rubber, cork or the like. While the tang is shown as an integral part of the stick, it may, if desired and for added cheapness of construction be made as a separate element of wood, fiber, cardboard or the like and secured to the stick in any suitable obvious manner so long as it is properly correlated with the parts of the device with which it is intended to coact.

Disposed centrally of the cover and exteriorly thereof is a rigid element **15** of any suitable shape which functions with the stick to take the place of a notch of the kind usually found in umbrellas of more expensive construction. It is of large area relative to the diameter of the cover and extends, as shown, over a substantial portion of the cover and comes wholly within the area described by the aforementioned disk **11**. In the form of the invention herein illustrated, said element is substantially rectangular and from side to side measures preferably about three inches. This element may be constructed of any well known thin flat strip material of a relatively stiff nature so that it will not flex. Such material may consist of compressed fiber and while I have stated that it is rectangular in shape, it can in fact be of any desired configuration. Through the center of the element **15** is driven a nail or other equivalent fastening device which can penetrate the various plies of material at the center of the cover and be firmly driven into the upper end of the stick to thus hold the latter operatively attached to said cover. A small portion of waterproof cement is preferably applied between the cover **10** and element **15** to insure against leakage at this point.

Secured by cement or the like to the underside of the cover are radially disposed linear stiff ribs **17**. Said ribs can be constructed of wood or the like, and each thereof is of rectangular form in cross section, as shown in Figure 7, thus providing flat upper and lower surfaces **17***a* and **17***b*. The inner ends of the ribs terminate just outside the marginal edge of the disk **12**. In Figure 4, it will be noted that the inner ends of the ribs are disposed in an annular series around said marginal edge of the disk **12** to enable them to be freely adjusted angularly when raising and lowering the cover.

Removably mounted on the stick **13** and adapted to slide thereon and turn on the aforementioned tang **14**, is an element or runner **18**, the same having a central rectangular or other suitably formed slot **19** whose opposite side walls are provided with confronting curved surfaces **20**. The surfaces **20** are concentrically related to the tang when the runner element is in cover securing position. The stick **13** freely passes through the slot **19**, and when the runner is in the position shown in Figures 1 and 2, the slot is disposed at right angles to the broad flat sides of the stick at which time, the concentric surfaces **20** co-act with the curved surfaces of the tang to hold the runner element in a fixed position of adjustment relative to the element **15**. It will be noted on reference to Figure 5 of the drawing that the tang **14** has a diameter slightly larger than the short transverse section of the stick **13**, whereby to prevent the runner from slipping or moving laterally when fully elevated to cover securing position. Upon reference to Figure 2, it will be noted that the length of said tang **14** plus thickness of disk **12** is equal to the combined thickness of the runner **18** and rib **17**, thus providing a tight lost motion preventing means to hold the parts in intended positions of rigid adjustment. The length and width of the slot **19** in runner **18** are proportioned to provide a more or less close sliding fit between the walls thereof and the surfaces of said stick.

Having fully described the essential structural features of the invention, as well as the functional features flowing therefrom, the operation is described as follows:

When the runner element **18** is turned 90° from the position shown in Figures 1 and 5, it can freely move downwardly on the stick **13**, during which movement the cover can be closed against the sides of the stick. When it is desired to open the cover, the runner element is threaded or passed onto the stick and moved to a position to engage against the under side of the cover and to gradually force the cover to a full open position of adjustment as shown in Figures 1, 2, and 3. When the cover is thus opened, the slot **19** in the runner element will coincide with the tang **14** and by turning the runner 90° the slot in the runner will occupy a position at right angles to the width of the stick as clearly illustrated in Figure 5. The element is now firmly secured to the stick and the upper surface of the runner will engage flatwise and very firmly and snugly against the flat faces **17***b* of the ribs **17**. The upper flat faces **17***a* of the ribs will, in like manner be firmly held against the under broad flat face of the element **15**. It is in this manner that the cover will be stretched and given the required measure of rigidity and stability to enable it to satisfactorily withstand the weight of water falling thereon and effectively resist the effect of the wind. I wish particularly to stress the novel construction of the cover of the umbrella; the means employed to reinforce the central portion of the cover, whereby the ribs, when the cover is closed cannot tear said cover; the use of broad width inflexible elements **15** and **18** between the stiff ribs and coacting with each other to very firmly secure the ribs therebetween when the cover is open; the manner of attaching by cementing the ribs **17** to the cover to leave the inner ends of the ribs in annular series formation relative to the long axis of the stick, whereby to provide ample flexibility to enable the cover to be quickly opened and closed, at the same time, leaving portions of substantial area of the ribs disposed for confinement between the elements **15** and **18**. I wish to further stress the novelty existing in the use of a single fastening device such as the nail, or the like for securing the cover to the stick and for securing the disk **12** firmly against the end of said tang **14**, whereby to provide a sealed connection at this point when use is made of a suitable waterproof cement at and around the parts and the central portion of the cover. Water proof paper can be used in the construction of the parts **10** and **11**. The peculiar construction of the tang **14** is also considered a feature of novelty enabling a firm clamping connection to be established between the elements **15** and **18** and assuring that the cover can be held open without the use of spring latch devices or the like.

It will appear obvious from the foregoing that

I have provided from the organization of parts disclosed, an umbrella of simple inexpensive construction that will be entirely effective for use as proposed. While I refer to the use of the device as an emergency umbrella, it follows that certain of the novel features employed can be used in connection with sunshades and umbrellas of more expensive design without departing from the spirit of the invention.

I claim as my invention:

1. In an umbrella having a cover, a stick to one end of which the central portion of the cover is secured, means slidable on the stick to engage and raise the cover to open same, means for preventing movement of the cover beyond a position of open adjustment, and means on the stick co-operable with said slidable means to rotatably support and correlate same with said preventing means to maintain the cover in a position of open adjustment.

2. An umbrella comprising a stick having a flat, inflexible element secured thereto at one end thereof and disposed at right angles thereto; said stick provided with a cover secured at its center to said end and beneath said element an having a plurality of radial ribs of stiff material; an element similar in kind to the first named element and slidable to a position on the stick to engage and open the cover to a position substantially parallel to said first element and to clamp the inner extremities of the ribs between both elements; and means on the stick for supporting the second element for rotary movement and being co-operable with said second element to retain same in a fixed position relatively to said first element.

3. An umbrella comprising a stick having a runner adapted to be manually adjusted linearly of the stick; the stick having a portion at one end with which the runner is adapted to co-act to hold the runner in a fixed position of adjustment; said stick provided with a cover secured at its center to said portion and adapted to be engaged and opened by the runner; and a flat inflexible element secured to said end portion of the stick exteriorly of the cover for limiting adjustment of the cover during movement in one direction of the runner; said runner and said end portion of the stick being respectively formed to secure the runner against moving in an opposite direction on the stick when the cover is opened.

4. An umbrella comprising a stick of rectangular cross section, the stick having an annular portion at one end of a diameter in excess of the shortest transverse dimension of the stick; a flat inflexible element disposed at right angles to the stick and secured to said annular portion; said stick provided with a cover secured at its center to said annular portion beneath the inflexible element; a flat inflexible runner slidable on the stick and against the underside of the cover to clamp the central portion of the cover between both elements; and means on the runner engageable with said annular portion and turnable with respect thereto while so engaged to maintain said elements in clamping relationship to the cover.

5. In an umbrella, a stick comprising a flat linear strip of material of elongated form in transverse section and provided at one end with an annular portion the diameter of which is in excess of the shortest transverse dimension of the stick; and a runner slotted to slidably fit the stick, the slot having its walls formed for co-action with the said annular portion and said runner being turnable with respect to said portion to secure the runner in a fixed position of adjustment on said stick.

6. In an umbrella, a stick comprising a flat strip of material of elongated form in transverse section and provided at one end with an annular portion the diameter of which is in excess of the shortest transverse dimension of the stick and to one end of which portion a cover can be secured; an inflexible element secured to said portion; and a runner slotted to slidably fit on the stick and consisting of a flat piece of stiff material formed for co-action with said portion to secure the runner in a position of fixed adjustment on the stick.

7. In an umbrella having a cover, a stick consisting of a linear strip of stiff material of rectangular form in transverse section; a flat element of inflexible material secured to one end of the stick at right angles thereto; a flat element of inflexible material having a rectangular slot to receive the stick and enable said element to slide on the stick in parallel relation to the first element; and means on the stick co-operable with the second element to hold it parallel to the first element and against sliding on the stick and with the cover firmly clamped at its center between both elements.

8. In an umbrella, a stick of rectangular cross section, the same having an annular member at one end, the diameter of which exceeds the shortest transverse dimension of the stick; and a flat inflexible runner slotted to slidably fit the stick, the slot in said runner formed to receive said annular member and enable the runner to be turned thereon and co-act with the stick to secure the runner against sliding movement.

9. In cover and rib construction for umbrellas, a paper cover; a reinforcing disk of similar material secured to the under side of the cover; a reinforcing disk secured against the first disk and being of stiff material and of smaller diameter than the first disk; and radially disposed ribs secured to the cover and to said first disk and having inner end portions disposed relative to the second disk to lap over and engage same when the cover is in a position of closed adjustment.

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