Oct. 2, 1945. L. PIECHOWSKI 2,385,937

EMERGENCY UMBRELLA

Filed Jan. 31, 1945 2 Sheets-Sheet 1

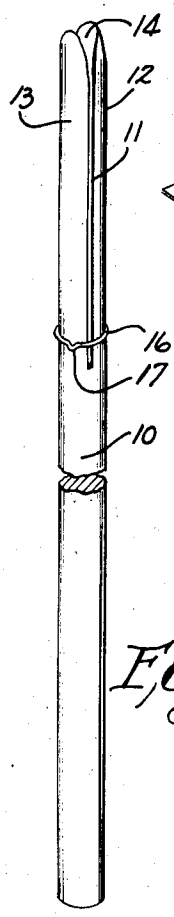


Fig. 1.

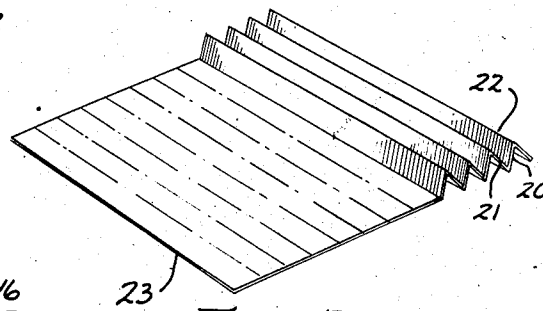


Fig. 2.

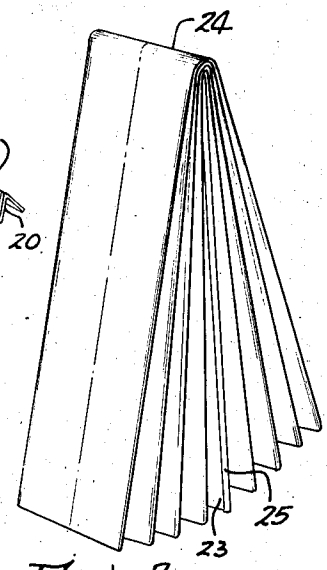


Fig. 3.

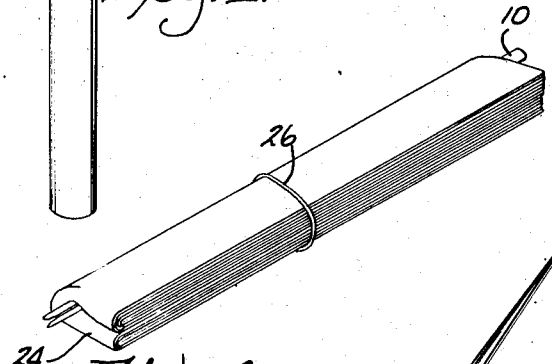


Fig. 4.

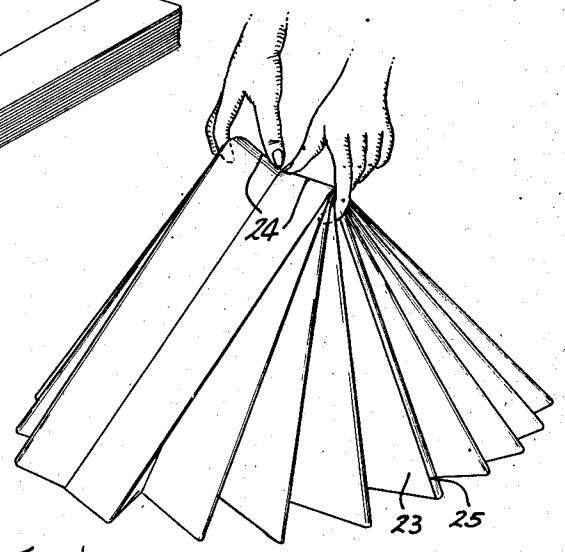


Fig. 5.

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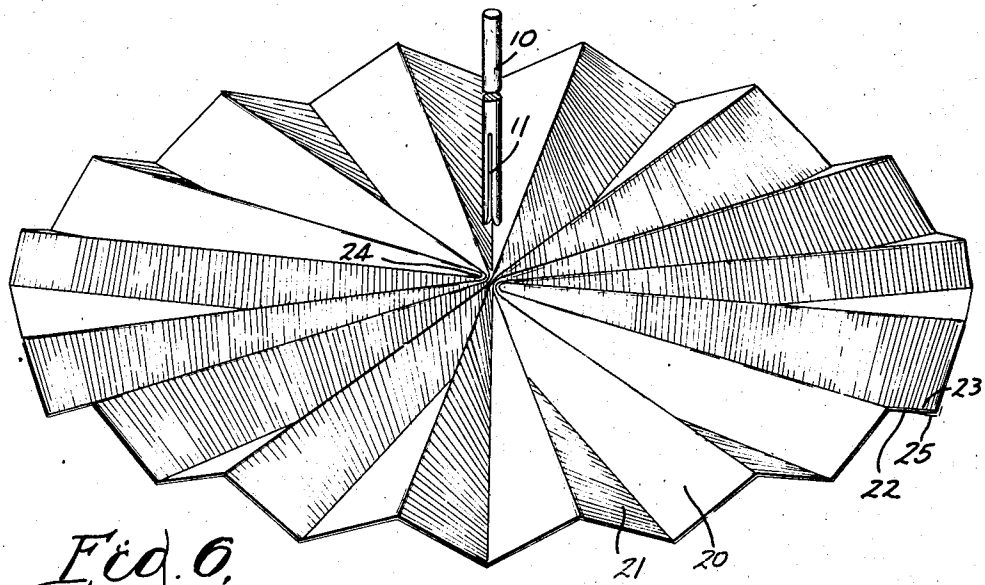


Fig. 6.

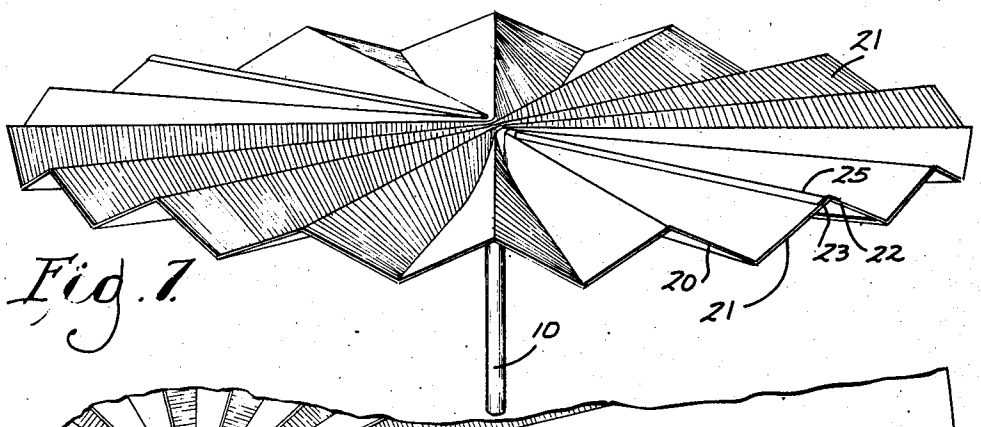


Fig. 7.

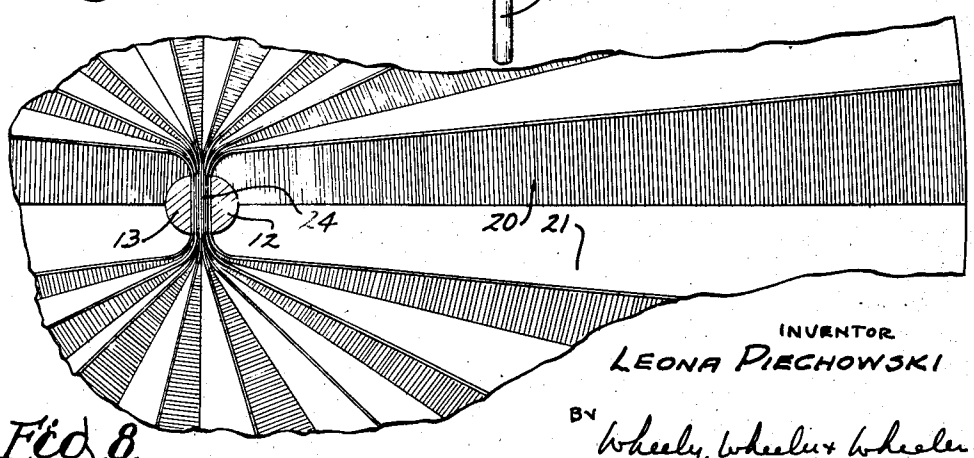


Fig. 8.

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UNITED STATES PATENT OFFICE

2,385,937

EMERGENCY UMBRELLA

Leona Piechowski, Milwaukee, Wis., assignor of one-half to Adley Hafemeister, Wauwatosa, Wis.

Application January 31, 1945, Serial No. 575,445

5 Claims. (Cl. 135—20)

My invention relates to an improved emergency umbrella.

Various attempts have been made to produce umbrellas which can be carried in an ordinary hand bag or luggage carrier, but they have not been commercially successful for the reason that they have failed to meet one or more of the following requirements.

First: An emergency umbrella, as distinguished from umbrellas of standard type, must be sufficiently inexpensive to enable the user to throw away at least the umbrella top after a single emergency use.

Second: The top must be foldable into a package of such short length that it can be carried in an ordinary hang bag with minimum increase to the weight of the bag and its contents and to the bulk of the latter.

Third: The handle must be of such a character that it can be packaged with the folded umbrella top, and it must not only be capable of supporting the top but of clamping the parts of the latter together and holding them securely in the extended position during the period of emergency.

Fourth: The handle and top must be capable of being clampingly secured together, handily, quickly, and with good job results by any ordinary person.

Fifth: the handle must be sufficiently durable so that it can be repeatedly used in combination with successive tops.

The object of my invention is to provide an emergency umbrella which will satisfactorily meet all of the above stated requirements.

In the following description, reference is had to the accompanying drawings, in which

Figure 1 is a perspective view of my improved umbrella handle, with the central portion broken away.

Figure 2 is a view of a reduced scale of a paper blank from which my umbrella top may be made, showing the same partially pleated.

Figure 3 is a perspective view of a completely pleated blank, transversely folded medially in the process of forming a package of a size to be carried in a hand bag or luggage carrier.

Figure 4 is a perspective view of the completed package, with the handle infolded, preparatory to storage in a hand bag.

Figure 5 is a perspective view illustrative of the manner in which the top is unfolded preparatory to attachment to the handle in position for use.

Figure 6 is a perspective view illustrative of the handle attaching operation.

Figure 7 is a perspective view of an unfolded umbrella top with the handle attached.

Figure 8 is a cross sectional view of the kerfed portion of the handle, showing a fragment of a clampingly engaged top as seen from the under side.

Like parts are identified by the same reference characters throughout the several views.

My improved handle comprises a rod 10, preferably formed of wood, and provided with a kerf 11 in one end portion whereby that end portion is divided into fork arms 12 and 13, the extremities of which are beveled as indicated at 14 to facilitate pressing these arms into clamping relation to portions of an umbrella top, as hereinafter explained. If desired, the handle may be banded by a ring 16, preferably formed of resilient wire and made slightly expansible by an outwardly extending crimp or loop 17. The normal diameter of the ring is slightly less than the diameter of the handle 10, but the outward bend 17 allows it to be expanded, forced onto the handle, and allowed to resiliently shrink so that it will retain its position at any point to which it may be manually adjusted. Normally this ring will be adjusted substantially at the base of a kerf 11 to prevent splitting of the handle below the fork arms when the latter are being forced into clamping relation to the umbrella top.

The top of my improved umbrella is formed by folding a rectangular sheet of paper in opposite directions at short intervals to form a series of parallel pleats or bars 20 and 21 extending from one end 22 to the other end 23. A thick heavy sheet of ordinary paper may be used, but it will preferably be oiled or otherwise rendered sufficiently waterproof to ensure that it will not become pulpy during a prolonged rain storm.

Upon completing the pleating operation, I press the pleats together, divide them into two groups, and fold them transversely about midway of the ends of the bars, as indicated at 24 in Figure 3. I then secure the ends 22 and 23 of the blank together, preferably by applying a strip of gummed tape 25 over their meeting margins.

Thereupon the free ends of the folded pleats may be pressed together and the two groups folded together to form a package, as shown in Figure 4, preferably with the handle 10 interposed as shown in that view. If desired, the pleats may be held about the handle by a rubber band 26, whereby to form a unitary package.

When the parts are to be assembled in the form of an umbrella, the rubber band, if present, will be removed, together with the handle, and the

folded top allowed to resume the shape in which it is shown in Figure 3. Thereupon it is grasped by both hands at the fold **24** and the free ends of the paired pleats or bars **20** and **21** partially separated at the middle of the series on each side of the center line by one finger of each hand while pressing downwardly with the thumbs at the middle of the fold **24**, as shown in Figure 5. This pressure causes the free ends of the bars or pleats **20** and **21** to swing outwardly through an arc of ninety degrees to the position in which they are shown in Figure 6, in which position the portions **24** will occupy planes at right angles to those occupied at the beginning of the unfolding operation, and may be pressed together by the finger and thumb of one hand while the arms **12** and **13** of the handle fork are being applied to the opposite side, as shown in Figure 6, to clamp these folded portions **24** together and also secure the handle to the top.

The pressure of the thumb and finger may then be released and the completed umbrella inverted to position for use, as indicated in Figure 7. The clamping pressure of the handle fork arms **12** and **13** holds the portions **24** of the bars **20** and **21** together, as best shown in Figure 8, and the bars extend radially from these clamped central portions in pairs disposed in angular planes of V-shaped cross section alternately divergent upwardly and downwardly with progressively increasing divergence from the center to the periphery, as clearly shown in Figure 7.

The clamping fork arms **12** and **13** will tend to spread when forced into engagement with the portions **24** of the top, but if the band **16** is used, it may be pushed upwardly to force the arms toward each other and increase the clamping pressure.

While it is pssible to repackage the paper top and use it more than once, particularly if the unfolded top is merely used as a sun shade, the expense of producing the top is so slight that it will ordinarily be thrown away after a single period of use. If desired, ordinary clothes pins may be used as handles and thrown away after each period of use, although the elongated handle shown in the drawings is preferred.

I claim:

1. In combination, a foldable umbrella top having V-shaped channels of progressively increasing width and correspondingly reduced depth extending along radial lines from its central portion to its periphery, the walls of the channels converging into parallel relation to each other across the central portion of the top, and a detachable handle provided with clamping arms adapted to press said central portions of the channel walls together, said channel walls on each side of the center being adapted to swing into complete parallelism and form a package of a length equal to the radius of the top when the handle is detached.

2. In combination, a foldable umbrella top comprising a rectangular sheet of flexible material, subdivided by parallel pleats into two series of integrally connected bars transversely folded midway of their ends and with the ends of the sheets permanently secured together, the bars of the two series being adapted to form a circular top when their free ends are swung outwardly through a 90 degree arc and their folded portions pressed together in parallel relation, with the bars extending radially in the form of V-shaped channels of progressively varying width and depth, and a handle provided with clamping means engageable with the parallel portions of the bars and adapted to hold them securely in said parallel relation.

3. The combination set forth in claim 2, in which the handle is of approximately the same length as the folded bars and provided with a kerf in one end portion of a width to snugly straddle the folded midway portions of the bars and removably receiving said portions therein.

4. In combination, an emergency umbrella comprising a rectangular sheet of paper reversely folded at intervals into two series of parallel pleats and normally transversely folded to form a package, the pleats at the ends of the sheet being permanently connected along one margin and said pleats when swung outwardly at their free ends through an arc of 90 degrees being adapted to form a circular top with the central portion of their folded portions in parallel relation, and a forked handle adapted to receive said folded portions between its fork arms to be clamped together thereby.

5. In combination, an emergency umbrella comprising a rectangular sheet of paper reversely folded at intervals into two series of parallel pleats and normally transversely folded to form a package, the pleats at the ends of the sheet being permanently connected along the margin and said pleats when swung outwardly at their free ends through an arc of 90 degrees being adapted to form a circular top with their folded portions in parallel relation, and a forked handle adapted to receive said folded portions between its fork arms to be clamped together thereby, said handle having a resiliently yielding band slidably mounted thereon and movable into pressure engagement with the fork arms to increase their clamping pressure upon the engaged portions of the pleats.

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