March 1, 1960 G. R. KLEINAU 2,926,676

FOLDING TENT

Filed Nov. 15, 1957 2 Sheets-Sheet 1

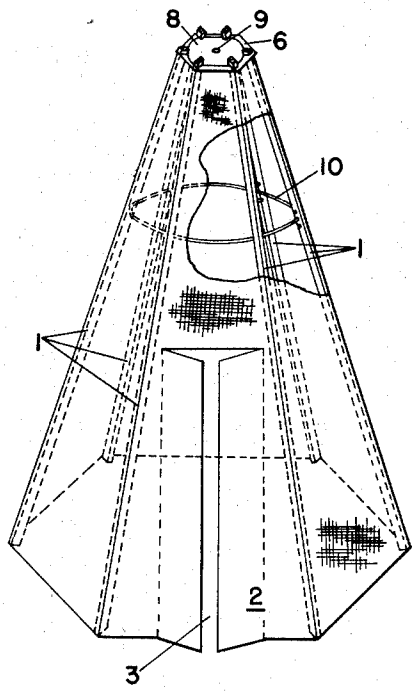


FIG.-1

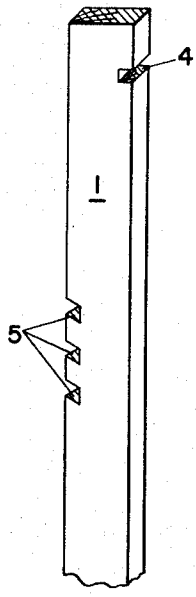


FIG.-2

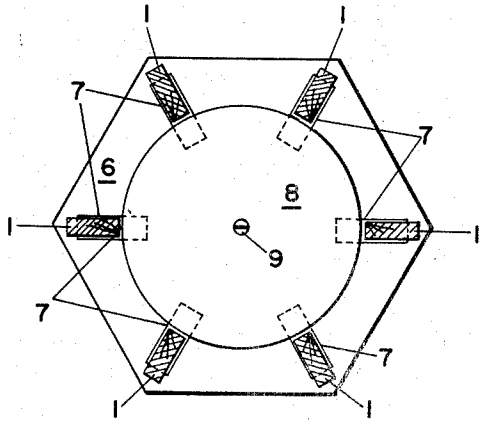


FIG.-3

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2 Sheets-Sheet 2

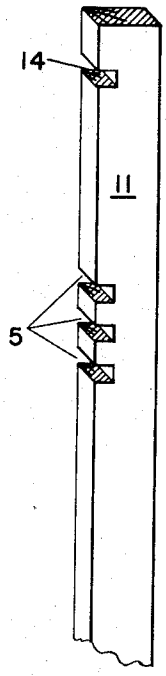


FIG.-4

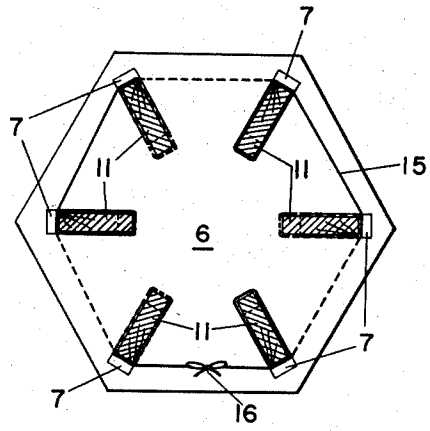


FIG.-5

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FOLDING TENT

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Application November 15, 1957, Serial No. 696,870

6 Claims. (Cl. 135—4)

This invention relates to a tent and more particularly to a tent of a tepee type having novel means for fastening together the tent poles and for holding the poles in a spread-apart position when the tent is in use.

One object of this invention is to provide a tent having tent poles pivotally attached to each other in a simple and inexpensive manner such that the tent may be readily folded or opened for use.

Another object is to provide a tent having simple but effective means for holding the tent poles in spread-apart position when the tent is in use.

Other objects of the invention will be apparent from the following description, taken in conjunction with the accompanying drawings, in which:

Fig. 1 is a perspective view of one embodiment of a tent made in accordance with this invention, with the cover broken away to show the spreader in place;

Fig. 2 is a perspective view of the top part of one of the poles forming a part of the tent;

Fig. 3 is an enlarged plan view of the plate used for pivotally holding the poles together at their tops, with a disc attached to the plate to hold the poles outwardly so that the plate is held in place in the pole grooves;

Fig. 4 is a perspective view of the top part of a modified form of pole; and

Fig. 5 is an enlarged plan view of the plate used for pivotally holding together at their tops the poles of the modified form shown in Fig. 4, in a modified manner.

In the drawings, the tent consists of a plurality of tent poles 1, of which at least three must be used, six being illustrated in Fig. 1. The cover 2, of suitable flexible material, such as paper, canvas or other fabric, plastic or other material, is supported by the tent poles 1 and preferably is attached thereto in some suitable manner, as by an adhesive, snap fasteners, tacks or staples, the cover having a suitable opening 3 for extrance into the tent. The tent poles may be of any desired cross section, such as round, square or rectangular, but are illustrated as being rectangular, for a purpose to be described hereinafter. As shown in Fig. 2, each of the tent poles has, near its top, a groove 4 cut therein for a purpose to be described, the groove being on the side of the tent pole intended to be turned outwardly.

On the inner side of the tent pole is a position substantially below the location of the groove 4, there is located a series of fastening devices to one of which a rigid interior spreader is adapted to be attached for the purpose of holding the tent poles in outwardly extended positions. These fastening devices may consist of small stops, hooks, or clips, forming a part of or attached to the pole, or any other means which will hold the spreader in position. In the form illustrated in the drawings, the fastening devices consist of a series of notches 5 cut in the inner sides of the tent poles.

A novel means for pivotally holding the poles together at their tops is illustrated in Fig. 3. This means consists of a plate 6 having therein a plurality of openings 7, equally spaced in a circle, there being a number of openings equal in number to the poles used in the tent. The openings 7 are of substantially the same cross section as the poles, but slightly larger than the poles, in order to permit the poles to be passed through the openings. When poles of rectangular cross section are used, the openings 7 are radially disposed rectangles, as illustrated. When the poles are passed through the openings, they are positioned with portions of the plate 6 adjacent the openings received in the grooves 4 in the poles. The grooves 4 are of greater width, or height, than the thickness of the plate 6, so that the poles 1 and the plate 6 may be pivoted relative to each other.

Various means may be employed to hold the poles in positions with portions of the plate 6 engaged in the grooves 4 of the poles. For example, in Fig. 3, there is shown a circular disc 8 of such radius that, when in place, the disc will hold the poles outwardly a sufficient extent to prevent the portions of the plate 6 from coming out of the grooves 4 of the poles. The plate 6 and the disc 8 may be made of sheet metal, in which case the disc may be held in place on the plate by means of a sheet metal screw 9. The screw 9 may be replaced by a bolt and nut, especially if the plate and disc are made of other materials. The arrangement of the parts is such that the poles 1 may be pivoted relative to the plate 6 in opening or folding the tent, without the poles becoming separated from the plate. When the poles have been assembled in place in the plate, with the disc 8 held onto the plate and the cover 2 on the poles, the poles may be spread apart to form a tent.

After the poles have been spread apart, they are held in extended position by means of the rigid interior spreader already mentioned, which may be a disc, a ring or hoop, or a plate with as many sides as the tent has, with notches at its corners in which the poles will move when the tent is opened or closed, or any other shape may be used. In the form illustrated in the drawings, the spreader consists of a hoop 10 which is forced upwardly, parallel to the base plane of the tent, to force the poles apart, until it engages one of the notches 5 in each of the poles which gives the desired extent of spread of the tent. The hoop is then rested in those notches and holds the tent in extended position. The cover 2 prevents the tent from being extended too far and tends to hold the poles inwardly, with the spreader hoop 10 firmly engaged in one of the notches 5 on each pole.

A modified form of the pole is shown in Fig. 4, in which there is shown a pole 11 having the interior notches 5 corresponding to the notches 5 in the pole 1, but in which the groove is formed in the inner side of the pole, the groove being designated by the numeral 14. As shown in Fig. 5, in this modification, after the poles 11 are passed through the openings 7 in the plate 6, the poles are forced inwardly, with portions of the plate 6 adjacent to the openings 7 passing into the grooves 14 in the poles. The poles may be held in this inward position by means of a cord 15 secured around each of the poles, alternately above and below the plate 6, the ends of the cord being tied together tightly, as at 16, to hold the poles all inwardly toward each other.

Although, as indicated above, the poles may be made of any desired cross section, the form illustrated is rectangular. This form enables the use of a pole which is very thin, light in weight and inexpensive, but which would tend to turn sideways and drop out of the plate 6 with rough handling. Since the shapes of the openings 7 are the same as the shapes of the poles, the openings 7 prevent the poles from becoming twisted and maintain them in position, at the same time permitting the poles to pivot inwardly and outwardly.

If desired, in place of having the groove 4 on the outer side of the pole or the groove 14 on the inner side of

the pole, the groove may be on one or both of the lateral sides of the pole, the adjacent portions of the plate being held in the grooves by means of a cord tied in a suitable manner, or by other means.

In the use of the tent, the poles are normally left in place in the plate 6, being held therein by the appropriate means used, and the cover 2 is at all times left attached to the poles. All that is required to set up the tent is to spread the poles apart and push the hoop 10 upwardly until it engages one of the series of grooves 5 in the poles, which will hold the poles in outwardly extended position, the cover preventing the poles from spreading too far apart when the ring is pushed up against the pole. When it is desired to take the tent down, all that is necessary is to remove the hoop 10 and pull the poles together, without separating the cover from the poles, or the poles from the plate 6.

This tent can be set up without requiring any fastening to the ground or to the floor, so that it can be set up at any place where there is sufficient space available for the spread of the poles. Of course, it can be moved from one position to another after it is set up merely by picking it up and moving it. It can be set up inside a house on any kind of floor, with any kind of floor covering, or outside on any kind of surface, such as earth, lawn or concrete.

This construction of tent eliminates a center pole, or a pole in the center of the door, leaving the whole interior of the tent unobstructed.

Since no pegs or ropes are needed, this tent eliminates tripping over such pegs or ropes, or having them pulled out and the tent falling or sagging until they are replaced.

The entire construction of this tent has a flexibility which makes it very durable and able to withstand rough handling without damage. On the other hand, the tent does not injure a child should the child fall against it.

As pointed out above, the number of poles to be used can be varied from three up to any practical number. The materials from which the cover, poles, plate, disc and ring are made can also be varied without changing the construction of the tent. It will also be possible to make the cover so that it would be removable without changing the nature of the tent.

It will be apparent to those skilled in the art that various changes may be made in the invention, without departing from the spirit and scope thereof and therefore the invention is not limited by that which is shown in the drawings and described in the specification, but only as indicated in the appended claims.

I claim:

1. A folding tent comprising at least three poles rectangular in cross section, each having a transverse groove formed therein adjacent its upper end, a plate having therein a plurality of circularly disposed openings of rectangular cross section extending radially equal in number to and adapted to receive the poles, portions of said plate adjacent said openings being receivable in said grooves, said grooves being wider than the thickness of said plate to permit pivotal motion of said poles relative to said plate, means for holding said poles in the positions in which said plate is engaged in said grooves and a flexible cover attached to said poles.

2. The invention according to claim 1 in which the grooves are in the outer surfaces of the poles and the means for holding the plate engaged in the grooves consists of a disc attached to the plate.

3. The invention according to claim 1 in which the means for holding the plate engaged in the grooves consists of a cord secured around the poles and holding them against the plate with the plate engaged in the grooves.

4. The invention according to claim 1 in which the grooves are in the inner surfaces of the poles and the means for holding the plate engaged in the grooves consists of a cord secured around the poles and holding them radially inwardly.

5. The invention according to claim 1 in which a rigid interior spreader ring and a series of notches cut in the inner surfaces of the poles engageable by the spreader ring are provided to hold the tent poles in spread-apart position.

6. A folding tent comprising a plate provided with a plurality of openings, a plurality of poles each having the upper end portion thereof extending through one of said openings, each pole having formed therein adjacent its upper end a transverse groove wider than the thickness of said plate loosely embracing a portion of said plate in a hinged connection, means for holding said poles in positions in which said plate is engaged in said grooves and a flexible cover attached to said poles.

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