

A drying rack for drying a wet item & method thereofField

The field of the invention relates to drying racks for drying wet items. In particular, the invention is suitable for drying umbrellas but can be used for other wet items.

Background

A problem is created when it is raining of excess water dripping such that indoors floors become wet, which can cause slipping.

Umbrella's are particularly likely to cause such problems as they are not easily stored.

Prior inventions to address this problem include wrapping layers of plastic around an umbrella to create a waterproof barrier, using plastic bags to insert the umbrella therein, and bag arrangements that aim to prevent splashback of drained water back to the umbrella.

Such bags are shown in figures 1 and 2. A first bag 10 comprises inner 8 and outer 6 bags, the inner bag 8 having holes in to let water through from the umbrella 2 to the outer bag 6. A drawstring 4 can be used to seal the bag 10.

A second bag 20 comprises similar features to allow draining & prevent splashback but comprises a unitary bag comprising upper & lower portions separated by a separator 16. A one way valve 14 allows water through from one portion to the other. The bag 20 can be closed using a drawstring 12 & the lower portion can be drained via a bung 18.

The prior art prevent dripping onto a floor but there is still a problem regarding actual drying of the umbrella or other wet item.

Summary

Aspects of the invention are set out in the independent claims and preferred features are set out in the dependent claims.

According to a first aspect there is provided [Claim 1].

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✓3

Means for gripping the item ensure that the item stays on the rack whilst the airflow is created. For example, to prevent it falling off, which would both prevent it being able to be dried and create a wet patch on the area it lands.

✓ ½

Means for creating an airflow around the item beneficially speeds up the drying process of the item. Airflow around the item is difficult to achieve using previously seen bag arrangements, which touch against the items surface without an airgap.

✓ ½

Together, gripping the item and creating an airflow around it ensure that the item can be dried on the drying rack. Airflow may be provided simply by leaving an air gap around the item.

Optionally, [Claim 2]. Advantageously collecting water from the wet item prevents the water dripping straight onto the floor and making a trip hazard.

✓ ½

Optionally [Claim 3]. Preferably the drying rack is used with an umbrella, however, other items such as coats may also be dried on the drying rack.

✓ ½

Optionally, [Claim 4]. A fan acts to move the air around the item and improve or increase the airflow. This speeds up the drying process.

✓ ½

Optionally [claim 5]. Manual operation involves either spinning blades of the fan or turning it on and off. This provides safety aspect as mixing water and electrics is not recommended as it is a safety hazard.

✓ ½

Optionally [Claim 6]. Blowing cold air dries the item and advantageously does not burn or melt the item relative to hot air. Of course, hot air can also be used to help drying.

✓ ½

Optionally [Claim 7]. A fixed portion allows the rack to be kept in a permanent position, for example in a shop cloakroom, but also provides means for rotating the rotating portion relative to the fixed portion. The rotating portion acts to generate an airflow and improve drying by creating an airflow of air next to the item by moving the item itself.

✓ ½

Optionally, [claim 8]. This provides means for self-support such that the rack can stand-alone. Beneficially, it can also be moved easily compared to a fixed portion that might be fixed to a wall or such like.

Optionally [claim 9]. In an example, two rings comprise the fixed & rotating portions. Being concentric & over lapping allows for rotation of the rings relative to one another,

Optionally, [Claim 10]. The upper ring rotating relative to the fixed ring, which is below, allows for the lower ring to be secured, for example using legs, to the ground. It also allows for accessories, for example including the gripping mechanism, to be attached above the rotating mechanism, which can be a better way of using the space and being able to access all parts of the rack.

Optionally [Claim 11]. This helps spinning or rotation which beneficially aids faster drying.

✓ ½

Optionally [Claim 12]. The track and ball bearings together make a system that can be easily rotated. The ball bearings fit into the track but can move along it, which can be restricted or aided by the number or closeness of the ball bearings within the track. The shape of the balls provides means for contacting the track at all times, in any orientation, whilst being able to move along the track by rolling.

Optionally, [Claim 13]. Airflow can be created or helped by manually spinning, for example by grabbing the rotating portion and pushing it in one direction.

✓ ½

Optionally, [Claim 14]. Pedals, for example, foot pedals, can be created using a system of cogs and gears. It advantageously produces spinning which improves the airflow to dry the item faster.

✓ ½

Optionally, [Claim 15]. Allows controllability of how fast the rotating portion is spun & hence how fast it dries. Caution must be taken to prevent water and electricity mixing, of course, for safety measures.

✓ ½

Optionally, [Claim [16]]. Clamping the item ensures that a strong grip is made & prevents the item from falling off the drying rack.

Optionally (Claim 17). A typical clamping means comprises a clamping portion, which is fixed, and a moveable portion, for example a hole in the clamping portion and a threaded bar, which secure the item between the bar and the clamping portion. A secure grip can be achieved this way.

✓ ½

Optionally [Claim 18]. A V-shaped clamp does not comprise moving portions, rather the distance of the V separation acts to grip the item therein by friction. A secure grip can also be achieved this way.

✓ ½

Optionally, [Claim 19]. Padding, such as rubber, acts against the item when gripped & protects the item from damage.

✓ ½

Optionally, [Claim 20]. The collecting means can be secured when in use and removed when not in use, or when the collecting means is full & needs emptying or draining. This allows the collecting means to be reused.

✓½

Optionally, [claim 21]. Waterproof materials repel water to allow them to be protected. This beneficially provides means for collecting water & preventing water getting on the floor and causing a hazard.

Optionally, [claim 22]. A liner, for example a bag, may be fitted around individual items to catch the drips therefrom. An air gap between the item & the liner must be maintained such that airflow around the item is not restricted.

✓½

Optionally, [Claim 23]. A drain lets water out of the collecting means so as to empty it & so it can be used again.

Optionally, [claim 24]. The collecting means can be attached to the drying rack or fastened thereto, for example using a hook or such like on the drying rack. This allows easy detachment of the collecting means.

✓½

Optionally, [Claim 25]. Rest supports the item, particularly an umbrella. Can adhere different lengths of umbrella. Also used to help support the rack so that the item can be centrally mounted thus improving the stability of the rack.

✓½

According to a second aspect there is provided [claim 26]. Gripping an item to the rack & providing an airflow around it beneficially aids to dry a wet item quickly so that it can be used again soon and be dry.

Brief Description of Figures

Embodiments of the present invention will now be described, by way of example only, in relation to the following figures in which:

Fig1 illustrates a prior art umbrella drying bag.

Fig. 2 illustrates a different prior art umbrella drying bag relative to Fig. 1.

Fig. 3 illustrates a schematic of a first embodiment of the present invention.

Fig. 4 illustrates a cross-sectional view of clamping means for fixing an umbrella to a drying rack.

Fig. 5 illustrates a schematic of a second embodiment of the present invention incorporating the clamping means of Fig. 4.

Fig 6A illustrates a view of an alternate clamping means.

Fig 6B illustrates the clamping means of Fig 6A in use.

Throughout the figures, like features are represented by like reference numerals.

Detailed Description

Figures 1 & 2 illustrate prior art which have been disclosed in the background section.

Fig. 3 illustrates an umbrella 104,106 on a rotating washing line 100.

The umbrella handle, 106 is hung over an arm of the washing line 100 with the canopy 104 dangling downwards such that the water on the outside of the canopy drips downwards to be dried & does not go into the dry underside of the canopy.

A fan, (not illustrated) for example a fan from a hairdryer, can be secured to the rotatable washing line to create an airflow around the canopy.

Legs 108 may be fixed or secured to the floor and the arms 102 rotate relative to the legs 108.

The umbrella handle 106 is gripped to the arms 102 (not illustrated) by means such as straps, hooks or clamps to prevent the umbrella from moving around or falling off the washing line 100.

In use, the umbrella is gripped and can be rotated, for example by rotating the washing line, or by improving airflow using the fan to help the umbrella dry faster.

Hot or cold air can be blown by the fan, and in fact, there is little difference seen between either.

The fan can be secured to the washing line 100 or could be hand held.

To provide safety, the fan should be manually operated or sufficient measures used to achieve a system that is waterproof & prevents electricity & water coming into contact.

✓3

Fig. 4 illustrates a clamping mechanism 200 comprising a hole 206 in the clamping portion 208 and a threaded bar 202 acting therethrough. A deformable end 204 is attached to an end of the bar 202 within the clamping portion 208.

An item, for example an umbrella handle 106, is clamped between the deformable end of the bar 202 and the clamping portion 208.

The threaded bar 202 is simply screwed to clamp or increase the grip between the item 106 and the clamp 200 and unscrewed to release the grip or remove the item 106 from the clamp 200.

The deformable end 204 can be made of rubber, which may be soft or squashy to push against the umbrella handle 106 and secures it and protects the item 106.

This allows for different shapes and sizes of item 106 to be clamped by screwing and/or unscrewing the bar 202 to fit the size of the item to be clamped.

Other clamping arrangements may similarly used to the same effect.

Fig. 5 illustrates a schematic of a drying rack comprising: the clamp 200 of Figure 4; an arm 304 connected to a moveable upper ring 308 for holding an item such as an umbrella ; and a stand or non-moveable portion comprising legs 316 and a lower ring 310.

The arm 304 is fixed to the upper ring 308 so that it rotates in unison with it. A rest 312 is attached to the arm 304 using a slider groove 306 and a pivot 302. The rest 312 provides an place to hold an umbrella between the clamp 200 at the end of the arm 304 and the rest end which has a hole to support an umbrella tip.

The rest supports the umbrella or item to be dried and is placed reasonably centrally amongst the central rings so that the item can be rotated about the central axis of the rings which beneficially provides stability over embodiments such as that of fig. 3.

The rack also comprises a fixed portion 316, 310 upon which the upper ring 308, arm 304 and rest 312 rotate.

Hooks 314 can be used to secure means for collecting water to the rack 300. For example, waterproof bag liners may be used.

In use, an umbrella or other item is fixed between the rest 312 and the clamp 200 with the handle clamped such that it points downwards.

The rest 312 can be adjusted by the pivot 302 and the groove 306 to accomodate different lengths of umbrella.

Once secured, the upper ring is rotated relative to the lower ring. Means for doing so comprise: simple pushing; a pedal (not illustrated) to be foot activated and using a system of cogs & gears; tracks along the overlapping sides of the concentric rings 308, 310 with ball bearings therebetween; and/or comprising an elictric motor.

Alternative means of fastening collector include clips or loop fasteners.

Fig 6A & 6B illustrate an alternative clamping mechanism 400 that can be used in fig. 5 in place of the clamp 200.

Y- or V-shaped arms are covered with rubber 402 or another soft material between the arms to grip the item and/or prevent it being harmed.

To clamp the item, for example umbrella handle, push hard into the V to secure.

Alternative means for collecting water can comprise a bag around the umbrella. The sides must not touch the umbrella, however.

The bag can be aided by use of a drain to remove water therefrom & reuse the bag.

Bags can be changeable over time or reused, for example.

Intro + Desc.

✓ 13

31½

MARKS AWARDED 31½/46

Elements from Figs are exemplary only and can be combinable in alternate ways.

1. A drying rack for drying a wet item, the drying rack comprising;
 - means for gripping the item to the rack to hold it in place; and
 - means for creating an airflow about the item so as to dry it.
2. A drying rack as in claim 1 further comprising means for collecting water that drips off the wet item.

✓ 15

✓ 3

	Examiner's use only
3. A drying rack as in claim 1 or 2 wherein the item is an umbrella.	✓ $\frac{1}{2}$
4. A drying rack as in any preceding claim wherein the means for creating an airflow comprises a fan	✓1
5. A drying rack as in claim 4 wherein the fan is manually operated	✓ $\frac{1}{2}$
6. A drying rack as in claim 4 or 5 wherein the fan is configured to blow cold air	✓ $\frac{1}{2}$
7. A drying rack as in any preceding claim; further comprising a fixed portion; and a rotating portion.	✓1
8. A drying rack as in claim 7 wherein the fixed portion comprises legs.	
9. A drying rack as in claim 7 or 8 wherein both portions comprise concentric and overlapping respective rings.	✓1
10. A drying rack as in claim 9 wherein an upper ring rotates relative to a lower fixed ring	✓ $\frac{1}{2}$
11. A drying rack as in claim 9 or 10 wherein at least one of the rings comprises a low friction material to aid the rotation	✓1
12. A drying rack as in claim 9 or 10 wherein one or more of the rings comprises a track; and further comprising a plurality of ball bearings between the rings.	✓ $\frac{1}{2}$
13. A drying rack as in any of claims 7–12 wherein rotating the rotating portion comprises manually spinning the rack.	✓ $\frac{1}{2}$
14. A drying rack as in any of claims 7-12 wherein rotating the rotating portion comprises a pedal arrangement	
15. A drying rack as in any of claims 7–12 wherein rotating the rotating portion comprises an electric motor	✓ $\frac{1}{2}$
16. A drying rack of any preceding claim wherein the means for gripping the item comprises a clamp	✓ $\frac{1}{2}$
17. A drying rack as in claim 16 wherein the clamp comprises a first clamp portion; and (a first clamp portion) and a hole with a threaded bar	
18. A drying rack as in claim 16 wherein the clamp is V-shaped	✓ $\frac{1}{2}$

19. A drying rack as in any of claims 16–18 further comprising padding to protect the item.
20. A drying rack as in any claims 3–19 when dependent on claim 2 wherein the means for collecting water is releasably secured to the drying rack
21. A drying rack as in any of claim 3–22 when dependent on claim 2 wherein the means for collecting water comprises a waterproof liner
22. A drying rack as in claim 21 wherein the waterproof liner surrounds the item without touching it.
23. A drying rack of any of claims 20 – 22 wherein the means for collecting water further comprises a drain
24. A drying rack as in any of claims 20–23 further comprising fastening means on the drying rack for securing the means for collecting water to the drying rack.
25. A drying rack of any preceding claim further comprising a rest.
26. A method of drying a wet item, the method comprising:
 - gripping the item to a drying rack to hold it in place; and
 - creating an airflow about the item so as to dry it.

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Claims

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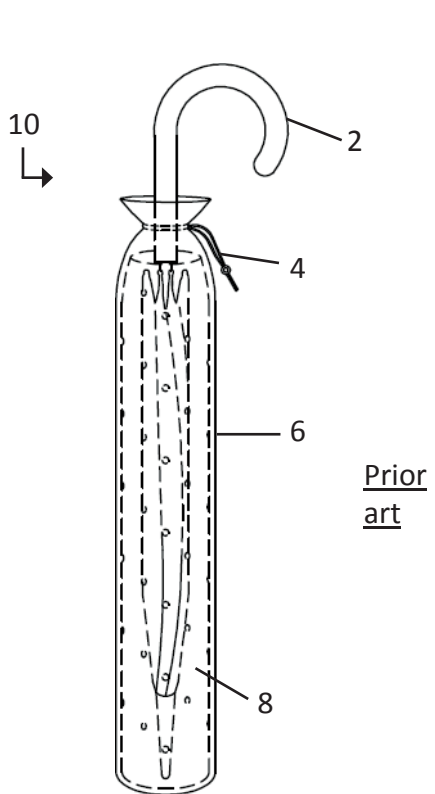


Figure 1

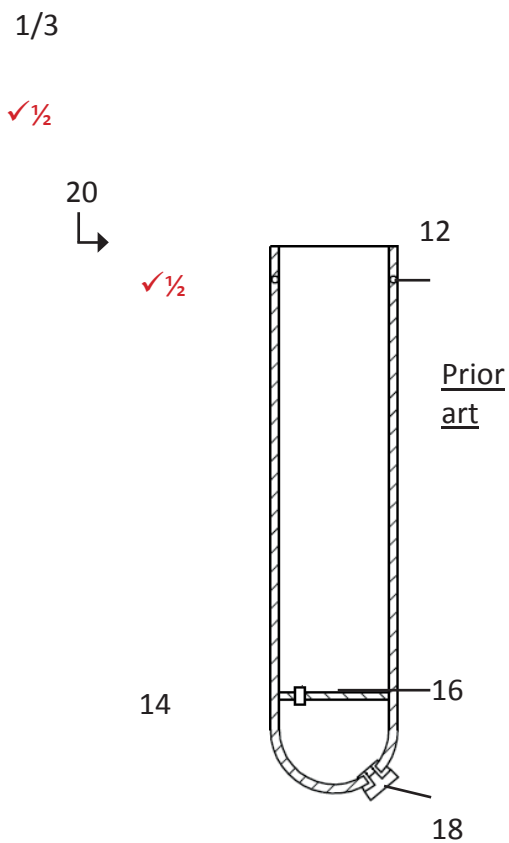


Figure 2

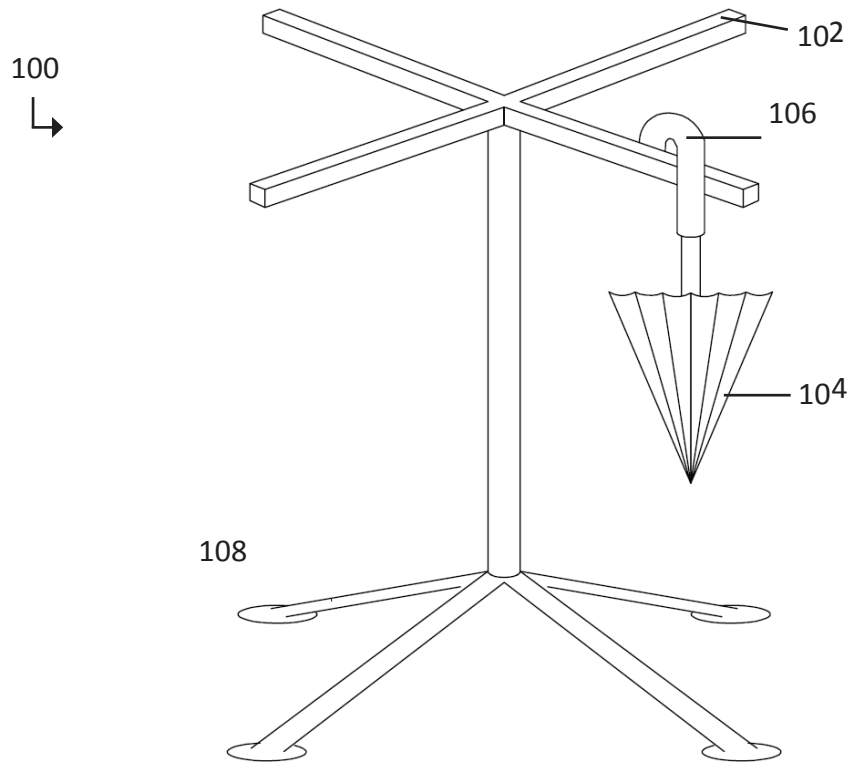


Figure 3

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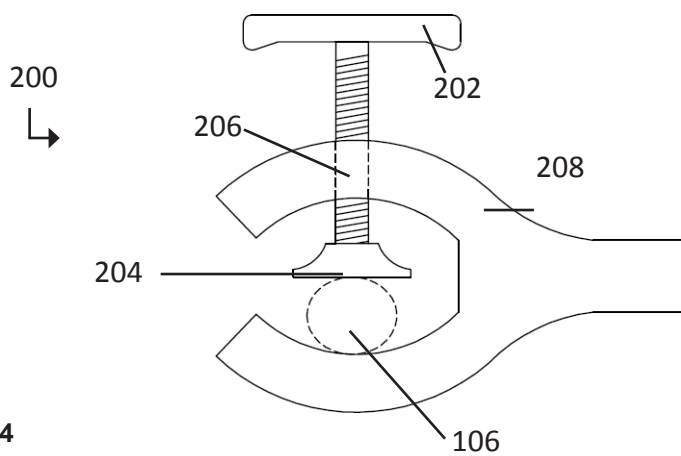


Figure 4

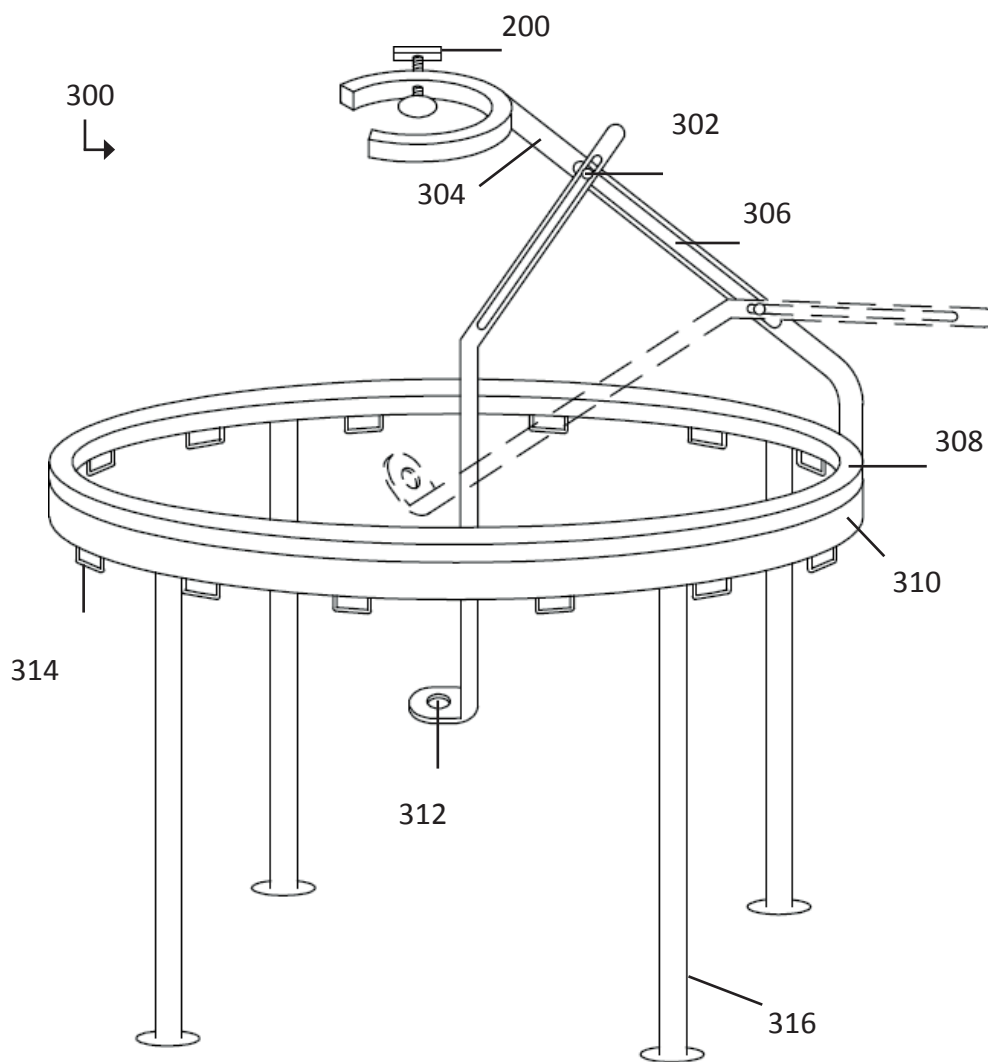


Figure 5

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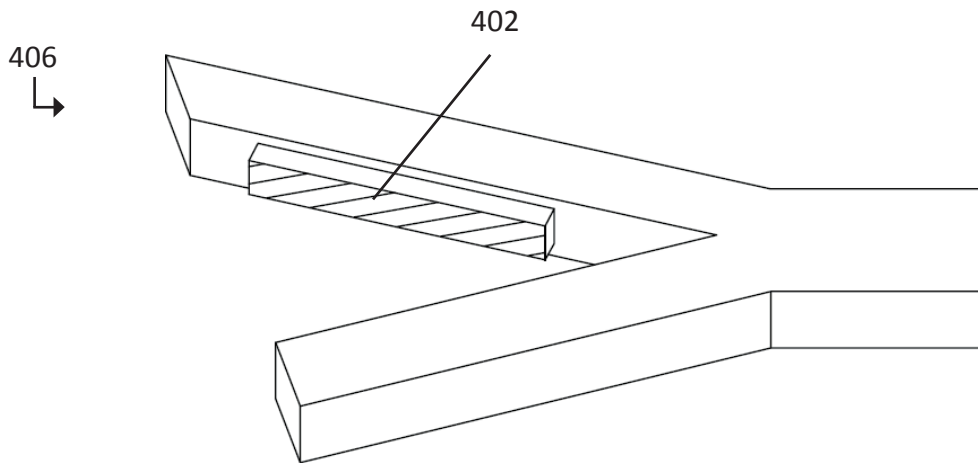


Figure 6A

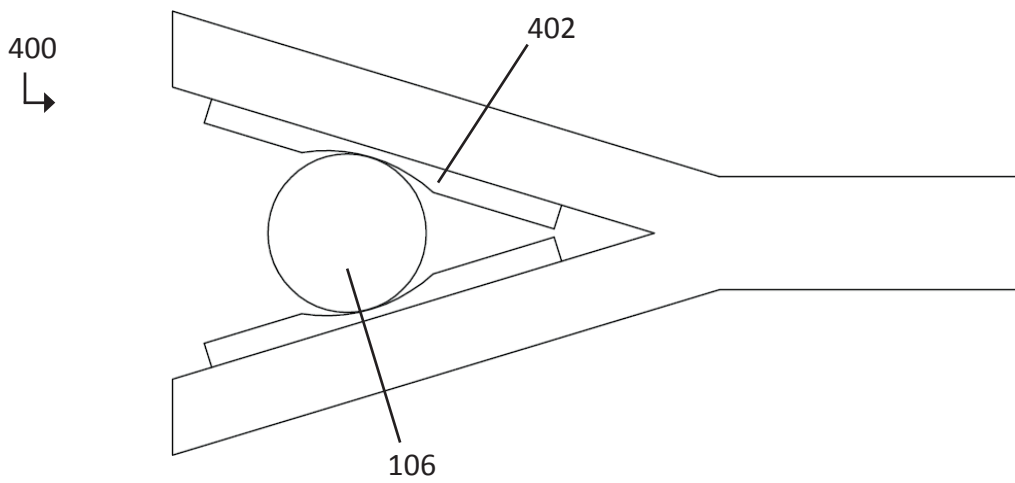


Figure 6B

Abstract

A drying rack for drying a wet item & method thereof

A drying rack 300 for drying a wet item comprising means for gripping 200 or clamping the item to the rack 300 to keep it in place and means for creating an airflow about the item so as to dry it. In particular, wherein the item is an umbrella.

[Figure 5]

Abstract

MARKS AWARDED 3/4

✓ $\frac{1}{2}$

✓2

✓ $\frac{1}{2}$

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