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(54) **PORTABLE CLOTHES DRYER**

(57) Disclosed is a portable clothes dryer, including main support standpipes and three groups of heating pipes. One or more groups of heating pipes distributed longitudinally are arranged between two main support standpipes symmetrically distributed. One group of the heating pipes includes two heating pipes, and pipe arms on two sides of the heating pipes are in hinged connection to the two main support standpipes. A heating pipe group formed by two heating pipes can be folded by flipping down from a middle. The portable clothes dryer of the present disclosure does not need to be fixed in a fixed place, is easy to be moved, and can be used wherever there is a power supply, whether fixed or mobile, which is fast and convenient; and moreover, the portable clothes dryer can be folded for storage.

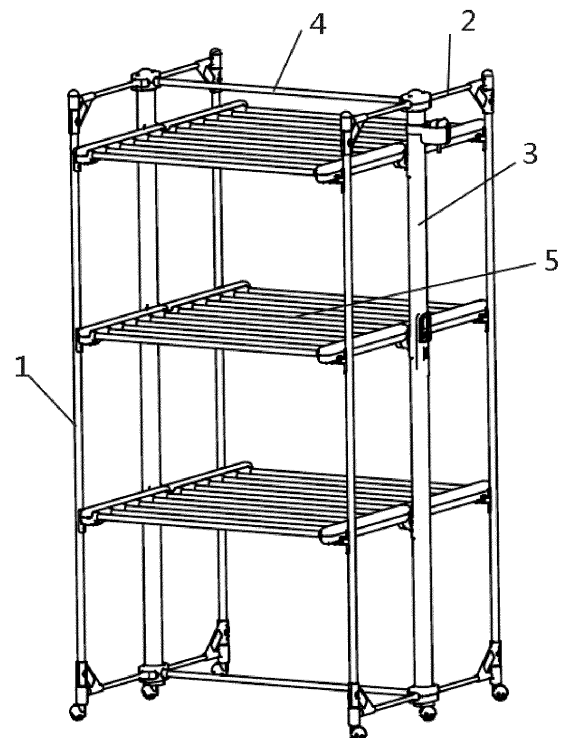


FIG. 2

Description

Technical field

[0001] The present disclosure relates to the technical field of clothes dryers for household towels, bath towels, clothes and the like, in particular to a portable clothes dryer easy to be dismantled, mounted and moved.

Background Art

[0002] Clothes, towels, and bath towels are conventionally dried naturally, which is limited by natural conditions, and the clothes are slow to dry on rainy days. Towels, as common household items, are needed almost every day. In daily life, people usually dry towels on a towel rack in the washroom or bathroom after using. However, the washroom or bathroom is a humid and unventilated place where towels are difficult to be dried, so the towels are usually in a damp state for a long time. The towels that have been wet for a long period of time are prone to harboring bacteria that are hazardous to human life and health. Therefore, there is a great demand for drying equipment in family life.

[0003] Existing clothes dryers can only be fixed in a certain place, which are inconvenient to be moved and to be dismantled and mounted. Other simple blowing clothes dryers are cumbersome in mounting and have high energy consumption and loud noise, which are unable to work with a mobile power.

Summary

[0004] Aiming at the above technical deficiencies, an objective of the present disclosure is to provide a portable clothes dryer, which is easy to be moved, dismantled and mounted, and is more convenient for use.

[0005] In order to solve the above technical problems, the present disclosure adopts the following technical solutions.

[0006] The present disclosure provides a portable clothes dryer, including main support standpipes and three groups of heating pipes. One or more groups of heating pipes distributed longitudinally are arranged between two main support standpipes symmetrically distributed, one group of the heating pipes includes two heating pipes, and pipe arms on two sides of the heating pipes are in hinged connection to the two main support standpipes; and a heating pipe group formed by two heating pipes is capable of being folded by flipping down from a middle;

detachable support standpipes are arranged on front and rear sides of the main support standpipes, top plugging caps are mounted at top ends of the detachable support standpipes, and bottom plugging caps are mounted at bottom ends of the detachable support standpipes; fixed seats are mounted at top

ends and bottom ends of the main support standpipes, the top plugging caps are connected to the fixed seats at the top ends of the main support standpipes via connecting horizontal pipes, and the bottom plugging caps are also connected to the fixed seats at the bottom ends of the main support standpipes via connecting horizontal pipes; and side faces of the bottom plugging caps are connected to end portions of the connecting horizontal pipes in a plugging manner, side faces of the top plugging caps are also connected to end portions of the connecting horizontal pipes in a plugging manner, and the connecting horizontal pipes are in hinged connection to the fixed seats;

the fixed seats at the top ends of the main support standpipes are connected via one supporting horizontal pipe, the fixed seats at the bottom ends of the main support standpipes are also connected via one supporting horizontal pipe, and the supporting horizontal pipes are in hinged connection to the fixed seats;

universal wheels are mounted at bottom portions of the main support standpipes and the detachable support standpipes; and fixed covers are mounted at openings of the fixed seats;

three fixed hooks are arranged on the detachable support standpipes, and pipe arms on sides of one or more groups of heating pipes are placed on the detachable support standpipes via the fixed hooks; and

a wire head box and a control box are arranged at an exterior of one of the main support standpipes, the wire head box being configured to store a power plug, and a power supply for supplying power to the heating pipes being mounted inside the control box; and electric wires on the heating pipes are connected to the control box by passing through pipe walls of the main support standpipes via an anti-winding device, and the electric wires on the heating pipes are further connected to an external electric wire having a power plug.

[0007] Further, the anti-winding device includes a mounting panel, a wire hole, and a separation structure, the mounting panel being a circular arc-shaped panel, the wire hole being disposed at a middle portion of the panel, and the separation structure being arranged at a middle portion of the wire hole to separate the wire hole into two holes; and the electric wires on the two heating pipes in one group pass through the two holes.

[0008] Further, the other ends of the connecting horizontal pipes are in reinforced connection to the detachable support standpipes via triangular brackets.

[0009] The beneficial effects of the present disclosure are as follows. The portable clothes dryer of the present disclosure does not need to be fixed in a fixed place, is easy to be moved, and can be used wherever there is a power supply, whether fixed or mobile, which is fast and

convenient; and moreover, the portable clothes dryer can be folded for storage.

Brief Description of the Drawings

[0010] To state the technical solutions of the examples in the present disclosure or the prior art clearer, a brief introduction to the accompanying drawings needed in the examples or prior art is stated below. Obviously, the accompanying drawings described below are merely some examples in the present disclosure, and for those ordinary skilled in the art, other drawings can be obtained according to these drawings without creative efforts.

FIG. 1 is a splitting diagram of a portable clothes dryer arranged in three layers according to Example 1 of the present disclosure;

FIG. 2 is a three-dimensional structural schematic diagram of the portable clothes dryer arranged in three layers according to Example 1 of the present disclosure;

FIG. 3 is a top view of the portable clothes dryer arranged in three layers according to Example 1 of the present disclosure;

FIG. 4 is a right view of the portable clothes dryer arranged in three layers according to Example 1 of the present disclosure;

FIG. 5 is a front view of the portable clothes dryer arranged in three layers according to Example 1 of the present disclosure;

FIG. 6 is a three-dimensional structural schematic diagram of a portable clothes dryer arranged in one layer according to Example 2 of the present disclosure;

FIG. 7 is a top view of the portable clothes dryer arranged in one layer according to Example 2 of the present disclosure;

FIG. 8 is a right view of the portable clothes dryer arranged in one layer according to Example 2 of the present disclosure;

FIG. 9 is a front view of the portable clothes dryer arranged in one layer according to Example 2 of the present disclosure;

FIG. 10 is a schematic structural diagram of an anti-winding device of a portable clothes dryer according to the present disclosure; and

FIG. 11 is a schematic structural diagram of the anti-winding device of the portable clothes dryer according to the present disclosure when threading an electric wire.

[0011] Reference numerals and denotations thereof: 1-detachable support standpipe; 2-connecting horizontal pipe; 3-main support standpipe; 4-supporting horizontal pipe; 5-heating pipe; 6-fixed cover; 7-fixed seat; 8-wire head box; 9-control box; 10-pipe arm of heating pipe; 11-bottom plugging cap; 12-triangular bracket; 13-universal wheel; 14-fixed hook; 15-top plugging cap; 16-mounting

panel; 17-wire hole; and 18-separation structure.

Detailed description

[0012] The technical solutions of the examples in the present disclosure will be described clearly and completely by reference to the accompanying drawings of the examples in the present disclosure below. Obviously, the examples described are only some, rather than all examples of the present disclosure. Based on the examples of the present disclosure, all other examples obtained by those ordinary skilled in the art without creative efforts fall within the scope of protection of the present disclosure.

Example 1

[0013] As shown in FIGS. 1-5, the example provides a three-layer portable clothes dryer, including main support standpipes 3 and three groups of heating pipes 5. Three groups of heating pipes 5 distributed longitudinally are arranged between two main support standpipes 3 symmetrically distributed. One group of the heating pipes 5 includes two heating pipes 5, and pipe arms on two sides of the heating pipes 5 are in hinged connection to the two main support standpipes 3. A heating pipe 5 group formed by two heating pipes 5 is capable of being folded by flipping down from a middle.

[0014] Detachable support standpipes 1 are arranged on front and rear sides of the main support standpipes 3. Top plugging caps 15 are mounted at top ends of the detachable support standpipes 1, and bottom plugging caps 11 are mounted at bottom ends of the detachable support standpipes 1. Fixed seats 7 are mounted at top ends and bottom ends of the main support standpipes 3. The top plugging caps 15 are connected to the fixed seats 7 at the top ends of the main support standpipes 3 via connecting horizontal pipes 2, and the bottom plugging caps 11 are also connected to the fixed seats 7 at the bottom ends of the main support standpipes 3 via connecting horizontal pipes 2. Side faces of the bottom plugging caps 11 are connected to end portions of the connecting horizontal pipes 2 in a plugging manner, and side faces of the top plugging caps 15 are also connected to end portions of the connecting horizontal pipes 2 in a plugging manner. The connecting horizontal pipes 2 are in hinged connection to the fixed seats 7.

[0015] The fixed seats 7 at the top ends of the main support standpipes 3 are connected via one supporting horizontal pipe 4, and the fixed seats 7 at the bottom ends of the main support standpipes 3 are also connected via one supporting horizontal pipe 4. The supporting horizontal pipes 4 are in hinged connection to the fixed seats 7.

[0016] Universal wheels 13 are mounted at bottom portions of the main support standpipes 3 and the detachable support standpipes 1; and fixed covers 6 are mounted at openings of the fixed seats 7.

[0017] Three fixed hooks 14 are arranged on the de-

tachable support standpipes 1, and pipe arms on sides of the three groups of heating pipes 5 are placed on the detachable support standpipes 1 via the fixed hooks 14.

[0018] A wire head box 8 and a control box 9 are arranged at an exterior of one of the main support standpipes 3, the wire head box 8 being configured to store a power plug, and a power supply for supplying power to the heating pipes 5 being mounted inside the control box 9. Electric wires on the heating pipes 5 are connected to the control box 9 by passing through pipe walls of the main support standpipes 3 via an anti-winding device, and the electric wires on the heating pipes 5 are further connected to an external electric wire having a power plug.

[0019] As shown in FIGS. 10-11, the anti-winding device includes a mounting panel 16, a wire hole 17, and a separation structure 18, the mounting panel 16 being a circular arc-shaped panel, the wire hole 17 being disposed at a middle portion of the panel, and the separation structure 18 being arranged at a middle portion of the wire hole 17 to separate the wire hole 17 into two holes; and the electric wires on the two heating pipes 5 in one group pass through the two holes. The separation structure 18 can separate the electric wires on two heating pipes 5 in one group, avoiding the electric wires winding together when the two heating pipes 5 are rotated and folded.

[0020] The other ends of the connecting horizontal pipes 2 are in reinforced connection to the detachable support standpipes 1 via triangular brackets 12.

[0021] An operation principle is as follows.

[0022] A towel rack of the example is arranged in three layers, which is suitable for family use.

[0023] The heating pipes 5 are used for the placement of clothes such as towels, and can heat and dry the clothes. The towel rack of the present application is equipped with universal wheels 13 at the bottom for easy movement.

[0024] The towel rack of the present application can be folded for storage. When the towel rack needs to be folded, the detachable support standpipes 1 are removed; the detachable support standpipes 1 support the heating pipes 5 by means of the fixed hooks 14, and the detachable support standpipes 1 are connected to the connecting horizontal pipes 2 in a plugging manner, so that the connecting horizontal pipes 2 can be detached.

[0025] After being detached, the heating pipes 5 in one group are flipped downward from the middle, and the two heating pipes 5 in one group are folded together downward from the middle. The connecting horizontal pipes 2 and the fixed seats 7 are in hinged connection, so that the connection horizontal pipes 2 can also be rotated and stored.

[0026] The towel rack of the present application can also be used with only one of the heating pipes 5 in one group, in which case one of the heating pipes 5 in one group is folded downwards, and one detachable support standpipe 1 is mounted at the end portion of the heating

pipe 5 in use to support the heating pipe 5.

Example 2

[0027] As shown in FIGS. 6-9, the difference between the example and Example 1 is that only one heating pipe 5 is arranged, and a single-layer portable clothes dryer is provided in the example. The three-layer portable clothes dryer is suitable for family use, and the single-layer portable clothes dryer is suitable for self-driving tour, camping, recreational vehicles and so on, and both are versatile and easy to be carried.

[0028] Obviously, a person skilled in the art may make various variations and modifications to the present disclosure without departing from the spirit and scope of the present disclosure. Therefore, the present disclosure is also intended to include such modifications and variations provided that they fall within the scope of the claims of the present disclosure and equivalents thereof.

Claims

1. A portable clothes dryer, comprising main support standpipes and three groups of heating pipes, wherein one or more groups of heating pipes distributed longitudinally are arranged between two main support standpipes symmetrically distributed, one group of the heating pipes comprises two heating pipes, and pipe arms on two sides of the heating pipes are in hinged connection to the two main support standpipes; and a heating pipe group formed by two heating pipes is capable of being folded by flipping down from a middle;

detachable support standpipes are arranged on front and rear sides of the main support standpipes, top plugging caps are mounted at top ends of the detachable support standpipes, and bottom plugging caps are mounted at bottom ends of the detachable support standpipes; fixed seats are mounted at top ends and bottom ends of the main support standpipes, the top plugging caps are connected to the fixed seats at the top ends of the main support standpipes via connecting horizontal pipes, and the bottom plugging caps are also connected to the fixed seats at the bottom ends of the main support standpipes via connecting horizontal pipes; and side faces of the bottom plugging caps are connected to end portions of the connecting horizontal pipes in a plugging manner, side faces of the top plugging caps are also connected to end portions of the connecting horizontal pipes in a plugging manner, and the connecting horizontal pipes are in hinged connection to the fixed seats; the fixed seats at the top ends of the main support standpipes are connected via one support-

ing horizontal pipe, the fixed seats at the bottom ends of the main support standpipes are also connected via one supporting horizontal pipe, and the supporting horizontal pipes are in hinged connection to the fixed seats; 5
universal wheels are mounted at bottom portions of the main support standpipes and the detachable support standpipes; and fixed covers are mounted at openings of the fixed seats; 10
three fixed hooks are arranged on the detachable support standpipes, and pipe arms on sides of one or more groups of heating pipes are placed on the detachable support standpipes via the fixed hooks; and
a wire head box and a control box are arranged 15
at an exterior of one of the main support standpipes, the wire head box being configured to store a power plug, and a power supply for supplying power to the heating pipes being 20
mounted inside the control box; and electric wires on the heating pipes are connected to the control box by passing through pipe walls of the main support standpipes via an anti-winding device, and the electric wires on the heating 25
pipes are further connected to an external electric wire having a power plug.

2. The portable clothes dryer according to claim 1, wherein the anti-winding device comprises a mounting panel, a wire hole, and a separation structure, the mounting panel being a circular arc-shaped panel, the wire hole being disposed at a middle portion of the panel, and the separation structure being arranged at a middle portion of the wire hole to separate the wire hole into two holes; and the electric wires on the two heating pipes in one group pass through the two holes. 30
3. The portable clothes dryer according to claim 1 or 2, wherein the other ends of the connecting horizontal pipes are in reinforced connection to the detachable support standpipes via triangular brackets. 40

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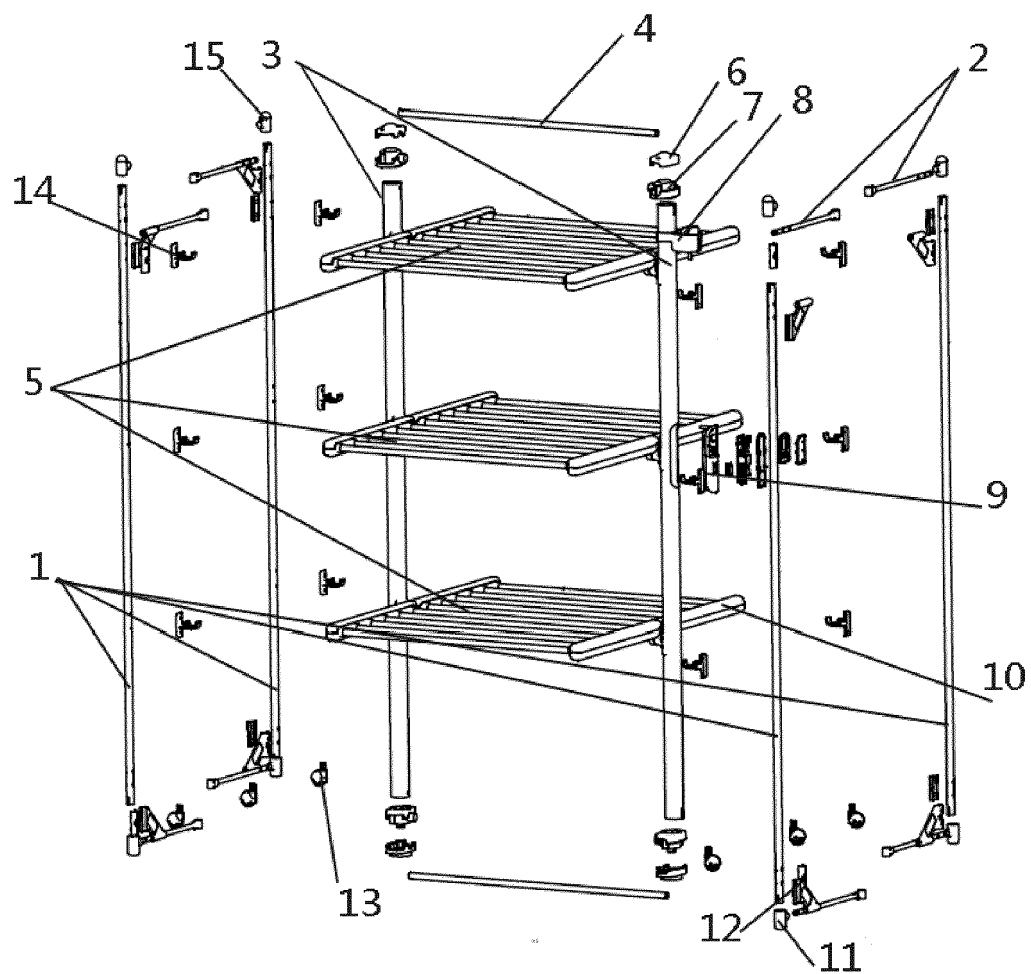


FIG. 1

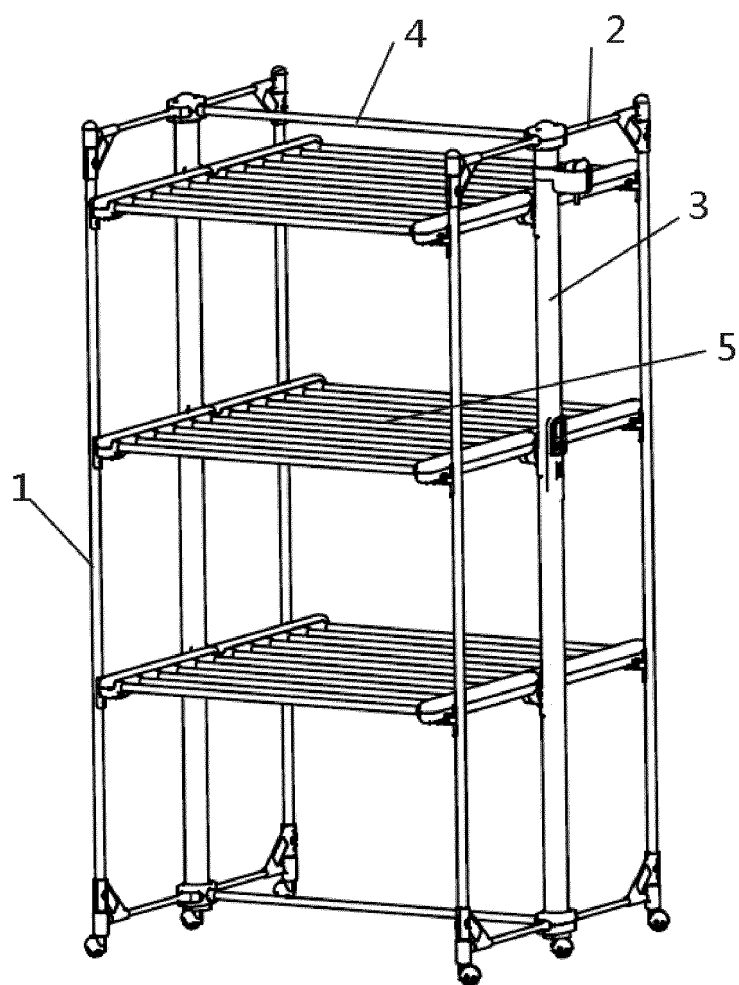


FIG. 2

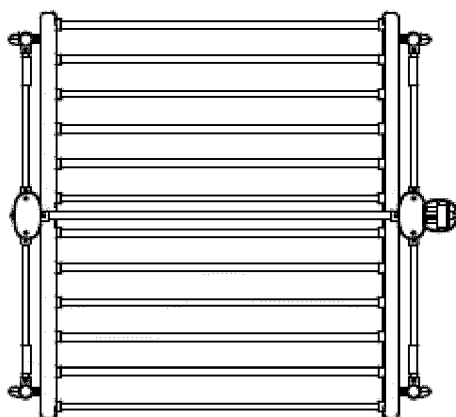


FIG. 3

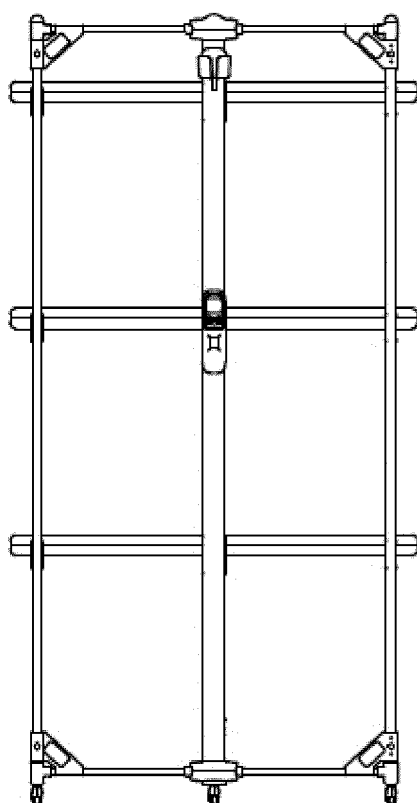


FIG. 4

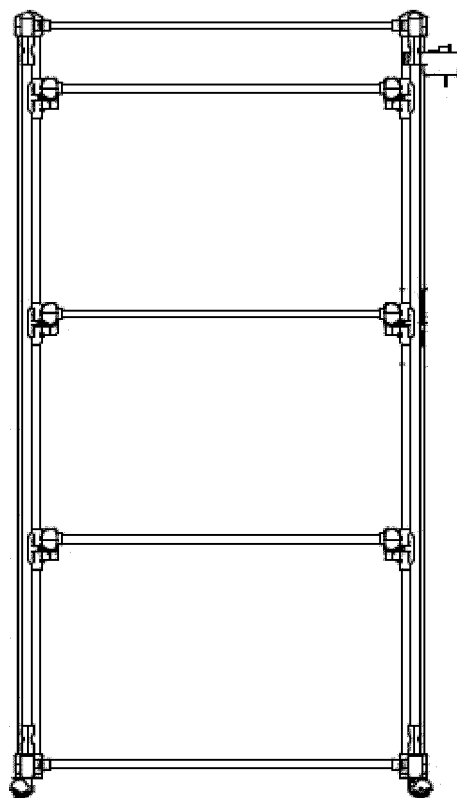


FIG. 5

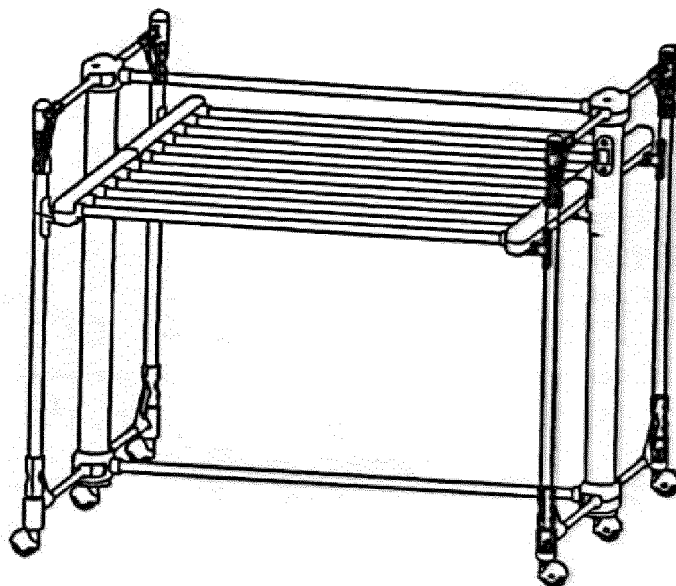


FIG. 6

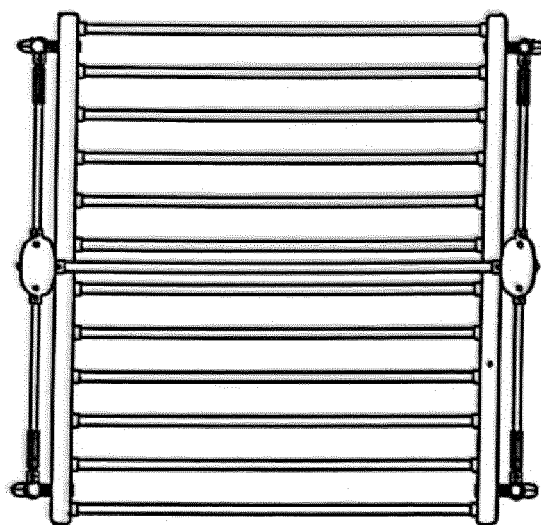


FIG. 7

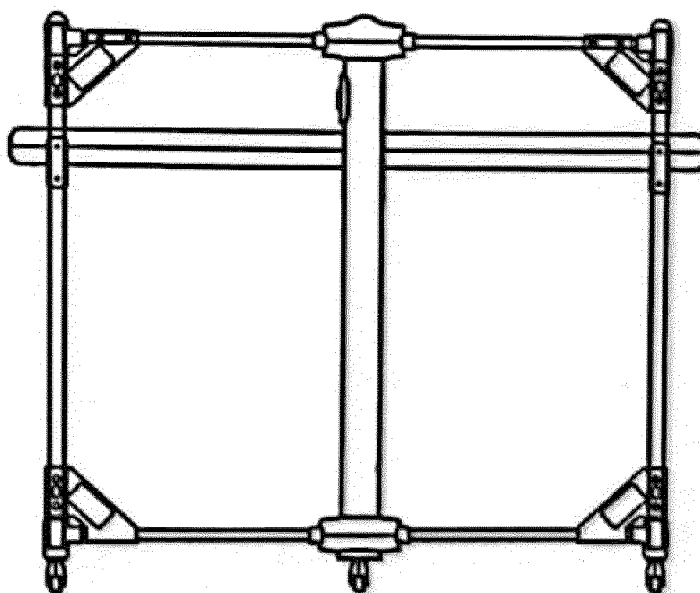


FIG. 8

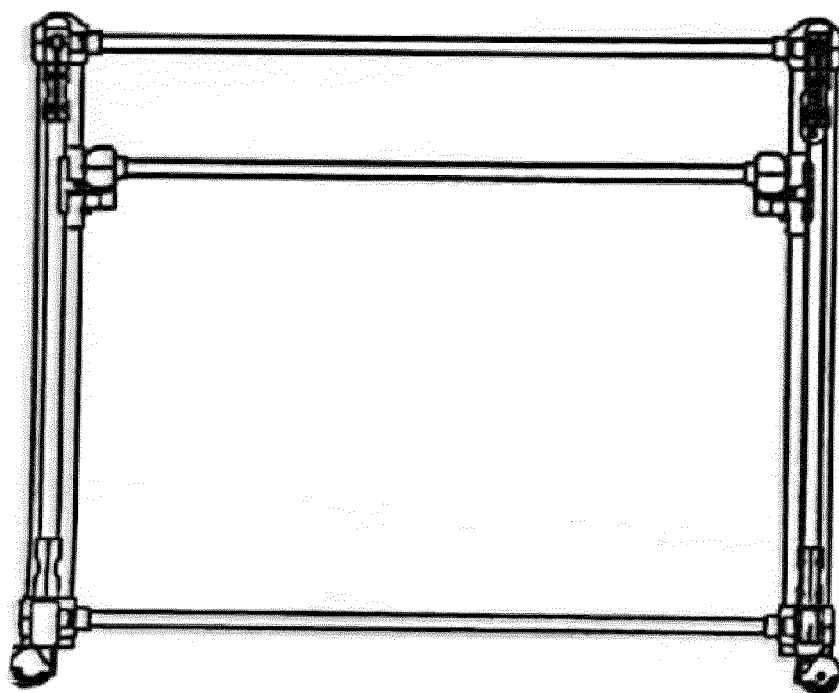


FIG. 9

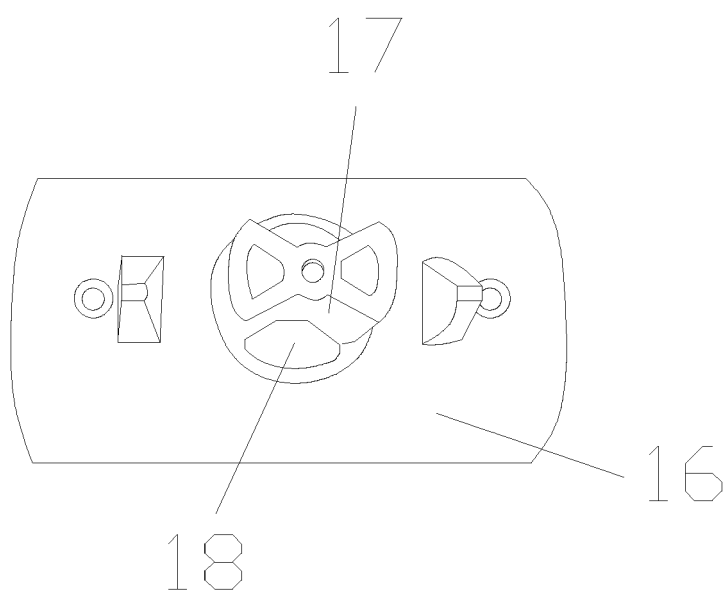


FIG. 10

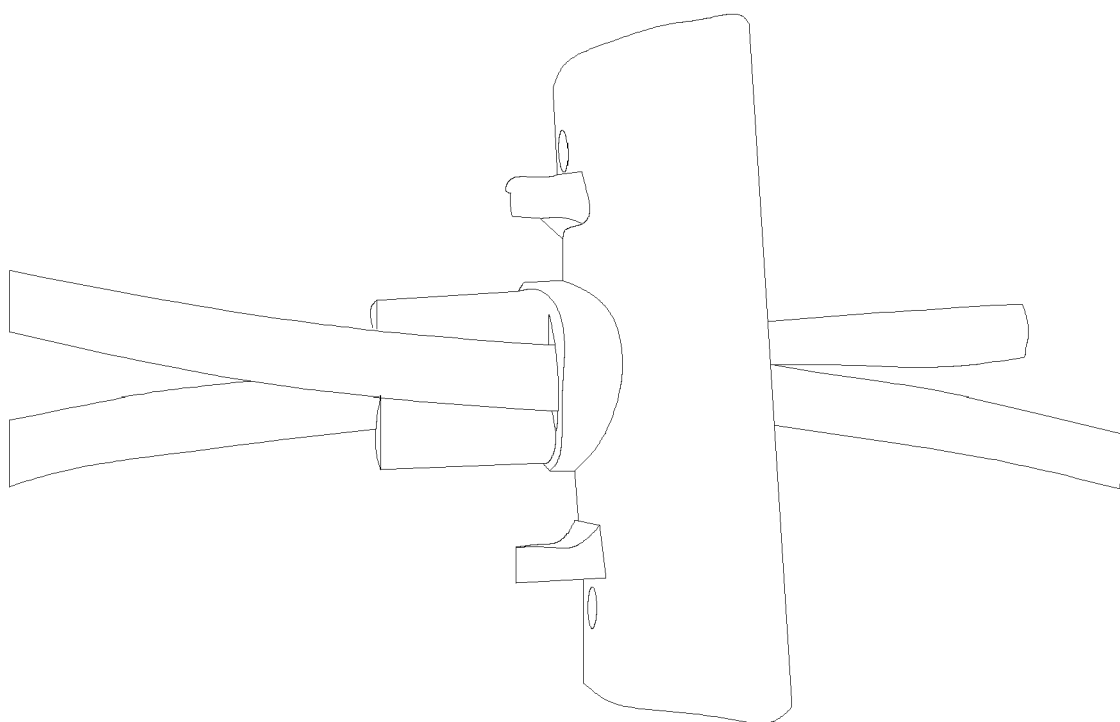


FIG. 11



EUROPEAN SEARCH REPORT

Application Number

EP 24 15 3556

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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		30 May 2024	Boyer, Olivier
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