

(No Model.)

R. P. & A. H. LAKE.
CLOTHES DRIER.

No. 422,949.

Patented Mar. 11, 1890.

Fig. I.

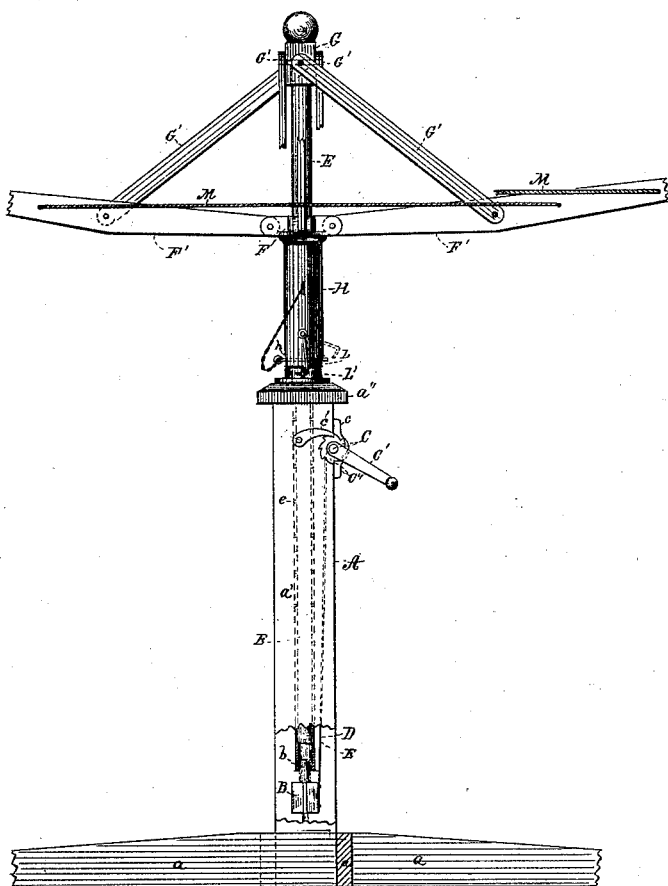
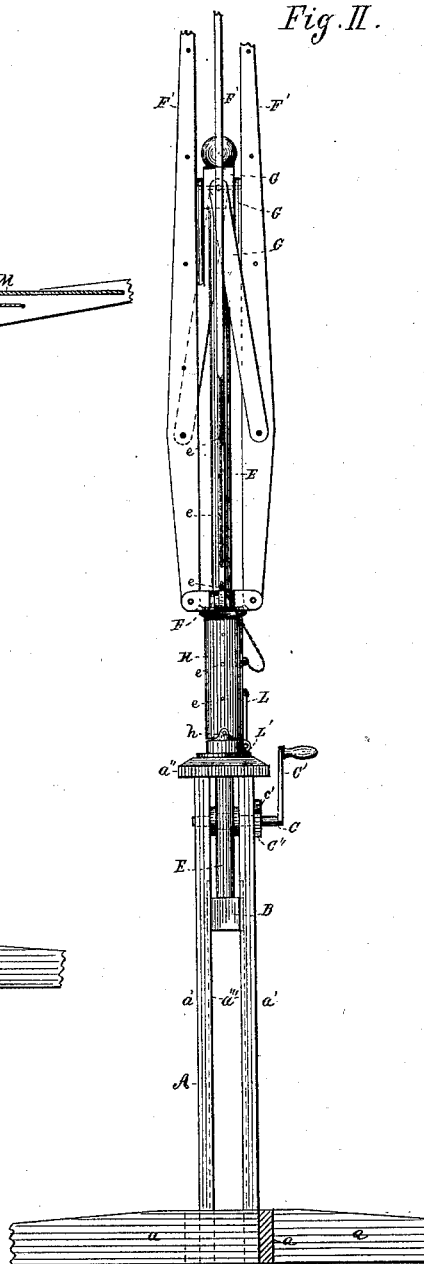


Fig. II.



Witnesses

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CLOTHES-DRIER.

SPECIFICATION forming part of Letters Patent No. 422,949, dated March 11, 1890.

Application filed May 24, 1888. Serial No. 274,947. (No model.)

To all whom it may concern:

Be it known that we, ROBERT P. LAKE and ALEXANDER H. LAKE, citizens of the United States, and residents of the city of Minneapolis, county of Hennepin, State of Minnesota, have invented a certain new and useful Improvement in Clothes-Driers, of which the following is a specification, reference being had to the accompanying drawings.

Our invention relates to that class of clothes-driers known as "adjustable folding reels;" and it consists in the construction hereinafter fully described, and particularly pointed out in the claims.

In the drawings, like letters referring to like parts, Figure I is a side elevation of our invention in position for folding or to receive its load of clothes, and Fig. II is a similar view when this reel is folded.

A is a supporting-pedestal of any suitable construction provided with guides for a vertically-adjustable block B. As shown, this pedestal is composed of suitable feet, as *a*, and a pair of parallel standards *a'*, rigidly secured thereto at a short distance apart, and bound together at their top by a perforated cap-plate *a''*. The inner opposing faces of the standards *a'* are provided with vertical grooves or ways *a'''*, constituting the guides for the block B. This block B fits snugly between the standards and is held in position by tenons or lugs on its ends working in said guides. From the upper surface of the block there projects a short shaft *b*, adapted to telescope within the reel-shaft, as hereinafter described.

C is a crank-shaft journaled in bearings *c*, fixed to the standards *a*, so that its center falls in line with the space between the standards, and is provided at one end with a crank *C'* and with a ratchet wheel or hub *C''*. To the standard, in proximity to the ratchet, is pivoted a gravity operating dog or pawl *c'*, adapted to engage with the teeth on the ratchet and hold it at any fixed point.

D is a flexible connection of any suitable kind, preferably a metallic strap, attached at one end to the under side of the block B, and at the other to the crank-shaft or windlass C.

E is the reel-shaft, which is provided with a hollow portion at its lower end, of a length

equal to or slightly greater than the projecting shaft on the block B, but which may otherwise be of any suitable construction. I preferably make it of gas-pipe.

F is the reel-hub loosely mounted on the shaft E, and provided with lugs to which the reel-arms F' are pivoted in the customary manner.

G is the brace-arm hub loosely mounted on a fixed bearing at the top of the staff in such a manner as to be free to turn, but not to move up or down on the shaft.

G' are the brace-arms pivotally connected to the hub G and to the reel-arms F'. The reel-shaft E is provided with holes *e*.

To the underside of the reel-hub is attached a sleeve H, of several inches in length, which is preferably composed of wood, and is provided at its lower end with a slot *h*.

K is a pin adapted to fit in the holes *e*.

L is a hook and L' is a staple, one of which is fixed to the pedestal and the other to the sleeve, for detachably locking the reel-hub and pedestal together to fold the reel. Any other suitable locking device might be used for the purpose.

M are the clothes-supporting lines attached to the reel-arms in the customary manner.

The operation is as follows: The reel-shaft passes through the perforated cap of the pedestal and telescopes over the projecting shaft on the block B. The cap *a''* and the shaft *b* therefore serve as keepers, preventing lateral displacement of the reel-shaft. If the block B is in its lowermost position, as in Fig. 1, the sleeve H will rest on the top of the pedestal and sustain the whole weight of the reel and the reel-shaft, the latter being suspended from the brace-hub G, entirely clear of any support from the block B. The effect is to force the outer ends of the reel-arms down to their lowermost limit, stretching the lines taut and keeping them so against any disturbance—such as the wind—as is desirable while the clothes are being suspended. After the clothes are on the line (the hook L being free from the staple L') the pin K is placed through the slot *h* and one of the holes *e* to prevent the reel-hub slipping downward on the reel-shaft by gravity or the effect of the wind. By then turning the crank the

block B is raised, receiving the weight of the reel and its load and carrying it to the desired elevation, where it will be held by the pawl *e'* engaging the ratchet *C''*. After the clothes are dry the pawl is thrown back and the windlass is unwound until the arms are brought to the desired level for the removal of the clothes, where it is again locked by the pawl, or, if in its lowermost position, is held by the sleeve H resting on the top of the pedestal. After the clothes have been removed the pin K is removed and the sleeve H is locked to the pedestal A by engaging L with L'. On winding up the windlass the reel-shaft will be forced upward, while the reel-hub remains stationary, thus folding the reel. The pin K may then be placed in one of the holes *e*, just above the reel-hub F, and the arms be thus locked in their folded position. The reel is then in its most convenient form for storage. All the operator has to do is to take hold of the sleeve H, after unlocking the hook from the staple, and by a lift the reel-shaft and reel may be removed from their pedestal.

The parts are all so proportioned as to bring them into the best possible position for convenient handling with the least possible labor. It is desirable to have the reel as large as possible, so as to carry the largest quantity of clothes. It must also be strong; otherwise it will be broken to pieces by the wind. It is also desirable to store it away to prevent injury to the lines or wires by exposure to the weather; hence it must not be too heavy to handle, and should fold into compact compass. When hanging up the clothes, the lines should be at the limit of the operator's reach when standing on the ground and be held taut. When drying, they should be at a higher position for the better clearance of passing objects. For convenience of removal after folded, the lift should be at a point below the level of the operator's head. All these ends are attained in our construction. The top of the pedestal is about on a level with women's shoulders. The sleeve H adds about an arm's reach to the elevation of the reel-arms when in their lowermost position.

The novel features of our construction over the state of the art are two, viz: our means for folding the reel in a positive manner by the windlass, and our means for throwing the whole weight of the reel-shaft on the brace-hub and through the brace-rods on the reel-arms at points beyond their fulcrum when the reel is in position to receive its load of clothes, thereby holding the arms firm and keeping the lines taut. These are very important points, affording a reel of greatly-increased efficiency and convenience of handling.

It should be further noted that our reel is handled with the greatest economy of movement. When the clothes are removed, all the operator has to do is to wind up the windlass,

and the reel is folded. The reel must be brought to its lowered position in order to take down the clothes. From that point a single vertical movement effects the folding. So in putting up the reel the block will be in its elevated position, in the most favorable location to receive the reel-shaft, and by a single vertical movement downward, unwinding the windlass, the reel is both unfolded and the weight of the shaft is thrown on the arm to hold the lines taut.

It will be understood, of course, that the pedestal may be of any other suitable form. All that is necessary is that it be provided with guides for the vertically-adjustable block, and have some kind of a keeper to assist in holding the reel-shaft against lateral displacement, and be provided with a stop or bearing piece for the sleeve when in its lowermost position.

It should be noted that the reel revolves freely either on the block B or on the top of the pedestal, according to which is sustaining its weight.

It will be understood that instead of the short shaft *b* telescoping within the hollow reel-shaft it might be hollow and telescope outside the reel-shaft. It amounts simply to a keeper co-operating with the perforated cap, which in this point of view is also simply a keeper to prevent lateral displacement of the reel-shaft.

What we claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination, with a pedestal having vertical guides and a perforated cap-plate, of a block mounted in said guides, a reel-shaft provided with a series of perforations passing through the cap-plate and seated on said block, a hub carried by the shaft and having a depending sleeve, and a locking-pin passed through the sleeve and into a perforation of the shaft, substantially as described.

2. The combination of the pedestal A, provided with the vertical guides *a'* and the perforated cap-plate *a''*, the block B, mounted in said guides and provided with the projecting shaft *b*, the crank-shaft C on said standard provided with crank *C'* and ratchet *C''*, the locking-pawl *c'*, the flexible connection D, attached at one end to said crank-shaft, and at the other to said block, the hollow reel-shaft E, passing through said cap-plate and telescoping over said shaft *b*, the reel-hub F, provided with the sleeve H, attached to its under side, the brace-hub G, the reel-arms F', pivoted to the reel-hub, the brace-rods G', pivoted to the reel-arms and brace-hub, the cords or wires M, and the hook and staple L L', substantially as and for the purpose set forth.

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In presence of—
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