June 7, 1932. C. W. MORDEN 1,861,871

CLOTHES DRIER

Filed Feb. 23, 1928 2 Sheets-Sheet 1

Fig. 1.

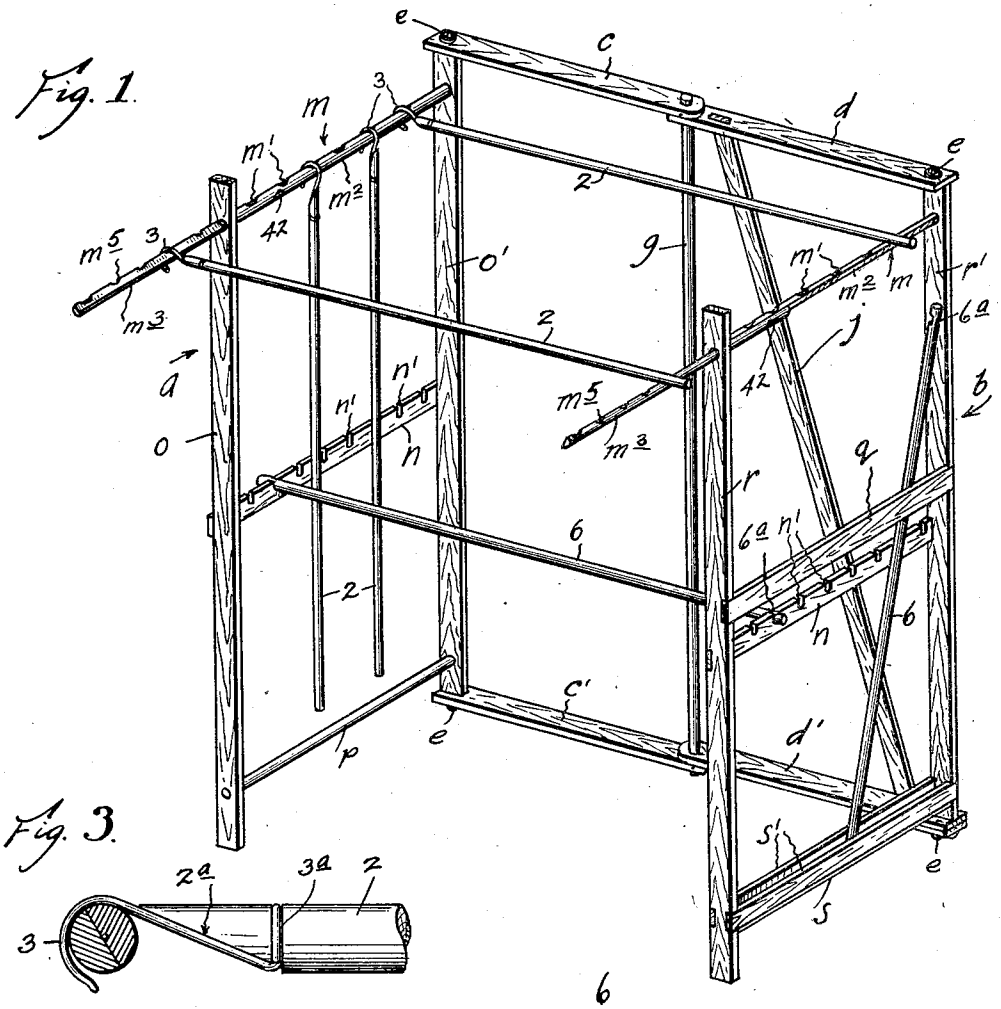


Fig. 3.

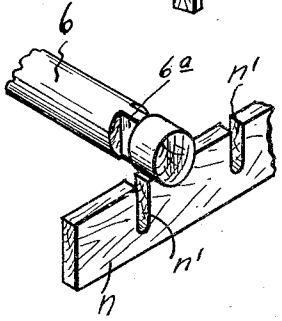


Fig. 4.

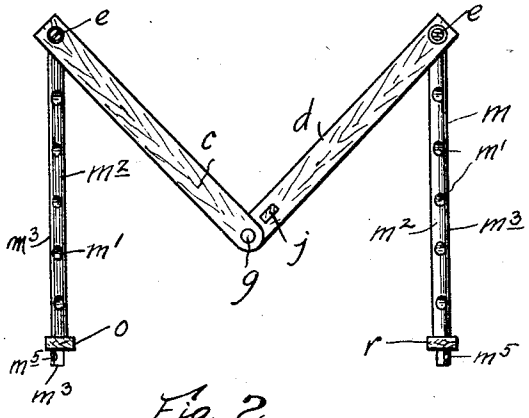


Fig. 2.

Inventor

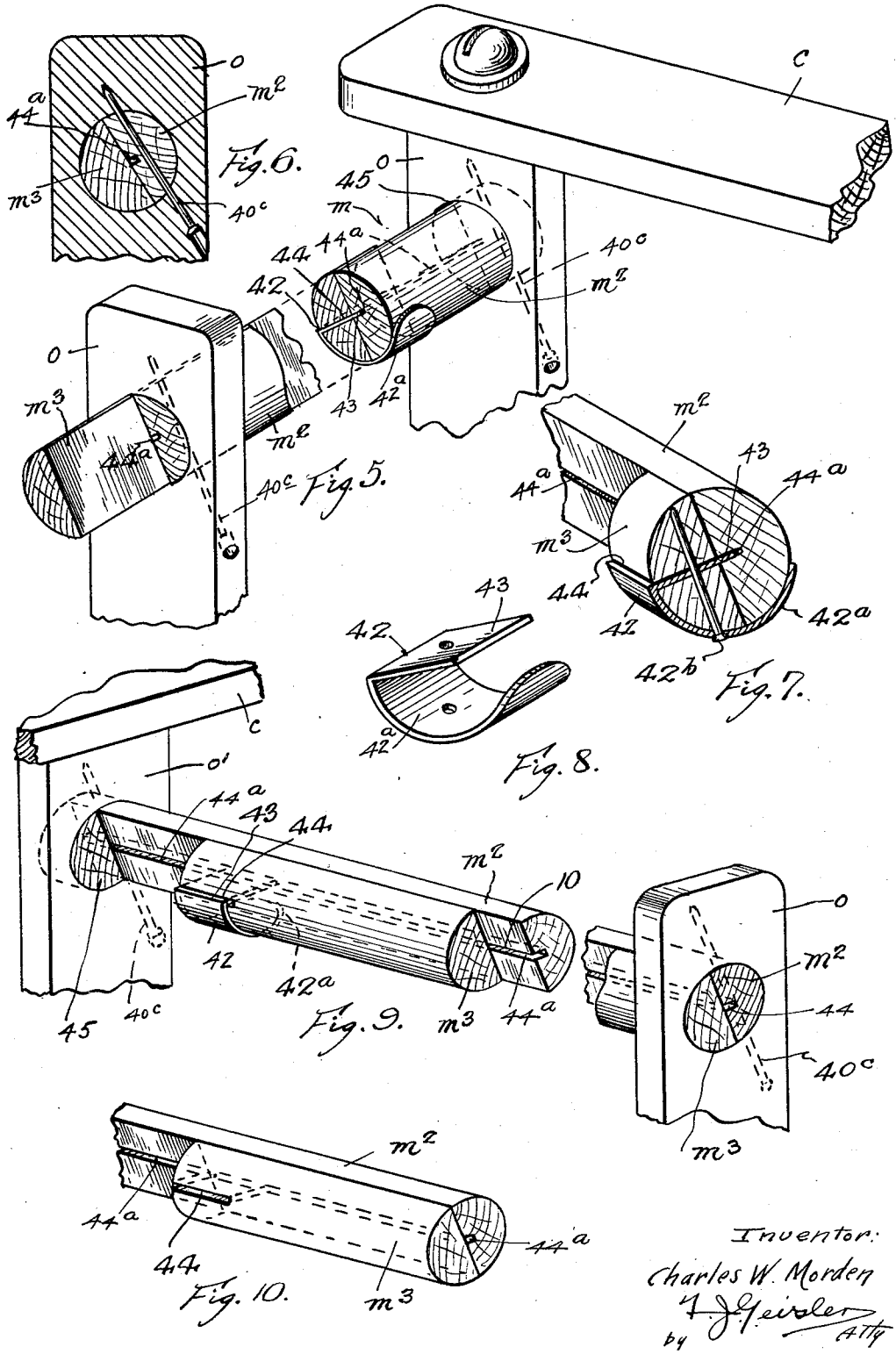
Charles W. Morden

by by Attorney

June 7, 1932. C. W. MORDEN 1,861,871

CLOTHES DRIER

Filed Feb. 23, 1928 2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

CHARLES W. MORDEN, OF PORTLAND, OREGON

CLOTHES DRIER

Application filed February 23, 1928. Serial No. 256,416.

My invention relates to clothes driers.

The object of my invention is to provide a simple and convenient structure in the form of a frame, preferably provided with foldable and extensible members, adapted to support movable clothes-hanging bars in horizontal position and including the following features:

Means are provided in connection with said supporting members and the clothes-hanging bars thereby supported by which the positioning of the latter is guided or fixed, so that the clothes hung from the bars will be spaced in such relation with each other and incidentally with the rear side of the drier as to assure ample circulation of air over both sides of the clothes and so speed the drying process; since, if wet clothes be hung and touch with each other, more or less, the drying will be greatly retarded

A further object of my invention is to provide means for preventing the clothes-hanging bars rotating on their axis on the supporting members of the drier, in order that when clothes are lapped over the bars for drying, a dependent heavier portion of the clothes on one side of the bar will not be capable of exerting a pull causing the clothes-bar to rotate, and thus cause the clothes to fall off the bar.

A further object of my invention is to provide for securing one end of the clothes hanging bars to one end of a supporting member by means functioning like a hinged joint so that the clothes hanging bars may be arranged in their clothes supporting position, that is, supported on said members, or pendent from one of the latter without detaching that end of the clothes bar which is secured to one of said members. In order to permit said arrangement of the clothes supporting bars, it is necessary to so proportion the parts of the clothes drier that the distance between its said supporting members is less and the elevation of the supporting member is greater than the length of said clothes supporting bars.

A further object of my invention is to so arrange the parts of the drier as to provide for storing the clothes supporting bars within the drier when the latter is arranged in its folded state; these means being adapted to secure the clothes hanging bars enclosed by and between the sides of the clothes drier when the latter is folded together; and to conveniently attain this object, it may be found preferable that the clothes hanging bars be detachably as well as hingedly fixed at one end to one of said supporting members.

A further object of my invention is to provide one end of the clothes hanging bars with special and convenient means for detachably and hingedly fixing the same to one of said members and to accomplish such result, I have provided a special form of hook preferably made of wire and which may be readily and firmly secured to the ends of the clothes hanging bars.

The forgoing features of my invention as well as incidental features, the construction and operation of my invention are hereinafter fully described with reference to the accompanying drawings, in which:

Fig. 1 shows a perspective view of my clothes drier as it appears when stood up for use with some of the clothes hanging bars arranged to hang clothes thereon, and others hanging pendent;

Fig. 2 shows a diagrammatic top plan view of my clothes drier and illustrates how it is folded on itself;

Figs. 3 and 4 show the details of construction of the clothes hanging bars;

Fig. 5 is a fragmentary sectional detail of one side-section of my drier, and a portion of the upper horizontal member of the back section to which the side section is pivoted;

Fig. 6 is a section of one of the uprights of a side section and of the longitudinally divided extensible cross bar supported by such upright, and shows the pin by which the upper section of the longitudinally divided cross bar is secured against movement in the upright;

Fig. 7 is a sectional fragmentary detail illustrating the mode in which the clip functions, by which the lower section of the longitudinally divided cross bars is slidably secured to the lower segment of the upper sec-

tion only, so as to provide a continuous even surface at the top of the upper section;

Fig. 8 is a perspective detail of said clip;

Fig. 9 is a fragmentary detail, similar to Fig. 5, and further illustrates how the clip, shown in Fig. 8, functions to slidably hold the lower movable section to the upper fixed section of the longitudinally divided cross bar; and

Fig. 10 is a fragmentary sectional perspective of one of the longitudinally divided cross bars.

With reference to the figures, my clothes drier comprises lateral frame sections *a* and *b*, hinged together by transverse members *c*, *c'* and *d*, *d'*, pivotally fastened at the respective ends to the top and bottom of the lateral frame sections *a* and *b*, by locked pins and washers *e* Fig. 1, and connected at their adjacent ends by a vertical rod *g*, inserted in holes bored in the said members.

The transverse members *d*, *d'* are arranged within the planes of the members *c*, *c'*, Fig. 1 to facilitate the folding of the lateral frame sections *a*, *b*, see Fig. 2. A diagonal brace member *j* is provided between the member *d*, *d'* for strength and rigidity.

The lateral frame section *a* comprises vertical spaced supports *o*, *o'*, a top cross bar *m*, an intermediate cross piece *n* provided with spaced notches *n'* and a lower cross bar *p*, the latter serving solely to strengthen the said frame section. The lateral frame section *b* is similar to the frame section *a* except that an extra intermediate cross brace *q* is provided fixed to the outer edges of the vertical supports *r*, *r'* and a lower cross bar *s* is fixed to the opposite inner sides of the said supports. Cross pieces *s'* are fixed to each side of the supports, adjacent the cross bar *s* thus forming a channel or trough, the purpose of which is hereinafter fully described.

A number of clothes hanging elements are provided consisting of cylindrical bars 2 beveled on one end as at 2*a* and provided with Z-shaped hooks 3 formed of stiff wire and bent at their basal ends to form a groove about the bars 2, the latter arranged in a groove 3*a* and the shank of the hook bearing against the beveled portion of the clothes bar end.

The clothes hanging bars are adapted to be hooked on the cross bar *m* of the lateral frame section *a* and permitted to hang pendent when not in use in the space enclosed by the vertical spaced supports *o*, *o'* and when in use to be arranged horizontally, their free ends resting on the other cross bar *m* of the lateral frame section *b*.

Supplementary clothes hanging bars 6 are provided formed with opposite square annular notches 6*a* at each end which when in use are adapted to be arranged in the notches *n'* in the intermediate cross pieces *n* and when not in use to be arranged in the space between the cross piece *n* and the cross brace *q* of the lateral frame section *b* with their lower ends resting in the before mentioned channel formed by the cross braces *s*, *s'*.

Thus, by this arrangement and construction, when my clothes drier is folded it will occupy very little space and enclose and contain all its removable parts, the clothes hanging bars 2 hanging vertically from the cross bar *m* of the lateral frame section *a* and the supplementary clothes bars 6 being arranged as above described between the supports *r*, *r'* of the lateral frame section *b*.

When my clothes drier is unfolded and set up, as illustrated in Figs. 1 and 2, the clothes hanging bars 2 are permitted to hang pendent until used, then they are raised one at a time and their free ends rested on the other cross member *m*, as the clothes are hung on them. It is convenient to use the cross bars 2 nearest the transverse members *c*, *c'*, *d*, *d'* and the others successively, thus avoiding the necessity of moving the clothes hanging bars one over the other and thus saving time and annoyance.

Spaced notches *m'* are provided on the cross bars *m* in which the clothes hanging bars 2 may be conveniently rested, serving to automatically space them apart to permit the satisfactory circulation of air between the clothes hung thereon.

The length of the clothes hanging bars is slightly greater than the space between the said lateral frame sections when unfolded in order that they may be supported at each end on the cross members *m*, but the height of the lateral frame section *a* is greater than the length of the cross bars, so that when the said cross bars are hanging pendent, they will not touch the floor.

Also, if small pieces are being washed, such as napkins, for example, the clothes hanging bars 6 may be used which will be supported by the intermediate cross pieces *n* in the notches *n'*.

The clothes hanging bars 6 also serve when seated in the notches *n'* to maintain the lateral frame sections *a*, *b*, spaced apart properly and to provide the requisite rigidity to the drier when unfolded.

By this construction of the hooks 3 which are curved to engage one half of the support of the cross bar *n*, the weight of the clothes hung over them will not tend to rotate the bars should there be more weight on one side than on the other with the result that the clothes would fall off. The said hooks are also intended to provide a hinge-like connection between the clothes hanging bars 2 and one of the cross bars *m*, whereby to permit the clothes hanging bars to be swung into and out of their active or clothes supporting position without being disengaged from the said cross bar *m*; at the same time such disengagement is facilitated if it should be de-

sired to remove a clothes hanging bar from the cross bar to which it is hingingly connected as mentioned.

The top cross bars *m* are extensible and are divided longitudinally into halves *m*2, *m*3. The half *m*2 is secured to the vertical supports *o*, *o'*, and *r*, *r'*, respectively, the other half *m*3 being slidably secured to the half *m*2 by clips 42. This clip has a curved tongue 42*a* and is also provided with a straight tongue 43 inserted through a slit 44 in the half *m*3 and bearing in a longitudinal groove 44*a* provided in the flat bearing face of the half *m*2. Semi-cylindrical filler sections 45 are secured in the rearward vertical supports *o'*, *r'* to hold the cross bars securely in place. The clip 42 is held against longitudinal displacement on the half *m*3 by a nail 42*b*.

The opposed faces of the cross bars *m*2, *m*3 are located in a plane so disposed that the top surface of the half *m*2 touches the horizontal plane not touched by the half *m*3.

In other words, the fixed half *m*2 overlies the movable half *m*3 between the said upright supports *o*, *o'*, *r*, *r'*. Thus, the top surface of the half *m*2 supports the clothes hanging rods free from interference through the top of the half *m*3 so that the half *m*3 may be relatively moved on the half *m*2 without disturbing the clothes hanging bars resting thereon.

Furthermore, the tongue 42*a* of the clip 42 is adapted to extend a considerable distance around the lower portion of the clothes bar half *m*2 whereby they are held firmly in sliding engagement and an obstruction or stop such as a staple 10 or the like is inserted in the groove 44*a* adjacent the supports *o*, *r*, to prevent the half *m*3 from being drawn completely out of the clothes hanger.

Notches *m*5 are also provided in the half *m*3 similar to the already described notches *m'* in the half *m*2 to similarly space the clothes hanging bars 2 which may be supported thereon.

By this construction additional clothes hanging space is provided as when the half *m*3 of the cross bars *m* are extended additional clothes hanging bars may be thus supported.

Thus I have provided a simple and convenient structure in the form of a frame provided with sections adapted for supporting movable clothes hanging bars in two horizontal positions: The first a position where the clothes may be readily placed on the bar or removed therefrom without interference from other bars; and the other, a horizontal position, spaced from the first in which position the bar is left, while the clothes are being dried, said structure being so arranged that the members adapted for supporting the clothes are extensible, in order to permit the occupancy by the drier of a floor space proportioned to the number of clothes to be dried and which permits the drying of a large quantity of clothes in a limited space.

I claim:

1. In a clothes drier, a frame comprising uprights and cross-bars, certain of the latter divided longitudinally into fixed and movable complementary sections relatively slidable one on the other, and a clip connecting the end of the movable section to the fixed section of said longitudinally divided cross-bar between said uprights, said clip having a semi-circular portion terminating at one end in an inturned radial tongue bearing in a longitudinal groove provided in the fixed section of said cross-bar, the said semi-circular portion of said clip encompassing only the lower portion of the fixed section of said cross-bar.

2. In a clothes drier, a frame comprising uprights and cross-bars, certain of the latter divided longitudinally into fixed and movable complementary sections relatively slidable one on the other, a clip connecting the end of the movable section to the fixed section of said longitudinally divided cross-bar between said uprights, said clip having a semi-circular portion terminating at one end in an inturned radial tongue bearing in a longitudinal groove provided in the fixed section of said cross-bar, the said semi-circular portion of said clip encompassing only the lower portion of the fixed section of said cross-bar, and the said longitudinal division of said cross-bar being arranged to lie in a diametric plane turned several degrees from the vertical, whereby the fixed section overlies the movable section of said cross-bar and provides a continuous even supporting surface.

3. In a foldable clothes drier, side sections comprising spaced uprights and cross-bars connecting the uprights, and a back section comprising upper and lower horizontal members foldable one over the other, between the opposed faces of which members one of the uprights of each side section is pivoted, the width of the uprights of said side sections being sufficiently great to provide a space therebetween for housing a clothes hanging bar and certain of the cross bars being secured to the outer sides of the uprights so that these cross bars will furnish additional housing means when the drier is folded together.

4. In a clothes drier, a frame comprising uprights and cross bars, certain of the latter divided longitudinally into complementary sections, one of said sections sliding on the other, and means securing one end of the movable section to the other section between said uprights, said means having sliding engagement with the lower segment of the latter section only, the longitudinal division of said cross bars being arranged to lie in a diametric plane turned several degrees from the vertical, whereby the relatively stationary

section overlies the movable section to provide a continuous, even, uninterrupted surface at the top of the cross bar.

5. In a clothes drier, a cross-bar divided longitudinally into complementary sections, one thereof slidably extensible on the other, and means securing one end of the slidable section to the other section, said means having sliding engagement with the lower segment of the latter section only, the longitudinal division of said cross-bar being arranged to lie in a diametric plane turned several degrees from the vertical, whereby the relatively stationary section overlies the movable section to provide a continuous, uninterrupted, even surface at the top of the cross-bar.

6. In combination with a clothes drier comprising cross-bars arranged for supporting clothes-hanging bars pendent in one position, a clothes hanging bar provided at one end with a hook having a shank terminating in a transverse loop encompassing the clothes hanging bar, the extremity of said end being provided with a plane face, and the said shank bearing on such face, whereby the hook is held against relative rotation on the clothes hanging bar.

7. In combination with a clothes drier comprising cross-bars arranged for supporting clothes hanging bars pendent in one position, a clothes hanging bar provided at one end with a hook having a shank terminating in a transverse loop encompassing the clothes hanging bar, the extremity of said end being beveled longitudinally and the said shank bearing on such surface, whereby the hook is held against relative rotation on the clothes hanging bar.

CHARLES W. MORDEN.