Nov. 7, 1939. M. E. KALKS 2,179,216

CLOTHES DRIER

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Fig. 1.

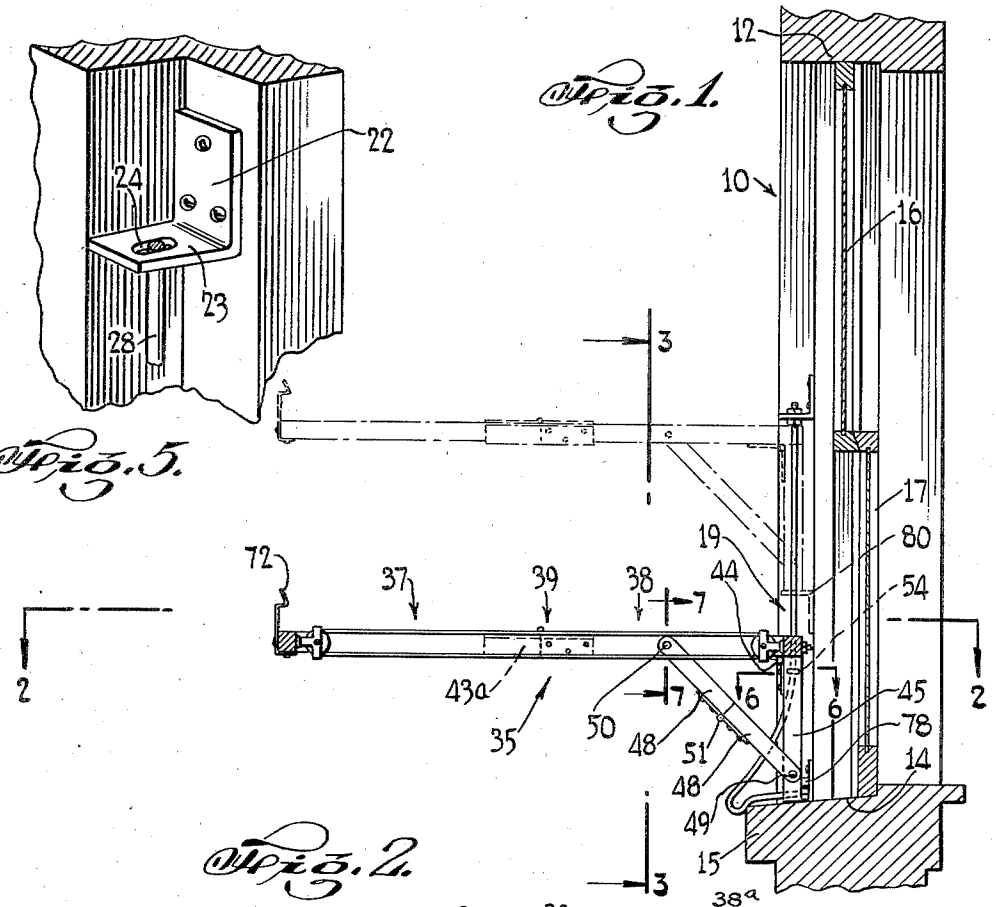


Fig. 5.

Fig. 2.

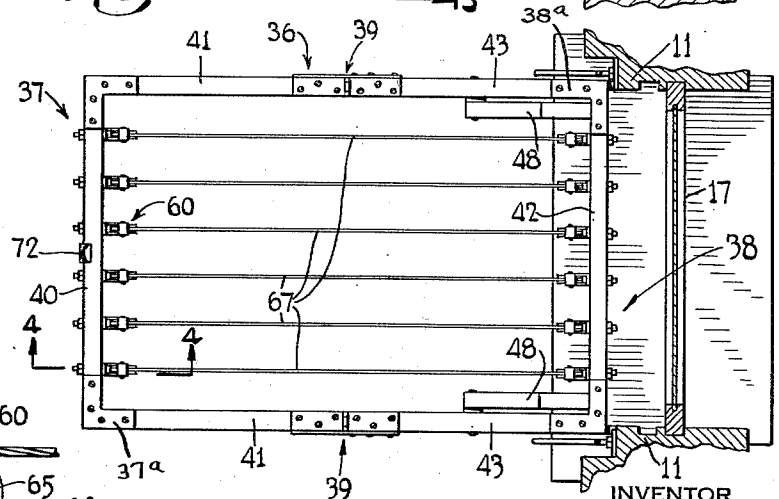
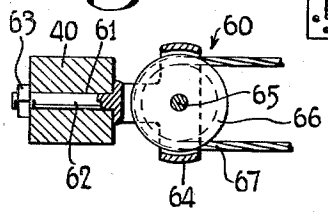


Fig. 4.



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Fig. 3.

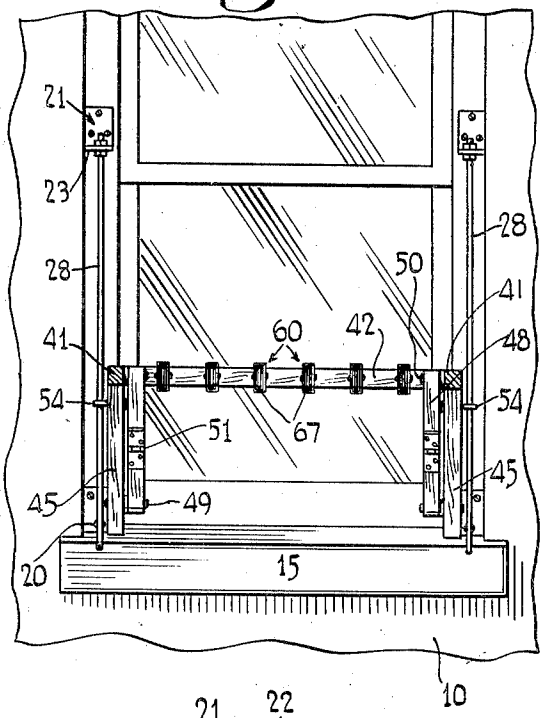


Fig. 6.

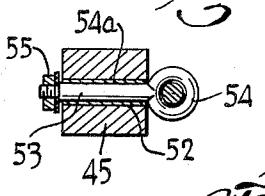


Fig. 10.

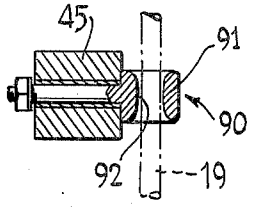


Fig. 11.

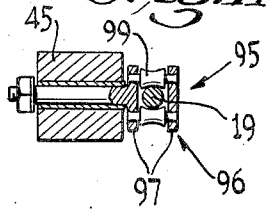


Fig. 8.

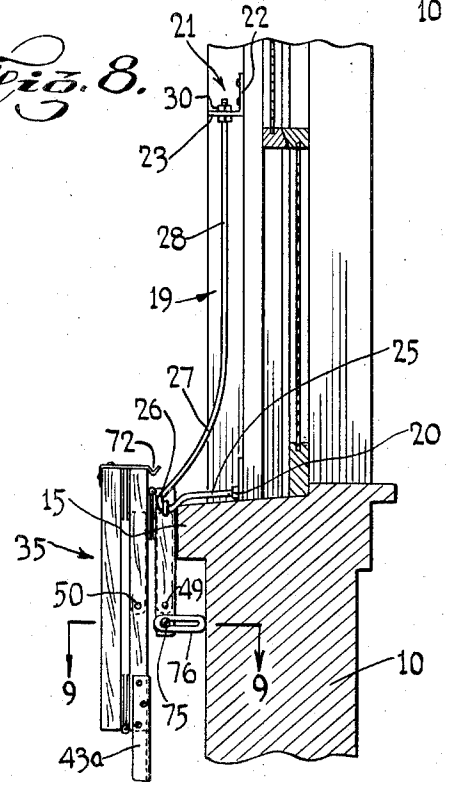


Fig. 7.

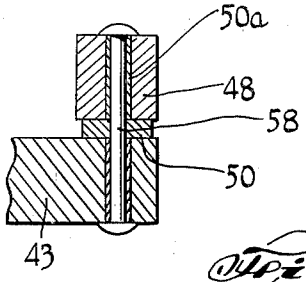
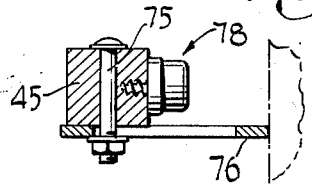


Fig. 9.



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UNITED STATES PATENT OFFICE

2,179,216

CLOTHES DRIER

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Application March 29, 1938, Serial No. 198,739

11 Claims. (Cl. 211—99)

This invention relates to clothes driers.

An object of this invention is to provide a collapsible clothes drier mounted at a window and adapted to be supported in various positions to suit the user, said clothes drier being so constructed that the same may be collapsed or folded compactly against the building wall, means being provided to hold the same in collapsed condition.

Another object of this invention is to provide a strong, rugged and durable clothes drier of the character described, which shall be easy to collapse, set up or adjust, which shall be relatively inexpensive to manufacture, easy to install, attractive in appearance, and yet practical and efficient to a high degree.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawings, in which is shown one of the various possible illustrative embodiments of this invention,

Fig. 1 is a side, elevational view of a window provided with a clothes drier embodying the invention;

Fig. 2 is a cross-sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a cross-sectional view taken on line 3—3 of Fig. 1;

Fig. 4 is an enlarged, cross-sectional view taken on line 4—4 of Fig. 2;

Fig. 5 is a perspective view of a portion of the window frame, and the bracket supporting one of the guide rods;

Fig. 6 is an enlarged, cross-sectional view taken on line 6—6 of Fig. 1;

Fig. 7 is a cross-sectional view taken on line 7—7 of Fig. 1;

Fig. 8 is a view similar to Fig. 1, but showing the clothes drier in collapsed position;

Fig. 9 is a cross-sectional view taken on line 9—9 of Fig. 8;

Fig. 10 is an elevational, cross-sectional view of the swivel joint shown in Fig. 6, but illustrating a modified construction; and

Fig. 11 is a cross-sectional view similar to Fig. 6, but illustrating a still further modified construction.

Referring now in detail to the drawings, 10 designates a window frame in the window opening of a building wall, said frame having side portions 11, a top portion 12 and a bottom portion 14, adjacent the window sill 15. In the frame are slidably mounted double hung window sashes 16 and 17.

Mounted on the side portions 11 of the window frame, in the manner hereinafter appearing, are a pair of similar guide rods 19, disposed in parallel planes perpendicular to the window frame. Each guide rod 19 is supported at its lower end by a bracket 20 disposed on the frame portion 11, adjacent the window sill. The upper end of each guide rod 19 is supported by an L-shaped bracket 21 attached to a side portion of the window frame, somewhat above the middle of the frame. The bracket 21 has a wall 22 fixed to the window frame, and a wall 23 extending outwardly therefrom and formed with a slot 24, perpendicularly to the plane of the window sash.

Each guide rod 19 comprises a bottom horizontal portion 25 disposed perpendicularly to the window frame, the rear end of said portion 25 being fixed to the bracket 20 in any suitable manner. Extending from said portion 25 is a downwardly and upwardly curved portion 26 extending beyond the window sill and preferably contacting the same. Extending from said portion 26, is an upwardly and inwardly curved portion 27, from which there extends, a vertical portion 28, the upper end whereof passes through the slot 24, and is fixed to the bracket 21 by a pair of lock nuts 30. The guide rods 19 may be slightly adjusted by loosening the lock nuts and moving the upper end of the rod within the slot 24, and then again tightening the lock nuts in adjusted position.

Supported by the guide rods 19 is a collapsible clothes drier 35 embodying the invention. The drier 35 comprises a rectangular frame 36 made of two substantially similar, symmetrically disposed parts 37 and 38, hinged together as at 39.

The part 37 has an end portion 40 and side portions 41. The part 38 has an end portion 42, parallel to the end portion 40, and side portions 43 aligned with the side portions 41. The hinges 39 interconnect the ends of portions 41 with the adjacent ends of portions 43. The part 37 may be swung on the hinges 39 into position overlying the part 38. The hinges 39 are constructed to permit swinging movement of the part 37 relative to the part 38 through an angle of 180 degrees. Fixed to the forward ends of portions 43, are plates 43a of angular, transverse cross-section, projecting beyond said portions 43 to engage the adjacent ends of portions 41 when the drier is in use.

Hinged to the portions 43 of the part 38, and adjacent portion 42 of the latter, as by hinges 44, are legs 45 adapted to be swung relative to said portions 43 through an angle of 90 degrees. Each leg 45 is connected to adjacent portion 43 by a pair of links 48 pivotally connected to said leg and portion, as at 49 and 50 respectively, and hinged together at the inner ends thereof by hinge 51. Said links 48 are preferably located on the inside of legs 45, and portions 43.

Each leg 45 is formed with a horizontal through opening 52 disposed parallel to the window sash. Swivelled in each opening is the shank portion 53 of an eyelet 54, retained on said leg by a nut 55 screwed to said shank. The guide rods 19 pass through the eyelets 54.

As shown in Fig. 1 of the drawings, the drier may be supported by the window sill and guide rods 19 with the lower ends of the legs 45 contacting the window sill and the frame 36 in horizontal position, and extending outwardly away from the window.

Means is provided for supporting clothes on the frame 36. To this end, there is attached to the portions 40 and 42 of the frame parts 37 and 38, a plurality of pairs of aligned pulleys 60. Said portions 40 and 42 may be formed with through openings 61, and the pulleys 60 may be provided with shank portions 62, extending through said openings, and fixed to said portions by nuts 63. Extending through each shank 62 is a cage 64 supporting a shaft 65, on which a pulley wheel 66 is rotatably mounted. Clothes lines 67 interconnect pulleys 66 in the usual manner.

It will now be understood that a person standing within the room and lifting the lower window sash will have access to the clothes drier, and clothes may be easily hung or removed from the clothes lines 67.

The drier 35 may be collapsed to the position shown in Fig. 8 of the drawings, against the outside of the window sill, closely adjacent to the building wall 70. To collapse the drier, the part 37 is swung over onto the part 38. The hinged links 48 are then pressed upwardly to swing the part 38 downwardly, relatively to the legs 45. The legs may be swung outwardly to clear the window sill, and the entire drier may then be moved downwardly with the eyelets 54 sliding down on the curved portions 27 of the guide rods, to the position shown in Fig. 8.

It will be noted that the eyelets 54 are swivelled to the legs 45 so as to turn as the eyelets move onto the curved portions 26 of the guide rods.

Fixed to the portion 40 of the part 37 is a spring clip 72 adapted to engage the portion 42 of the part 38 to hold the parts 37 and 38 together, as illustrated in Fig. 8 of the drawings.

Fixed to the legs 45 are bolts 75 carrying slotted members 76 adapted to engage the building wall 70, when the drier is in collapsed position, as shown in Figs. 8 and 9 of the drawings. When the drier is in use, the members 76 may be moved against the legs 45 so as not to protrude therefrom and fixed in such position by bolts 75.

Rubber bumper members 78, fixed to the legs 45, are adapted to contact the side portions of the window frame when the drier is in use, as shown in Fig. 1.

Fixed to the side portions 11 of the window frame, above the window sill, are brackets 80 located just inside of the guide rods 19. The clothes drier 35 may be lifted to the dot, dash line position of Fig. 1 so that the legs 45 will rest on the brackets 80. The clothes drier may thus be supported at a higher level if desired.

Metal bushings 54*a* may be placed on the shank 53 of the eyelets 54 to facilitate swivelling of said eyelets. Bushings 50*a* may also be placed on the pivoted pins 49 and 50 to facilitate pivotal movement of the links 48. Washers 50*b* may be placed on the pivot pins 49 and 50, and between the links 48 and the portions 43 of part 38, and legs 45.

In Fig. 10 there is illustrated a modified form of swivel. The swivel 90 shown in Fig. 10 has a cylindrical head 91, formed with a diametrical through opening 92, to receive the guide rods 19.

In Fig. 11 there is illustrated a still further modified form of swivel. The swivel illustrated in Fig. 11 has a head 96 comprising a pair of parallel plates 97 interconnected by parallel rollers 99. The guide rods 19 pass between the rollers 99, as shown in Fig. 11.

Flat L-shaped corner brace plates 37*a* and 38*a* may be fixed to the top and bottom corners of the frame parts 37 and 38.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In combination, a pair of similar aligned guide rods disposed in parallel planes and adapted to be fixed to the side portions of a window frame, each guide rod having a bottom forwardly extending horizontal portion adapted to extend beyond a window sill, an upwardly and rearwardly curved portion extending from said first portion, and a vertical portion extending from said last portion, a collapsible clothes drier, and a pair of eyelets swivelled to said clothes drier and receiving said guide rods therethrough.

2. In combination with a pair of guide rods adapted to be attached to a window frame and disposed in vertical parallel planes, a clothes drier comprising a frame having a pair of parts hinged together and adapted to be moved to superimposed positions, one with respect to the other, legs hinged to one of said parts, adapted to rest on a window sill and support the frame of the drier, links interconnecting said legs with said part, eyelets swivelled to said legs and receiving said guide rods therethrough, and pulleys on said frame parts interconnected by clothes lines.

3. In combination with a pair of guide rods adapted to be attached to a window frame and disposed in vertical parallel planes, a clothes drier comprising a frame having a pair of parts hinged together and adapted to be moved to superimposed positions, one with respect to the other, legs hinged to one of said parts, adapted to rest on a window sill and support the frame of the drier, links interconnecting said legs with said other part, eyelets swivelled to said legs and receiving said guide rods therethrough, and pulleys on said frame parts interconnected by clothes lines, said guide rods having curved portions extending away from the window frame, and adapted to extend beyond a window sill.

4. In combination a pair of guide rods adapted to be attached to the side portions of a window frame within a window opening, and disposed in vertical planes perpendicular to said frame, said guide rods having upper vertical portions, and portions extending from said vertical portions, and curved downwardly and outwardly, and adapted to extend beyond a window sill, a clothes drier comprising a frame having two similar, symmetrically disposed parts, hinged together at adjacent ends, pulleys on said parts carrying

clothes lines, legs pivoted to one of said parts, adapted to rest on a window sill and support the frame of a drier, and interconnected to said parts by links, and eyelets on said legs receiving said guide rods.

5. In combination a pair of guide rods adapted to be attached to the side portions of a window frame within a window opening, and disposed in vertical planes perpendicular to said frame, said guide rods having upper vertical portions, and portions extending from said vertical portions, and curved downwardly and outwardly beyond the window sill of the window opening, a clothes drier comprising a frame having two similar, symmetrically disposed parts, hinged together at adjacent ends, pulleys on said parts carrying clothes lines, legs pivoted to one of said parts, and interconnected to said part by links, and eyelets on said legs receiving said guide rods, said legs being adapted to engage said window sill for supporting said last mentioned frame in horizontal position, and means fixed on the side portions of said last mentioned frame and disposed above said window sill, adapted to be engaged by said legs for supporting said clothes drier in raised position.

6. In combination a pair of guide rods attached to the side portions of a window frame and disposed in vertical planes perpendicular to said frame, said guide rods having upper vertical portions, and portions extending from said vertical portions, and curved downwardly and outwardly beyond the window sill, a clothes drier comprising a frame having two similar, symmetrically disposed parts, hinged together at adjacent ends, pulleys on said parts carrying clothes lines, legs pivoted to one of said parts, and interconnected to said part by links, eyelets on said legs receiving said guide rods, said legs being adapted to engage said window sill for supporting said last mentioned frame in horizontal position, and rubber bumpers attached to said legs and adapted to contact the side portions of said window frame, when said legs rest on the window sill.

7. In combination a pair of guide rods adapted to be attached to the side portions of a window frame and disposed in vertical planes perpendicular to said frame, said guide rods having upper vertical portions, and portions extending from said vertical portions, and curved downwardly and outwardly beyond the window sill, a clothes drier comprising a frame having two similar, symmetrically disposed parts, hinged together at adjacent ends, pulleys on said parts carrying clothes lines, legs pivoted to one of said parts, and interconnected to said part by links, and eyelets on said legs receiving said guide rods, said legs being adapted to engage said window sill for supporting said last mentioned frame in horizontal position, and a pair of slotted members adjustably connected to said legs, and adapted to engage a building wall when the drier is in collapsed position.

8. In combination a pair of guide rods adapted to be attached to the side portions of a window frame and disposed in vertical planes perpendicular to said frame, said guide rods having upper vertical portions, and portions extending from said vertical portions, and curved downwardly and outwardly beyond the window sill, a clothes drier comprising a frame having two similar, symmetrically disposed parts, hinged together at adjacent ends, pulleys on said parts carrying clothes lines, legs pivoted to one of said parts, and interconnected to said part by links, eyelets on said legs receiving said guide rods, said legs being adapted to engage said window sill for supporting said last mentioned frame in horizontal position, rubber bumpers attached to said legs and adapted to contact the side portions of said window frame when said legs rest on the window sill, and a pair of slotted members adjustably connected to said legs and adapted to engage a building wall when the drier is in collapsed position.

9. In combination, a pair of guide rods adapted to be attached to the side portion of a window frame, a clothes drier comprising a frame having two substantially similar, symmetrically disposed parts, each having a pair of side portions and an end portion, the side portions of one part being aligned with the side portions of the other part, the end portion of one part being parallel to the end portion of the other part, the ends of the side portions of one part being hinged to the adjacent ends of the side portions of the other part, a pair of legs hinged to one of said parts, a pair of interpivoted links interconnecting each leg with said part, the legs being adapted to rest on the window sill, means on said legs to slidably engage said guide rods, aligned pairs of pulleys on the end portions of said parts, and clothes lines on said pulleys.

10. In combination, a pair of guide rods adapted to be attached to the side portion of a window frame, a clothes drier comprising a frame having two substantially similar, symmetrically disposed parts, each having a pair of side portions and an end portion, the side portions of one part being aligned with the side portions of the other part, the end portion of one part being parallel to the end portion of the other part, the ends of the side portions of one part being hinged to the adjacent ends of the side portions of the other part, a pair of legs hinged to one of said parts, a pair of interpivoted links interconnecting each leg with said part, the legs being adapted to rest on the window sill, means on said legs to slidably engage said guide rods, aligned pairs of pulleys on the end portions of said parts, clothes lines on said pulleys, and extensions on the ends of the side portions of one of said parts adapted to engage the side portions of the other part when said parts are in a single plane.

11. In combination, a pair of guide rods adapted to be attached to the side portion of a window frame, a clothes drier comprising a frame having two substantially similar, symmetrically disposed parts, each having a pair of side portions and an end portion, the side portions of one part being aligned with the side portions of the other part, the end portion of one part being parallel to the end portion of the other part, the ends of the side portions of one part being hinged to the adjacent ends of the side portions of the other part, a pair of legs hinged to one of said parts, a pair of interpivoted links interconnecting each leg with said part, the legs being adapted to rest on the window sill, means on said legs to slidably engage said guide rods, aligned pairs of pulleys on the end portions of said parts, clothes lines on said pulleys, extensions on the ends of the side portions of one of said parts adapted to engage the side portions of the other part when said parts are in a single plane, and a spring clip on the end portion of one of said parts adapted to engage the end portion of the other of said parts, upon swinging one part onto the other part.

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