April 12, 1932. J. JUDELSON 1,853,061

DRIER

Filed Feb. 9, 1928 4 Sheets-Sheet 1

Fig. 1.

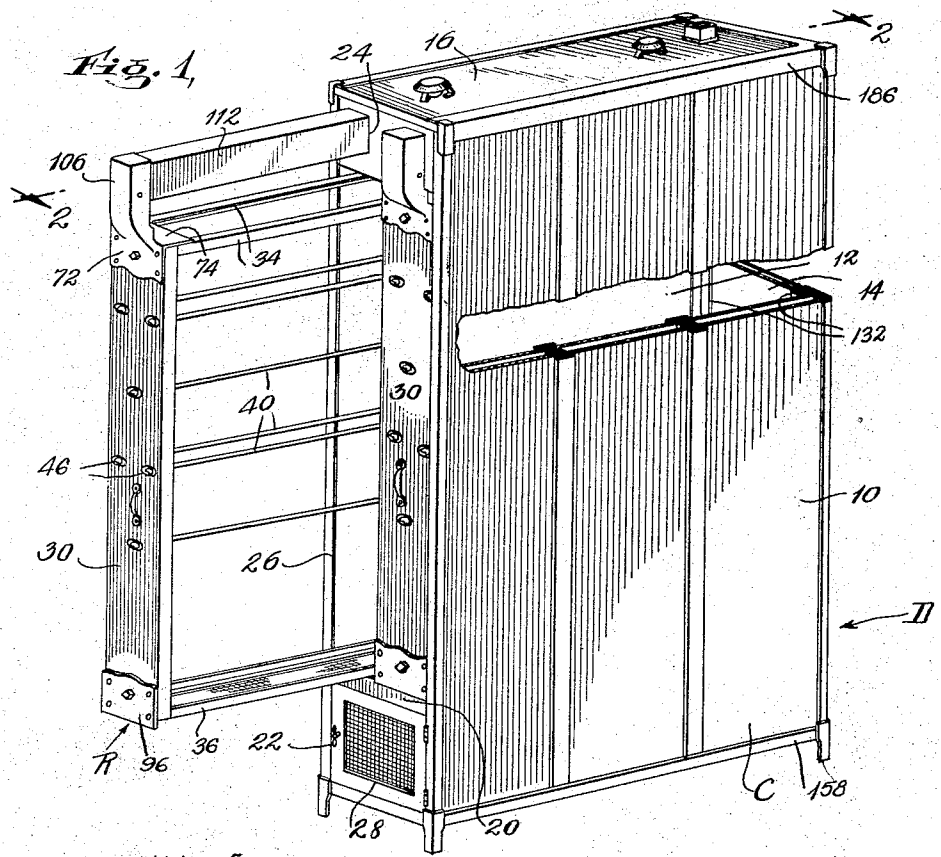
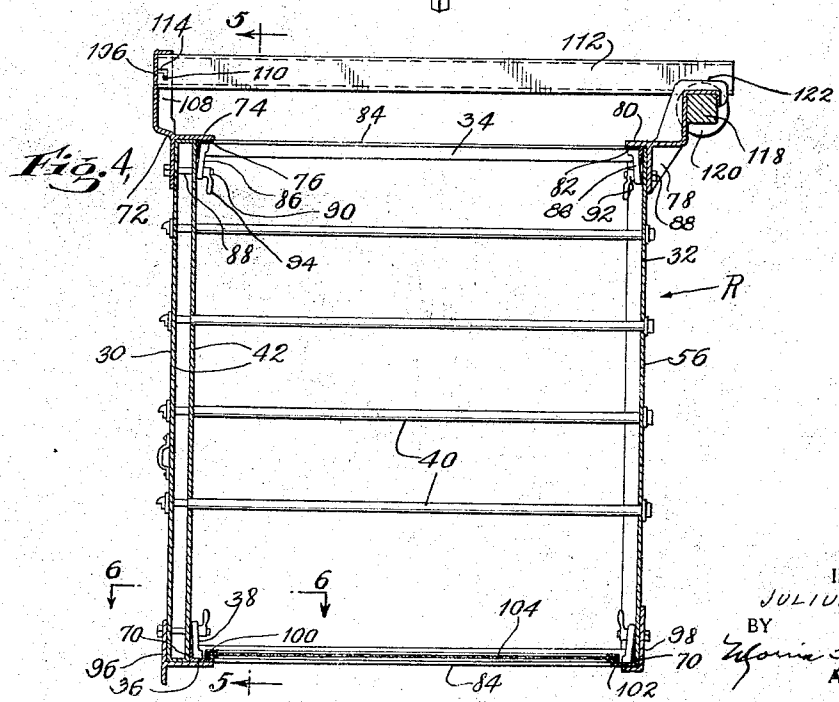


Fig. 4.



INVENTOR
JULIUS JUDELSON
BY
ATTORNEY

April 12, 1932. J. JUDELSON 1,853,061

DRIER

Filed Feb. 9, 1928 4 Sheets-Sheet 2

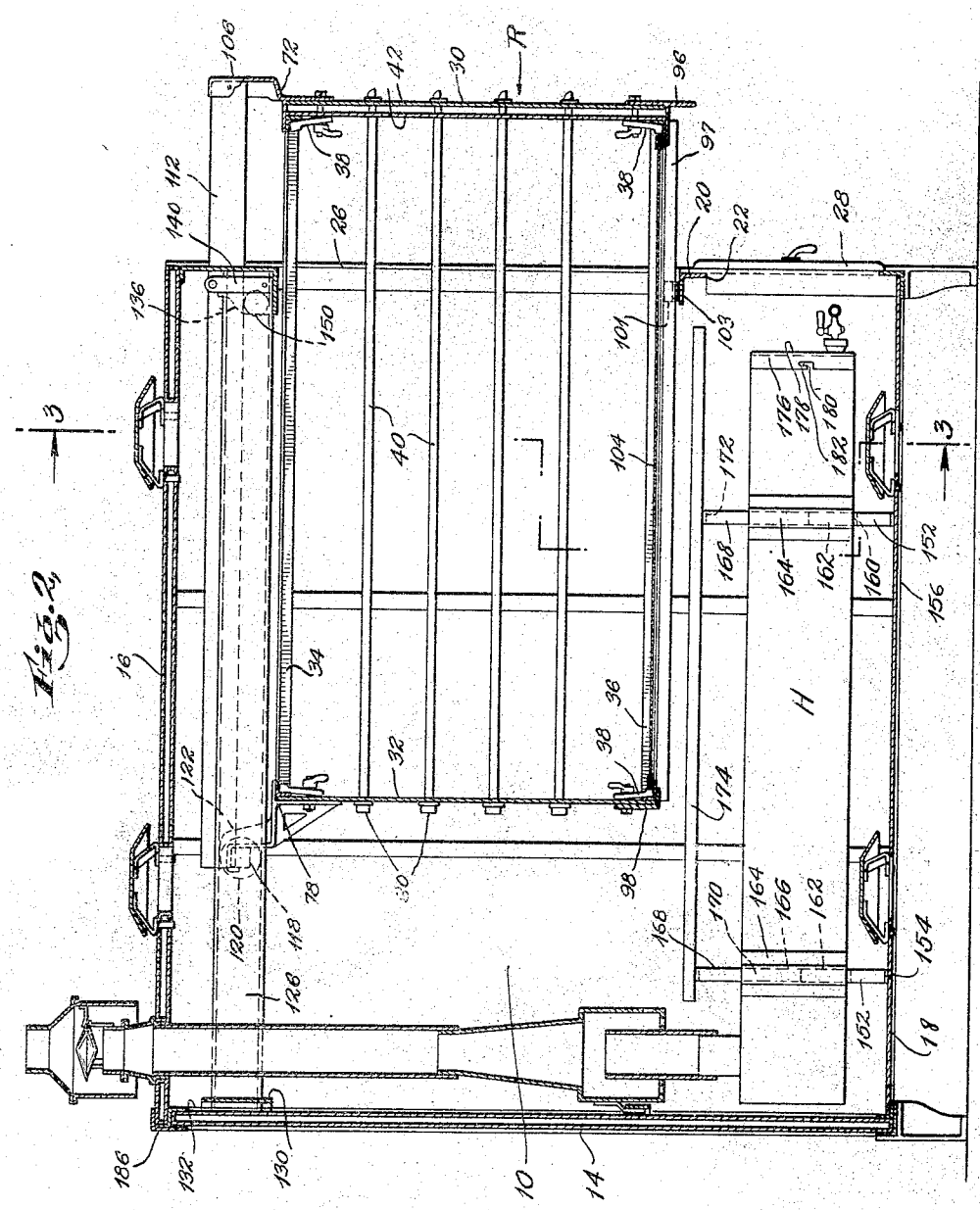


Fig. 2.

INVENTOR
JULIUS JUDELSON
BY
ATTORNEY

April 12, 1932. J. JUDELSON 1,853,061

DRIER

Filed Feb. 9, 1928 4 Sheets-Sheet 3

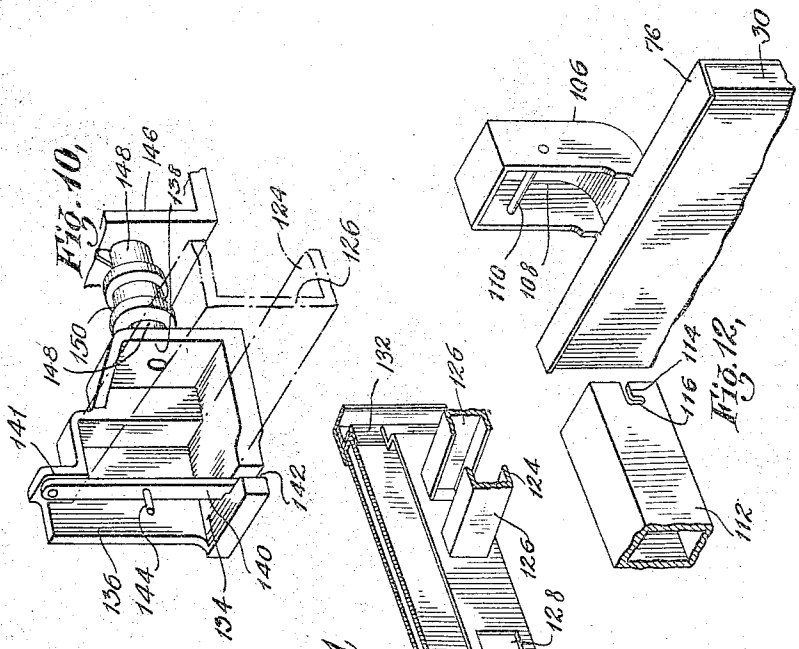


Fig. 10,

Fig. 12,

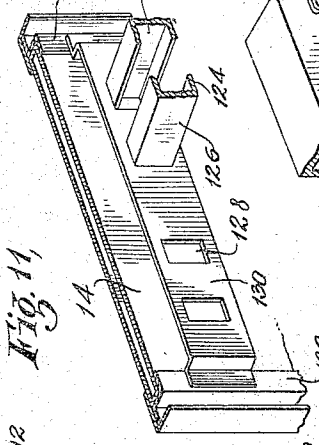


Fig. 11,

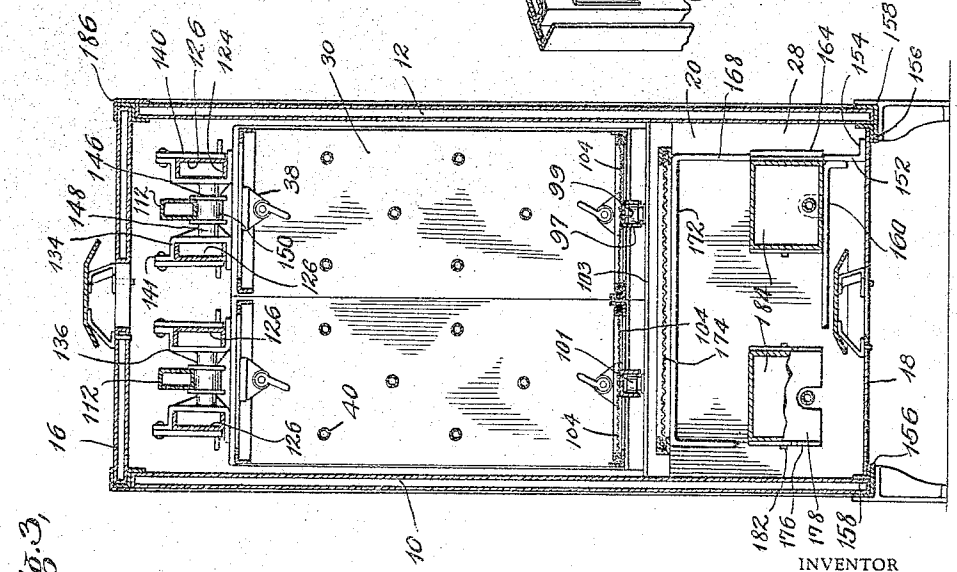


Fig. 3,

INVENTOR

JULIUS JUDELSON

BY

ATTORNEY

April 12, 1932. J. JUDELSON 1,853,061

DRIER

Filed Feb. 9, 1928 4 Sheets-Sheet 4

Fig. 5,

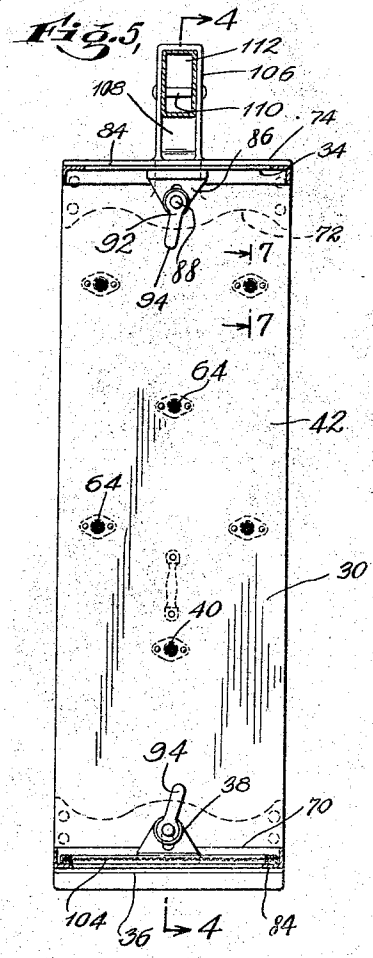


Fig. 7,

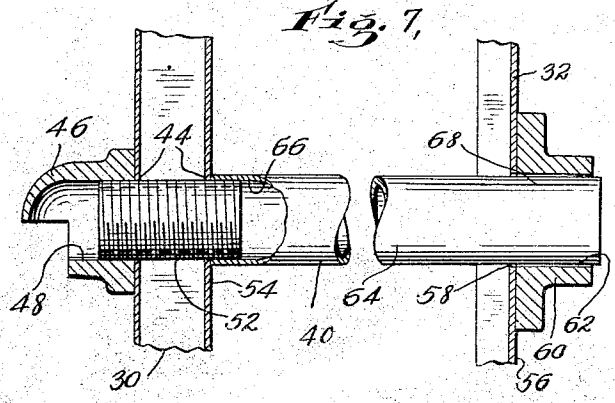


Fig. 8,

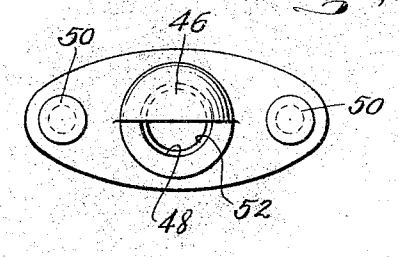


Fig. 9,

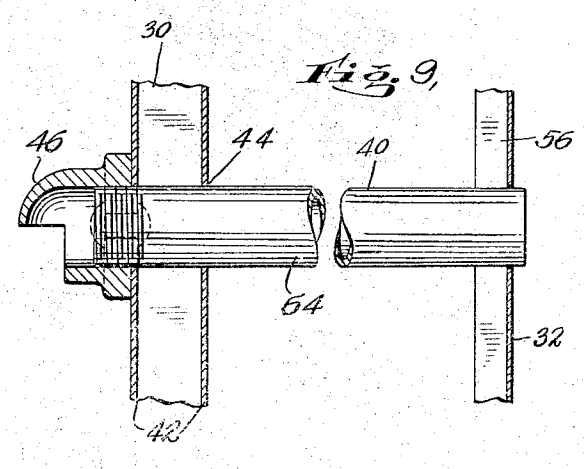
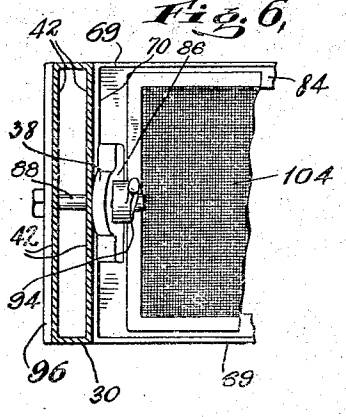


Fig. 6,



INVENTOR
JULIUS JUDELSON
BY
ATTORNEY

Patented Apr. 12, 1932 1,853,061

UNITED STATES PATENT OFFICE

JULIUS JUDELSON, OF NEW YORK, N. Y., ASSIGNOR TO JUDELSON DRYER CORPORATION, OF MOUNDSVILLE, WEST VIRGINIA, A CORPORATION OF WEST VIRGINIA

DRIER

Application filed February 9, 1928. Serial No. 253,015.

This invention relates to driers. More particularly, the invention embodies improved means for providing a drier for clothes or the like which is readily collapsible, or capable of being set up within a short period of time, and which shall be a drier of rigid construction with the parts thereof compactly arranged for efficient operation, and easily replaceable for repairs.

An object of the invention is to provide a drier with its various parts readily capable of assemble or disassembly, or removal.

A further object of the invention is to provide in a drier, a drying rack of the character described, having a plurality of readily removable rack rods.

A still further object of the invention is to provide a rack of the character described in which the several parts may be readily separated or quickly clamped into assembled position.

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 examplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

Figure 1 is a perspective view of a drier embodying the invention, shown with one of the drier racks moved forwardly out of the casing, the walls being partly broken away to show the construction thereof;

Fig. 2 is a longitudinal sectional view on line 2—2 of Fig. 1 illustrating the assembled relation of the various parts of the drier;

Fig. 3 is a transverse vertical sectional view on line 3—3 of Fig. 2;

Fig. 4 is a longitudinal vertical sectional view on line 4—4 of Fig. 5, showing the construction of the drier rack and its carrier means;

Fig. 5 is a transverse sectional view on line 5—5 of Fig. 4, illustrating the means whereby the various sections of the drier rack are retained in fixed relation;

Fig. 6 is a partial plan view in section on line 6—6 of Fig. 4, illustrating the frame clamping device for the drier rack;

Fig. 7 is a longitudinal sectional view on line 7—7 of Fig. 5 illustrating the construction and method of assembly of the drier rack rods;

Fig. 8 is a front elevational view of the air deflector heads, designed to receive said rack rods;

Fig. 9 is a sectional view, similar to Fig. 7, of a modified rack rod construction;

Fig. 10 is a perspective view of the front portion of the positioning and retaining means for the rails upon which the drier rack is carried;

Fig. 11 is a fragmentary perspective view, illustrating the rear portion of the rail support; and

Fig. 12 is a fragmentary perspective view showing the method of assembly of the front drier panel and the carrier bar.

On the drawings, the drier D is seen to comprise the casing C, through the front wall of which are slidable the carriers or racks R for supporting clothes, or the like, for drying purposes, in relation to a heater H, mounted in the lower portion of casing C, in the manner hereinafter described. The casing C may be made up to comprise the side walls 10, 12, which if so desired, may be constructed in the manner described in my Patent No. 1,513,595 dated the 28th day of October 1924, or in any other suitable manner. These side walls, together with the rear wall 14, combine to produce a closed casing with which are assembled a top wall 16 and a bottom wall 18, preferably constructed in the manner described in my co-pending application Serial No. 253,014, filed February 9, 1928.

A front wall 20 may be constructed as shown in my Patent No. 1,632,904 dated the 21st day of June, 1927, and is seen to have formed therethrough a number of openings 22, 24, 26, through which different elements of the drier are receivable. Opening 22 may be closed by a grilled door 28, mounted so that it may be opened for access to the heater H, supported in the bottom part of the drier. Slidable through openings 24 and 26 are por-

tions of rack R, which, when the rack is moved entirely within the casings C, serve to entirely close these openings.

Racks R are seen to comprise the front panel 30 and the panel 32, spaced apart by frames 34, 36, positioned at the top and bottom of the racks and held in place by suitable clamping means 38, in a manner hereafter described. Supported between panels 30, 32, are a plurality of rack rods 40, removably retained in a manner hereinafter appearing, and adapted to support clothes, or other articles, for drying purposes, relative to heater H.

Panel 30 is seen to comprise a double wall construction 42, securely held together by rivets, or the like, and containing any suitable insulating material, or, if desired, comprising merely an air space. A number of openings 44 are formed through this double wall construction 42, the air deflector heads 46 being mounted on the front side of panel 30 so that the opening 48 of each head is located in alignment with an opening 44. Said heads may be secured to panel 30 in any suitable manner, preferably by rivets 50. The openings 48 are screw-threaded for the reception therein of a nipple 52, adapted to extend through openings 44, and project from the inner surface 54 of panel 30. Rear panel 32, which is adapted, practically at all times to be housed within casing C, may be made merely of a single sheet of material 56. Said sheet may be perforated with a number of openings 58, the arrangement of said openings relative to each other, being substantially that of openings 44 in panel 30, so that openings 44 and openings 58 will be substantially in alignment. Bushings 60 are provided with openings 62 and are positioned on the rear side of rear panel 32, so that the openings 58 and 62 will be concentric. When the panels 30, 32, have been properly supported in the assembly operation, the tubes 64, having an internally threaded end 66, may have their smooth end 68 slipped into openings 58 and 62, which are slightly larger than the outside diameter of said tubes. Then said tube may be advanced so that the internally threaded end 66 will be received on the projecting end of nipple 52, and tightened by hand thereon. It is evident therefore, that the tubes may be readily assembled, or removed, with respect to the drier rack, at any time, for replacement, or when desired to set up the apparatus for use, or, if desired, for packing.

The frames 34 and 36 are likewise retained in relation to panels 30 and 32 in such manner that they may readily be removed, or assembled. Each frame comprises an angular cross-sectional side portion 69, made by cutting out a portion of one of the legs of an angle iron, bending the angle at that point, and then spot welding the ends of the angle to produce a closed frame, oblong in shape, and angular in cross-section. By this means, a vertically extending flange 70 is provided at the two ends, adapted to abut the two panels. Secured to the upper edge of front panel 30 is a plate 72, having an inwardly extending flange 74 adapted to rest upon the top of panel 30, and providing a shoulder 76 projecting inwardly beyond said panel. Secured in like manner to the upper end of rear panel 32 is a bracket 78 having a flange 80 extending inwardly and providing the shoulder 82 within the rack R. Upper frame 34 is adapted to have its horizontal flange 84 received against the flanges 74 and 80, and the vertically extending flange, at either end is received in abutment with the inner faces of panels 30, 32 and retained, in this manner, by clamp plate 86. Plates 86 are loosely secured upon bolt 88, retained in plate 72 and bracket 78, said bolts providing projecting threaded ends 90 to receive the threaded nuts 92, to which are attached the actuating handles 94 for tightening said nuts. By this means, frame 34 is positively clamped in position to retain the two panels rigidly spaced from each other at their top ends.

In a similar fashion, plates 96 and 98 are secured to the lower ends of front and rear panels 30, 32 respectively to receive, on their extending shoulders 100, 102, the frame 36 for spacing apart the lower ends of said panels. The upper surfaces of the horizontally extending flanges 84 of frame 36 are adapted to support thereon the screen 104, made up in any suitable manner, as by clamping a sheet of screen wire between two sections of sheet metal, the screen being of such dimensions as to substantially fill the opening provided by the frame 36, in order to prevent clothes, or other articles, hanging on tubes 64 from falling down upon heater H.

The frame 36 may have secured thereto, as disclosed in my Patent No. 1,691,290, dated Nov. 13th, 1928, a channel member 97 having its opening 99 facing downward and adapted to be received over a roller bearing 101, mounted on the cross bar 103, forming the lower boundary of opening 26, to facilitate movement of rack R in and out of casing C.

The plate 72 is seen to have a projecting member 106 formed to provide an inwardly opening socket 108, secured across which is the pin 110. A tubular bar 112, of suitable length and of oblong cross-section, is seen to have an L-shaped slot 114 opening from the front end of said bar and having a downwardly extending leg 116. Said pin 110 is adapted to be slipped into the horizontal portion of said slot 114 and then dropped down the vertically extending leg 116. It will thus be seen that the inner surfaces of the top and side walls of said socket 108 will be rigidly secured in abutment with said bar by this arrangement; yet the socket and bar are readily separable, when desired.

Said bar is seen to extend into the casing C through the opening 24, formed in front wall 20, and has secured thereto at the rear end thereof, by any suitable means, as by riveting or welding, the axle 118. Said axle carries, on its extending ends, the roller bearing wheels 120. Intermediate the wheels 120 and bar 112, axle 118 is of square cross-section and receives thereupon the arms 122, extending from bracket 78, so as to retain panel 32 rigidly and operatively arranged with respect to the bar 112. The wheels 120 are received upon one horizontally extending face 124 of the channel 126. Said channel is supported within casing C upon said face, and within the oblong slot 128 of the transversely extending bracket 130, secured to the frame 132, within which is housed the rear wall 14. The front end of the said channel is received in the channel shaped portion 134 formed as a part of the casting 136, and is so positioned that the channel 126 will be received in said portion with the vertically extending surface 138 of portion 134 closing the opening of channel 126. An ear 141 extending from a flange of portion 134, is seen to have supported pivotally thereon the finger 140, receivable in a slot 142 in the base of casting 136, for locking channel 126 securely in position. A finger end 144 may be provided for actuating said finger into its various positions. The casing 136, in which is formed channel shaped member 134, may be provided with a symmetrically arranged member 146 of construction similar to member 134, but having its opening facing in the opposite direction to receive a similar channel 126, whereby the wheels 120 are positively guided for movement with respect to casing C.

Mounted between members 134 and 146 and made a part of said casting, are the bearings 148 for carrying a roller 150, said roller being positioned immediately below opening 24 in front wall 20, so that bar 112 may be properly, and substantially non-frictionally, retained for movement in and out of said front wall.

Heater H may be of a type described in my Patents Nos. 1,513,594, and 1,513,598, dated October 28th, 1924, and may be provided with the outlet stack described in my co-pending application Serial No. 253,014 filed February 9th, 1928. Heater H is seen to be supported upon the H brackets 152, spaced from the ends of said heater and having the extending toes 154 for reception upon the horizontally extending flanges 156 of the frame 158 making up the base of said drier. It will be seen that the body of the heater H is supported on the bar 160 of brackets 152, the upwardly extending pieces 162 of said brackets being received in sockets 164, formed by welding, or in any other suitable manner, securing to side walls of heater H, sheet metal so as to provide a through opening 166, into which said pieces are receivable.

U-shaped members 168 are inverted, and have their prongs 170 inserted through the upper ends of the openings 166, so that the prongs of the U are brought into abutment with the terminals of pieces 162. By this means, the cross piece 172 is positively supported from the toes 154 to carry a screen 174, as additional protective means to prevent clothes from falling upon heater H, without bringing any weight to bear upon the body of heater H. The front of heater H may be provided with removable doors 176, situated in proximity to the grilled door 28, said doors 176 comprising a flanged plate 178, the side flanges of which are each provided with an L-shaped slot 180 for reception upon pins 182, secured at the edges of the front openings 184 of heater H.

In setting up the drier for use, the frame 158 is positioned, and side walls 10 and 12, front wall 20, and rear wall 14 set up thereon. The frame 186 is then placed over the upper ends of said walls. Then, before slipping bottom wall 18 into place, the tubular bar 112 is carried into the interior of casing C and the free end of the bar projected through opening 24, with the roller wheels 120 extending downwardly from the bar. The channels 126 are now positioned with their faces and openings properly arranged to receive the roller wheels 120, one end of the channel first being inserted in the socket 128 and the other end then being slipped into the opening of channel shaped member 134 to be locked in place by the finger 140. Bottom wall 18 may be now slipped into position and heater H inserted to rest thereon in the manner described. The screen 174 may then be placed upon the properly positioned members 168.

Thereafter, the bar 112 is projected from the casing so that panel 32 may be hung upon axle 118 by means of the arms 122. The front panel 30 is then suspended from bar 112 by means of pin 110, socket 108, and slot 114, after which the upper and lower frames 34 and 36 are clamped, by means 38, to rigidly space the panels in position.

The tubes 64 may now be assembled in the desired manner and screen 104 placed on frame 36. Top wall 16 is now slipped into the frame 186, the heater H connected with a source of a heating medium, and the outfit is ready for use.

It will thus be seen that there is provided a device in which the several objects of this invention ar 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 embodiment 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.

I claim:

1. In drier construction, a rack comprising front and rear walls, a pair of aligned openings through said walls, an air deflector cap secured to one wall around one of said openings, and a tube received slidably in the other opening and secured to said deflector cap.

2. A drier rack comprising front and rear walls, said walls being spaced apart by panels having flanged ends, adapted to abut said walls, angular shaped members adapted to position said panels with respect to said walls, and means for clamping said panels and members to said walls.

3. A drier panel, having a plurality of openings therethrough, threaded members mounted over some of said openings, a support piece received through another of said openings, a clamp loosely received on said piece, and means engaging said piece for adjusting said clamp.

4. A drier panel having a plurality of openings therethrough, threaded members mounted over some of said openings, a support piece received through another of said openings, a clamp loosely received on said piece, shoulders extending from said panel in proximity to said clamp, and means engaging said piece for adjusting said clamp.

5. A drier panel having a plurality of openings therethrough, threaded members mounted over some of said openings, a support piece received through another of said openings, a clamp loosely received on said piece, shoulders extending from said panel in proximity to said clamp, said clamp and shoulders being positioned to receive therebetween the flanged end of a frame, and means engaging said piece for adjusting said clamp.

6. A drier panel having means for detachably securing thereto a plurality of rack rods and a spacer member, said panel having an upwardly extending socketed projection, and a pin extending through said socket and fixed thereto.

7. In combination, a drier panel having means for detachably securing thereto a plurality of rack rods and a spacer member and having an upwardly extending socketed projection and a pin extending through said socket and fixed thereto, and a bar having an L-shaped notch, said pin being removably received in said notch.

8. In combination a drier panel having means for detachably securing thereto a plurality of rack rods and a spacer member and having an upwardly extending socketed projection and a pin extending through said socket and fixed thereto, and a bar having an L-shaped notch, said pin being removably received in said notch with the upper front and side faces of said bar in contact with said socket.

9. A drier casing having a rack movable through a wall of said casing and a rail section for supporting said rack, sockets formed in opposite walls of said casing receiving and supporting said rail, and means on one of said sockets for latching said rail in position.

10. A rack support comprising a base, a socket portion on said base having a movable side wall, and a roller bearing supported on said base away from said wall.

11. A rack support comprising a base, a plurality of rail end receiving members formed in said base, and a bearing mounted between said members for supporting a slidable bar.

12. A rack support comprising a base, a plurality of rail end receiving members formed in said base, each of said members having a pivoted side wall and a bearing mounted between said members for supporting a slidable bar.

13. A rack support comprising, a base, a plurality of rail end receiving members formed in said base, each of said members having a pivoted side wall movable to provide an open side for positioning said rail ends in said members and a bearing mounted between said members for supporting a slidable bar.

14. In drier construction comprising a casing having a plurality of end walls, one wall being provided with a plurality of sockets, another wall having a plurality of members of channel cross-section mounted thereon, and having their openings in alignment with said sockets, and a plurality of rail sections received in said sockets and said openings.

15. In drier construction comprising a casing have a plurality of end walls, one wall being provided with a plurality of sockets, another wall having a plurality of members of channel cross-section mounted thereon, the intermediate portions of each pair of channel members being positioned in face to face relationship, and having their openings in alignment with said sockets, and a plurality of rail sections received in said sockets and said openings.

In testimony whereof I affix my signature.

JULIUS JUDELSON.