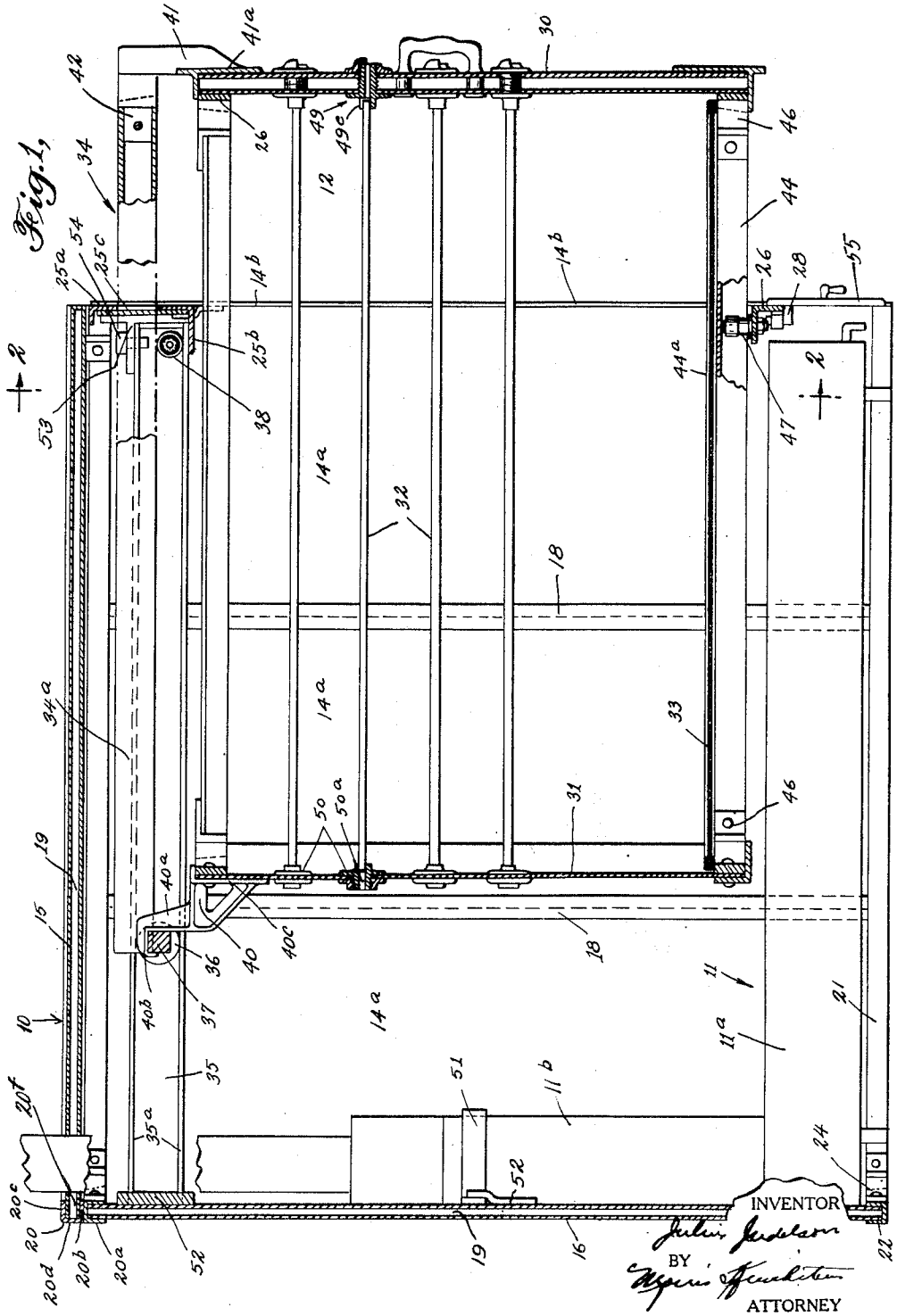
Nov. 13, 1928. 1,691,290

J. JUDELSON

DRIER CABINET

Filed Feb. 11, 1925 3 Sheets-Sheet 1

Fig. 1.



INVENTOR
Julius Judelson
BY
Myers & Hamilton
ATTORNEY

Nov. 13, 1928. 1,691,290

J. JUDELSON

DRIER CABINET

Filed Feb. 11, 1925 3 Sheets-Sheet 2

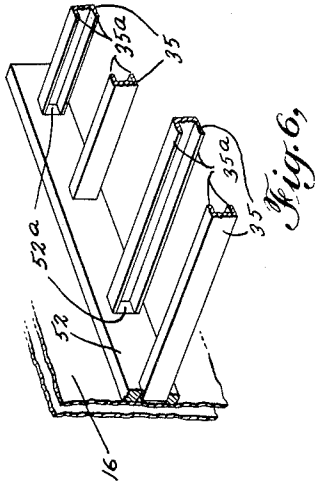


Fig. 6,

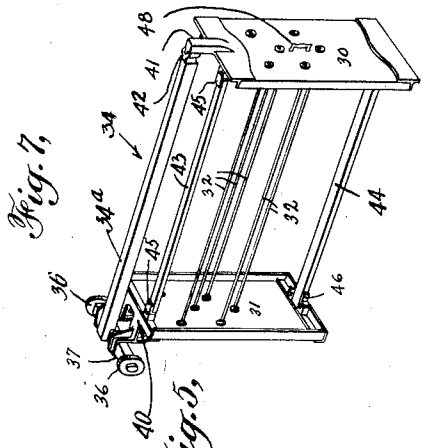


Fig. 7,

Fig. 4,

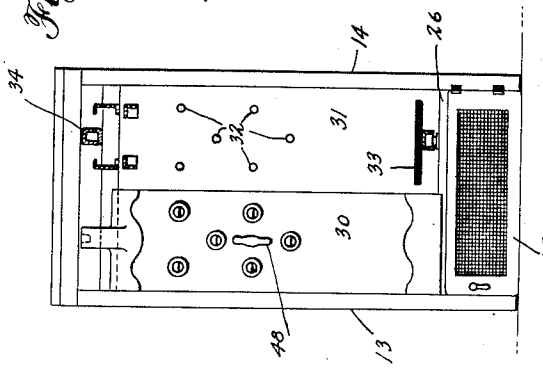
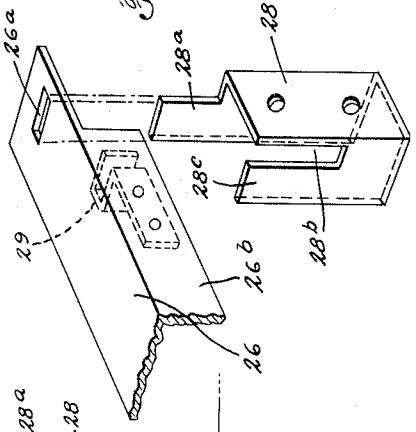


Fig. 5,



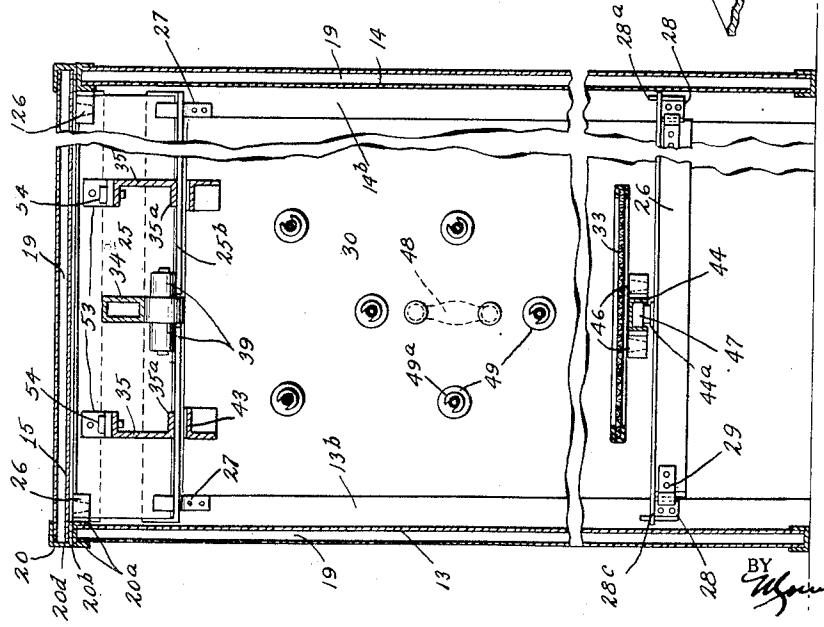


Fig. 2,

INVENTOR
Julius Judelson

BY

ATTORNEY

Nov. 13, 1928. 1,691,290

J. JUDELSON

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Filed Feb. 11, 1925 3 Sheets-Sheet 3

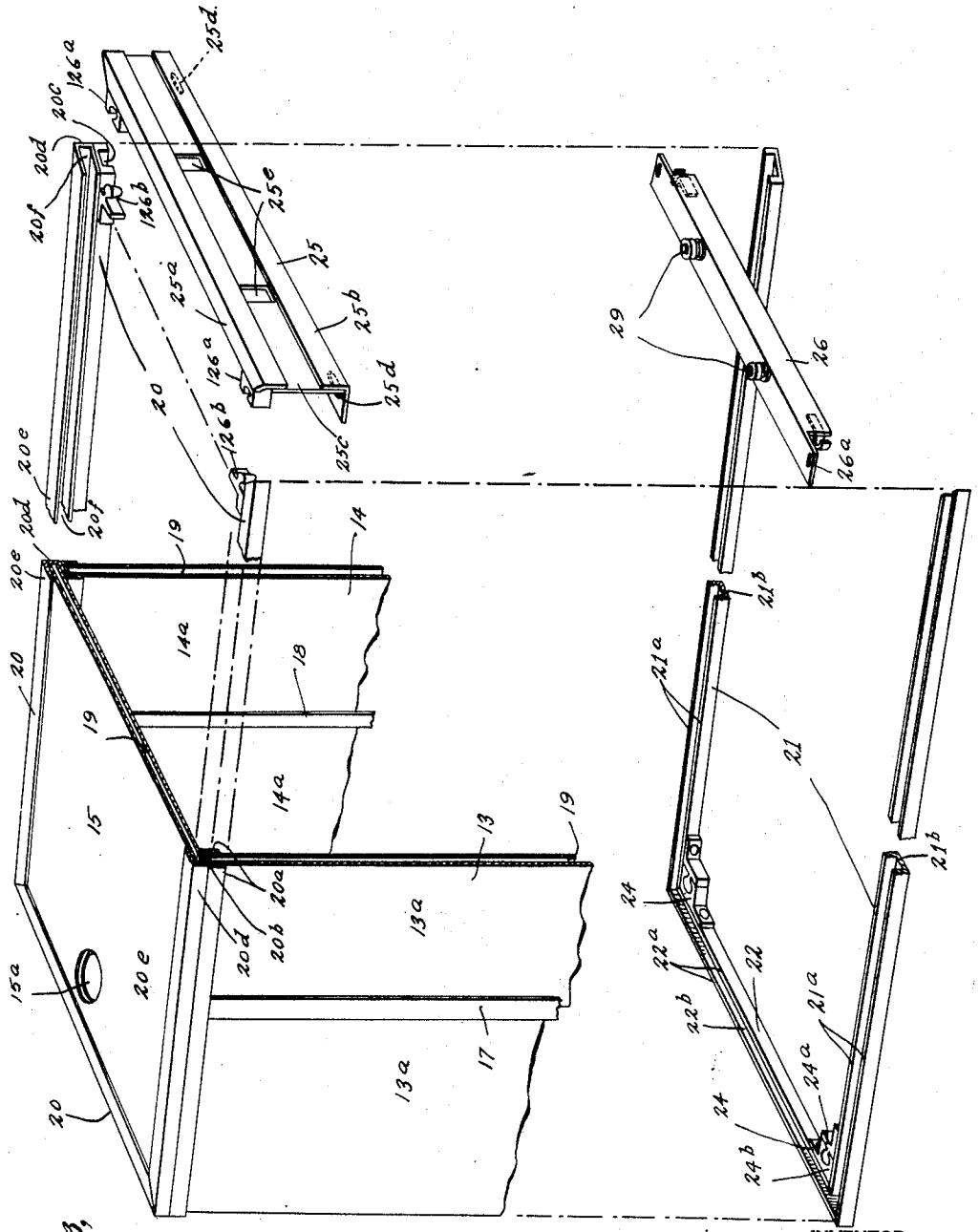


Fig. 3.

INVENTOR

Julius Judelson

BY

Louis Finkelstein

ATTORNEY

Patented Nov. 13, 1928. 1,691,290

UNITED STATES PATENT OFFICE.

JULIUS JUDELSON, OF NEW YORK, N. Y.

DRIER CABINET.

Application filed February 11, 1925. Serial No. 8,333.

This invention relates to cabinet construction. More particularly, the invention is directed to an improved cabinet construction specially adapted for clothes driers or the like apparatus.

As conducive to a clear understanding of the invention, it will first be noted that it is desirable to so construct drying cabinets of the character described as to enable shipment thereof in "knock-down" condition for assembling at the point of destination. What has been gained, however, in handling and saving of charges in transportation, has been offset and at times overcome by the comparatively long time required to assemble the parts and the necessity for employment of skilled mechanics in such assembly.

One object, therefore, of the invention is to provide a clothes drier of improved construction which has the parts thereof arranged for interlocking engagement and which can be easily and quickly assembled without the use of tools by persons unskilled mechanically.

A further object of the invention is to provide an improved apparatus of the character described which is constructed of few and simple parts, which is relatively inexpensive to manufacture, and practical and efficient to a high degree for the purpose set forth.

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

Certain features herein shown and described are shown, described and claimed in my co-pending application, Serial No. 8,332, filed in the United States Patent Office on the 11th day of February, 1925, and accordingly not claimed herein.

With the above exception, 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 in cross-section, of a clothes drier embodying the invention showing the interior construction;

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

Fig. 3 is a perspective view of the casing or cabinet of the drier shown in Fig. 1 partially assembled;

Fig. 4 is a front elevational view showing a two rack-frame drier unit with one of the front panels removed;

Fig. 5 is an enlarged detailed perspective view of the fastening connection on the end of the lower front cross bar;

Fig. 6 is an enlarged detail perspective view showing the rear supports for the ends of the channel track rails of two frame drier units; and

Fig. 7 is a perspective view of the assembled carrier and drier frame.

Referring in detail to the drawing, an embodiment of the invention is there shown as applied to clothes driers which may consist of one or more units each comprising a drying chamber or cabinet 10 provided with suitable air heating means, as for example a heater equipment 11, to supply heated air thereto for drying the clothes. The clothes are carried on one or more rack frames 12 which may be reciprocated in and out of the cabinet 10, said frames being supported in the manner hereinafter described.

The cabinet 10 comprises side walls 13, 14, a top wall or roof 15, and a rear wall 16. The side walls may be made in sections 13^a, 14^a, joined together in any suitable manner to form air tight, tongue and groove joints, as for example by means of intermediate member 17, 18 of H cross-section, more fully described in my co-pending application Serial No. 504,968.

The sections 13^a, 14^a, roof 15 and rear wall 16 are preferably constructed of sheet metal and may each comprise a pair of parallelly disposed walls suitably reinforced in any well known manner to enclose an air space 19 to form a heat retaining closure within the drying chamber 10.

As shown in Figs. 1, 2 and 3, top corner edge rails 20 may be provided for securing the side and rear walls of the cabinet to the roof, said rails being formed of two separate channel pieces secured together, or from one piece of sheet metal. Each of said rails 20 is constructed to have two spaced longitudi-

nal sides 20^a which extend downwardly from a horizontal wall 20^b thus including therebetween a recess or groove 20^c whereinto the upper ends of assembled sections 13^a, 14^a may be snugly fitted. Upstanding at right angles to the horizontal wall 20^b is a wall 20^d which extends continuously with the outer side 20^a. The rails 20 are formed so as to extend at right angles to said wall 20^d to provide another horizontal top wall 20^e extending parallel to the wall 20^b and spaced therefrom a height substantially equal to the width of the roof member 15, thus providing a recess or groove 20^f extending at right angles to the recess 20^c, and in which said groove 20^f may snugly fit the edge portion of the roof member 15 of the cabinet.

A metallic bottom or floor member may also be provided which is preferably formed of side and rear corner edge rails 21 and 22 respectively, extending about the sides and back of the cabinet and from which upstand pairs of walls 21^a, 22^a spaced from each other so as to provide recesses 21^b, 22^b whereinto may snugly be fitted the lower edge portions of the side and rear walls of the cabinet 10. The jointed portions 17, 18 of the wall sections 13^a, 14^a are arranged to permit the top and bottom portions of the walls 13, 14 to freely fit into the recesses 20^c, 21^b, 22^b, in the top and bottom rails 20, 21 and 22 respectively.

To securely fasten the rails 21 and 22 of the floor member together any suitable form of quickly detachable interlocking means may be provided, as for example corner socket fittings 24, each comprising a male member 24^a and a female member 24^b as shown in Figs. 1 and 3.

The cabinet 10 may be braced on the front side by providing upper and lower cross pieces 25 and 26 respectively which engage with suitable means mounted on supporting portions 13^b, 14^b and extend along the upstanding edges of the forward wall sections 13^a, 14^a as is clearly shown in Fig. 2.

The upper cross bar 25 may be made of a single piece, or as shown in Figs. 1, 2 and 3, of several members such as top angle bar 25^a, lower angle bar 25^b and front plate 25^c, all firmly secured together by any well known means as by riveting or welding. The cross bar 25 may be arranged to have quick interlocking engagement with the free ends of the corner rails 20 by suitable means such as corner socket fittings 126 which may be similar in construction to the fittings 24 described above, and which have a member 126^a secured at each of the ends of angle bar 25^a, and another member 126^b fastened to the ends of corner rails 20 for engagement with member 126^a as shown in Fig. 3. For releasably interlocking the side walls 13, 14 with the cross bar 25, the angle bar 25^b may be provided with openings 25^d adjacent the ends thereof, which are adapted to receive the upstanding ends of hook members 27 which are permanently secured on the supporting portions 13^b and 14^b. (See Fig. 2.) Thus the top front portions of the side walls 13, 14, corner rails 20, and roof 15 of the cabinet are rigidly interconnected. Spaced openings 25^e may be provided in front plate 25^c of cross-piece 25, as will hereinafter be described.

The lower cross bar 26 is preferably made of angle iron and may be provided with any suitable quick detachable interlocking means for securing said bar 25 in position to engage the supporting portions 13^b, 14^b of the wall sections 13^a, 14^a above the floor level. Said means may comprise fittings like 24 described above or as seen from Figs. 2, 3 and 5, may comprise male members 28 of U-shaped cross-section riveted or otherwise permanently secured to the supporting portions 13^b, 14^b. Said members 28 have upstanding portions 28^a which are arranged to be received in openings 26^a provided adjacent the ends of the cross bar 26 as shown in Fig. 5. To stiffen the connection of the cross bar 26 with the members 28, the latter are recessed as at 28^b, and hook shaped pieces 29 are provided adjacent said ends of a flange 26^b on cross bar 26 which are adapted to engage with upstanding portions 28^c adjacent the recesses 28^b. (See Figs. 2 and 5.) Rollers 47 may be mounted to extend up from the cross bars 26 for engaging with the rack frame 12 to guide the latter during the reciprocating movement in and out of the cabinet 10, as will hereinafter appear.

Each rack frame 12 is preferably constructed of quickly attachable, interlocking parts that can be easily assembled, without the use of tools, and comprises a front vertical panel 30 adapted to provide a closure or door for the upper front portion of the cabinet 10, and rear panel 31. Extending between the panels 30 and 31 are horizontal and parallel spaced rack rods 32 from which the clothes or other articles to be dried may be suspended. Close to the bottom of the drier frame 12, the usual wire mesh removable shelf or tray 33 is provided.

Each frame 12 is constructed to reciprocate in and out of the cabinet 10 and is adapted to be supported by the cabinet when extended to an overhanging position relative thereto. A carrier 34 is provided for this purpose, having a main tubular member, a bar 34^a the rear end of which is supported to travel between flange portions 35^a of two parallel spaced channel rails 35 on a pair of rollers 36. The latter preferably have anti-friction bearings and are mounted on an axle 37 secured to the bar 34^a by any suitable well known means.

The channel rails 35 are detachably secured between a bar 52 fastened on the inner side of rear wall 16, and the upper cross piece 25, said bar 52 having openings 52^a therein

to receive and rigidly support the end of the rails 35. (See Figs. 1 and 6.) The front ends of the rails 35 may be supported on the inwardly extending portion of the angle bar 25[b] of cross-piece 25, and are preferably secured against lateral displacement by providing a T-member 53 fastened to the plate 25[c] and a pin 54 securing the member 53 to the rails 35 as is clearly shown in Figs. 1 and 2.

The carrier bar 34[a] rides on a roller 38 supported on the angle bar 25[b] of the upper cross bar 25, and mounted for rotation between a pair of bearing members 39 secured to the angle bar 25[b] and the openings 25[e] in plate 25[c] permitting free passage of the bar 34[a] therethrough.

For securing the rear top portion of the drier frame 12 to the axle 37 of the carrier 34, there is provided a yoke member 40, comprising a pair of upwardly and outwardly offset arms 40[a] which terminate in hook ends 40[b], and which are adapted to detachably engage with the axle 37. The lower end of the yoke member 40 is provided with an angle connecting plate portion 40[c] for securing the member 40 to the rear panel 31 (see Figs. 1, 2 and 7). A T-shaped member 41 is secured to the front panel 30 by means of angle connecting plate portion 41[a] and also is detachably connected with the carrier bar 34 (see Figs. 2 and 7). Socket fittings 42 may be provided to secure said carrier bar 34[a] to the member 41. These fittings 42 comprise male portions and female portions similar in construction to the male and female portions 24[a], 24[b] of the quick detachable interlocking fittings 24 described above.

The drier frame 12 is rigidly braced by means of a pair of spaced bars 43 connecting the yoke member 40 with the T-shaped member 41, and a single channel bar 44 joining the lower portion of the front panel 30 with the rear panel 31. Said bars 43 and 44 are provided with quick detachable fittings 45 and 46 respectively, which may be similar in construction to the fittings 24 and 42, the fittings 45 having a single set of engaging portions, and fitting 46 having dual sets, as is clearly shown in Fig. 7. The lower brace bar 44 is preferably of U-shaped cross-section and is arranged normally to be in inverted position so that its channel recess 44[a] may engage over the roller 47 on the lower cross piece 26 and thus serve to guide the frame 12 during the reciprocating movement in and out of the cabinet. It will be noted that the roller 47 is shielded by means of the inverted channel bar 44, thus providing proper roller and guide means free from the possibility of the clothes being caught.

The operation of the mechanism for reciprocating and supporting the drier frame will now be apparent. As a drier frame 12 is drawn out of the cabinet 10, by means of a handle 48, the rear portion of the carrier 34 rides on roller 37 in the channel rails 35, and the carrier bar 34[a] rides on the roller 38, while lower brace bar 44 is guided by the roller 47. Due to the spaced supporting construction between the carrier 34 in the channel rails 35 and the guiding engagement afforded by the roller 47 with bar 44, any tendency for the drier frame 12 to side swing is prevented.

To demountably secure the rack rods 32, in spaced position in the drier frame 12, socket supporting fittings 49 and 50 are provided which are fastened to the front and rear panels 30 and 31 respectively, said members 49 and 50 being recessed at 49[a] and 50[a] respectively to permit lifting the rods 32 free from the rack.

The heater equipment 11 for the drying chamber 10 may be of any suitable construction and may be adapted to be operated by gas, steam, or electricity, one form of suitable gas heating equipment being fully described in my Patent No. 1,449,609 dated March 27th, 1923. As seen from Fig. 1, the heater equipment 11 comprises a heater 11[a] which extends lengthwise of chamber 10 under the drier frame 12, and a flue member 11[b] which is supported against the rear side 16 to extend up through an opening 15[a] in the roof 15, as shown in Figs. 1 and 3. Said flue member 11[b] may be releasably secured to the side 16 by any suitable means as for example, by strap 51 which embraces the flue member and engages with the upstanding end of hook member 52 fastened to the rear side 16.

A suitable side hinged door 55 may be provided for closing the opening in front of the heater equipment under the front panels 30 as shown in Figs. 1 and 4.

It is clear that a drier constructed embodying the invention as described above may be quickly and easily put together or disassembled without the use of tools, and as such a drier comprises few and simple parts, a person even though lacking mechanical skill can without trouble properly erect the same. In fact, it has been found by actual experience that an unskilled person could erect a drier of the improved construction in a fraction of the time required by skilled mechanics to erect a similar size and type of drier constructed as heretofore.

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 embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpret-

ed 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. A drier of the character described comprising a cabinet having side and top walls, a drier frame formed of parts mounted to reciprocate in and out of the cabinet, and connections for detachably securing said walls to each other and for connecting said frame parts together to form separate rigid structures, said connections being made without the use of tools.

2. A drier of the character described comprising a cabinet having side and top walls, a drier frame formed of parts mounted to reciprocate in and out of the cabinet, heater equipment for the cabinet releasably secured to a wall thereof, and connections for detachably securing said walls to each other and for connecting said frame parts together to form separate rigid structures, the connections of the heater equipment, the walls, and the frame parts being made without the use of tools.

3. A drier of the character described comprising a cabinet formed of side, rear and top walls, top edge rails for releasably connecting said side and top walls together, bottom edge rails being for releasably connecting said side and rear walls together, said bottom edge rails constructed to interlock with each other and with the side walls of the cabinet, cross pieces demountably secured to the side walls at the front side of the cabinet, the connections of said walls, rails and cross pieces being made without the use of tools.

4. A drier of the character described comprising a cabinet formed of side, rear and top walls, top edge rails for releasably connecting said side and top walls together, bottom edge rails for releasably connecting said side and rear walls together, said bottom edge rails being constructed to interlock with each other and with the side walls of the cabinet, cross pieces demountably secured to the side walls at the front side of the cabinet, heater equipment for the cabinet, said equipment having a flue releasably secured within and to an upright side of said cabinet, the connections of said walls, rails, cross pieces and heating equipment being made without the use of tools.

5. A drier of the character described comprising a cabinet formed of detachable side, rear and top walls, top edge rails for releasably connecting said side and top walls together, bottom edge rails for releasably connecting said side and rear walls together, said bottom edge rails constructed to interlock with each other and with the side walls of the cabinet, cross pieces demountably secured to the side walls at the front side of the cabinet, heater equipment for the cabinet, said equipment having a flue, a strap releasably securing said flue to and along an upright side of said cabinet, and connections made up without tools for releasably securing said walls, rails, cross pieces, and heating equipment for quick and easy assembly.

6. A drier of the character described comprising a cabinet formed of detachable side, rear and top walls, top edge rails for releasably connecting said side and top walls together, bottom edge rails for releasably connecting said side and rear walls together, said bottom edge rails being constructed to interlock with each other and with the side walls of the cabinet, cross pieces demountably secured to the side walls at the front side of the cabinet, a carrier mounted to reciprocate in and out of the cabinet, a drier frame constructed of demountable parts and releasably supported from the carrier, said walls, rails, cross pieces, carrier and drier frame having other than bolted connections to permit quick and easy assembly without the use of tools.

7. A drier of the character described comprising a cabinet formed of detachable side, rear end top walls, top edge rails for releasably connecting said side and top walls together, bottom edge rails for releasably connecting said side and rear walls together, said bottom edge rails being constructed to interlock with each other and with the side walls of the cabinet, cross pieces demountably secured to the side walls at the front side of the cabinet, a carrier mounted to reciprocate in and out of the cabinet, a drier frame constructed of demountable parts and releasably supported from the carrier, heater equipment for the cabinet, said equipment having a flue, a strap releasably securing said flue to and along an upright side of said cabinet, and connections made up without the use of tools for securing said walls, rails, cross pieces, carrier, drier frame and heater equipment.

8. In a drier comprising a knock-down cabinet, a knock-down drier frame carried therein for reciprocation into and out of said cabinet, and a detachable track for said frame supported entirely within said cabinet.

9. A drier constructed for ready separation and assembly of its parts, one of said parts being a drier frame mounted for reciprocation into and out of said drier, and means housed entirely within said drier for supporting said frame and permitting reciprocatory movement thereof.

In testimony whereof I affix my signature.

JULIUS JUDELSON.