(No Model.) 3 Sheets—Sheet 3.

T. S. WILES.

DRIER.

No. 314,500. Patented Mar. 24, 1885.

Fig. 11.

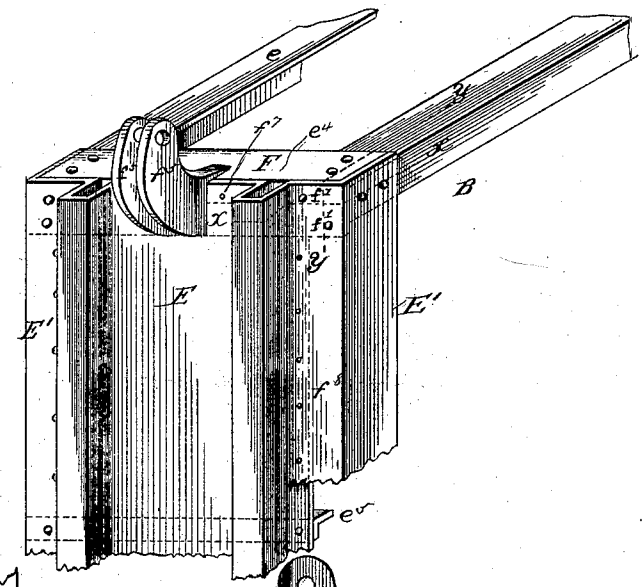


Fig. 12.

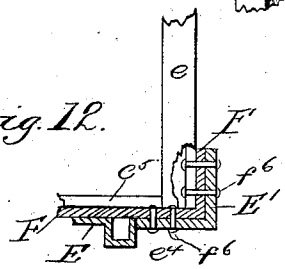


Fig. 13.

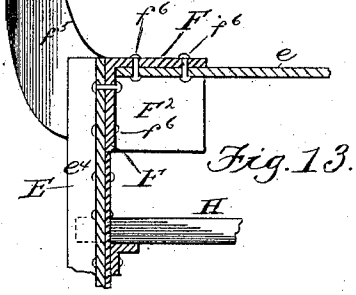


Fig. 14.

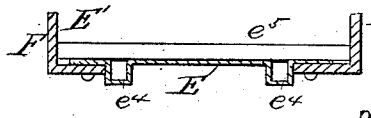


Fig. 15.

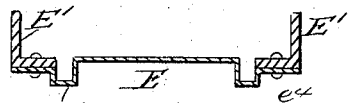


Fig. 16.

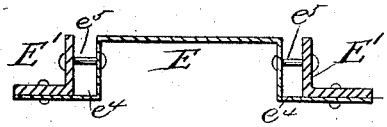
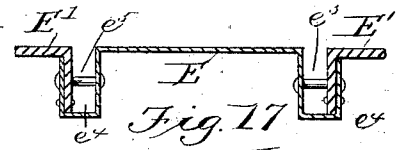


Fig. 17.



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By E. B. Stocking

Attorney.

N. PETERS. Photo-Lithographer. Washington, D. C.

(No Model.)

3 Sheets—Sheet 2.

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Fig. 8.

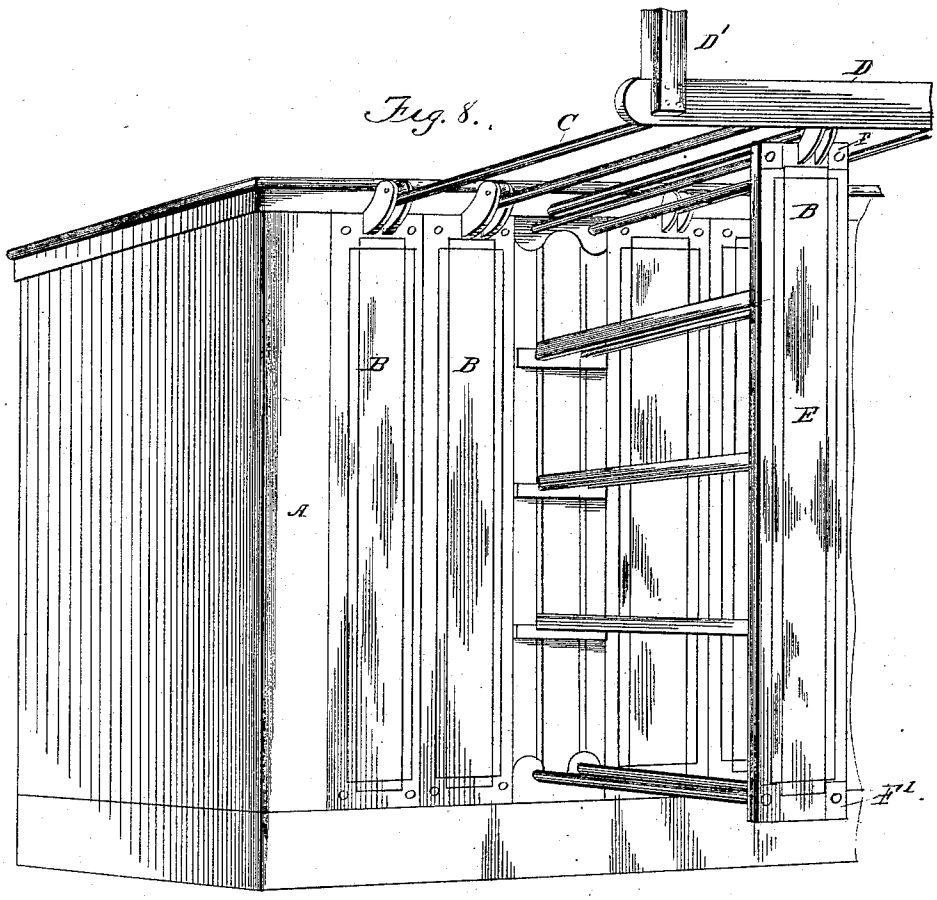


Fig. 9.

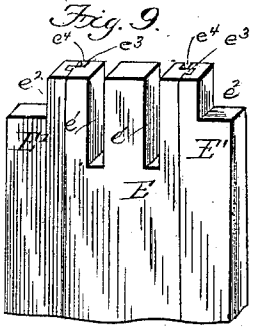
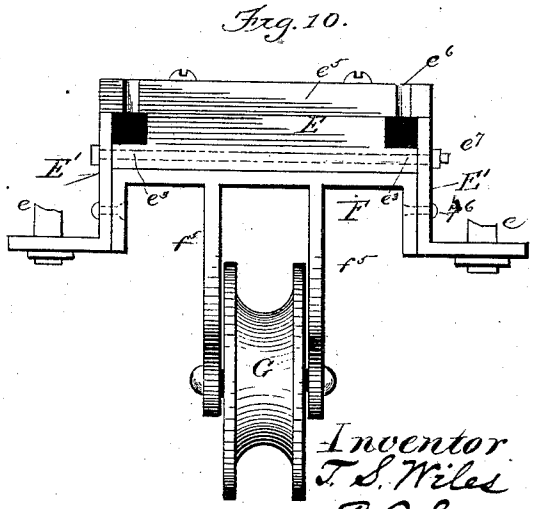


Fig. 10.



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(No Model.)

3 Sheets—Sheet 1.

T. S. WILES.

DRIER.

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Fig. 1

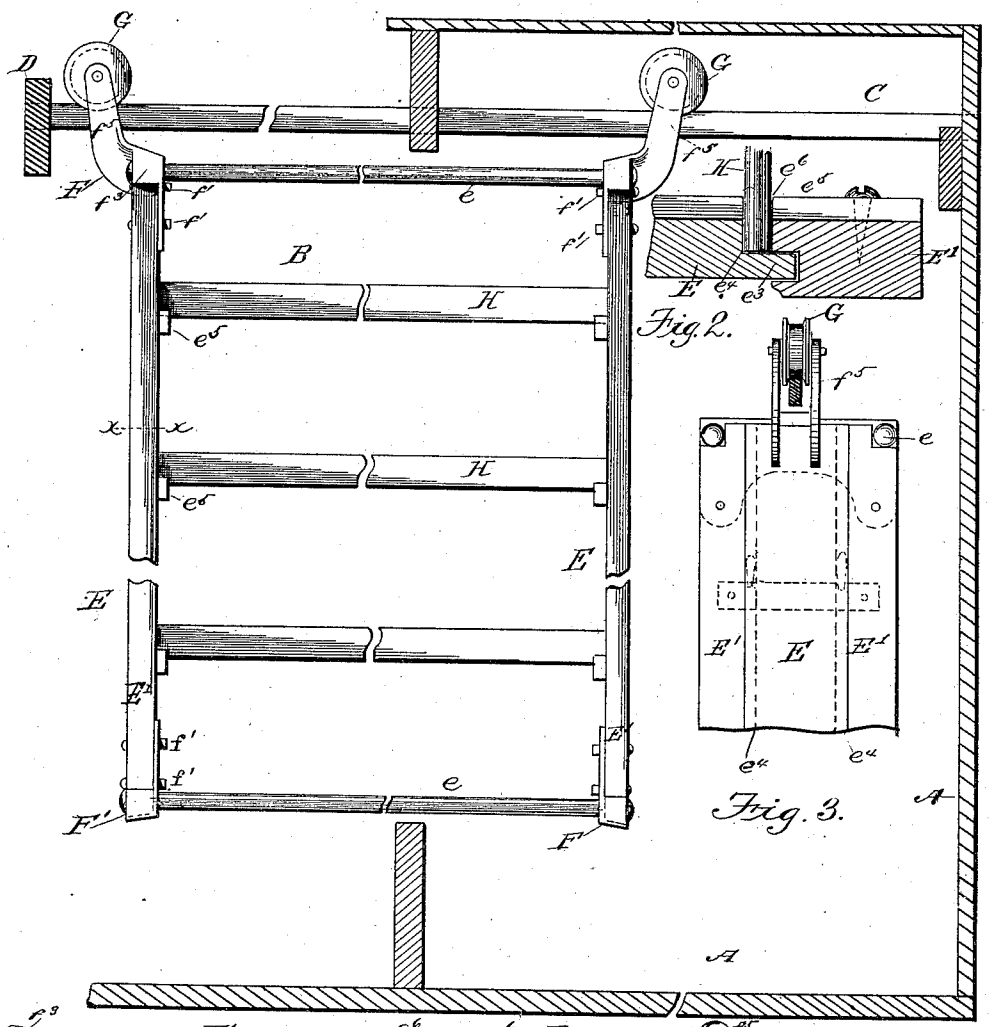

Fig. 2.

Fig. 3.

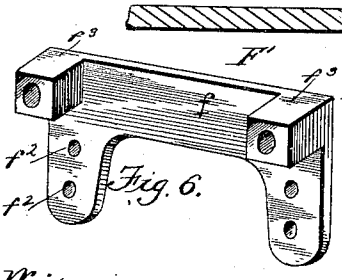

Fig. 6.

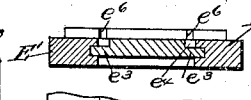

Fig. 5.

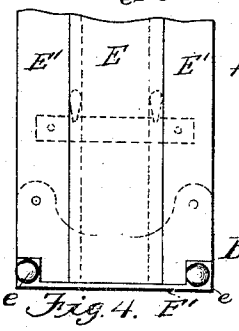

Fig. 4.

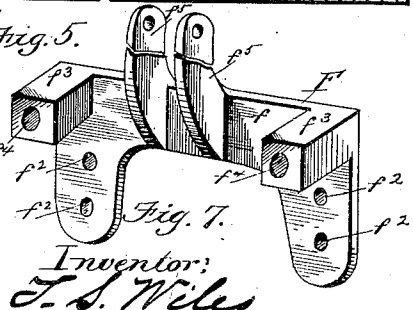

Fig. 7.

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UNITED STATES PATENT OFFICE.

THOMAS S. WILES, OF ALBANY, NEW YORK.

DRIER.

SPECIFICATION forming part of Letters Patent No. 314,500, dated March 24, 1885.

Application filed March 19, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS S. WILES, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Driers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to certain improvements in the construction of driers, and although herein set forth and illustrated as adapted for use in laundries, certain novel features herein shown are as well adapted to driers used for any purpose, and I therefore do not limit my invention to laundry-driers only.

My invention is herein shown as applied to that class of laundry-driers which comprise a series of frames arranged side by side, and supported in such manner that each frame of the series may be independently withdrawn from or moved into a drying room or compartment, which is suitably connected with a system of steam or hot-air pipes for the purpose of maintaining a desired temperature within the compartment. This class of driers has heretofore been constructed almost entirely of wood, and especially so the front and rear walls, which, by reason of the continuous and excessive heat to which the frames are subjected, soon become loosened at the joints and otherwise unfitted for use.

My invention relates more particularly to the drying-frames; and it has for its object the production of drying-frames which will withstand the high heat to which they are subjected without injury.

Other objects and advantages of my invention will appear in the following description, and the novel features thereof will be specifically set forth in the claims.

Referring to the drawings, Figure 1 is a vertical section of a drying-compartment with one of the frames thereof partially withdrawn and shown in side elevation. Fig. 2 is an enlarged detail of an end wall of the frame in section, taken on the line *x x* of Fig. 1. Fig. 3 is a front elevation of the upper end, and Fig. 4 is a similar view of the lower end, of the wall. Fig. 5 is a complete section taken on the line *x* of Fig. 1. Fig. 6 is a perspective of the casting (employed at the lower end of the wall) inverted. Fig. 7 is a perspective of the casting employed at the upper end of the wall. Fig. 8 is a perspective of a complete compartment with one of the frames withdrawn, so that its rear wall is in a common plane with the front walls of the closed frames. Fig. 9 is a perspective of the upper portion of the wood-work of the wall. Fig. 10 is a plan showing a modified construction of the wall, the panels and cleats being of wood. Fig. 11 is a perspective of a modified construction in which iron is used exclusively. Figs. 12 and 13 are sections, respectively, on the line *x* and *y* of Fig. 11. Figs. 14 to 17 illustrate different arrangements relatively of the sheet-metal panels and stiles.

Like letters refer to like parts in all the figures.

Referring to Figs. 1 and 8, A represents any suitable room or compartment, which may be a permanent part of the building, or erected in a permanent part or room of the building.

In the compartment A are a series of drying frames B. From the rear wall of the compartment to a distance in front of the front wall thereof equal to or greater than the depth of the compartment are supported in any suitable manner rails C, the front ends of said rails being supported upon a girder, D, secured in any suitable manner in position, as illustrated in Fig. 8, by means of a hanger, D′, which may be attached to a ceiling of the room in which the drier is located. A rail, C, is provided for each of the driers, and, if desired, as will be hereinafter indicated, a floor-rail may be arranged in a manner so that any frame or frames may be supported at top and bottom by means hereinafter described. Each of the frames comprise a front and a rear wall, E, each constructed like the other, and connected by the upper and lower tie-bars, *e*. In this instance I provide what I consider an important feature of my invention, a casting, F, at the upper ends of each of the walls E, and a somewhat similar, or it may be identical, casting, F′, at the lower end of each wall. If similar to the upper casting, the lower or floor rail will be employed for a purpose hereinafter specified.

The casting F′ comprises a main plate, *f*, having a length equal to the width of the wall and of any suitable depth or width, to permit of its attachment to the rear surface of a wall

by means of bolts f', passing through holes f^2 of the casting. At opposite ends of the plates are lugs f^3, which are apertured at f^4 for the passage therethrough of the tie-bars, rods, or pipes e. If desired, these apertures f^4 may be screw-threaded for the reception of gas-pipe of any suitable size, which may be substituted for the rod e, or said pipe may be passed through said perforations, and any suitable couplings or nuts be employed to secure the ends of the same in the apertures or to the casting in any manner which would suggest itself to persons skilled in the manufacture of similar structures. The casting F is provided with two brackets, f^5, projecting more or less, as desired, from its outer face and from its upper edge for the purpose of providing suitable bearings for the grooved roller G. The lower casting, F', is intended to be substantially like the other, except that it has no brackets f^5 thereon, unless it is intended that the frame shall be supported on a ground-rail, either with or without the upper rail, C. If desired, the brackets may be formed separate from the casting, and in case of very heavy frames additional supports may be provided by duplicating the brackets and locating rollers at either or both ends of the frame at its top, or at its top and bottom, as desired.

By reference to Fig. 9 it will be seen that the end wall, E, is provided with two slots, e', for the reception of the brackets f^5, and the stiles E' are cut away at the corners, as at a^2, for the reception of the lugs f^3. A rabbet or tongue is formed on the longer edges of the wall, so as to produce vertical grooves e^4 along the inner surface of the wall after it is inserted into the stiles E' of wood, when they are employed. By this construction allowance is made for the expansion and contraction of the stiles and of the wall proper, in that when the walls expand or the stiles contract, or vice versa, the portion cut away forming the grooves e^4 permits all usual variations in the relative position of the stiles and the main portion of the wall without separating the one from the other. At desired intervals I screw to the walls and stiles cleats e^5, which may or may not have notches e^6 opposite the grooves e^4, into which the lower narrower edges of the clothes-bars H rest, as clearly shown in Fig. 2, and in dotted lines in Fig. 3. If desired, the cleats e^5 may be secured either to the stiles or to the main portion of the wall, and their number and the number of the bars may be either increased or diminished.

In the modification shown in Fig. 10 I dispense with the wooden stiles E' and employ metal stiles, each consisting of ordinary merchantable angle-iron, which is secured to the wall E by bolts e^7 passing completely through the wall and one flange of each of the angle-irons, and to the other flange the tie-rods e are secured in any suitable manner. The castings F and F' are slightly modified, and are secured at the front of the wall and attached to one flange of each of the angle-irons by bolts or rivets f^6. If desired, the wall also may be bolted to the casting, as at f^7, Fig. 11.

Any suitable handle may be secured to the front wall of each frame, whereby it may be withdrawn from the compartment.

When I employ metallic panels I prefer to make them of sheet metal, as illustrated in Figs. 11 to 17, and I form the grooves e^4 by bending the panel outwardly along its longer sides, as clearly shown, and secure it to the casting by bolts or rivets f' or to the stiles by bolts or rivets f^8, the casting being modified to resemble and adapted for connection with and conformation to angle-iron. The casting may or may not, as desired, have end walls, as shown at F^2, Fig. 13, and I may arrange the panel either outside or inside of the casting and stiles, and the latter may be arranged to form a substantially flat wall, as in Figs. 11 to 15, or so as to form a sunken panel, as in Fig. 16, and the cleats e^5 may be formed by bolts or rivets passing through the walls of the grooves e^4, as in Figs. 16 and 17. The grooves e^4 may, if desired, be formed of vertical angle-irons secured to the inner surface of a plain ungrooved panel.

By the construction shown and described I secure frames which will readily withstand the high degree of temperature to which they are necessarily exposed, and this without injury by long-continued use. The expansion or contraction of any wall, when taking place laterally, is limited in a great measure by the employment of the casting at its upper and lower ends, and the contraction and expansion of the tie-bars e is substantially uniform at top and bottom, and produces no injury by reason of the loose fit of the bars H, while the structure is as a whole adapted to also effectually resist diagonal strains and contortions by reason of any weight placed thereon, any ordinary heat to which it is subjected, and any ordinary operation through which it passes in use, so as a whole the structure is firm, serviceable, and practicable.

I do not wish to be understood as limiting my invention to the exact details herein shown and described, but I reserve my right to vary the same in any manner and to any extent which will suggest itself to any person skilled in the manufacture of similar structures, as I deem myself the first to provide a drying-frame with walls having transverse metallic binding portions, and longitudinal metallic stiles or binding portions, and the first to provide either one or both of said transverse binders with means whereby it is adapted to be directly connected with the supporting-rollers of the frame, and I therefore deem any drier the walls of which are provided with similar or metallic bindings as comprehended by my invention.

I am aware that it is common to apply metal bars or plates to wooden or other articles to avoid splitting; but in this my invention the castings F F' not only serve the function of preventing the warping of the end wall of

the drier-frame, but they are so constructed that they also serve as connecting means or are provided with apertured lugs or devices to which I may secure the tie-rods of the frame, thus obviating disadvantages which accompany any construction in which the said rods are secured to the end wall itself or to the panel or stiles thereof, whether these parts be of metal or wood.

Having described my invention and its operation, what I claim is—

1. A drier-frame comprising end walls having transverse castings and metallic tie-rods firmly seated in the castings at opposite ends of the frame, whereby the frame as a whole is prevented from warping, substantially as specified.

2. A drier-frame comprising an end wall and a casting or castings secured across its end or ends, and metallic tie-rods connected with said castings, substantially as specified.

3. A drier-frame having a vertically-grooved end wall, metallic stiles, end castings secured together, and metallic tie-bars secured to the upper and lower ends of the wall, substantially as specified.

4. A drier-frame having an end wall, comprising a sheet-metal panel bent to form interior vertical grooves for receiving clothes-bars, castings secured to its ends, one of which is provided with brackets for the attachment of a supporting-roller, substantially as specified.

5. A drier-frame, an end wall of which comprises an interiorly-grooved panel, vertical stiles, castings secured to the ends of said stiles, cleats secured to the inner surface thereof, both of said castings being adapted to receive tie-bars, and one or both having brackets for a supporting-roller, substantially as specified.

6. The casting F, provided with perforations f^2, for attachment to an end wall or panel, lugs f^3, (or their described equivalents,) perforated for the reception of tie-rods, and with brackets f^5, substantially as specified.

7. The combination of the panel E, the stiles E′, the upper casting, F, having brackets f^5, and the lower casting, F′, these elements being connected to each other, substantially as shown and described.

8. The combination of the vertically-grooved sheet-metal panel E, metal stiles E′, cleats e^5, and castings F F′, substantially as shown and described.

9. In a drier-frame, an end wall comprising a panel provided with two vertical grooves formed by rabbeting or shaping its edges, and stiles secured to said edges outside of said grooves, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS S. WILES.

Witnesses:
EZRA STILLMAN,
JOHN RATIGAN.