

Nov. 23, 1948.

G. McCANN
PORTABLE SHOWER UNIT

2,454,518

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2 Sheets-Sheet 1

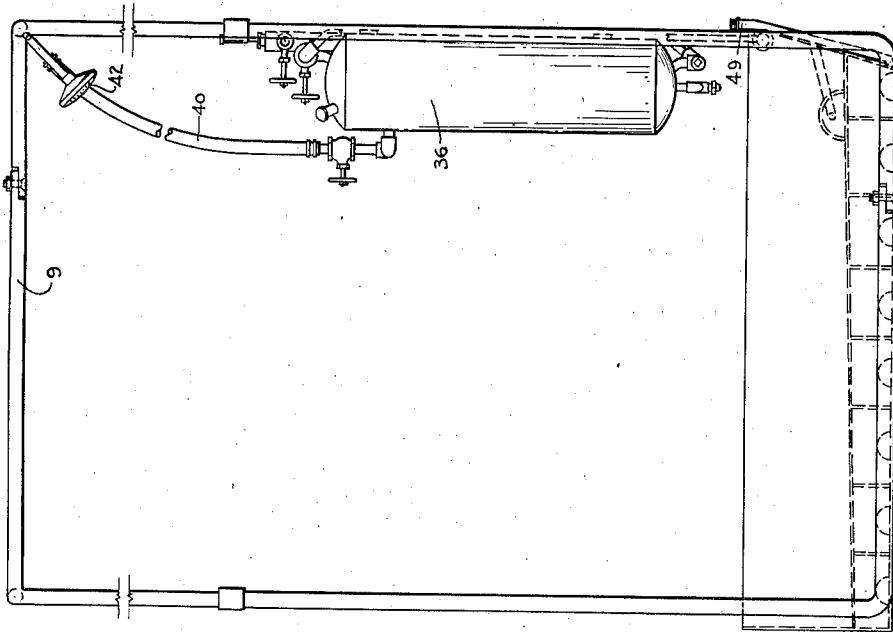


FIG. 2

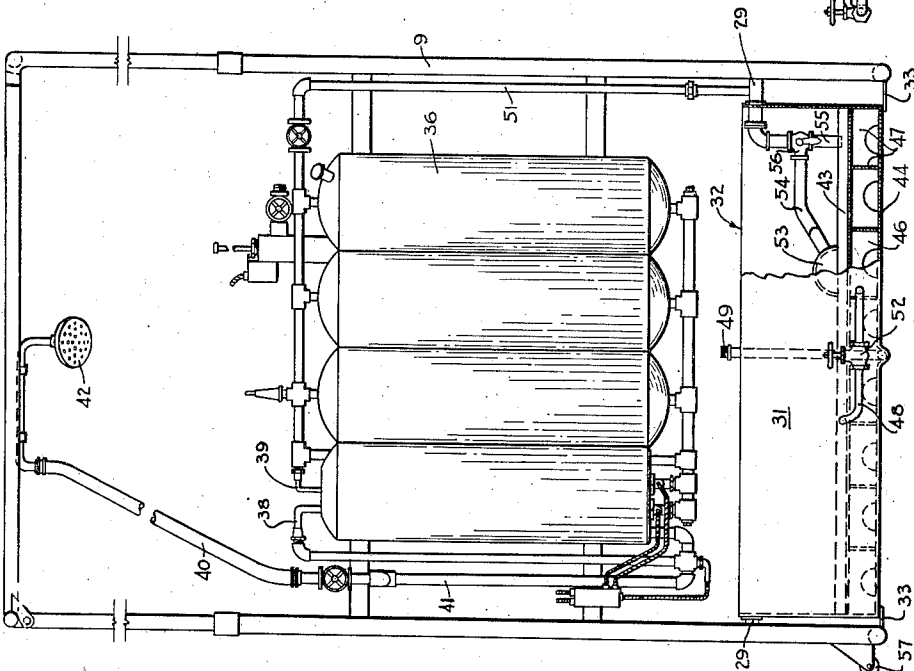


FIG. 1

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2 Sheets-Sheet 2

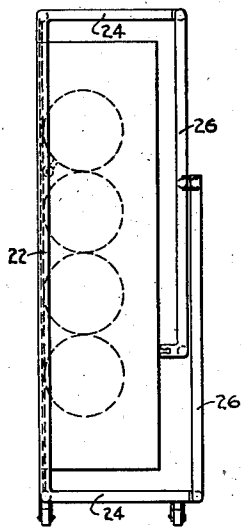


FIG. 4

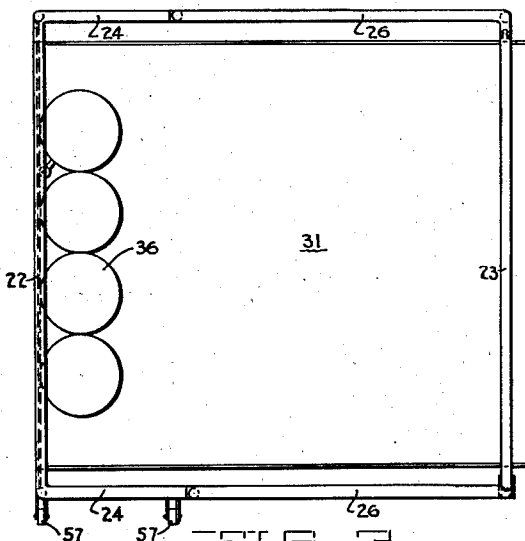


FIG. 5

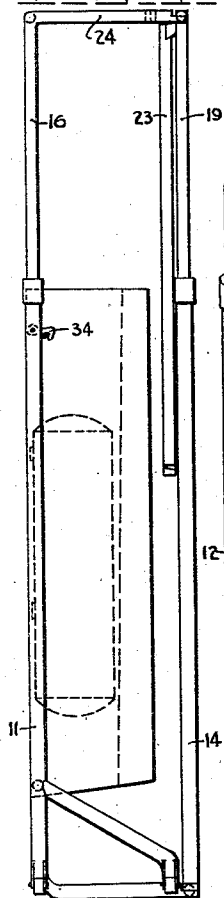


FIG. 6

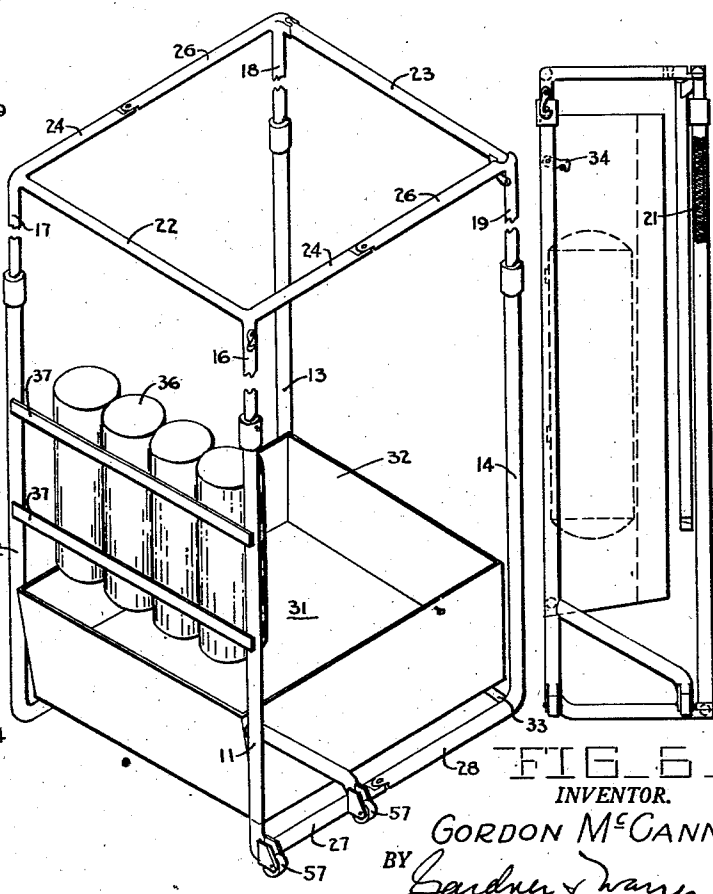


FIG. 7

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UNITED STATES PATENT OFFICE

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PORTABLE SHOWER UNIT

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4 Claims. (Cl. 4-146)

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The invention relates to a portable shower unit which may be folded to occupy a small space, and stored when not in use.

An object of the invention is to provide a shower unit which when in use, will afford all of the utility and spaceousness of the conventional built-in shower, but in which all of the working parts as well as the frame or cabinet, can be folded and nested to occupy a minimum space, when it is desired to compact the unit for moving or storage.

Another object of the invention is to provide a foldable and portable shower unit which will have as a self-contained part thereof, a complete and efficient water supply, pressure and heating system.

An object of the invention is to provide a portable and foldable shower unit having various apparatus for affording complete facilities for showering and which are so mounted and connected in the unit as to permit conversion of the unit from operative position to inoperative position and vice versa with extreme readiness and without requiring any detachment or re-attachment of the parts in the process.

A further object of the invention is to provide a unit of the character described having the water supply and heating apparatus so arranged that the interior of the shower will not be obstructed thereby when the shower is in use, nor will such apparatus protrude outwardly from the frame or cabinet in either the compacted or operating positions of the unit.

A further object of the invention is to mount and arrange the interior parts and apparatus in such manner that all of such parts and apparatus will be completely enclosed within and protected by the frame or cabinet of the unit when the unit is in folded position.

An additional object of the present invention is to provide as a part of the unit a water supply and heating means which may be used to heat the floor of the shower before the shower spray is utilized.

A further object is to provide as part of the unit a means for collecting and storing the waste water and then insuring the effective cleansing and complete evacuation of the compartment in which the waste water is collected.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawings accompanying and forming part of the specification. It is

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to be understood, however, that variations in the showing made by the said drawings and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawings:

Figure 1 is a front elevational view of the shower unit of my invention showing the unit in position for use.

Figure 2 is a side elevational view of the shower unit as shown in Figure 1.

Figure 3 is a plan view of the unit in operative extended position,

Figure 4 is a view corresponding to Figure 3 but showing the unit in folded position.

Figure 5 is a side view similar to Figure 2, but from the opposite side of the unit and showing the same folded as in Figure 4.

Figure 6 is a view the same as Figure 5, but with the unit compacted to its smallest size.

Figure 7 is a perspective view of the unit in extended position with portions broken away or omitted to show the frame and relationship of some of the parts more clearly.

As shown in the drawings, the unit of my invention comprises a cabinet frame 9 preferably formed for the most part of metal tubing and serving to provide a support for all of the members forming a part of the unit. The frame as here shown is arranged to be of generally rectangular form when in operative position, and includes a lower section having four corner posts 11, 12, 13, and 14, and an upper section having corner posts 16, 17, 18, and 19 telescopically fitted within the posts 11, 12, 13 and 14 of the lower section, the posts of the upper section being normally held in extended telescopic relation by means of coil springs 21 located within the lower posts. As will be clear from Figure 7, the posts 16 and 17 of the upper section are secured together in fixed relation by means of a top rail 22, while the posts 18 and 19 of the same section are detachably connected by means of a top rail 23, which is pivotally connected to the post 19 and releasably secured to the post 18. Posts 16 and 18 and posts 17 and 19 are connected by means of top rails, each including arms 24 rigidly fixed to posts 16 and 17, and pivotally attached to arms 26, fixed to the posts 18 and 19. Posts 11 and 12 are secured to posts 13 and 14 by means of bottom rails each including arms 27 fixed to the posts 11 and 12 and arms 28 attached to the posts 13 and 14 and pivotally connected to the arms 27 in a manner corresponding to the connection of the arms 24 and 26. If desired curtains (not shown)

may be hung from the top rails so as to enclose the four sides of the unit.

Mounted on trunnions 29 on the posts 11 and 12 adjacent the bottom thereof, for rotation about a horizontal axis, is a tray 31 which, in operative position, is arranged to be positioned in horizontal relation preferably completely within the posts and with the open side 32 thereof disposed uppermost, supports 33 being provided on the posts 13 and 14 upon which the free end of the tray may rest when the latter is in operative position, or if desired the outer end may be allowed to rest directly on the floor or other surface on which the unit is supported. The tray may be swung to a vertical position when the unit is not in operation, a catch 34 being provided as a mean of releasably holding the tray in said position.

Water for the shower unit is arranged to be supplied from a storage tank 36 which is mounted upon cross-bars 37 fixed between the posts 11 and 12 which may be considered as being disposed at the rear side of the unit. The tank 36 is associated with a water heating and pressure system which is fully described in my copending application filed contemporaneously herewith, and includes a water outlet pipe 38 and a steam outlet pipe 39. The water outlet pipe 38 is connected to a valve controlled extension 41 having a shower sprayhead 42 which is secured at the top of the frame to the cross rail 22, a flexible hose 40 being used as a part of the extension.

The tray 31 is of novel construction, and is provided, as will be most clear from Figures 1 and 2, with a false bottom 43 which with the real bottom 44 of the tray defines a chamber 46 preferably divided into a plurality of compartments by means of perforated partitions 47. Discharge of the waste water deposited in the tray during the use of the shower is provided for by means of an outlet duct 48 leading from the upper surface of the false bottom 43 and opening into the chamber 46. It will thus be clear that where no drain connection extraneous of the unit is conveniently available, the waste water may be accumulated in the chamber and then discharged as through a drain spout 49 when disposal facilities become available. Preferably the chamber is of a capacity which will permit the accumulation of the full amount of water used for a single complete shower.

In order to provide for a ready and effective cleansing of the chamber 46 an extension 51 is secured to the steam pipe 39, which leads directly to the chamber. In this manner by causing steam to be forced through the chamber after the use of the shower has been completed, the contents can be effectively expelled thereby giving no opportunity for the accumulation of any solid waste matter. Desirably the drain spout has a swivel connection so that the spout may be raised to trap the water within the chamber, or lowered to permit gravity evacuation of the chamber. Should it be necessary to dispose of the water from the chamber into an elevated receptacle such as a sink or toilet bowl, a hose may be attached to the spout and led to the receptacle, the force of the steam available in the chamber being sufficient to elevate the water and expel the same in this manner. When the chamber is being cleansed or the water being expelled, in order to prevent water from being driven back up through the outlet duct 48 a valve 52 is provided therein. In order to permit steam bathing a steam outlet and distribution head 53 is pro-

vided upon the bottom 43, and is connected to the steam line by a branch pipe 54 leading from the extension 51. A two-way valve 56 is disposed at the juncture of the pipes 55 and 54, so that the steam may be selectively diverted into the chamber or to the steam distribution head.

As previously explained, the tray is designed to be raised to an elevated position at the rear portion of the unit when the unit is not in use, and in order that the operative connection between the steam pipe 39 and the steam attachments within the tray will not require disconnection upon raising and lowering of the tray, one of the trunnions 29 is utilized as a part of the steam line 51 and is preferably provided with appropriate steam tight joints to prevent leakage.

As also previously explained, one of the important features of the invention is the folding of the unit into a compact assembly when the shower is not in use, and in keeping with this object the storage tank and accessories are so designed and arranged that they will be fitted within and completely enclosed by the tray when the latter is in elevated inoperative position. By thus enclosing the tank and the accessories, protection against damage while in storage or transit is afforded, in addition to compactness of assembly.

When the tray is in vertical position, and it is desired to fold up the frame so as to reduce the dimensions of the unit for storage or transportation, the rail 23 is first disengaged from its connection at the top of post 18 and allowed to hang vertically from its pivotal connection adjacent post 19. Next the arms 26 and 28 are swung inwardly, one over the other, so as to dispose them in substantially parallel relation to the rail 22, as shown in Figure 4, suitable means being preferably provided for locking the arms in said folded position. Desirably the pivotal connection of the arms is such that when the arms are swung to inward folded position the front posts of the upper lower sections of the frame will be disposed against the elevated bottom of the tray. As a final step in the compacting of the unit, the upper section is depressed against the resistance of the springs and locked in position with the top rails immediately over the upper side of the tray. Preferably a pair of caster wheels 57 is mounted on the post 12 and arm 27 at one side of the lower frame at the bottom thereof, and so positioned that by tilting the unit the wheels may be made to engage the floor or other surface upon which the unit is supported, and thus permit the unit to be readily wheeled or transported to a closet or other place of storage.

I claim:

1. In a shower unit of the character described, a frame comprising relatively spaced vertical members at the front and at the rear thereof, means between the rear members securing same together in fixed spaced relation, a tray pivotally secured to the rear members for horizontal positioning adjacent the bottom of the frame and for vertical positioning substantially parallel to the rear members, arms secured to corresponding front and rear members and pivotally secured together to hold the corresponding members in operative spaced relation or permit the front members to be swung relatively inwardly against and overlying the tray when the latter is vertically disposed, and means releasably securing the front members in outwardly extended position.

2. In a shower unit of the character described, a frame comprising relatively spaced vertical

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members at the front and at the rear of the frame, a rail rigidly securing the rear members at the top portion, a tray pivoted to the rear members near the bottom thereof and positionable horizontally between the front and rear members and vertically between the rear members in substantially parallel relation to the latter, means including a rail releasably holding said front members in operative spaced relation, means at the upper and lower portions of the frame securing together the corresponding front and rear members and including arms secured to the rear members and arms secured to the front members and pivoted to the first arms so as to swing inwardly toward the tray and position the front members overlying the tray when the latter is vertically disposed and to swing outwardly to position the front members in extended relation when the tray is horizontally disposed, a first supporting wheel carried by one of the rear members, an arm secured to and extending from one of the rear members, and a second supporting wheel carried by said arm and disposed in spaced relation to said first wheel.

3. In a shower unit of the character described, a lower frame comprising spaced vertical members at the front and at the rear thereof, means rigidly securing the rear members together in spaced relation, a tray pivotally secured to said rear members for positioning horizontally at the bottom of the frame or vertically in substantially parallel relation to the rear members, an upper frame having front and rear members corresponding to and telescopically mounted on the front and rear members of the lower frame, said upper frame being vertically depressible to position its top portion substantially immediately over the tray when the latter is in vertical position, foldable arms connecting corresponding front and rear members of the lower frame, foldable arms similar to said first arms connecting corresponding front and rear members of the upper frame, said first and second arms foldable to position the front members of the upper and lower frames against the tray bottom when

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the latter is vertically disposed and unfoldable to position said front members outwardly of the tray when the latter is in horizontal position, and means for releasably securing said front members in spaced relation when in outward position.

4. In a shower unit of the character described, a frame having relatively permanently fixed vertically extending rear members, a tray pivotally connected to said rear members and movable from a horizontal position extended forwardly of the rear members to a vertical position lying between and substantially longitudinally paralleling said rear members, a water storage and heating unit disposed between said rear members and positioned to be enclosed by the tray when the latter is in vertical position, said storage and heating unit being arranged to deliver steam into said tray to be discharged upwardly from the bottom of the latter and to deliver hot water to and to be discharged from a shower head supported by the frame rear members in elevated position over said tray, vertically extending front members spaced relatively to said rear members, and arms secured to corresponding front and rear members and pivotally secured together to hold the front and rear members in relatively spaced relation and to guide said front members to folded positions overlying the bottom of said tray when the latter is in vertical position.

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