March 10, 1959 J. KAISER 2,876,457

COMBINED BATH AND WASH FIXTURE

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Fig.1

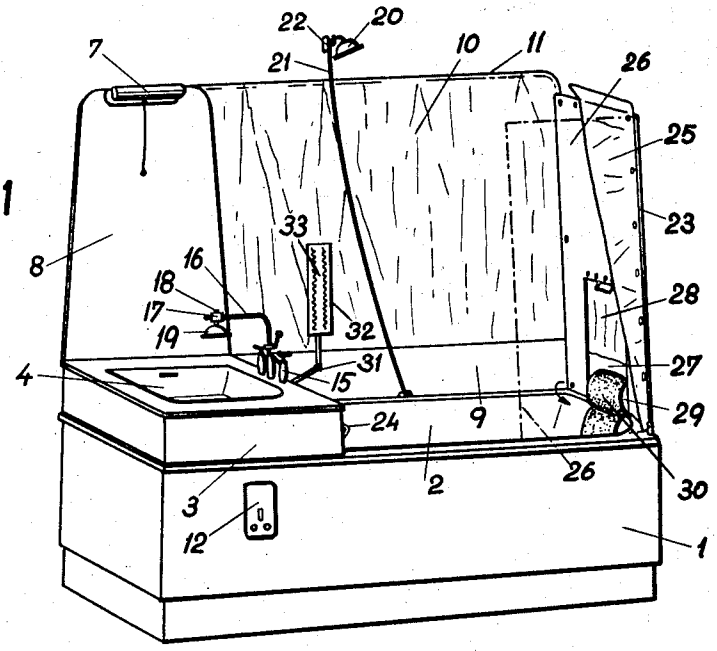


Fig.2

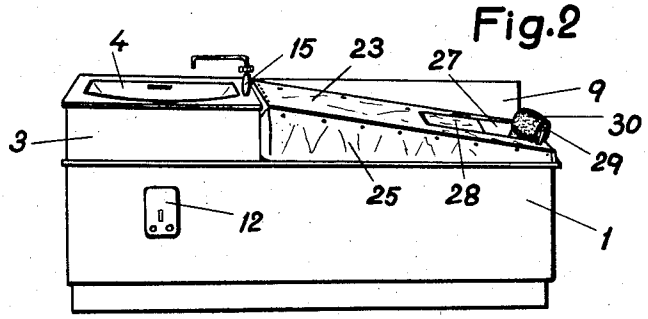


Fig.4

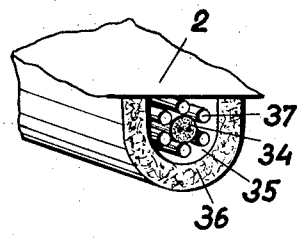
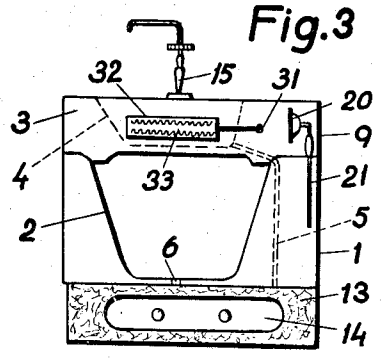


Fig.3



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COMBINED BATH AND WASH FIXTURE

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7 Claims. (Cl. 4—4)

To minimize the space and piping required for bath and wash fixtures it has been proposed to combine a bath tub and a wash basin in a unit of construction. In these constructions the bath tub and wash basin are combined so that the wash basin either extends beyond the length of the bath tub at the foot end thereof or extends at least partly above said end. In these constructions it is either necessary to make the tub very high in order to enable the wash basin to be arranged in the proper position for use or the wash basin is very low, which is just as impractical. In smaller bath tubs, therefore, it is often only possible to mount a shower because the hot water heaters provided in most cases in the bath room itself require a relatively large space. In order to save space and to prevent the bath water from cooling down it has already been proposed to provide a heater for directly heating the tub. In most of these constructions electric resistance heaters or gas burners or the like are provided adjacent to the bottom of the tub. These constructions will obviously have an extremely low thermal efficiency because an adequate heat insulation is not possible and the motion of the water due to the heating is very slight. In addition, the bottom of directly heated tubs becomes so hot that the tub cannot be used until considerable time after the shutting down of the heater and it is not possible to control the water temperature during use.

The invention relates to a bath and wash fixture in which all the advantages set forth herein before have been eliminated and which complies with all requirements while requiring a very small space.

The bath and wash fixture according to the invention comprises a tub having a head end and a foot end, a hot water heater having a hot water outlet and combined with said tub to form a unit of construction therewith, a water mixing valve carried by the tub and connected to said outlet, a support carried by said tub and extending above the same at the foot end thereof, a wash basin carried by said support above said tub, a discharge pipe connected to said mixing valve and adapted to feed said tub and said wash basin, said tub and said wash basin being provided with a water outlet each, and a wastepipe connected to said outlets of said tub and wash basin. The hot water heater is suitably accommodated in a casing which encloses the tub and in which the water heater is readily accessible. In most cases the hot water heater will consist of a flow heater or of a hot water reservoir of low height disposed below the tub. The construction according to the invention achieves a substantial saving of space, piping and the like compared to the previously known conduits because only a single water supply pipe is required for the tub and hot water heater. Since the wash basin comes to lie in an elevated position above the tub the latter may have a normal overall height and the wash basin may nevertheless be disposed on the level which is desirable for the use thereof. The tub is suitably provided with a readily removable casing. The wash basin and its support consisting of a base casing are in most cases arranged to cover the top of the tub for a portion adjoining the foot end of the tub.

In another development of the invention it is even possible to use the bath and wash fixture according to the invention as a steam bath or as a sauna. To this end the fixture comprises a preferably removable covering means which covers the top of the tub and is arranged next to the base casing of the wash basin, and a heater for heating the room enclosed by the tub, the base casing and wash basin and the cover. If desired that heater may heat an evaporating chamber which can be supplied with water through a metering device or the like to facilitate the preparation of a sauna or steam bath. As has already been mentioned the space required by the fixture according to the invention is very small because it needs to be accessible only from the front side. For this reason the fixture may be arranged in rooms so small that they could previously be used only as a shower cabin. The fixture can also be accommodated without difficulty in caravan trailers for camping purpose and the like. Further details and desirable developments of the invention will become apparent from the following description of the accompanying drawing.

The accompanying drawing illustrates an embodiment of the invention.

Fig. 1 is a perspective view showing a bath and wash fixture according to the invention suitable as a steam bath.

Fig. 2 is another perspective view showing a modification of Fig. 1, with the cover closed.

Fig. 3 is a diagrammatic cross-sectional view showing another modification of the invention.

Fig. 4 is a diagrammatic cross-sectional view showing the lower part of a bath tub with a special construction of a flow heater.

A bath tub 2 is arranged in a casing 1, which consists preferably of readily detachably connected components made in most cases of sheet metal or thermoplastic synthetic materials. A wash basin 4 is carried in a support or base casing 3 which is mounted on the tub 2 at the foot end thereof. The outlet of said basin is connected by a pipe 5 to a waste pipe connected to the tub outlet 6. A mirror wall 8 provided with a lighting fixture 7 is affixed behind the wash basin 4. The rear part of the tub casing 9 extends upwardly to the level of the top edge of the base casing 3. In the embodiment shown in Fig. 1 a tubular frame 11 carrying a splash curtain 10 is affixed to the rear side of the wall. In the embodiments shown in Figs. 1 and 2 an electrically heated flow heater 12 is accommodated in the front part of the casing 1. This flow heater may comprise, e. g., a helical water tube, which accommodates bright heating conductors or sufficiently thin tubular heaters. According to Fig. 3 a hot water reservoir 14 which is provided with a heat insulation 13 and can be electrically heated or gas-fired is disposed below the tub. That reservoir distinguishes by a particularly low overall height which is, at most, one third of the overall height of the tub. A joint mixing valve 15, which is connected to the flow heater 12 or the hot water reservoir 14, is provided for the tub 2 and the wash basin 4. According to Fig. 1 that mixing valve has a discharge pipe 16, which can be swung from the tub to the wash basin and carries at its outlet end a sleeve-shaped rotary valve member 17. That sleeve 17 carries an outlet tube 18 and a shower 19 which can be alternately connected to the mouthpiece of the discharge pipe 16 by turning the sleeve 17. In addition to the shower 19 provided on the discharge pipe the tub has a shower 20 which is connected by a hose 21 to the mixing valve 15. The hose 21 is disposed inside the tub casing 1 and be pulled out of the tub casing with the

aid of the shower 20 through an opening formed in the tub casing 1. As is shown in Fig. 1 the hose-connected shower 20 can be hung on a wall hook 22 or the like to enable it to be used like a normal shower. Since the hose 21 is concealed in the tub casing 1 when the shower 20 is in its normal position that hose need not be made of expensive, chromium-plated material, because the hose 21 is not visible in the normal position of the shower. In the extended position the hose forms a freely hanging loop.

As is apparent from Figs. 1 and 2 the base casing 3 and the wash basin 4 disposed therein covers the foot end of the bath tub 2. In the constructions shown in said two figures the tub casing has hinged to its head end a cover 23, which can be swung out of a substantially vertical position of rest (shown in Fig. 1) on top of the tub to cover the same as far as to the base casing 3. The free end of the cover is supported by a rod 24, which is attached to the base casing 3 and serves at the same time as a handle. When closed the cover 23 is slightly inclined and has at its front end a triangular flap 25 closing the gap formed between the cover and the top edge of the tub. Such a flap is not required on the rear side of the cover because the upwardly extending splashboard 9 closes the gap between the cover and tub. A panel 26 is hinged to one longitudinal side of the cover 23 and can be swung forwardly in the vertical position of the cover, as is shown by a dash-and-dot line in Fig. 1, to form together with the cover a shower cabin which is open towards the foot end of the tub. In most cases a hook or the like for suspending the hand shower 20 is provided on the rear wall 10 or on the frame 11 thereof. It would also be possible, of course, to hinge several wall panels together in order to enlarge the front cover of the shower cabin formed in the manner described or to provide for an entirely closed shower cabin. In a similar way a horizontal rectangular frame extending beyond the tub could be attached to the frame 11 for guiding a splash curtain. The cover 23 and the wall panel 26 are formed with head holes 27 which register when the elements 23 and 26 are folded together. These holes, which can be closed by a slide cover 28, extend at one end edge by the top edge of the head end of the tub and enable the head to be left outside the room enclosed by the tub, cover, base casing and wash basin if the cover is closed. A roll 29 is carried at the head end of the tub to be arranged in the hole 27 in the vertical position of the cover. A mat 30 consisting in most cases of foamed rubber is wound on said roll. When rolled up that mat forms a kind of neck support. The mat can be unwound from the roll 29 to cover the bottom and the head end wall of the tub. The base casing 3 carries a shaft 31, on which a heater 33, provided with an adjustable reflector 32 and constructed as a long-field radiator, is pivoted to be swung from its vertical position, shown in Fig. 1, into a horizontal position. The heater 33 can be fixed in several angular positions. In its horizontal position the heater heats the room enclosed between the tub and cover. The fixture according to the invention enables the taking of normal and hot-air steam and sauna baths. The preparation of steam and sauna baths can also be facilitated by providing the heater 33 with an evaporating chamber, which can be supplied with water through a metering device. For normal baths the mat 30 may serve to prevent slipping whereas in the case of steam baths or the like it serves as a warm cover for the cold bottom and head end of the wall.

In the flow heater shown in Fig. 4 a rod-shaped radiator 34 is disposed below the tub 2 in an elongated horizontal compartment 35, which is provided with heat insulation 36 open towards the tub to provide for a heat transfer between the compartment 35 and the tub. The radiator 34 is surrounded by spaced tubes 37 connected to the hot water outlet of the radiator. The compartment 35 may be open at both ends and accommodate a fan or the like so that this radiator 34 may also be used for room heating. Locking means or the like are desirably provided which prevent the operation of the fan if the radiator is under high load, e. g. when the hot water outlet is entirely open. Instead of being mounted in a compartment 35 the flow heater consisting of the radiator 34 and the water tubes 37, may be disposed in a casing tube or the like which is provided in the tub casing and is suitably in heat transfer relation with the tub 1. The omission of the heat insulation towards the tub provides that the latter is slightly preheated before the water is admitted to the tub whereas the tub will not assume unduly high temperatures. The water tubes may be helically curved, if desired.

In the illustrated embodiments the hot water heaters 12, 14 and 34 are electrically operated. It would also be possible, of course, to operate the hot water heaters and the radiator 33 with gas or a liquid fuel. The water mixing valve could be carried by the tub itself and the base casing and wash basin 4 could be removably arranged. The tub itself as well as its casing may be made of enamelled sheet metal or of moulded plastics or the like.

I claim:

1. A bath and wash fixture, comprising a tub having a head end and a foot end, said tub comprising a tub casing and a tub member having a top rim and contained in said tub casing, said fixture comprising further an electric water heater having a hot water outlet and disposed in said tub casing below said top rim, a water mixing valve carried by said tub and connected to said outlet, a support carried by said tub and extending above the same at the foot end thereof, a wash basin carried by said support above said tub, a discharge pipe connected to said mixing valve and adapted to feed said tub member and said wash basin, said tub member and said wash basin being provided with a water outlet each, and a wastepipe connected to the drain outlets of said tub member and wash basin.

2. A fixture as set forth in claim 1, in which said tub comprises a tub member and a tub casing containing said tub member and formed with an opening, a hand shower disposed outside said tub casing, and a flexible tube extending in said tub casing and out of the same through said opening and connecting said hand shower to the mixing valve, said flexible tube being adapted to be pulled out through said opening.

3. A bath and wash fixture as set forth in claim 1, in which said tub member consists of heat conducting material and said electric water heater comprises a hot water reservoir member of heat conducting material in contact with said tub member, and which comprises heat insulating material disposed between said reservoir member and said tub casing.

4. A bath fixture which comprises a tub, a cover movable to a closed position in which it covers the top of the tub, whereby a closed space is defined by said tub and cover, said cover having two longitudinal sides and two ends and being hinged to the top of said tub at one of said ends and being pivotally movable to a vertical position, and a wall panel hinged to one of said longitudinal sides and adapted to be folded down on the cover and to be swung away from said cover to form therewith a shower cabin when the cover is in said vertical position.

5. A bath fixture as set forth in claim 4, in which said tub has a head end to which said cover is hinged, and which comprises a roll mounted on the head end of the tub and a mat wound on said roll and adapted to be unwound therefrom to cover the bottom of the tub and the inside of the head end thereof, and in which said cover and wall panel are formed with a head hole each and said head holes are arranged to register when said wall panel is folded down on said cover, said roll being

arranged to be disposed in said head hole of said cover in the vertical position thereof.

6. A bath fixture comprising a tub member of heat conducting material, a tub casing containing said tub member and defining therewith a horizontal compartment, to which said tub member is directly exposed, a flow-type electric heater disposed in said compartment, and a discharge pipe connected to said water heater and arranged to feed said tub member.

7. A bath and wash fixture, comprising a tub having a head end and a foot end, an electric water heater having a hot water outlet and combined with said tub to form a unit of construction therewith, a water mixing valve carried by said tub and connected to said outlet, a support carried by said tub and extending above the same at the foot end thereof, a wash basin carried by said support above said tub, a discharge pipe connected to said mixing valve and adapted to feed said tub and said wash basin, said tub and said wash basin being provided with a water drain outlet each, and a waste-pipe connected to said drain outlets of said tub and wash

basin, said support forming a base casing covering the top of said tub for a portion adjoining the foot end of the tub, said fixture comprising further a cover movable into a closed position in which it covers the top of said tub where the same is not covered by said base casing, whereby a substantially closed space is confined by said tub, base casing, wash basin, and cover, and a heater arranged in said space for heating the same.

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