March 10, 1953 A. H. TIEDEMANN ET AL 2,631,062

PORTABLE SHOWER

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Fig. 1.

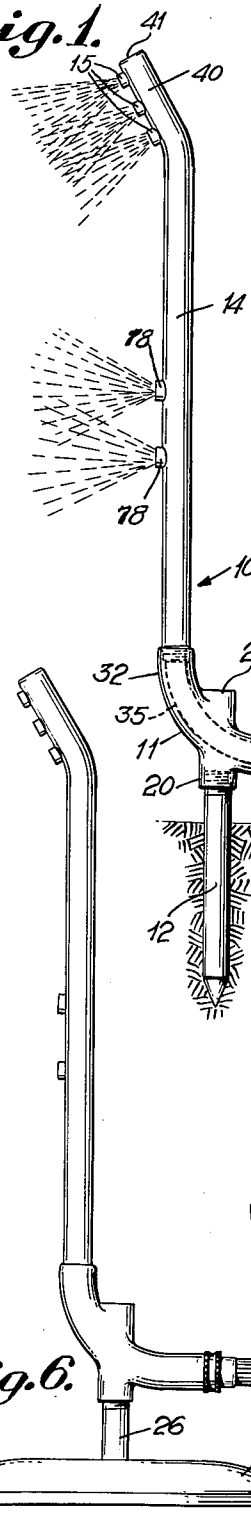


Fig. 3.

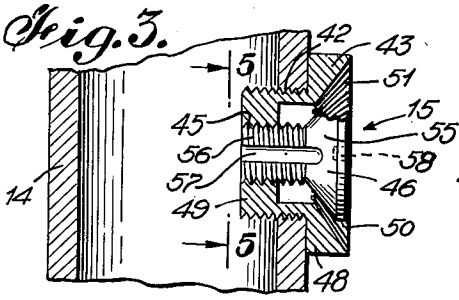


Fig. 4.

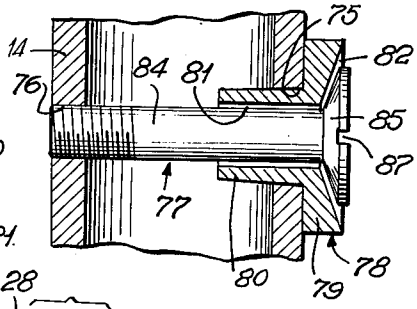


Fig. 2.

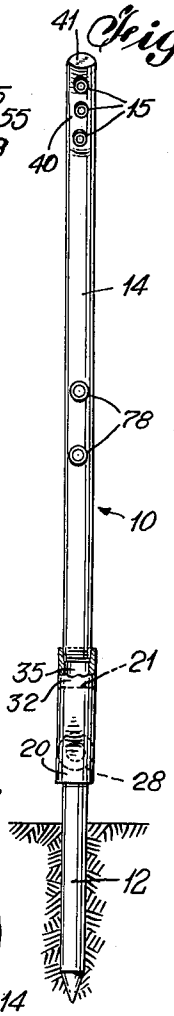


Fig. 5.

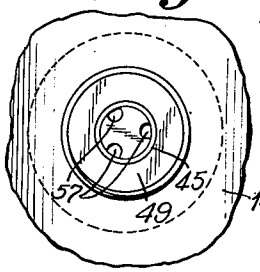


Fig. 7.

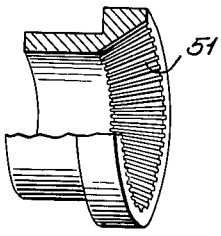


Fig. 8.

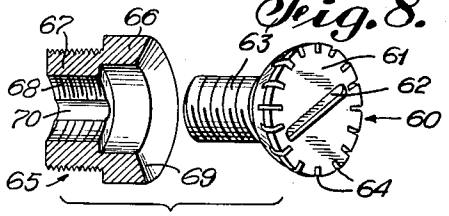


Fig. 6.

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PORTABLE SHOWER

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2 Claims. (Cl. 299—75)

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This invention relates to a portable shower.

The principal object of this invention is the provision of an outdoor shower unit which may be made portable or for permanent installation and which may very readily and easily be set up and connected for use. Although the shower unit herein described and claimed is intended primarily for outdoor use, it may, of course, be installed indoors should this be desired. The principal application of the invention is to a portable unit which is either provided with a spike for insertion into the ground or with a base or pedestal which is adapted to rest upon suitable horizontal surface, such as a cement pavement or a lawn.

Portable shower units with spikes or bases have heretofore been designed but for one reason or another they have been found unsuitable for the purposes for which they were devised. Especially is this true of portable shower units equipped with spikes which are to be driven into the ground. No means has been provided in these shower units which might be engaged by a hammer or other suitable striking means. In the present device, however, an anvil has been incorporated immediately above the spike and in line with it so that a hammer or heavy stone or any other suitable means that may be handy, may be used to engage the anvil for driving the stake or spike into the ground. The spike and base are interchangeable in the present device so that either may be used, as desired or required.

Another object of this invention is the provision of a shower unit of the character described which may be hooked up to a conventional garden hose which is provided with conventional couplings or fittings. The shower unit constituting the present invention may be provided with external screw threads to receive a female hose fitting or with internal screw threads to receive a male hose fitting. Other connecting means and methods may be employed, if desired. For example, the screw threads may be omitted entirely and a friction fit between the hose and the present shower unit may be substituted in place of the screw threaded connection above mentioned.

What has been said of the connection between the present shower device and the hose is equally true of the connection between the main casting of said shower device and the spike or base which supports it. The spike and base may be placed in screw threaded engagement with the main casting, or a press fit or slide fit (with some friction) may be utilized in place of the screw threaded connection between the parts.

The same remarks are equally true of the riser and its connection with the main casting of said

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shower device. A screw threaded engagement may be provided between the riser and the casting or, if desired, a press fit may be substituted in its place. Although the construction hereinabove described is susceptible of many variations in addition to those specifically mentioned, it will suffice to say that in the preferred form of this invention, screw threaded engagement between the main casting and the spike, between the main casting and the hose, and between the main casting and the riser, is to be preferred. In this manner standardization of parts and production can readily be achieved.

Another important object of the present invention is the provision of a shower unit of the character described which includes at least one, and preferably a plurality, of spray heads or nozzles, each of which constitutes a separate and independent unit which may be inserted into the riser which the main casting of the device supports. The number and location of the spray heads or nozzles on the riser, and also their respective positions on the riser, will determine the character, quantity and direction or directions of the spray. The spray may be directed upwardly or downwardly or laterally or it may be directed in all three directions at the same time.

The use of separate and independent spray heads or nozzles makes for very substantial advantages over the prior art. The same basic design may be employed whether one or five or an even greater number of spray heads or nozzles are used in any given unit. Like the other parts of the shower unit, these spray heads or nozzles may be in screw threaded or press fitted engagement with the riser. Since screw threaded connections are to be preferred in this construction, the number of spray heads or nozzles in the riser may be varied by simply varying the number of tapped holes which may be provided therein. If it be desired to install only one spray head in a given riser, a single tapped hole may be provided therein to receive said spray head; where half a dozen spray heads are to be incorporated into a single riser, half a dozen tapped holes should therein be provided to receive said spray heads. The nature of the construction of the riser remains constant and unchanged, irrespective of the number of spray heads which may be incorporated therein and the nature of the construction of the spray heads also remains constant and unchanged, whether one or more than one are installed in a single riser. This feature standardizes and facilitates production to a very considerable extent since any number of different models may be had with the same parts.

A further object of this invention is the provision of a shower unit of the character described having individual spray heads incorporated therein as mentioned above, each spray head being individually adjustable to provide for a coarser or finer spray with a greater or lesser flow or volume of water. Each spray head is provided with a screw type of adjustment construction and all that need be done to change the character or quantity of the spray is to turn the screw adjustment in the appropriate direction to the desired extent. It is possible, in multi-headed shower units of the character described, to have one or more of the spray heads adjusted for a strong spray and one or more adjusted for a relatively weak spray, thus rendering the shower unit an extremely versatile device which may be adjusted and adapted to meet all shower and spray requirements.

The spray heads or nozzles may be designed for screw machine production so that they may be produced in large quantities at relatively low cost. The adjustment screws of these spray heads are also ideally adapted for screw machine manufacture.

Still another object of the present invention is the provision of spray heads or nozzles of the character described which may be used for shower purposes, as well as for many other purposes where liquids, gases and powders are sprayed or similarly emitted or ejected. Although the principal application of the present invention is to showers, and especially portable showers, it has many other applications to fields and industries and uses which are far removed from showers. For example, the invention may be applied to sprinkling and irrigating systems for lawns, gardens and agricultural farms. It may also be applied to sprinkler systems which are installed and employed for fire fighting purposes. The invention may be applied to the application of insecticides and similar chemical compositions to wide agricultural areas, irrespective of whether these insecticides or other chemical compositions be in liquid, gas or solid (powder) form. It will be understood that these applications are set forth herein solely for purposes of illustration and that the invention is susceptible of many other applications equally as well.

Still another object of this invention is the provision of a portable shower of the character described which is relatively simple and inexpensive both in construction and in assembly. The spike and the spray heads may be of screw machine design. The riser is an ordinary pipe or tube. There is only one casting. All of the parts may be secured to each other by means of screw threaded connections. Shipment is feasible both in assembled and unassembled condition.

Preferred forms of this invention are shown in the drawing purely for illustrative purposes. In the drawing:

Fig. 1 is a side view of a portable shower made in accordance with one form of this invention, showing the use of a spike to support it on the ground;

Fig. 2 is a front view thereof, the main casting being partly broken away to show its screw threaded engagement with the riser;

Fig. 3 is an enlarged sectional view through one of the spray heads;

Fig. 4 is a similar view showing a modified form of spray head;

Fig. 5 is a sectional view on the line 5—5 of Fig. 3;

Fig. 6 is a view similar to that of Fig. 1, showing the portable shower supported on the ground by means of a base or pedestal, rather than by means of a spike;

Fig. 7 is an enlarged perspective view, partly broken away and in section, of the female part of the spray head shown in Fig. 4; and

Fig. 8 is an exploded, perspective view of the male and female parts of a third form of spray head.

Reference to Fig. 1 will disclose the fact that the portable shower 10 comprising the first form of this invention, is provided with a main casting 11, a spike 12 which may be driven into the ground 13 to support the portable shower thereon, a riser 14 and a plurality of spray heads 15. The main casting 11 has a downwardly extending portion 20 and an upwardly extending portion 21 which is in vertical alignment therewith. The downwardly extending portion 20 may be provided with a vertically extending hole which may have internal screw threads formed therein and the spike may have external screw threads formed at its upper end for engagement with said internal screw threads of downwardly extending portion 20. This is one way of securing the spike to the casting and it will be understood that there are many other ways well known to those skilled in the art. The upwardly extending portion 21 constitutes a relatively solid boss which is situated in line with the spike when the spike is inserted in downwardly extending portion 20. No part of the portable shower is situated directly above upwardly extending portion 21 so that a hammer or other suitable means may be employed to strike said upwardly extending portion 21 for the purpose of driving the spike into the ground. The upwardly extending portion will hereinafter be designated or referred to as the anvil of the present device.

Spike 12 may constitute a solid rod which is pointed at its lower end and screw threaded at its upper end, as has above been indicated. It may, of course, be made of tubular material, such as a length of pipe. In Fig. 6 the same portable shower is shown mounted on a base or pedestal 25. Extending upwardly from the base, centrally thereof, is a short rod or length of pipe 26 which may be screw threaded at its upper end for engagement with internally threaded portion 20 in the place and stead of spike 12. The base may be of any suitable construction, it may be hollow or solid and it may comprise a casting or it may be made of tubular material. Vertical stem or post 26 may be screw threadedly secured to the base or it may be press fitted thereto, or welded thereto or in any other manner suitably fastened thereto.

Casting 11 also has a laterally extending portion 28 having an internally threaded hole formed therein to receive the externally threaded fitting 29 of hose 30. It is by this means that the portable shower constituting the present invention may be hooked up or connected to a source of water under pressure. If desired, portion 28 may be externally threaded to receive an internally threaded fitting or screw threads may entirely be dispensed with and a friction fit or other suitable fit may be provided between the hose and the casting.

The main casting has still another outwardly extending portion formed thereon, to wit curved,

upwardly extending portion 32. Upwardly extending portion 32 is offset from anvil 21 in order to avoid interference between it and any hammer that may be used to strike the anvil. Upwardly extending portion 32 may be provided with a hole formed therein and internal screw threads in said hole. The riser 14 may be provided with external screw threads at its lower end for engagement with the internal screw threads of upwardly extending portion 32. If desired, other suitable fastening means may be employed to secure the riser to the main casting.

It has been stated that a hole is formed in laterally extending portion 28, which may more suitably be described as the hose engaging portion, and that another hole is formed in the upwardly extending portion 32 which may more conveniently be described as the riser engaging portion of the main casting. It has also been stated that a third hole is formed in the downwardly extending portion 26 which also may more conveniently be designated as the spike engaging portion of the main casting. The two holes in portions 26 and 32 are actually continuous with each other and they form a curved passageway 35 which extends through the main casting, providing communication between hose 30 and riser 14. The hole in spike engaging portion 26 normally does not communicate with passageway 35, although it may communicate therewith, if so desired. It would be desirable to provide communication between the hole in portion 26 and riser engaging portion 32 if it is decided to connect said portion 26 to a source of water under pressure. In such case portion 26 would be secured, say to a water pipe, and portion 28 would be blocked off. In the preferred form of this invention, however, main casting 11 is made precisely as it is shown in the drawing, namely with a cored, curved passageway 35 between hose engaging portion 28 and riser engaging portion 32. The hole in spike engaging portion 26 is a dead end hole.

Riser 14 is a tubular member or pipe which projects vertically above riser engaging portion 32 of the main casting and which may be bent over, say 45°, at its upper end 40. Its top 41 is blocked or closed off. It is provided with a plurality of tapped holes 42 formed in its main, vertically extending portion, as well as in its bent upper portion 40. One of these tapped holes 42 is clearly shown in Fig. 3. Mounted tightly in each of said tapped holes 42 is the female part 43 of spray head 15. This female part 43 has a tapped hole 45 formed therein, centrally thereof, and the male part 46 of said spray head is therein mounted.

The female part 43 of the spray head comprises what may be described as a bushing or fitting which has a head or flange 48 and a reduced shank portion 49. It is this shank portion which is externally threaded for engagement with internally threaded hole 42 in the riser. When the shank is screwed in tight, head portion or annular flange 48 engages the outer wall of the riser very tightly and a water-tight connection between said female part 43 and the riser 14 thereby results. Flange 48 has a cone-shaped recess 50 formed therein concentrically with tapped hole 45. Grooves or ridges 51 are formed along the wall of said recess 50, in radial relation to tapped hole 45. These grooves or ridges may be of equal depth or height from end to end or they may taper in depth or height from their respective inner ends to their respective outer ends so that said grooves or ridges may actually start with relatively small proportions at their inner ends and end up with relatively large proportions at their outer ends. As a matter of fact the wall of recess 50 may actually be smooth at its lower or smaller end and grooved or ridged only in the direction of its larger or outer end.

Male part 46 of the spray head may be designated as a threaded stud or adjustment screw. It comprises a cone-shaped head 55 having a reduced, threaded shank 56 which may be inserted into tapped hole 45 in the female part. Longitudinally extending grooves 57 are formed in said threaded shank and they project partly into the cone-shaped head 55 of said male part. These grooves 57 provide a passageway for the water from the riser to the cone-shaped recess 50 of the female part. A slot 58 is formed in the head of the adjustment screw so that said screw may be turned in the female part by means of a screw driver. The head of the screw cooperates with the grooved or ridged recess of the female part to control the flow of water. Naturally, a lesser space between the screw and the female part of the spray head will be productive of a relatively finer spray whereas a greater space between the male and the female parts will be productive of a relatively coarser spray.

It will be understood that the ridges or grooves in the female part of spray head are but illustrative of the many paths or tracks which may be provided in the female part for the passage of the water. By the same token grooves or ridges may be formed in the head of the male part and the cone shaped recess of the female part may be left smooth. This is simply a reversal of the arrangement above noted and it is illustrated in Fig. 8. Here a male part 60 is shown, having a head 61 with a slot 62 formed therein and having a reduced, screw threaded shank 63. Head 61 may be of truncated cone shape having a plurality of grooves or notches 64 formed peripherally thereof and radially with respect to the shank 63. Female part 65 has a head or annular flange 66 and a reduced, screw threaded shank 67 with a tapped hole 68 formed therein to receive screw threaded shank 63 of the male part. Head 66 has a cone shaped recess 69 formed therein and it will be seen that said recess has a smooth wall. Tapped hole 68 has a plurality of longitudinally extending grooves 70 formed therein which correspond to grooves 57 of the male part of spray head 15. Female part 65 may be inserted into a tapped hole 42 in the riser in the same manner that female part 43 has above been described as being inserted into said tapped hole. Male part 60 may be brought into engagement with said female part 65 in the same manner that the male part 46 was brought into engagement with the female part 43. Male part 60 may be turned with a screw driver to increase or decrease the water flow.

Another modification of the spray head which the present invention covers is shown in Fig. 4. It will there be seen that the riser is provided with diametrically opposite holes 75 and 76 respectively. Hole 75 is somewhat larger than hole 76 and the latter hole is tapped to receive a screw 77 which constitutes the male part of this third form of spray head. The female part 78 is press fitted into the larger hole 75. This female part has a head or annular flange 79 and a reduced shank 80 which is provided with a centrally extending hole 81. The head of the

female part is provided with a cone shaped recess 82 which may be grooved or ridged as above described. Screw 77 has a relatively long shank 84 which extends the full diametrical distance from one side of the riser to the other. It also has a cone shaped head 85 which cooperates with the cone shaped recess 82 in the manner previously described with respect to the first form of sprinkler head herein discussed. As shown in Fig. 4, recess 82 is grooved or ridged and head 85 is smooth. It may be found desirable to reverse this arrangement and to form grooves, notches or ridges on the head of the screw and to leave the cone-shaped recess smooth. There is, of course, sufficient space between the inner wall of shank 80 of the female part and the shank of the male part to allow water to pass therethrough and through the space between the heads of said male and female parts. The male part has a slot 87 formed in its said head portion so that it may be turned in threaded hole 76 to increase or decrease the size of the opening or passageway between the two head portions of the male and female parts.

It will be understood from the foregoing that what has hereinabove been described and what is shown in the drawing is merely illustrative of the present invention and is not to be construed as limiting the invention in any way whatsoever. The specific forms of the invention in the drawing may be modified in many ways and other forms may be provided within the broad scope and spirit of the invention.

By way of illustration of some of the modifications which are encompassed within the scope of the present invention, the following may be mentioned: The spray heads or nozzles shown in the drawing each comprise a single female part and a single male part. It will be clearly understood that a pyramidal arrangement may be provided wherein a series of male and female parts may be incorporated into a single unit comprising for example, a relatively large female part encircling a relatively large male part, a relatively small female part mounted within the large male part and a relatively small male part mounted within the relatively small female part, making a total of two spray heads in a single assembly. Another illustration of modifications which may be incorporated into the present invention is the angular relationship between the bend in the head of the riser and the spray heads which are mounted therein. In the preferred form of this invention the bend extends at an angle of approximately 45° to the vertical riser. The axial center of each spray head mounted on said bent end portion of the riser is normal to the axial center of said bent end portion and the wall of the cone-shaped recess in the female part as well as the wall on the cone-shaped head of the male part, both are inclined at an angle of approximately 45° to the axial center of the spray heads. Hence, some of the spray will be emitted from the spray heads on substantially horizontal lines and some of the spray will be emitted therefrom on substantially vertical lines, most of the spray being emitted in the 90° space between said horizontal and vertical lines. This will have the effect of controlling the direction of the spray so as to cover a given, relatively concentrated area. In other words, the hose connection to the riser is situated at the back of the riser and the spray is so controlled that it is emitted from the front of the riser in the manner above described.

These angular arrangements are purely illustrative of the present invention and other angular arrangements will be found to be suitable for the different purposes of the portable shower herein described and claimed.

We claim:

1. A supporting base for a portable shower having a riser and at least one spray head on said riser, said supporting base comprising a central, vertically extending portion, a substantially horizontal portion extending laterally from said vertical portion on one side thereof, an upwardly curved portion extending laterally from said vertical portion on the other side thereof, and a stand on which the vertically extending portion is mounted, said vertical, horizontal and upwardly curved portions being integral with each other and having an arcuate passageway formed therethrough which extends through the horizontal portion, across the vertical portion and up through the upwardly curved portion, the free end of the upwardly curved portion being provided with screw threads to receive the riser, the free end of the horizontal portion being provided with screw threads to receive a supply hose, said passageway providing communication between said hose and said riser, and the vertical portion having an anvil-shaped top which is in vertical alignment with the stand, so that hammer-blows struck upon said anvil-shaped top of the vertical portion are transmitted therethrough to the stand to secure the stand to the ground, the top of the stand being provided with screw threads and the bottom of the vertical portion of the supporting base being provided with complementary screw threads so as to provide for screw threaded engagement between said stand and said supporting base.

2. A supporting base for a portable shower having a riser and at least one spray head on said riser, said supporting base comprising a central, vertically extending portion, a substantially horizontal portion extending laterally from said vertical portion on one side thereof, an upwardly curved portion extending laterally from said vertical portion on the other side thereof, and a stand on which the vertically extending portion is mounted, said vertical, horizontal and upwardly curved portions being integral with each other and having an arcuate passageway formed therethrough which extends through the horizontal portion, across the vertical portion and up through the upwardly curved portion, the free end of the upwardly curved portion being provided with screw threads to receive the riser, the free end of the horizontal portion being provided with screw threads to receive a supply hose, said passageway providing communication between said hose and said riser, and the vertical portion having an anvil-shaped top which is in vertical alignment with the stand, so that hammer-blows struck upon said anvil-shaped top of the vertical portion are transmitted therethrough to the stand to secure the stand to the ground, the stand being a vertically extending spike which is in vertical alignment with the vertical portion of the supporting base and in vertical alignment with the anvil-shaped top of said vertical portion of the supporting base, so that hammer-blows struck upon said anvil-shaped top will drive the spike into the ground.

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