June 13, 1967 D. P. CONROY 3,324,483

PORTABLE SINK

Filed Nov. 13, 1964 2 Sheets-Sheet 1

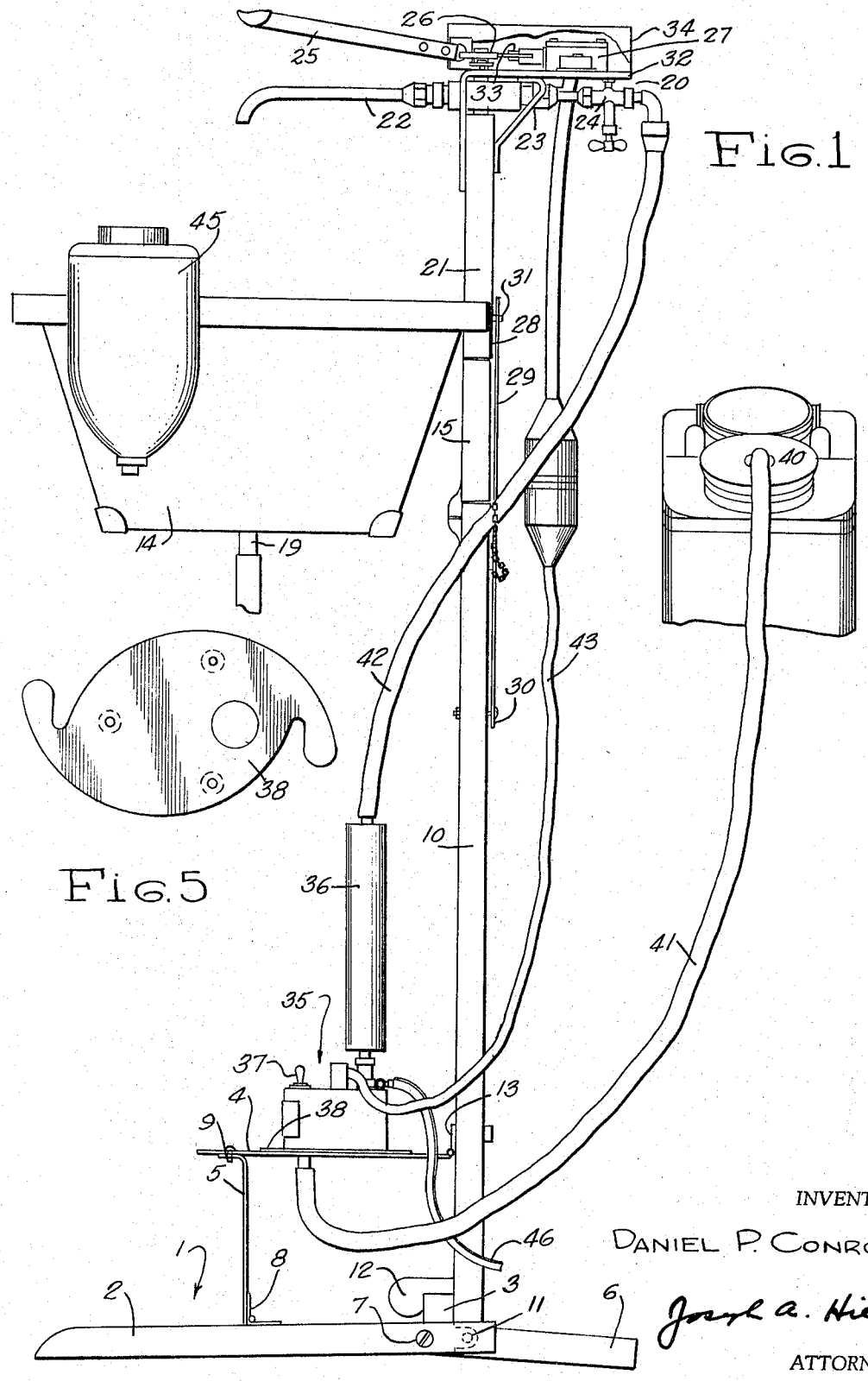


Fig. 1

Fig. 5

INVENTOR

DANIEL P. CONROY

Joseph A. Hill

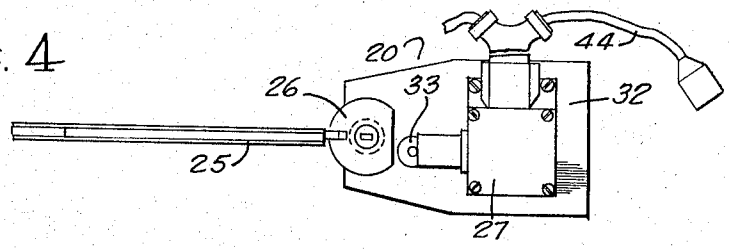
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PORTABLE SINK

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Fig. 4



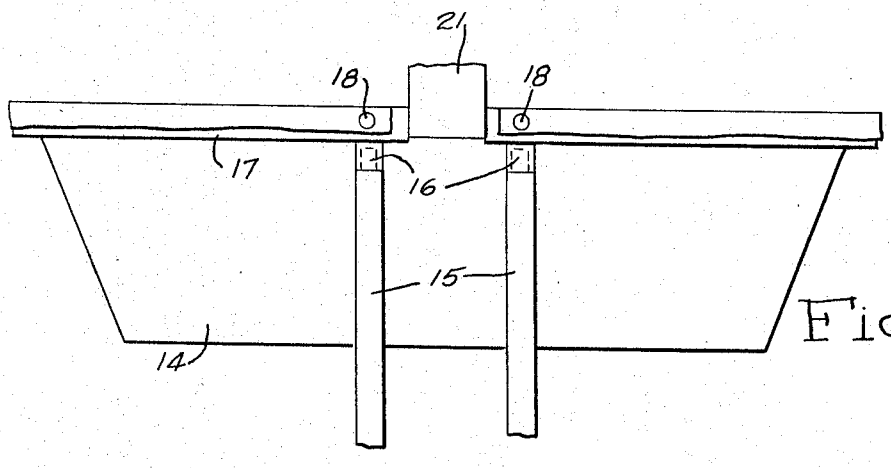
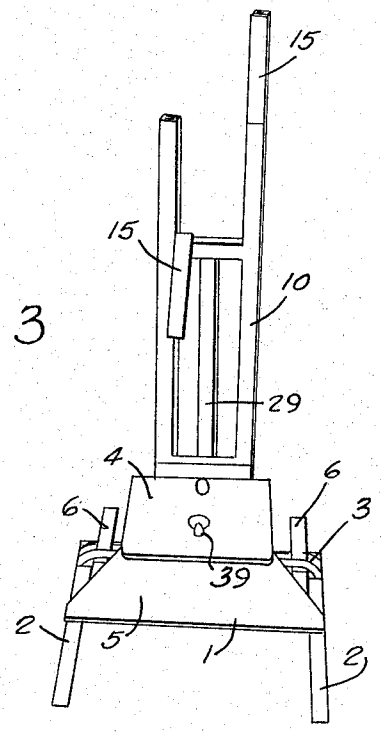


Fig. 2

Fig. 3



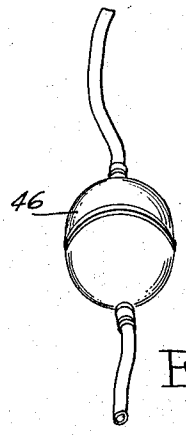


Fig. 6

INVENTOR

DANIEL P. CONROY

BY Joseph A. Hill

ATTORNEY

United States Patent Office 3,324,483 Patented June 13, 1967

3,324,483

PORTABLE SINK

Daniel P. Conroy, Amityville, N.Y., assignor to the United States of America as represented by the Secretary of the Army

Filed Nov. 13, 1964, Ser. No. 411,163
4 Claims. (Cl. 4—187)

The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment to me of any royalty thereon.

This invention relates to a portable sink, and more particularly to a portable, lightweight, washing sink that will provide heated water to field surgeons for scrubbing.

An object of this invention is to provide a compact, foldable, inexpensive, lightweight, easily assembled, heated-water, portable washing sink capable of being easily carried by one person.

Anther object is to provide a gravity flow water system for a sink wherein the rate of flow is adjustable by means of a valve upstream from a full on-off type faucet valve.

Anther object is to provide a hot water system wherein the heater operates only when the faucet is open.

The structural features of the invention are illustrated in the accompanying drawings in which:

FIG. 1 is a side elevation of the full-assembled sink;

FIG. 2 is a rear elevation showing the construction of the catch basin;

FIG. 3 is a perspective view of the sink base and vertical support member;

FIG. 4 is a plan view of the faucet assembly, with the waterproof covering removed;

FIG. 5 is a plan view of the water heater mounting plate; and

FIG. 6 is a perspective view of the suction bulb used to start water flow in the sink.

Referring to the drawings, the sink is supported by base **1**. Base **1** consists of horizontal members **2**, cross-member **3**, base platform **4**, and platform support **5**. Base extensions **6** are pivotally mounted at **7** and are unfolded to extend the base when the sink is assembled. Platform support **5** is connected to members **2** by hinges **8**, and to platform **4** by fastener **9**. Vertical support **10** is pivotally connected to lugs **11** of base **1**. Latch **12** locks vertical support **10** in operating place. Base platform **4** is connected to support **10** by hinges **13**. When in collapsed position, platform **4** is folded parallel to vertical support **10**, support **5** is folded parallel to members **2**, extensions **6** are folded back within the dimensions of members **2**, and support **10** is folded parallel to members **2**.

To attach basin **14**, vertical support extensions **15** are inserted in support **10**, and the insert plugs **16** of basin frame **17** are placed in the open ends of extensions **15**. Frame members **17** as well as **2**, **3**, **6**, and **10** are preferably made of square extruded aluminum. Waterproof fabric basin **14** is draped over frame **17** and secured by a friction fit and by snap-on buttons **18**. Metal outlet **19** is provided at the bottom of basin **14**.

Faucet assembly **20** consists of faucet support **21**, spout **22**, ball valve **23**, needle valve **24**, elbow-actuated handle **25**, cam **26**, and microswitch **27**. Support **21** is placed over frame **17** and secured thereto by a clip **28** and by bar **29** which is pivotally connected to support **10** at **30** and releasably connected to support **21** at **31**. Microswitch **27** is supported by platform **32** which is bolted

to support **21**. The microswitch **27** is of the roller actuator type and is located on platform **32** so that when handle **25** is turned, cam **26**, attached to handle **25**, causes roller plunger **33** to actuate the microswitch. Microswitch **27** is conventional, one suitable example being Minneapolis-Honeywell Company Type No. BAF1–2RZN8–LH. The entire switch-actuator-cam assembly is preferably encased in waterproof covering **34**. Ball valve **23** is a conventional full on-off valve such as the Salisbury Ball Valve No. 350. The turning of handle **25** from the center position causes valve **23** to open and permit flow of water. The rate of water flow is controlled by conventional needle valve **24**, located upstream from valve **23**. A No. 115 SAE needle valve is suitable for this purpose.

The water heater used with this invention is conventional, such as the Model M–1 instant heater made by Landam Products Corporation of Great Neck, New York. The heater consists of heating unit **35**, expansion chamber **36**, on-off switch **37**, and mounting plate **38**. The heater is attached to platform **4** by rotating mounting plate **38** so as to engage the plate tabs under thumb screws **39**. Thumb screws **39** are then tightened to secure the heater.

In operation, a water source such as a standard Army five-gallon can, is elevated so as to provide at least two feet of head. Adaptor **40** is inserted into the can closure and inlet hose **41** is connected to heater **35**. Feed hose **42** connects the heating unit to the faucet assembly. Microswitch **27** is connected to heater **35** by waterproof electrical conductor **43**. Electrical lead **44** is connected to an outside power source and ground conductor **46** is connected to heater **35** and to ground. When handle **25** is turned from the center position, ball valve **23** is caused to open and microswitch **27** is actuated by cam **26**. With valve **23** open, water is allowed to flow from the source, through the heating unit, the the spout. The rate of flow is predetermined by adjusting valve **24**. The actuation of microswitch **27** turns on the water heater. By this system, water flowing at approximately one quart per minute and at approximately 110 degrees Fahrenheit can be obtained. If desired, a standard, foot-operated detergent dispenser **45** can be attached to basin frame **17**.

To start the gravity flow of water, the heater switch **37** is placed in the "off" position, the faucet handle is turned to open valve **23**, and the suction end of a double-acting suction bulb **46** is inserted into spout **22**. The action of the bulb evacuates the water feed lines. When water begins to flow, the bulb is removed and the primed faucet is closed.

The sink weighs only approximately 25 pounds, can be assembled by one man in five minutes, will raise the water temperature 60 degrees in 30 seconds, and will fold into a suitcase-like container occupying a volume of no more than two and one-half cubic feet. This transporting compactness and simplicity without sacrifice of high performance characteristics is the essential feature of this invention.

I claim:

1. A portable sink comprising:
   (a) a collapsible base;
   (b) a vertical basin support which is pivotally connected to the base;
   (c) a foldable waterproof catch basin attached to the vertical support;
   (d) faucet means connected to a water supply and to the vertical support; and

(e) heating means located between the water supply and the faucet, to heat the water.

2. The portable sink described in claim 1, wherein the heating means is a fast-acting electrical water heater which operates only when the sink faucet is open.

3. A portable sink comprising:

(a) a collapsible base;

(b) an expandable, vertical basin support which is pivotally connected to the base;

(c) a catch basin consisting of a frame and a waterproof, foldable fabric removably attached to the frame;

(d) faucet means connected to a water supply and to the vertical support, said faucet having valve means independent of the faucet handle for regulating the rate of flow of the water; and

(e) electrical heating means attached to the sink base to heat the water before it reaches the faucet.

4. The portable sink described in claim 3, wherein the electric heater is controlled by the faucet handle through a microswitch so that the heater operates only when the faucet is open, wherein the faucet valve is of the full on-off type, and wherein the rate of water flow is controlled by a needle valve located upstream from the faucet valve.

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LAVERNE D. GEIGER, *Primary Examiner.*

HAROLD J. GROSS, *Examiner.*