

# United States Patent

[11] 3,581,529

[72] Inventors **Bernard A. Mitchell**  
 33 N. LaSalle St., Chicago, Ill. 60602;  
**Victor A. Petertil, Oak Park; James**  
**Teague, Chicago, Ill.**  
 [21] Appl. No. **807,729**  
 [22] Filed **Mar. 17, 1969**  
 [45] Patented **June 1, 1971**  
 [73] Assignee **Mitchell, by said Petertil and Teague**

[56] **References Cited**  
**UNITED STATES PATENTS**  
 2,974,343 3/1961 Seyfried ..... 15/323  
 1,778,489 10/1930 Goldberg..... 68/222  
 763,032 6/1904 Wassertheurer ..... 68/222

*Primary Examiner—William I. Price*  
*Attorney—Max R. Kraus*

[54] **STEAMER**  
**12 Claims, 12 Drawing Figs.**  
 [52] U.S. Cl. .... 68/222,  
 15/302, 15/323  
 [51] Int. Cl. .... **D06f 71/34,**  
 F22b 1/28  
 [50] Field of Search ..... 68/5.0, 5.2,  
 6, 222, 240; 15/323, 302, 321; 223/51; 38/69

**ABSTRACT:** A steamer for use as a household appliance which produces steam and exhausts same through a nozzle on the end of a flexible conduit so that the steam may be directed against clothes, drapes, and the like, to remove wrinkles therefrom and to serve as a freshener therefor.

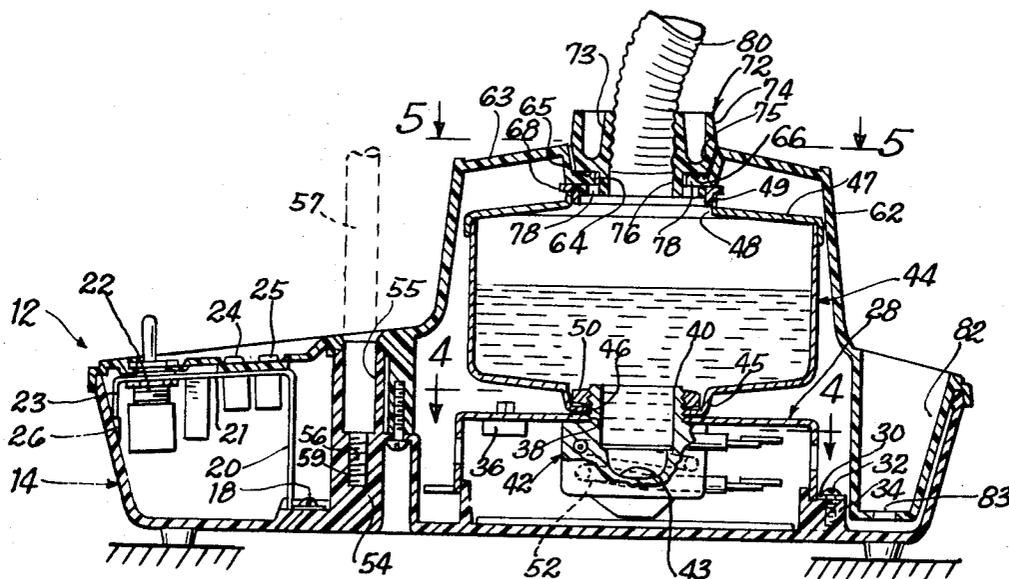


FIG. 1

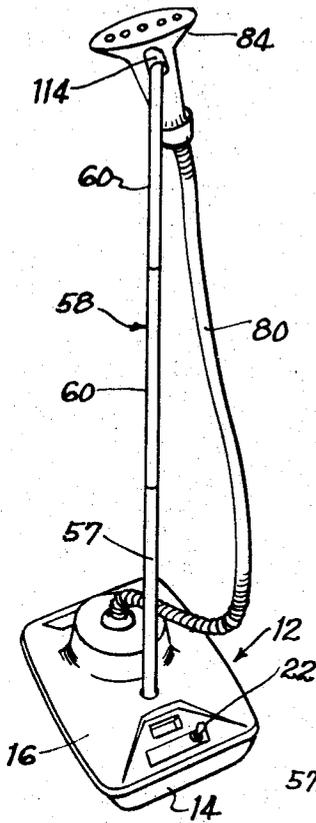


FIG. 2

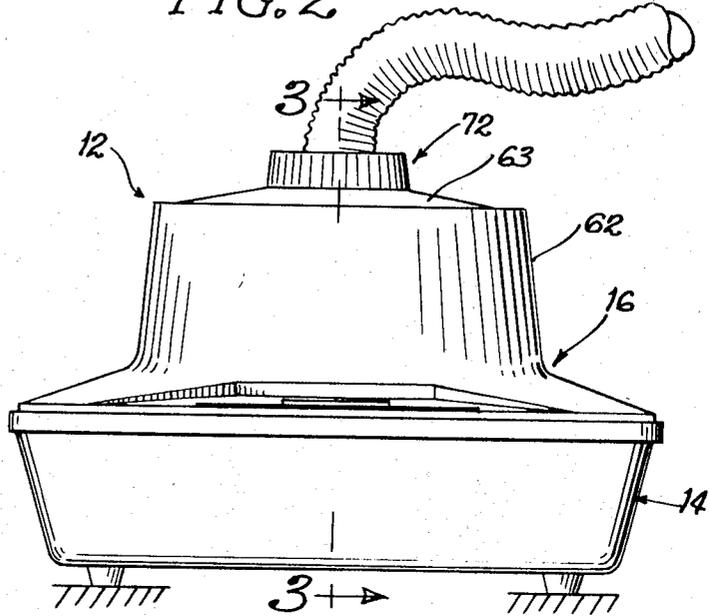


FIG. 3

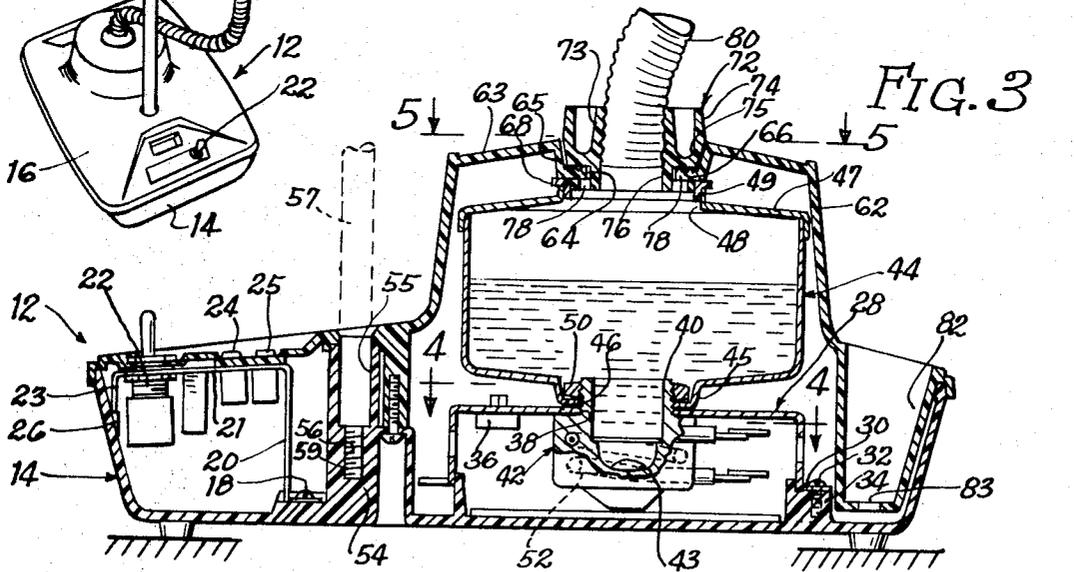


FIG. 4

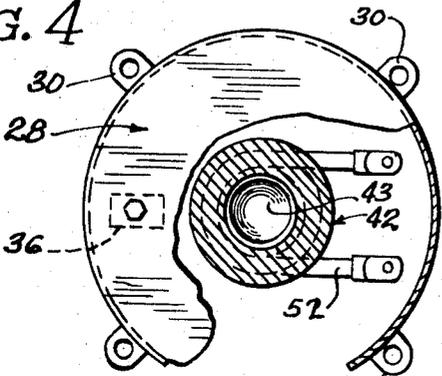
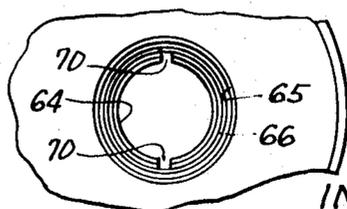
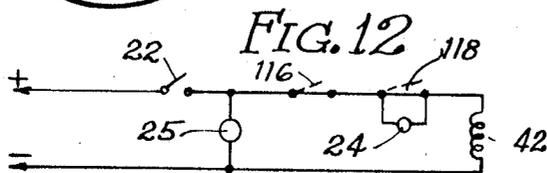
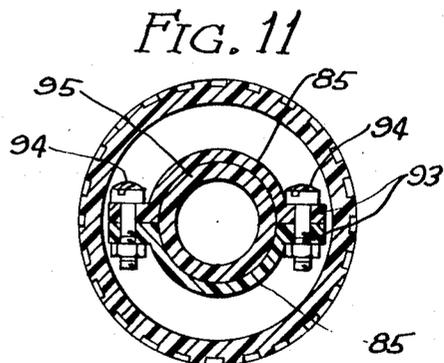
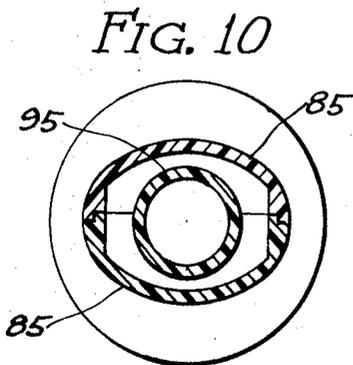
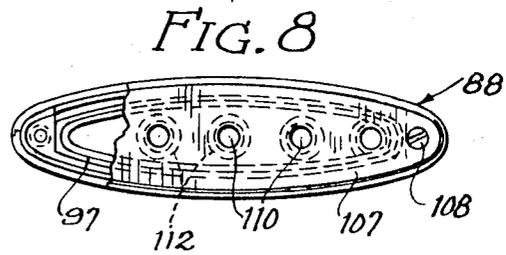
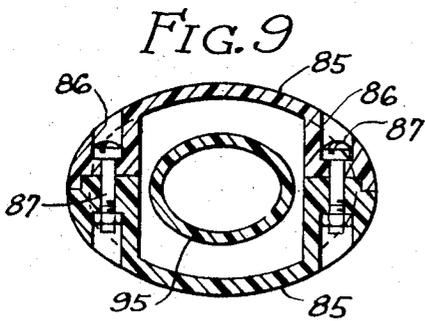
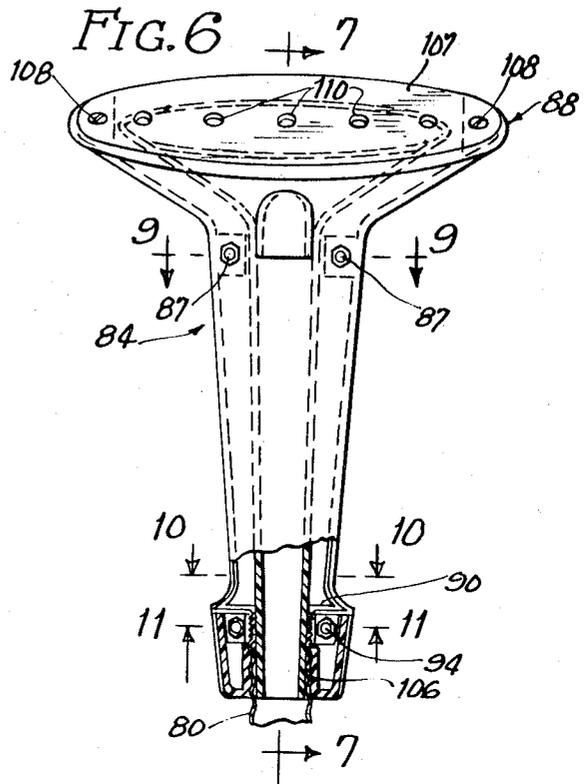
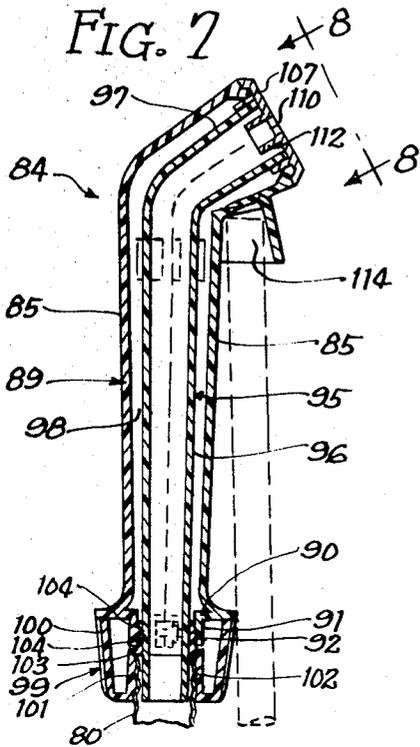


FIG. 5



INVENTORS  
 Bernard A. Mitchell  
 Victor A. Petertil  
 James Teague  
 May R. Kraus  
 Att'y



## BRIEF SUMMARY OF THE INVENTION

It is well recognized that clothes when worn become wrinkled and normally have to be ironed for the purpose of removing the wrinkles and freshening the clothes. This necessitates either sending the clothes out to have them pressed or doing the job laboriously in the home by the use of an iron or the like. The present invention is to provide a steamer which will serve as a household appliance and may be kept in a bathroom, closet, or the like so that it is readily available for use, and which is light in weight, inexpensive to produce, and can be operated to produce steam in about one minute, which steam is ejected through a nozzle connected to a flexible hose so that the steam may be directed directly against the garment to remove the wrinkles therefrom and to freshen the garment or other object. It has means which permits an easy replenishment of the water and is provided with a nozzle which prevents dripping or discharging of water.

With the foregoing and other objects which will appear as the description proceeds, the invention consists of certain novel features of construction, arrangement and a combination of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

## BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a perspective view of the device forming this invention.

FIG. 2 is an elevational view taken from the rear.

FIG. 3 is a sectional view taken on line 3-3 of FIG. 2.

FIG. 4 is a view taken on line 4-4 of FIG. 3.

FIG. 5 is a view taken on line 5-5 of FIG. 3.

FIG. 6 is a view partly in section of the nozzle.

FIG. 7 is a sectional view taken on line 7-7 of FIG. 6.

FIG. 8 is a view taken on line 8-8 of FIG. 7.

FIG. 9 is a view taken on line 9-9 of FIG. 6.

FIG. 10 is a view taken on line 10-10 of FIG. 6.

FIG. 11 is a view taken on line 11-11 of FIG. 6, and

FIG. 12 is a schematic of the electrical circuit.

The device has a base, generally indicated by the numeral 12, which comprises a base housing, generally indicated at 14, formed preferably of a die casting. The base housing is covered or enclosed by a base cover, generally designated by the numeral 16, formed preferably of a plastic material which is applied and secured to the base housing after the components, to be described, are secured to the base housing.

Secured to the base housing as by a screw 18 or other fastening member is a metal bracket 20 to the horizontal portion 21 of which is secured a toggle switch 22 and a pair of indicating lights indicated by the numerals 24 and 25. The end 23 of the bracket 20 extends downwardly and rests on a shoulder 26 formed in the wall of the base housing. The indicating light 24 is either a red light or is covered by a red translucent or transparent plate so that a red colored light appears when the indicating light is illuminated. The indicating light 25 is a white light and when illuminated a white light appears. The purpose of these indicating lights will be hereinafter described.

Secured to the base housing is a circular housing, generally indicated at 28, having spaced ears 30 at the bottom thereof. Threaded fastening members 32 pass through suitable openings in the ears to secure the housing to spaced bosses 34 on the bottom of the base housing. The housing 28 supports a thermostat 36 at the top thereof adjacent one side thereof. The housing has a central opening 38 through which extends the threaded neck portion 40 of a heating unit generally indicated at 42. The heating unit has a hollow or cup-shaped interior 43.

A container, generally indicated by the numeral 44, has a central bottom depressed portion 45 provided with a central opening 46. The container has a top 47 secured thereto having a central opening 48 bounded by an upwardly extending flange 49. The bottom opening 46 of the container fits around the neck 40 of the heating unit 42 and a locking nut 50 is in threaded engagement with the neck 40 to secure the heating unit and the container to the housing 28, as best seen in FIG. 3. The hollow interior 43 of the heating unit communicates with the container 44. The heating unit 42 is of conventional commercial structure, having heating elements such as Calrod members 52 which are imbedded in the body of the heating unit and extend around the central cup-shaped portion 43 of the heating unit for the purpose of heating the water that flows from the container 44 into the hollow interior 43 of the heating unit.

The bottom of the base housing 14 has a boss 54 formed integrally therewith which extends upwardly from the bottom to substantially the height of the base housing. The boss 54 has a bore 55 at the upper portion thereof and a reduced internally threaded bore 56 at the bottom thereof.

The lowermost section 57 of the nozzle-supporting stand, generally indicated by the numeral 58, is received in the bore 55 and the lowermost section has an externally threaded extension 59 which is screw threaded into engagement with the internal threads of the bore 56 to secure the lowermost section of the stand to the base housing. The nozzle-supporting stand 58 also includes a plurality of additional sections 60 which are suitably secured to each other and to the lowermost section. The sections are detachable for the purpose of shipment.

The base cover 16 is adapted to fit over and enclose the base housing 14. The base housing is formed of a plastic material and has a raised portion 62 which, when the base cover is secured to the base housing, is positioned over the container or receptacle 44. The raised portion 62 has a top 63 having an annular opening 64 with an annular depending portion 65 and an inwardly horizontally extending concentrically grooved shoulder 66. A rubber seal or washer 68 is positioned between the flange 49 of the container and the horizontal shoulder 66 of the base cover. The inwardly extending horizontal shoulder 66 has a pair of diametrically opposed slots or recesses 70 (FIG. 5) which form a portion of the bayonet lock and are engaged by the lugs of the hose connector.

The hose connector, generally indicated at 72, is molded preferably of heat resistant plastic and has an annular internally threaded sleeve 73 spaced from the outer annular wall 74. The lower portion 75 of the outer annular wall is tapered complementary to the taper of the depending wall 65 into which it is positioned. Extending below the sleeve 73 as a continuation thereof is an annular extension 76 having a pair of diametrically positioned horizontal lugs 78 which enter the slots 70 for connection of the hose connector 72 to the base cover. The lugs 78 will extend below the horizontal portion 66 so that by a slight rotation of the connector the lugs will engage the underside of the horizontal portion 66 and lock therewith in a bayonet lock arrangement. Rotating the connector in the opposite direction and aligning the lugs 78 with the slots 70 will permit uncoupling of the connector 72 with respect to the base cover.

Adjacent the raised portion 62 of the base cover is a well 82 formed in said base cover which serves as a storage compartment for the electrical cord when the cord is not in use and is not connected to an electrical wall outlet. The bottom of the well portion 82 has an opening 83 through which the cord extends and the opposite end of the cord is connected to the components, as more specifically shown in connection with the schematic electrical diagram.

The opposite end of the flexible hose is secured to a nozzle, generally indicated at 84, the details of which is best shown in FIGS. 6 through 11. The nozzle 84 is formed of a pair of outer or shell sections 85 molded of plastic material, which have recessed portions 86, as shown in FIG. 9, having openings through which fastening elements 87 pass for joining the two

sections together to form a single outer housing. The head of the nozzle is at an acute angle with respect to the longitudinal axis of the stem 89.

The shape of the outer housing is as shown in FIGS. 6 and 7, wherein there is an enlarged oval-shaped upper end or head 88 which tapers downwardly and inwardly toward the body or stem 89 of the nozzle. The stem has a continuing inward taper towards the bottom. The bottom of the body or stem flares outwardly and then continues horizontally inward as at 90 and downwardly to form a reduced sleeve portion 91 when the two sections are joined, which is internally threaded as at 92. The two sections have outwardly extending lips 93 (FIG. 11) at the bottom which are secured by fastening elements 94 to join the two sections together at the bottom, as best seen in FIG. 11.

Supported within the outer housing 85 of the nozzle and in spaced relation thereto is an inner member integrally blow molded and of a plastic material and generally designated at 95 which has a tubular body 96 which flares outwardly at its upper end to form an oval-shaped head 97. The head is angled with respect to the tubular body substantially as the outer housing. The inner member 95 is secured inside the outer housing and extends inwardly of the wall thereof to provide an air space 98 between the outer wall of the outer housing and the wall of the inner member.

A cap, generally indicated at 99, has an outer annular wall 100 and a spaced inner annular wall 101 which is internally threaded at its lower end as at 102. The inner annular wall continues inwardly to provide a shoulder 103 and then extends upwardly to form a reduced sleeve portion 104, which is externally threaded as at 105 for threaded engagement with the internal threads 102 at the lower end of the outer housing to secure the cap 99 to the outer housing.

The lower end of the inner member 95 is retained in the sleeve portion of the cap and the lower end of the inner member extends into the cap and is spaced therefrom as at 106 to accommodate the upper end of the flexible conduit or hose 80 which is thereby securely fastened to the spout unit. The conduit may be detached from the nozzle for replacement when necessary.

The oval-shaped opening at the upper end of the nozzle is closed by an oval-shaped metal plate 107 which is secured to the outer nozzle housing by fastening elements 108. The plate is provided with a plurality of spaced openings 110, each of which communicates with a tubular portion 112, best shown in FIG. 7, which extends inwardly into the interior of the inner member. The purpose of said inwardly extending tubular portion 112 in connection with each of the openings 110 of the face plate of the nozzle is to prevent any water from being expelled outwardly of the openings. Whatever water or condensation forms near the openings 110 will run back inwardly into the inner member 95 of the nozzle and will not be discharged outwardly of the nozzle. The spacing of the inner member of the nozzle prevents the nozzle which is to be manually held from becoming too hot for handling. By the spacing arrangement and the air space 98 between the inner member and the outer housing, the nozzle is maintained in a relatively cool condition so that it can be manually held by the operator without discomfort. When the nozzle is held in an upright position the water that might form at the openings 110 will run back into the nozzle and will not drip out through the openings. The outer housing of the nozzle has a pocket 114 formed therein which permits the nozzle to be supported on the upper end of the stand, as best shown in FIGS. 1 and 7.

The electrical circuit is shown schematically in FIG. 12 and will be understood in connection with the description of the operation of the device.

The operation of the device should be understood from the foregoing but will be briefly described.

Access to the container 44 is through the covering opening 64. By detaching the hose connector 72 through the bayonet connection with the top of the cover, access is provided to the interior of the container which can be filled with water through said opening. Some of the water will flow into the

cup-shaped bottom 43 of the heating element. The hose connector 72 is then recoupled by means of the bayonet lock to the plastic cover. The container is of a size to hold approximately two cups of water. With the electric cord plugged into an electrical wall outlet and the toggle switch 22 operated to close the electrical circuit, the heating unit 42 will heat the water and produce a steam or vapor which will pass up through the flexible hose 80 and out through the openings 110. The nozzle is operated by manually holding it and moving it in direct relation to the clothes or garments to be steamed so that the steam is expressed against the clothes to remove the wrinkles and/or to freshen same. As soon as the toggle switch 22 is operated to close the circuit the white indicating light 25 goes on. When all of the water in the container is vaporized the red indicating light 24 will go on to indicate that the water supply has to be replenished if further steaming is necessary. Conventional thermostats 116 and 118 are in the electrical circuit for the conventional purpose. The thermostat 118 is a functioning thermostat and operates when the water in the container is evaporated so that the red light 24 goes on. Thermostat 116 is a safety thermostat.

We claim:

1. A steamer of the character described comprising, a base, a water receptacle in said base, said base and receptacle having aligned openings, a flexible conduit, a connector having a bayonet lock connected to said flexible conduit to detachably connect said flexible conduit to said base so that when detached from said base an opening is provided through which water may be poured into said receptacle, a nozzle connected to the opposite end of said flexible conduit, heating means in said base adapted to heat the water in said receptacle to form steam which passes through said conduit and out through said nozzle.

2. A structure as defined in claim 1 in which the water receptacle has an opening at the bottom thereof and in which a heating unit having a cup-shaped member is secured to the bottom of the receptacle and wherein some of the water in the receptacle is positioned in said cup-shaped member to be first heated to form steam.

3. A structure as defined in claim 1 in which the base has a storage compartment for receiving and storing the electrical cord when in nonuse.

4. A structure as defined in claim 1 in which an upright stand is secured to said base and in which the nozzle is supported on said upright stand.

5. A structure as defined in claim 1 in which the lower end of the flexible conduit is screwed into the connector.

6. A steamer of the character described comprising, a base formed of a base housing and a base cover detachably supported on said base housing, a water receptacle in said base, a flexible conduit connected to said base, a nozzle connected to the opposite end of said flexible conduit, heating means in said base adapted to heat the water in said receptacle to form steam which passes through said conduit and out through said nozzle, said receptacle and heating unit secured to said base housing.

7. A structure as defined in claim 6 in which the nozzle has a pocket which permits the nozzle to be supported on said stand.

8. A structure as defined in claim 6 in which a bracket is secured to the base housing for supporting a switch and a plurality of indicating lights.

9. A steamer of the character described comprising, a base, a water receptacle in said base, a flexible conduit connected to said base, a nozzle connected to the opposite end of said flexible conduit, heating means in said base adapted to heat the water in said receptacle to form steam which passes through said conduit and out through said nozzle, said nozzle having an outer housing and an inner member spaced therefrom to provide an air space therebetween, with the upper end of the nozzle provided with openings through which the steam is vented.

10. A structure as defined in claim 9 in which communicating with each of said openings is a tubular portion extending inwardly into the nozzle.

5

11. A steamer of the character described comprising, a base, a water receptacle in said base, a flexible conduit connected to said base, a nozzle connected to the opposite end of said flexible conduit, heating means in said base adapted to heat the water in said receptacle to form steam which passes through said conduit and out through said nozzle, said nozzle having a face plate provided with a plurality of spaced openings and tubular portions communicating with said openings which extend inwardly into the nozzle to prevent the condensed water or water caused by condensation from escaping or passing out through said openings and which directs the water accumulated in the nozzle to flow back into

6

the nozzle.

12. A steamer of the character described comprising, a base, a water receptacle in said base, a flexible conduit connected to said base, a nozzle connected to the opposite end of said flexible conduit, heating means in said base adapted to heat the water in said receptacle to form steam which passes through said conduit and out through said nozzle, an upright stand secured to said base in which the nozzle is supported on said upright stand, said upright stand formed of a plurality of sections which are detachably secured.

15

20

25

30

35

40

45

50

55

60

65

70

75