Dec. 20, 1966 V. MUSSO 3,292,993

STERILIZER

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Fig. 1

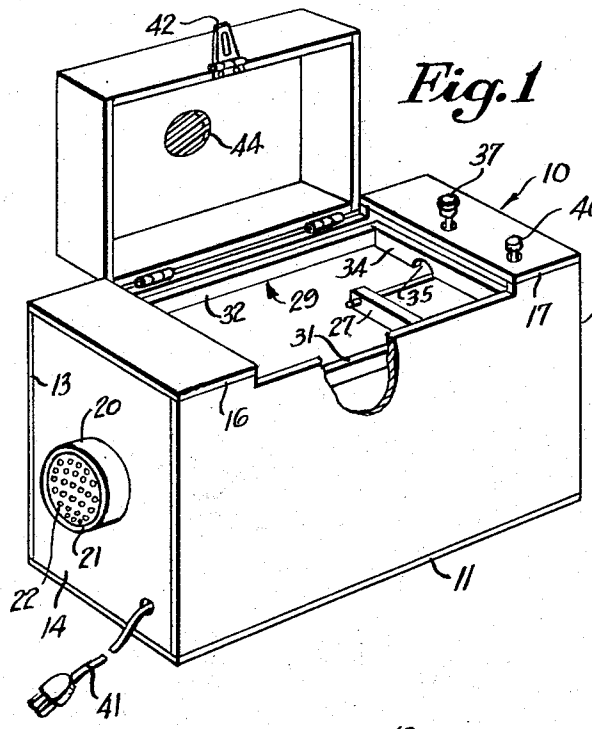


Fig. 3

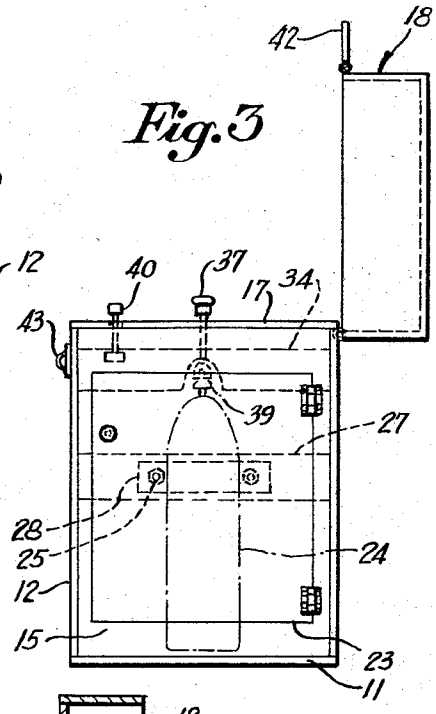


Fig. 2

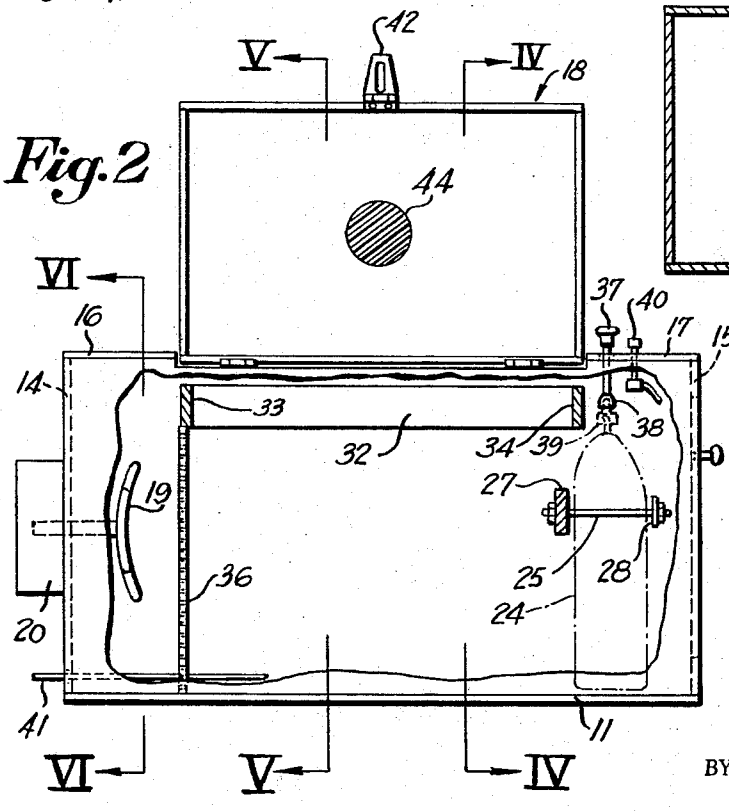
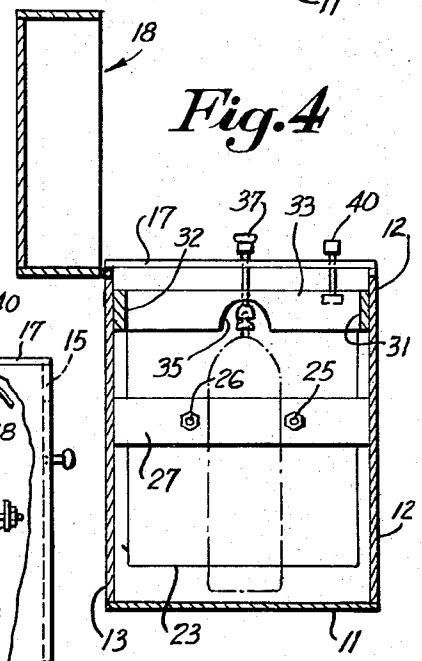


Fig. 4



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STERILIZER

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Fig. 7

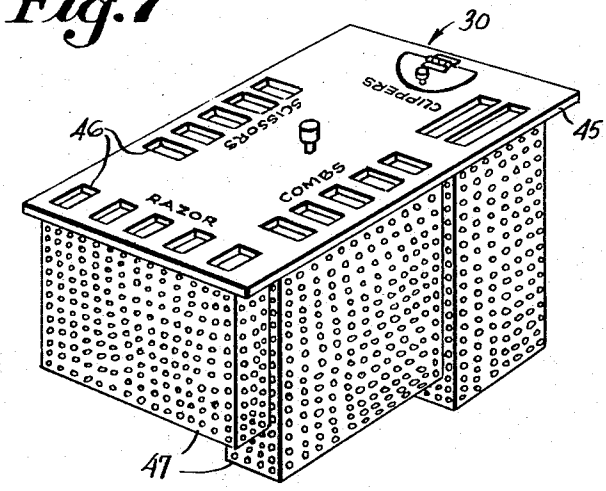


Fig. 5

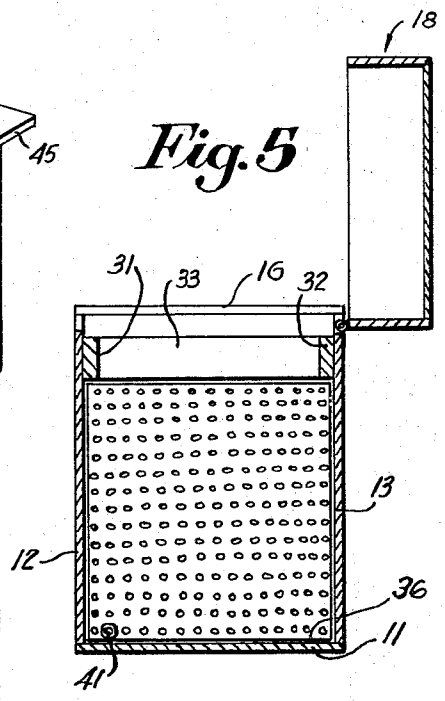
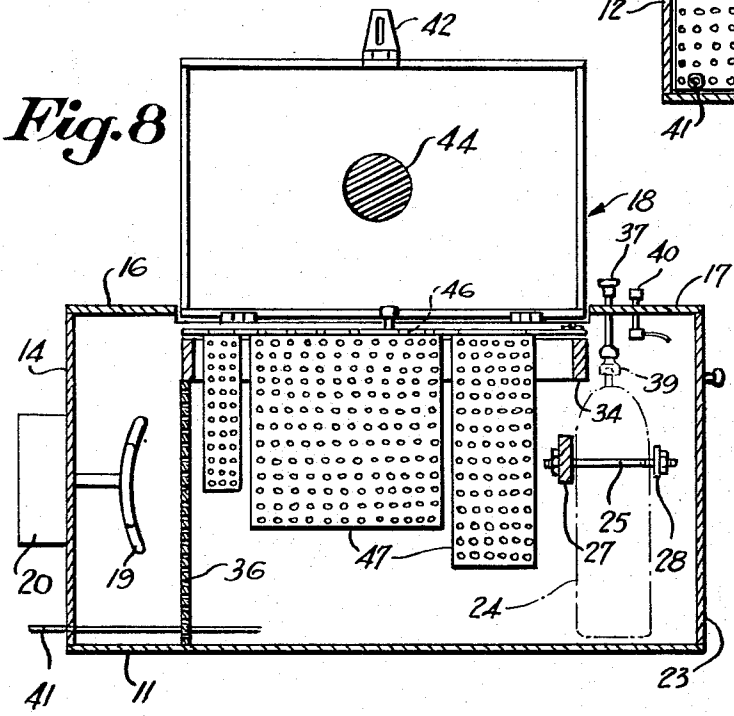


Fig. 8



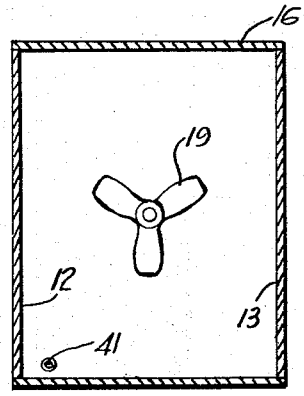


Fig. 6

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STERILIZER

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7 Claims. (Cl. 21—83)

This invention relates to a sterilizer and refers more particularly to a sterilizer which may be used to sterilize instruments as, for example, barber's instruments, in a very short period of time.

Instruments as, for example, those used by barbers, manicurists, etc. require frequent and thorough sterilization to preclude the possibility of bacteria, etc. being transferred to the persons of customers receiving haircuts, manicures and the like. Most barber shops and beauty shops use steam type sterilizers which are very effective in killing bacteria and the like. However, a major drawback of these and other prior art sterilizers is that they have a lengthy operating cycle so that quite often the barber must hold up his work until instruments are available at the end of the sterilizing cycle.

It is, therefore, a primary objective of the present invention to provide a sterilizer for sterilizing barbering instruments and the like which in use effects complete sterilizing in a very short period of time.

Another object is to provide a sterilizer which is simple to operate.

Still another object is to provide a sterilizer which is compact in size and may be installed in an unobtrusive manner in a barbering or manicuring establishment.

A further object is to provide a sterilizer which in use does not require external connection to a hot water or steam service.

Other objects of the present invention will become more apparent during the course of the following specification.

In achieving the aforementioned objectives of the present invention, a sterilizer may be provided which comprises a box-like housing wherein may be supported instruments to be sterilized as, for example, scissors, combs, razors, etc. A motor drive fan is supported at one end of the housing for directing a flow of air over and around the instruments. A support is provided inside the housing at the other end for supporting a bottle or similar container filled with alcohol or similar antiseptic substance. An actuating rod is supplied in the top of the housing for controlling flow from the antiseptic container. In operation, a spray of antiseptic is directed from the container onto the instrument supported in the housing. The motor-drive fan effects a flow of air within the housing which picks up the antiseptic spray and mixes with it while at the same time the mixture saturates the instruments from all directions and thoroughly sterilizes them.

The invention will appear more clearly from the following detailed description when taken in conjunction with the accompanying drawings showing, by way of example, a preferred embodiment of the inventive concept.

In the drawings:

FIGURE 1 is a perspective view of a sterilizer constructed in accordance with the principles of the present invention, the cover of the housing being shown in an open position and the instrument tray having been removed.

FIGURE 2 is a front elevational view of sterilizer, a portion of the front wall being broken away.

FIGURE 3 is a side elevational view of FIGURE 2.

FIGURE 4 is a sectional view as taken along line IV—IV of FIGURE 2.

FIGURE 5 is a sectional view as taken along line V—V of FIGURE 2.

FIGURE 6 is a sectional view as taken along line VI—VI of FIGURE 2.

FIGURE 7 is a perspective view of the instrument tray for supporting the barber's instruments in the sterilizer.

FIGURE 8 is a front elevational view partly in section showing the manner in which the instrument tray is removably supported inside the housing during sterilization.

Throughout the specification, like reference numerals are used to indicate like parts.

The sterilizer **10** of the present invention will be described hereinafter by way of example, for use in a barber shop for sterilizing barber's instruments. However, the sterilizer is equally suited for use in the kitchen, laboratories and other places where it is desirable or necessary to sterilize instruments and tools of all kinds both quickly and thoroughly.

Referring now in more detail to the construction shown in FIGURES 1 to 6, the sterilizer **10** comprises an elongated base plate **11**, a front wall **12**, a rear wall **13**, end walls **14** and **15**, spaced apart top plates **16** and **17** and a hinged cover member **18** for covering the space between top plates **16** and **17**. The base plate, front, rear and end walls, top plates and cover member constitute an enclosure or housing wherein may be supported the barbering instruments during sterilization. A fan **19** is supported inside the housing, the drive motor **20** for driving the fan being supported in end wall **14**. The cover plate **21** of the drive motor is provided with openings **22** to permit air to be drawn into the housing by the fan.

The other end wall **15** of the housing contains an access door **23** which is hinged to swing outwardly of the end wall **15** to provide access for inserting a bottle of alcohol **24** or other antiseptic substance into the housing. The bottle **24** is firmly supported inside the housing by means of a pair of rods **25** and **26** which enclose the bottle at each side, the rods being connected with a transverse member **27** extending between front wall **12** and rear wall **13** and being connected with removable strap **28** which is supported in the rods and extends parallel to transverse member **27**.

A saddle **29** is firmly connected inside the housing to support the instrument tray **30** (FIG. 7) wherein the instruments to be sterilized are placed and which will be described in more detail later on in the specification. Saddle **29** comprises parallel longitudinally directed bars **31** and **32** which are firmly connected to the inside of front wall **12** and rear wall **13**, respectively, and transversely directed bars **33** and **34** connected with the ends of longitudinal bars **31** and **32**. Transverse bar **34** is slotted as at **35** (FIG. 1) to permit spray to be directed from bottle **24** onto the instrument tray **30**. The saddle **29** supports instrument tray **30** inside the housing in the manner shown in FIGURE 8.

A perforated diffuser plate **36** is provided inside the housing and in front of fan **19** as best seen in FIGURE 2.

An actuator rod **37** is slidably supported in top plate **17** and extends downwardly into the housing wherein its terminal end is flared as at **38** to fit over the nozzle **39** (FIG. 2) of the antiseptic bottle **24**. It is contemplated that the antiseptic bottle **24** will preferably be of a "bomb" type in which case the product therein is under pressure and is discharged by depressing the nozzle **39**. A switch **40** is provided for turning the fan **19** on and off and an electric cord **41** is provided to connect the fan with a source of power.

Cover member **18** is provided with a hasp fitting **42** for locking the cover in a closed position to fitting **43** (FIG. 3) carried on front wall **12** near the top. The cover member **18** also has a vent fitting **44** to permit used air-antiseptic mixture to exhaust from the sterilizer.

Referring now in detail to FIGURE 7, the instrument tray **30** comprises a flat plate **45** which is provided with a number of openings **46** which are grouped and sized according to the various instruments which a barber normally employs in his work and which require sterilizing. Firmly connected with the plate **45** and arranged under each group of openings **46** are perforated or wire screen cages **47** wherein will be supported during sterilizing the instruments inserted through the various openings.

In operation:

Assume that a barber has used some of his instruments and now wishes to sterilize them before reusing them on another customer. Referring now in greater detail to FIGURE 8, the barber will first insert the antiseptic bottel **24** in the sterilizer. This is accomplished by opening access door **23** and removing strap **28**. A "bomb" type container **24** is then inserted in the housing being positioned between rods **25** and **26** and strap **28** is replaced on the rods. The nozzle **39** on the "bomb" is connected to actuator rod **37** and door **23** is closed.

Instrument tray **30** is now filled with the instruments to be sterilized. In practice each instrument (not shown) will extend down into its associated cage **47** with a portion thereof extending above flat plate **45** to facilitate instrument removal after sterilization. The instrument tray **30** is then inserted in the sterilizer housing being supported on saddle **29**. Cover member **18** is then closed and locked by means of hasp member **42**. The housing is now completely sealed except for the openings **22** in fan motor housing **21** and the vent **44** in cover **18**. The user now presses down several times an actuator rod **37** which will cause the "bomb" type container to discharge a spray of antiseptic into the housing in the well known manner. Switch **40** is then actuated to turn on fan **19**. The fan will force air into the housing wherein it mixes with the antiseptic and flows to all reaches of the housing, saturating the instruments and completely enveloping them with the antiseptic mixture. The used mixture will, of course, flow out through vent **44**. The user may thereafter repeat the sterilizing process as often as desired by merely injecting more antiseptic into the housing. When the user is satisfied that the instruments have been completely and thoroughly sterilized, he merely turns off fan **19**, opens cover **18** and removes the instruments from the tray **30**.

It is apparent that the sterilizer of the present invention may be utilized to sterilize tools and instruments both quickly and simply without requiring complicated heating service etc.

While there is above disclosed but one embodiment of the sterilizer, it is possible to produce still other embodiments without departing from the scope of the inventive concept herein disclosed.

What is claimed is:

1. A sterilizer for sterilizing barber's instruments and the like, said sterilizer comprising an elongated base plate, a pair of end walls firmly connected with each end of said base plate, a front wall firmly connected with and extending between said end walls, a rear wall firmly connected with and extending between said end walls, said base plate, said end walls and said front and rear walls constituting a box-like enclosure having an open top, a cover swingably connected with an upper portion of said rear wall and being adapted in a closed position thereof to cover the top of said box-like enclosure, an antiseptic containing bottle disposed within said enclosure adjacent one end wall and having a depressible discharge nozzle positioned to spray antiseptic material in the direction of the opposite end wall, supporting means carried in said box-like enclosure for supporting said antiseptic containing bottle in an upright position within said box-like enclosure, actuator means slidably supported in said enclosure and having one end thereof protruding outwardly of said enclosure for manual operation and an opposite end within said enclosure operatively engagable with said discharge nozzle for depression thereof perforated tray means removably supported within said box-like enclosure alongside said supporting means and below said cover when said cover is in said closed position, said tray means being adapted to hold barber's instruments for sterilizing, and fan means disposed within said enclosure adjacent said opposite end wall and having fan elements positioned to blow air across said tray means in the direction of said one end wall, said opposite end wall being provided with an air inlet opening for said fan means and said cover being provided with an outlet opening for the used air-antiseptic mixture.

2. A sterilizer in accordance with claim **1** wherein said tray means comprises a substantially flat plate having a plurality of openings extending therethrough, and perforated cages firmly connected with said flat plate and extending a distance below said openings, said perforated cages being adapted to hold barber's instruments during sterilizing.

3. A sterilizer for sterilizing barber's instruments and the like, said sterilizer comprising an elongated base plate having parallel front and rear margins, a pair of upstanding end walls firmly connected with and extending between said margins, an upstanding front wall firmly connected with the front margin of said base plate and extending between said end walls, an upstanding rear wall firmly connected with the rear margin of said base plate and extending between said end walls, said base plate, said end walls and said front and rear walls constituting a box-like enclosure having an open top, a cover swingably connected with an upper portion of said rear wall and being adapted in a closed position thereof to cover the top of said box-like enclosure; an antiseptic containing bottle disposed within said enclosure adjacent one end wall and having a depressible discharge nozzle positioned to spray antiseptic material in the direction of the opposite end wall, a bar firmly connected with and extending transversely between said front and rear walls within said box-like enclosure and adjacent said one end wall, a pair of parallel arranged rods firmly connected with said bar and extending longitudinally in said box-like enclosure in the direction of said one end wall, a strap removably connected with said rods and extending parallel to and spaced from said bar, said strap, said rods and said bar constituting a support for supporting said antiseptic containing bottle in an upright position within said box-like enclosure, actuator means slidably supported in said enclosure and having one end thereof protruding outwardly of said enclosure for manual operation and an opposite end within said enclosure operatively engagable with said discharge nozzle for depression thereof; a tray supported within said enclosure and having a plurality of separate perforated compartments and being adapted to hold barber's instruments in each of said compartments for sterilizing; saddle means within said enclosure for removably supporting said tray within said box-like enclosure below said cover when said cover is in said closed position and alongside said support, and fan means carried in said opposite end wall and having fan elements positioned to blow air across said tray in the direction of said one end wall, said opposite end wall being provided with an air inlet opening for said fan means and said cover being provided with an outlet opening for the used air-antiseptic mixture.

4. A sterilizer in accordance with claim **3** wherein said one end wall is provided with an access door for providing access to the interior of said box-like enclosure for inserting an antiseptic containing bottle in said support.

5. A sterilizer in accordance with claim **3** wherein said saddle means comprises a pair of elongated longitudinally directed bar members firmly connected with the inner sides of said front and rear walls respectively, and transverse bar members firmly connected with the ends of said longitudinally directed bar members and extending between said front and said rear walls.

6. A sterilizer in accordance with claim 3 wherein said cover is provided with locking means for locking it to said front wall in a closed position.

7. A sterilizer for sterilizing barber's instruments and the like, said sterilizer comprising an elongated base plate having parallel front and rear margins, a pair of upstanding end walls firmly connected with and extending between said margins, an upstanding front wall firmly connected with the front margin of said base plate and extending between said end walls, an upstanding rear wall firmly connected with the rear margin of said base plate and extending between said end walls, a pair of spaced top plates each firmly connected to a respective end wall and extending a distance in the direction of each other; said base plate, said end walls, said front and rear walls and said top plates constituting a box-like enclosure having a large central opening at the top defined by the space between said top plates, a cover swingably connected with an upper portion of said rear wall and being adapted in a closed position thereof to cover the opening in the top of said box-like enclosure; an antiseptic containing bottle disposed within said enclosure adjacent one end wall and having a depressible discharge nozzle positioned to spray antiseptic material in the direction of the opposite end wall, a bar firmly connected with and extending transversely between said front and rear walls within said box-like enclosure and adjacent said one end wall, a pair of parallel arranged rods firmly connected with said bar and extending longitudinally in said box-like enclosure in the direction of said one end wall, a strap removably connected with said rods and extending parallel to and spaced from said bar, said strap, said rods and said bar constituting a support for supporting said antiseptic containing bottle in an upright

position within said box-like enclosure, actuator means comprising a rod slidably supported in one of said top plates over said support and having one end thereof protruding outwardly of said enclosure for manual operation and an opposite end within said enclosure operatively engagable with said discharge nozzle for depression thereof; a tray supported within said enclosure and having a plurality of separate perforated compartments and being adapted to hold barber's instruments in each of said compartments for sterilizing; saddle means within said enclosure for removably supporting said tray within said box-like enclosure below said cover when said cover is in said closed position and alongside said support; and fan means carried in said opposite end wall and having fan elements positioned to blow air across said tray in the direction of said one end wall, said opposite end wall being provided with an air inlet opening for said fan means and said cover being provided with an outlet opening for the used air-antiseptic mixture.

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