S. S. STAPLES.

APPARATUS FOR MOISTENING ABSORBENT MATERIAL.

APPLICATION FILED JULY 25, 1917.

1,254,286.

Patented Jan. 22, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

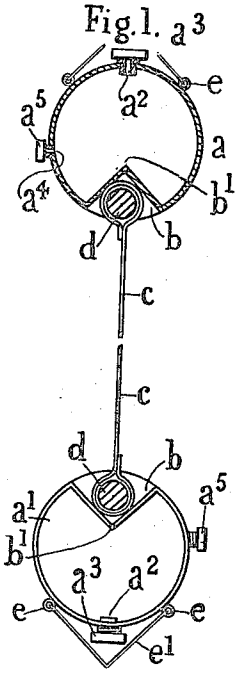


Fig. 2.

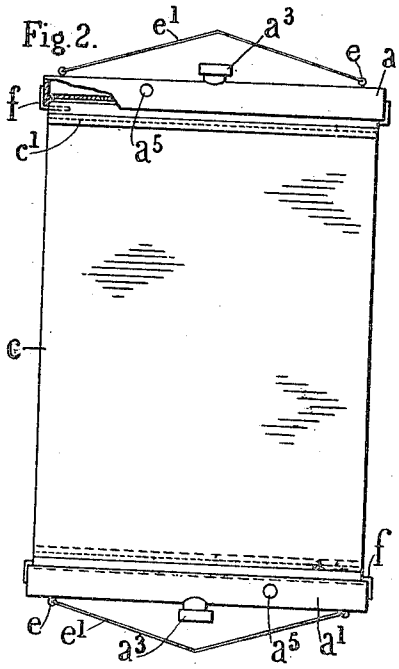


Fig. 3.

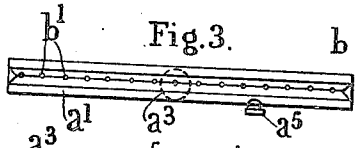
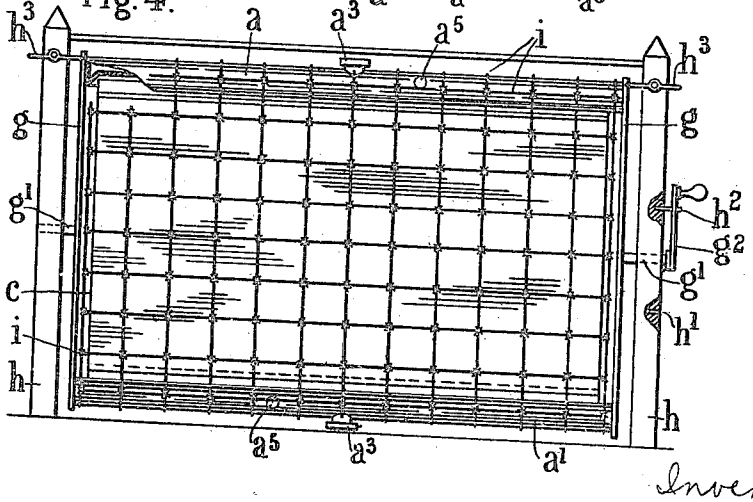


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

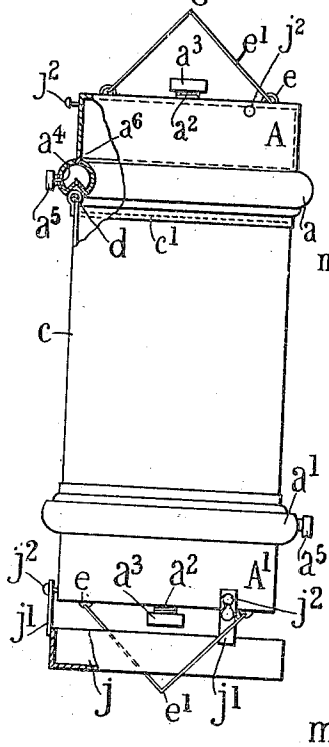


Fig. 6.

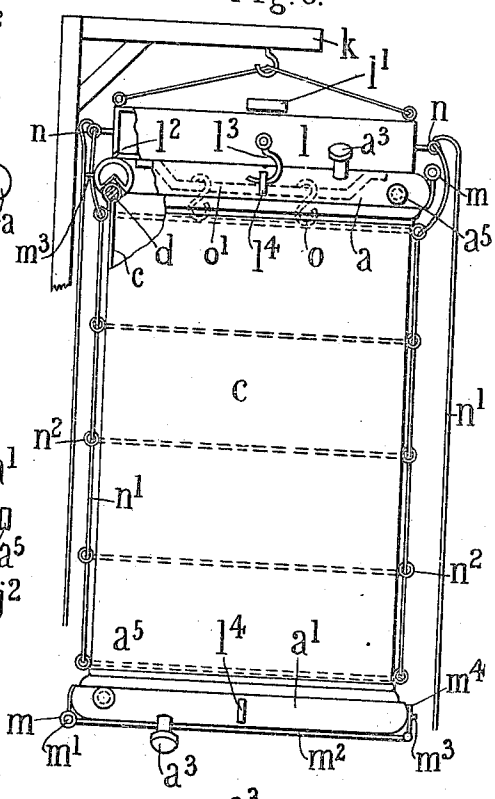


Fig. 8.

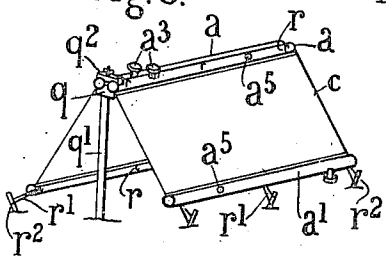
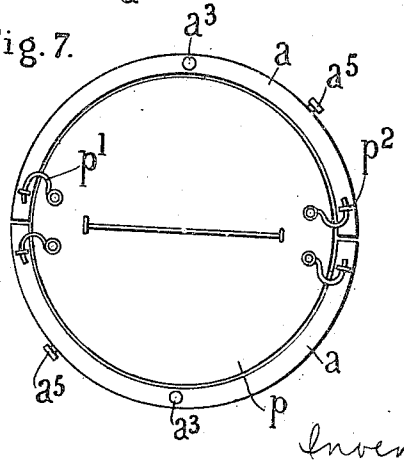


Fig. 7.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR MOISTENING ABSORBENT MATERIAL.

1,254,286. Specification of Letters Patent. Patented Jan. 22, 1918.

Application filed July 25, 1917. Serial No. 182,805.

To all whom it may concern:

Be it known that I, SARAH SUSANNAH STAPLES, a subject of the King of Great Britain, residing at London, England, have invented certain new and useful Apparatus for Moistening Absorbent Material, of which the following is a specification.

The invention relates to that type of apparatus in which a sheet of absorbent material is kept moist by means of a liquid contained in a reservoir at the upper part thereof, which liquid may or may not be poisonous according to whether it is desired to kill insects or merely to cool an apartment or chamber.

The invention relates more particularly to that kind of apparatus having two reservoirs, one at each end of the sheet, and in which means are provided whereby the apparatus may be hung up at either end or be turned bodily over. The upper reservoir contains the liquid and the lower reservoir receives the liquid as it drips from the lower part of the sheet of absorbent material. The object of the present invention is to construct apparatus in which the liquid from the upper reservoir cannot escape without moistening the absorbent material and in which the said liquid can readily enter the lower reservoir as this latter has an opening to allow the air to escape therefrom as the water enters. According to the present invention each reservoir has a concave or grooved side adjacent to the sheet of absorbent material, and the usual fine perforations are made along the middle of the concave or grooved side. The lower reservoir therefore presents a channel toward the sheet of absorbent material and receives the liquid without allowing any of it to creep over the edge.

The sheet of absorbent material is passed around a rod at each end, and the rod is so located that the absorbent material is in contact with parts of the sides of the groove so that the drops will come in contact with the absorbent material before they actually leave the reservoir. This will prevent the drops from the upper reservoir running down the sides of the inverted channel and falling without coming into contact with the absorbent material.

In order that the liquid may pass freely through the perforations into the lower reservoir, each reservoir is preferably formed with an air outlet, which is provided with a suitable closing device. In order to regulate the outflow of the liquid, each reservoir may be formed with an air inlet aperture and a suitable regulating device to control the passage of the air.

In some forms, especially in the smaller forms, each reservoir is provided with a cord or eyes to enable it to be hung either way up upon a nail or nails. In larger appartus the sheet and reservoirs are preferably carried by a frame having trunnions mounted in a fixed stand, so that the sheet and reservoirs may be readily reversed. A suitable catch or catches would be provided to retain the swinging frame in a vertical position.

Such a fly-killing and cooling device may be hung on the sides of a hanging meat safe. If the safe be circular in cross section, a plurality of such devices may be employed, each having curved or arc shaped reservoirs. In this latter form the fly-killing and cooling device would be turned on an axis so as to keep its concave side toward the meat safe.

The herein described fly-killing and cooling device may be employed as the roof or side of a tent, or for cooling the head and neck of a traveler in a hot climate, and for various other purposes as will be well understood.

The reservoirs may be made of metal or waterproof canvas, as heretofore.

The invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical section of the apparatus drawn to a large scale.

Fig. 2 is a front elevation of a similar apparatus suitable for hanging in a room, for killing flies and cooling the apartment.

Fig. 3 is a plan of the lower reservoir shown in Fig. 2.

Fig. 4 is a front elevation of a larger apparatus adapted to be fixed in the open and especially suitable for killing tsetse and other flies which attack animals and human beings.

Fig. 5 shows a side elevation partly in section of an apparatus which is circular in plan and is adapted for hanging in a room, for the purpose of killing flies.

Fig. 6 shows a side elevation partly in section of an apparatus in the form of a meat safe.

Fig. 7 shows a plan of a meat safe with the apparatus arranged around it.

Fig. 8 shows how the apparatus such as that shown in Figs. 1 and 2 may be employed as a tent.

a is the upper reservoir and a' is the lower reservoir, which are preferably circular in cross section as shown.

Each reservoir a, a', has a groove b along one side thereof, and perforations b' connect the groove b with the interior of the reservoir a or a'.

Each reservoir has a filling orifice and air inlet a^2, closed by a screw cap a^3, and each reservoir has an air outlet a^4, closed by a screw cap a^5. It will be observed that the air outlet a^4 is just above the level of the perforations b' in the upper reservoir a, and just below the level of the perforations in the lower reservoir a'.

The sheet of absorbent material c is at each end passed around a rod d, and secured by stitching c', and the rod d is located so close to the groove b that the drops of water passing through the perforations b' must come into contact with the absorbent material c which is wrapped around the rod d. The rings e, e, fixed to the reservoirs a, a', are adapted to receive cords e' by which the apparatus may be suspended with either reservoir a or a' in the upper position.

The apparatus is used in the following manner. The upper air outlet a^4 is closed by screwing up tightly its cap a^5, and the lower air outlet is opened by partly unscrewing its cap a^5 or entirely removing the same. The lower filling aperture and air inlet a^2 is closed by tightly screwing up its cap a^3. The upper filling aperture is opened by removing its cap a^3, and the upper reservoir is filled with liquid. The upper cap a^3 is then replaced but is not screwed up tightly, so as to allow air to enter the upper reservoir as the liquid passes through the upper perforations b'. By screwing up more or less tightly the upper cap a^3, the inlet of air may be regulated, by which means the outflow of the liquid is also regulated. The liquid having flowed down the absorbent material c, collects in the lower groove b and passes through the perforations b' into the lower reservoir a'. As the lower reservoir is filling, the air therein passes out through the air outlet a^4 therein. When the lower reservoir is filled up to the level of the air outlet a^4, this latter is closed, and the air inlet a^2 in the top reservoir a is also closed. The apparatus may then be turned bodily over, when the upper reservoir will again contain liquid and the lower reservoir will be empty. The upper air inlet a^2 is then slightly opened and the lower air outlet a^4 is also opened, and the apparatus starts working again.

In Figs. 2 and 3 I have shown the apparatus in the form of a flat banner having rings e fixed to both reservoirs a, a', and cords e' attached to the rings e. By these means the apparatus may be suspended at either end. The drawing also shows wires f fixed to the ends of the reservoirs a, a'. The ends of the wires f are bent horizontally and enter the ends of the rods d.

In Fig. 4 the reservoirs a, a', are fixed to rods g, which are mounted on short shafts g', passing through the uprights h, fixed in the ground. One short shaft g' is provided with a handle g^2, enabling the reservoirs a, a', and all parts carried thereby to be reversed from time to time when the upper reservoir has become empty. In order to retain these parts in the desired position with both reservoirs in the same vertical plane, it is necessary to provide suitable retaining means, otherwise the upper, full, reservoir would probably fall back into its lowest position. One of the uprights h may be provided with holes h' adapted to receive a pin h^2, which is passed through the handle g^2, thus locking the parts. These reversible parts may be locked by other means. For instance, the uprights h may be provided at their upper ends with long turn-buttons h^3, the inner ends of which project into the paths of the rods g. To prevent cattle licking the absorbent material c, it is necessary to cover it with barbed wire i, the vertical strands of which are wound around the reservoirs a, a'. The horizontal strands of the barbed wire are carried by the vertical strands.

In Fig. 5 the reservoirs, the rods d, and the absorbent material c, are all circular in plan. These reservoirs are partly tubular, at a, a', as in the figures already described, but have extensions, A and A', which are provided with the filling apertures a^2 and air regulating and closing caps a^3. Perforations a^6 connect the two parts A, a, and A', a'. The parts a, a' are fitted with the air inlet a^4 and closing caps a^5. The parts A, A', have rings e and cords e' enabling the apparatus to be readily reversed. In this form of the apparatus I have provided a pan j to catch any drips should they happen to pass over the lower reservoir a' A'. The pan j has straps j' which are slotted to pass over studs j^2 on those parts of the reservoirs marked A, A'.

The meat safe shown in Fig. 6 is hung from a support k. The reservoirs a, a', the rods d, and absorbent material c, are circular in plan as described with respect to Fig. 5. The reservoirs a, a', have, however, no extensions. From the support k is suspended a tank l having a filling aperture closed by a screw cap l'. This tank l has apertures l^2 through which water may flow over the exterior of the upper reservoir a and thence over the absorbent material c. The water in the tank l may be used merely for cooling the contents of the meat safe by

soaking the absorbent material c, and the water in the reservoirs a, a', may be poisoned. The tank l is circular in plan and forms the top of the meat safe. The reservoirs a, a', and absorbent material c form the circular wall of the safe. The tank l has hooks l^3 which pass through eyes l^4 of that reservoir, a or a', which happens to be uppermost. Each reservoir a, a', has eyes m adapted to receive a hinge pin m' by means of which the bottom m^2 may be secured at one side to either reservoir. Each reservoir a, a', has also a pin m^3 by which the bottom m^2 may be secured in its closed position by the hinged piece m^4. The tank l has eyes n through which pass ropes n'. These ropes n' also pass through rings n^2 fixed to the absorbent material. The ropes n' enable the absorbent material to be raised when the bottom m^2 has been opened, thus allowing meat to be readily placed on or to be readily removed from the hooks o. These hooks o are supported by a rod o' fixed to the bottom of the tank l.

In Fig. 7 p represents the top of any ordinary cylindrical meat safe, which is provided with hooks p' passing through eyes or loops p^2 fixed on the upper reservoirs a, a, of the cooling apparatuses, each of which is semi-circular in plan but is otherwise similar to the construction shown in Figs. 1, 2 and 3, similar parts being marked with similar letters of reference.

Fig. 8 illustrates how a tent may be made by two sets of apparatus similar to that shown in Figs. 2 and 3, similar parts being marked by similar letters of reference. The two upper reservoirs a are supported by a cross piece q on top of a tent pole q'. A clamping block q^2 securely holds the upper reservoirs a, a, on the cross piece q. The reservoirs a, a', have hooks r, the lower hooks being fastened by ropes r' to the tent pegs r^2. By releasing the clamping block q^2 and the ropes r', the reservoirs a, a', and absorbent material c may be readily reversed.

What I claim as my invention is:—

1. Apparatus for moistening absorbent material having an upper and a lower liquid reservoir, a groove in each reservoir, perforations connecting each reservoir with its groove, a rod located in each groove, and a sheet of absorbent material the upper and lower edges of which are wrapped around the rods and are in contact with parts of the sides of the grooves, substantially as set forth.

2. Apparatus for moistening absorbent material having an upper and a lower liquid reservoir, a groove in each reservoir, perforations connecting each reservoir with its groove, a rod located in each groove, a sheet of absorbent material the upper and lower edges of which are wrapped around the rods and are in contact with parts of the sides of the grooves, a filling aperture and air inlet in each reservoir, a closing device for each filling aperture and air inlet, an air outlet in each reservoir, and a closing device for each air outlet, substantially as set forth.

3. Apparatus for moistening absorbent material having an upper and a lower liquid reservoir, a groove in each reservoir, perforations connecting each reservoir with its groove, a rod located in each groove, a sheet of absorbent material the upper and lower edges of which are wrapped around the rods and are in contact with parts of the sides of the grooves, a filling aperture and air inlet in each reservoir, a closing device for each filling aperture and air inlet, an air outlet in each reservoir, a closing device for each air outlet, and means for suspending either reservoir in the upper position, substantially as set forth.

4. Apparatus for moistening absorbent material having an upper and a lower reservoir, a groove located in the body of each reservoir, perforations connecting each reservoir with its groove, a rod located in each groove, and a sheet of absorbent material the upper and lower edges of which are fixed around the rods and are in contact with parts of the sides of the grooves, substantially as set forth.

5. Apparatus for moistening absorbent material having an upper and a lower reservoir, a V-shaped groove located in the body of each reservoir, perforations connecting each reservoir with its groove, a rod located in each groove, and a sheet of absorbent material the upper and lower edges of which are fixed around the rods and are in contact with parts of the sides of the grooves, substantially as set forth.

6. Apparatus for moistening absorbent material having an upper and a lower reservoir, a groove located in the body of each reservoir, perforations connecting each reservoir with its groove, a rod located in each groove, a sheet of absorbent material the upper and lower edges of which are fixed around the rods and are in contact with parts of the sides of the grooves, a combined filling aperture and air inlet in each reservoir, a closing device for each combined filling aperture and air inlet, an air outlet in each reservoir, and a closing device for each air outlet, substantially as set forth.

In witness whereof I have hereunto affixed my signature.

SARAH S. STAPLES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."