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UMBRELLA STEAMER.

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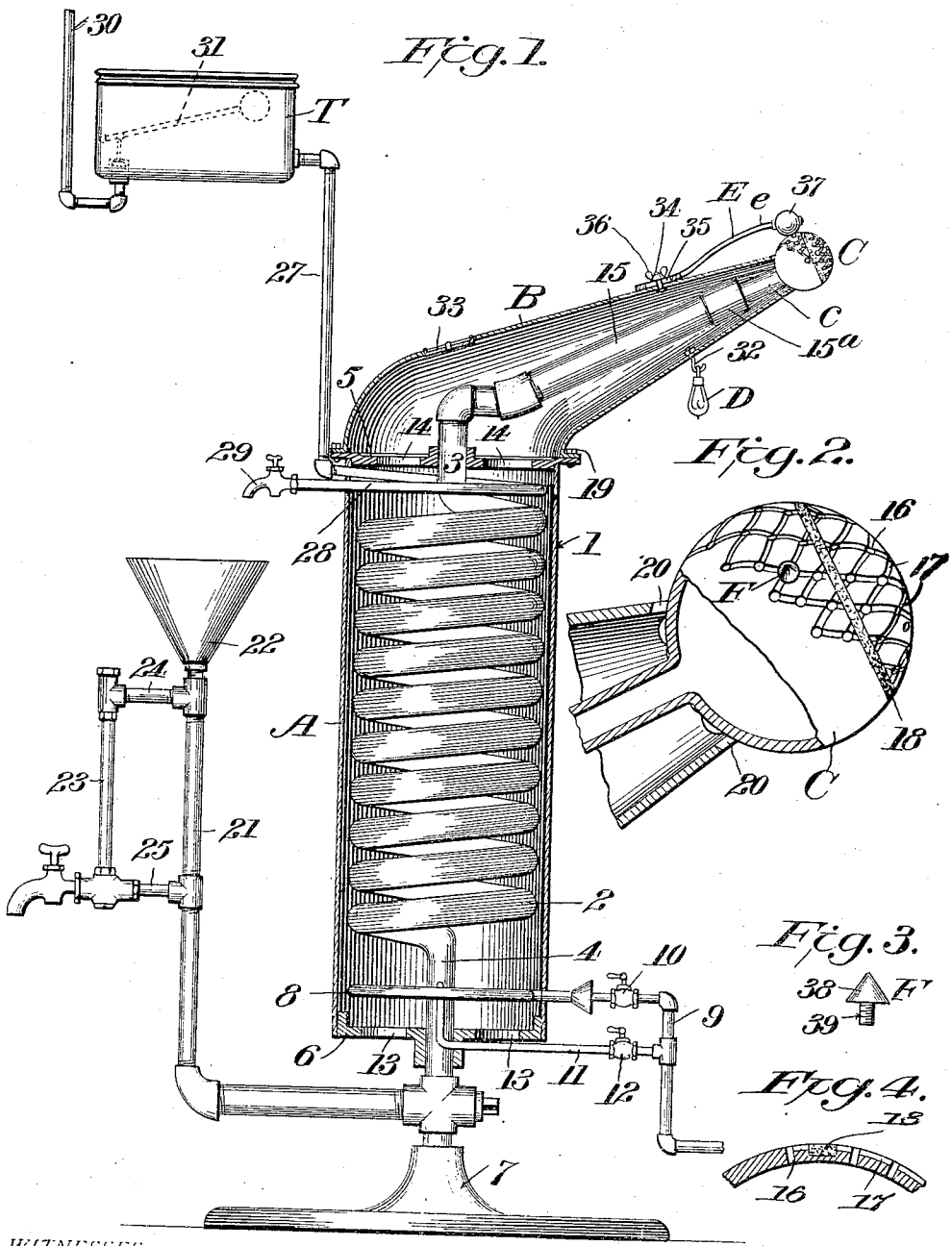

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

WITNESSES

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UMBRELLA-STEAMER.

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To all whom it may concern:

Be it known that I, SIMON I. GOLDSTEIN, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Umbrella-Steamers, of which the following is a specification.

This invention relates to a steaming and ironing device particularly adapted for removing the wrinkles from umbrella covers.

In the manufacture of umbrellas, after the umbrella cover has been attached to the rod and ribs, the umbrella is usually opened and held up before a light or window by one operator who examines the cover for holes and defects, and if no defect appears it is passed over to another operator who subjects the cover to a jet of steam, while the umbrella is open, which causes the wrinkles to disappear from the fabric. If the steam is dry and no water gets upon the fabric, the umbrella may be closed immediately after it has been steamed, but if the steam is wet and any water gets upon the cover, the umbrella cannot be closed until the water has evaporated without leaving wrinkles in the cover. Usually the dry steam is obtained at the expense of a considerable amount of fuel, and condensation at the outlet of the steamer frequently wets the cover and delays the work.

The purpose of my invention is to provide a combined steaming and ironing device which will insure the delivery of dry steam at the point of use, with a minimum amount of fuel, and which is so arranged that the operator who attends to the steaming and ironing of the umbrella cover may also, at the same time, inspect the cover for holes and defects, thus saving the expense of employing another person for the latter purpose.

The invention relates also to attachments for spreading hem stitches and for pressing the seams of fabrics.

In the accompanying drawing, Figure 1 is a side elevation of the apparatus, the heater casing and the hood thereon being shown in central section; Fig. 2 is a detail view on a larger scale, showing the globular nozzle and ironing surface and the outer end of the hood, partly in section; Fig. 3 is a detail view of the spreading device for hem stitches; Fig. 4 is a section through a portion of the nozzle taken diagonally across the felt strip 18 on the line of one of the ducts.

Referring to the drawing A indicates a heater, comprising a shell or casing 1 surrounding a coiled pipe 2 which pipe has straight end portions 3 and 4 which extend through central openings in the upper and lower heads 5 and 6, respectively, of the shell. The lower end of said pipe extends into a suitable base 7, which forms a support for the pipe, and the casing is supported upon the pipe by the heads 5 and 6. An annular gas burner 8 surrounds the part 4 of the heating pipe and receives gas from a pipe 9, through a suitable controlling valve 10. A branch gas pipe 11, controlled by a valve 12, extends into proximity to the main burner 8, for the purpose of providing a pilot light therefor. The lower head 6 of the heater has openings 13 through which air may pass into the casing and the upper head 5 has openings 14 through which the heated air and gases may pass out of the heater into a hood B which is hereinafter referred to.

The heater may be of any desired form and the heater thus far described is one suitable for my purpose, but not a novel structure. Upon this heater, or a heater of any suitable type, I connect a pipe 15 which is attached by suitable couplings to the upper end 3 of the heating coil, and the pipe 15 extends laterally and upwardly from the top of the heater and terminates in a globular nozzle C having a plurality of small perforations 16 through which the steam, generated in the coil 2, may issue in numerous fine jets. Preferably narrow channels or ducts 17 in the outer surface of the nozzle intersect the perforations 16, forming a network of ducts with the perforations at the intersecting points of the ducts the purpose of these ducts being to collect any water which may form by condensation upon the surface of the nozzle. The nozzle has also an annular groove in its outer surface, in which is fitted a band of felt 18. The pipe 15 extends outwardly some distance from the heater in order that the nozzle may be in a suitable position for permitting the operator to rub the inner side of the umbrella cover against the nozzle, without having the stick come in contact with the casing of the heater, which would otherwise obstruct the operation. For the purpose of

maintaining the nozzle hot, so as to prevent condensation, and in order that the nozzle may constitute a heated ironing surface, and, also, in order to prevent waste of the heat and to save fuel, I arrange upon the top of the heater a hood B, which may be connected to the head 5 by bolts 19, which hood extends over the top of the heater and projects laterally and upwardly, inclosing the pipe 15, the hood tapering toward and terminating at the rear side of the nozzle and forming a support therefor. This hood, at its outer end, has openings 20 through which the hot air and gases from the heater may flow outward in contact with the nozzle.

Water is fed into the heater coil 2, through a stand pipe 21 connected to the lower part 4 of the heater coil. A funnel 22 is arranged at the upper end of the stand pipe and a glass gage 23 is connected in the usual manner to the stand pipe by cross pipes 24 and 25 at the upper and lower ends of the gage. In case of any sudden excessive back pressure of steam in the heater, the water therein will be forced back into the funnel, which forms a reservoir to receive it, and when the pressure is relieved the water will flow back into the heater.

The admission of an excessive amount of cold water into the heating coil, might result in the delivery of wet steam at the nozzle, which would cause drops or particles of water to be absorbed by the umbrella cover, and this, for reasons previously stated, would cause hindrance and delay in the work. Therefore I provide means for delivering water into the steamer only as fast as it is evaporated. As shown in the drawing a tank T is arranged at a suitable distance above the heater and from a low point in this tank a pipe 27 leads to a single coil 28 in the upper part of the heater and thence to a faucet 29 arranged over the funnel 22. The water passing from the tank to the funnel is therefore given a preliminary heating in the upper part of the heater. The cock or faucet 29 is opened far enough to let the water drip in a small stream into the funnel from whence it passes into the heater. Where the heater is installed in a building having a water supply service connected to the town or city water supply pipes, if there are a number of faucets in the building, the pressure in the pipes in the building will vary according to the number of faucets which may be open at one time. Therefore, if one of the faucets connected directly to the service pipes were arranged to deliver water into the funnel 22, the pressure would vary from time to time as other faucets in the building were opened or closed and therefore the supply of water to the heater would not be uniform, and at times might be cut off so that the heater would be injured by burning, and at other times the flow of water would be in excess of the amount required for steaming purposes and in this latter case the steam delivered at the nozzle would be wet.

In order to maintain the head of water at the cock 29 substantially constant, the tank T is provided as a storage reservoir, this tank being connected to one of the service pipes 30 and being provided with a float-controlled valve, indicated in dotted lines at 31, so that as the water is drawn off from the tank the float valve will open and admit more water to the tank, thus maintaining a supply in the tank at all times. Hence when the cock 29 is opened to the desired extent there will be a constant drip of water therefrom regardless of the variations in pressure in the service pipe in the building. The cock 29 is arranged a suitable distance about the funnel so that the water may be observed in passing through the intervening gap, and the size of the stream may thus be readily gaged by the eye and regulated by the cock to supply the water to the heater only as fast as evaporation takes place. Also, as the pipe 28 is not connected to the stand pipe, the back pressure which occurs in the stand pipe at times does not affect the pressure in the pipe 28 or vary the rate of flow therefrom.

In order to regulate the heat at the spherical nozzle C to prevent possible over-heating of the nozzle, I provide a damper 33 in the top of the hood B, which damper may be of any well known form, and which, when open, will allow more or less of the hot air and gases to escape from the hood without being carried to the nozzle.

A pressing device E, is adjustably attached to the hood B. This device comprises a spring-arm *e* pivotally connected to the hood by a stud 34, passing through a longitudinal slot 35 in the arm, the stud being provided with a wing nut 36 for clamping the arm to the hood. This arm carries, at its free end, a ball 37, which is journaled upon the arm, and constantly pressed toward the nozzle C. The arm may be adjusted to set the ball forward or backward on the nozzle, or the arm may be turned on its pivot so as to swing the ball out of the way. The purpose of this spring-pressed ball is to flatten out seams, as hereinafter described.

In Fig. 3 is shown a spreading device F for spreading the fabric at hem stitches. This device comprises a cone 38, on a threaded stem 39, by which the cone is attached to the nozzle at a suitable point, as shown in Fig. 2. The purpose of this spreading device will hereinafter appear.

When used for plain umbrellas or parasols having neither inserts nor seams running transversely of the umbrella or para-

sol sections, the pressing device E is swung out of the way. The stitch spreading device F is located in such position that it will not engage the umbrella cover in the ordinary operation of steaming an umbrella or parasol, but, if desired, it may be removed from the nozzle or turned farther out of the way by turning the nozzle, the stem *c* of which is connected by a suitably packed joint 15ª with the pipe 15.

In operation, the water is kept constantly dripping into the funnel 22 and the steam issues from the spherical or globular nozzle C in fine jets. The operator, with the umbrella open and with the stick or handle portion projecting toward or at one side of the heater, places the inner side of the cover against the nozzle and rubs the sections of the fabric over the surface of the nozzle, the spring-pressed ball 37 being swung out of the way, unless there are seams to be pressed. The dry steam passing through the fabric, and the pressure of the fabric upon the hot metal surface, causes the wrinkles in the sections of the cover to disappear. While the operator, standing nearly in front of the nozzle, is rotating the umbrella cover thereagainst, he also is enabled to inspect the cover for holes or defects. In order to permit of this inspection I provide a hook 32 upon the under side of the hood B, upon which is suspended a lamp D so that the umbrella cover, while bearing upon the nozzle will be between the operator and the lamp. Thus the inspection is carried on simultaneously with the steaming operation, instead of preceding that operation, thus saving the time and labor usually expended in inspecting the umbrellas before they are steamed. The felt strip 18 is provided for the purpose of smoothing the braid on umbrellas which are provided with braided edges, the steam and the simultaneous contact with the felt causing the braid to become smooth and free from wrinkles.

For umbrellas having seams running transversely of their sections, the pressing device E is swung into place, as shown in Fig. 1, and the umbrella is moved so as to carry the seams under the spherical roller 37, which presses the seams against the nozzle, during the steaming operation, and thus the seams are flattened.

In the manufacture of parasols having hem stitches running transversely of the sections, it is customary for the operator to spread the edges of the fabric at the stitches so as to smooth these edges before steaming. This is usually done by inserting the thumb nail between the adjacent edges of the fabric and moving it along the stitches to spread the edges. When such parasols are to be steamed on my steaming device, the edges of the fabric, which are hem stitched together, are spread by placing the parasol so that the conical spreader F will enter between the edges of the fabric at the stitches and by then moving the parasol so that the entire seam will pass over the spreader. This is done simultaneously with the steaming operation and the work is more quickly and uniformly accomplished than can be done by the hand operation above referred to.

What I claim is:

1. The combination with a steam generator comprising a casing, of an outlet pipe projecting from the casing, a nozzle on said pipe having a convex outer wall and a plurality of perforations therethrough and a hood fitting over the generator casing and extending to the nozzle.

2. The combination with a steam generator comprising a casing, of an outlet pipe projecting from the casing, a nozzle on said pipe having a convex outer wall and a plurality of perforations therethrough and a hood fitting over the generator casing and extending to the nozzle, said hood having its end adjacent the nozzle open.

3. The combination with a steam generator comprising a casing, of an outlet pipe projecting from the casing, a globular nozzle having a plurality of perforations, and a hood fitting over the generator casing and extending to the nozzle.

4. The combination with a steam generator comprising a casing, of an outlet pipe projecting from the casing, a nozzle on said pipe having a convex outer wall and a plurality of perforations therethrough, and a hood fitting over the generator casing and around said pipe and extending to the nozzle.

5. The combination with a steam generator comprising a casing, of an outlet pipe projecting from the casing, a globular nozzle on said pipe having a plurality of perforations, and a hood fitting over the generator casing and around said pipe and extending to the nozzle.

6. The combination with a steam generator and an outlet pipe projecting therefrom, of a nozzle on said pipe having a convex outer wall, said wall having a network of channels or ducts therein and having perforations at the intersecting points of said ducts.

7. The combination with a steam generator comprising a casing, of an outlet pipe projecting laterally from the casing, a nozzle having a plurality of perforations on said pipe, and a hood fitting over the generator casing and extending from the generator to the nozzle.

8. The combination with a steam generator comprising a casing, of an outlet pipe projecting laterally from the casing, a nozzle having a plurality of perforations on

said pipe, and a hood fitting over the generator casing and extending from the generator to the nozzle and inclosing said pipe.

9. The combination with a steam generator of an outlet pipe projecting therefrom, a nozzle on said pipe, and a spring-pressed roller adapted to bear against said nozzle.

10. The combination with a steam generator, of an outlet pipe projecting therefrom, a nozzle on said pipe, a spring-pressed roller adapted to bear against said nozzle and means for adjusting said roller relatively to the nozzle.

11. The combination with a steam generator of an outlet pipe projecting therefrom, a nozzle on said pipe, a hood inclosing said pipe and extending from the generator to the nozzle, a spring arm connected to the hood, and a roller mounted on said arm and adapted to bear against the nozzle.

12. The combination with a steam generator and an outlet pipe projecting therefrom, of a nozzle having a convex outer wall provided with a plurality of perforations, and a stitch spreading device on said nozzle, said device comprising a cone secured at its base to the surface of the nozzle.

13. The combination with a steam generator and an outlet pipe projecting therefrom, of a spherical nozzle on the pipe, a portion of said nozzle having a plurality of perforations and having a strip of felted material arranged circumferentially in the perforated portion of the nozzle.

In testimony whereof I affix my signature, in presence of two witnesses.

SIMON I. GOLDSTEIN.

Witnesses:
M. MAURICE MEYER,
OSCAR L. HUTTON.