Dec. 29, 1942. M. C. VAN TRIES 2,306,766

WALLPAPER REMOVER

Filed Nov. 24, 1941 3 Sheets-Sheet 1

Fig 1

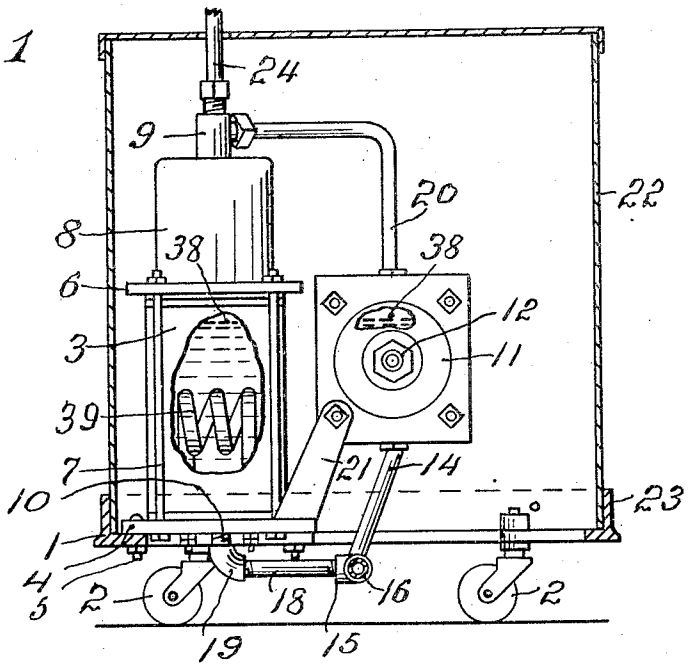
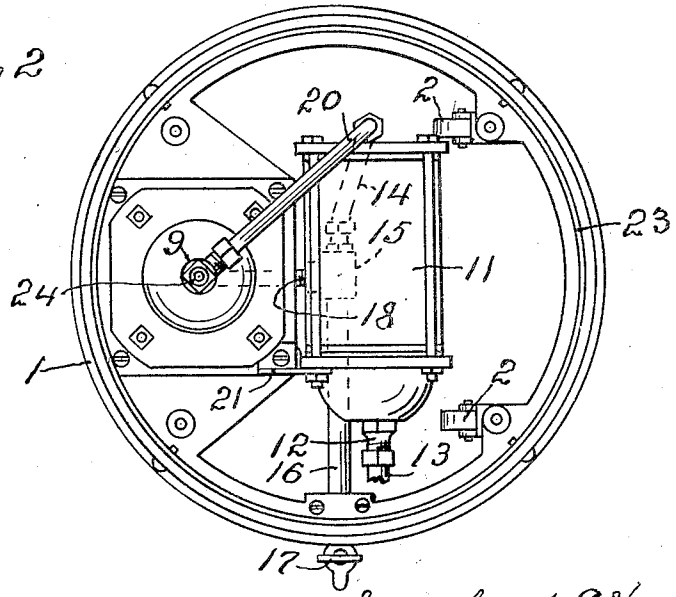


Fig 2



Manford C. Van Tries INVENTOR

BY Warren W. House

His ATTORNEY

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WALLPAPER REMOVER

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Fig 3

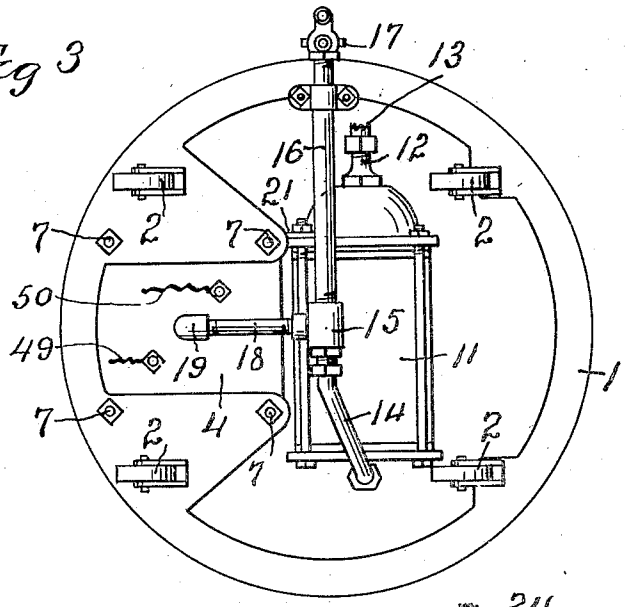
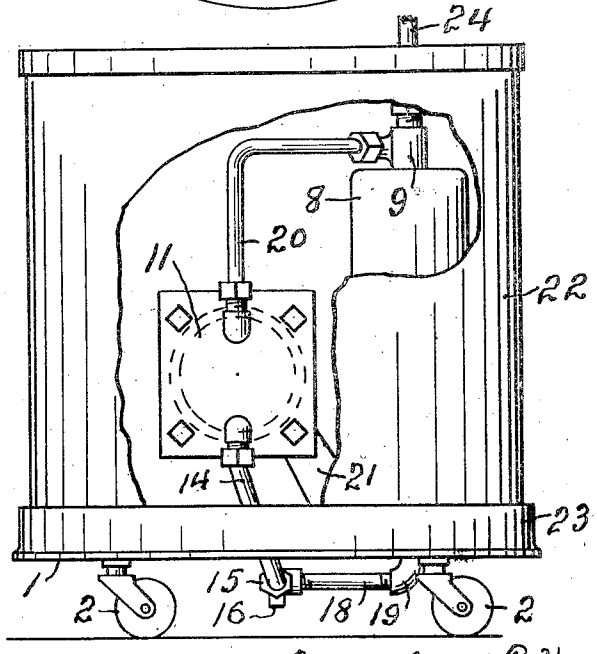


Fig 4



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Dec. 29, 1942. M. C. VAN TRIES 2,306,766

WALLPAPER REMOVER

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Fig 5

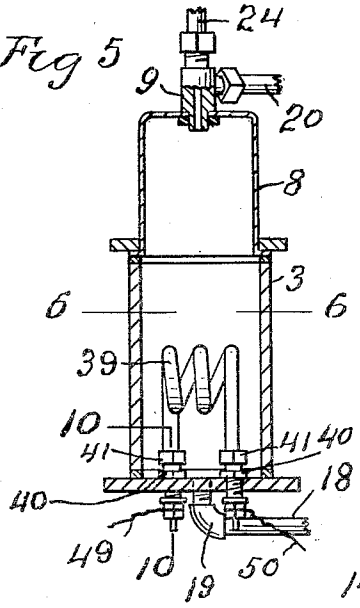


Fig 7

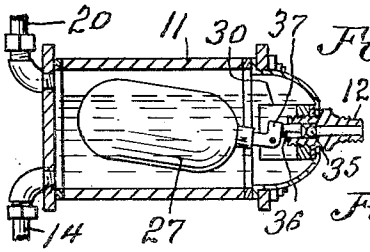


Fig 11

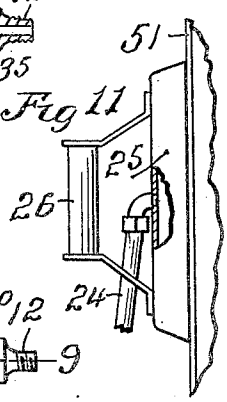


Fig 8

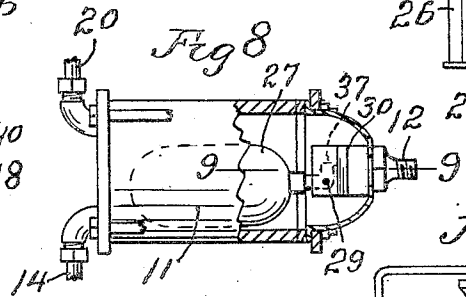


Fig 12

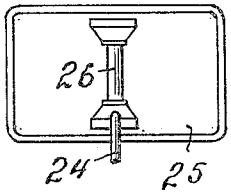


Fig 6

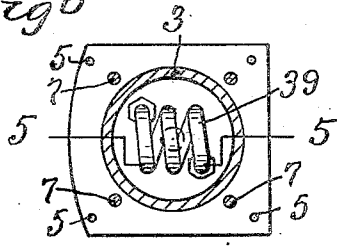


Fig 9

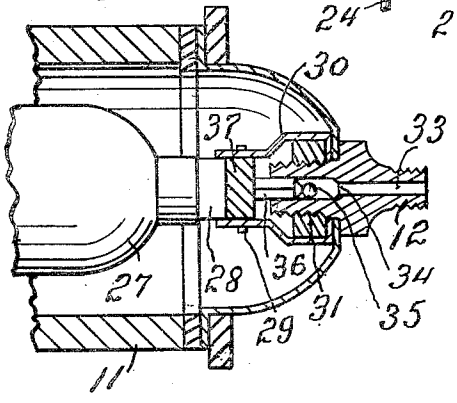
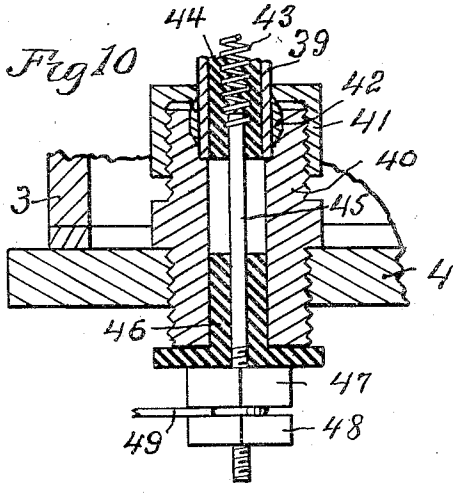


Fig 10



Manford C. Van Tries INVENTOR.

BY Warren D. House

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Patented Dec. 29, 1942

2,306,766

UNITED STATES PATENT OFFICE

2,306,766

WALLPAPER REMOVER

Manford C. Van Tries, Kansas City, Mo., assignor to Orson H. Swearingen, Kansas City, Mo.

Application November 24, 1941, Serial No. 420,161

5 Claims. (Cl. 219—39)

My invention relates to improvements in wallpaper removers.

It relates particularly to the type of wallpaper removers which furnishes steam to a hand operated steam applicator applied to the wallpaper for moistening it, so that the wallpaper can be easily and quickly removed.

One object of my invention is to provide a novel self contained mechanism, which is simple, relatively cheap to manufacture, which is portable, easily and economically operated, which will automatically furnish the steam required, and which is efficient in its operation.

A further object of my invention is the provision of novel means for electrical generation of the steam which is produced in the boiler which forms a part of my improved mechanism.

The novel features of my invention are hereinafter fully described and claimed.

In the accompanying drawings which illustrate a preferred embodiment of my improved apparatus:

Fig. 1 is a side view, partly in elevation, partly in vertical section, and partly broken away of my improved apparatus.

Fig. 2 is a top view of the same with the cover for the wheeled support removed and parts broken away.

Fig. 3 is a bottom view of what is shown in Fig. 2.

Fig. 4 is a side elevation, partly broken away, of my improved apparatus, looking in the opposite direction from that in which Fig. 1 is viewed.

Fig. 5 is a vertical sectional view of the boiler taken on the plane of the line 5—5 in Fig. 6.

Fig. 6 is a horizontal sectional view on the line 6—6 of Fig. 5.

Fig. 7 is a vertical sectional view of the float chamber with some of the parts shown in side elevation, the float being shown in the position in which it closes the water intake valve.

Fig. 8 is a side elevation of the float chamber, parts being shown in longitudinal vertical section, parts being broken away, and the float shown in the lowered position in which the intake valve opens.

Fig. 9 is an enlarged longitudinal sectional view of the water intake portion of the float chamber on the line 9—9 of Fig. 8, the valve being shown in the open position.

Fig. 10 is an enlarged vertical section on the line 10—10 of Fig. 5.

Fig. 11 is an end elevation, partly broken away, of the steam applicator shown operatively engaged with a portion of wallpaper which is to be removed.

Fig. 12 is a reduced front elevation of the applicator shown in Fig. 11.

Similar characters of reference designate similar parts in the different views.

Referring to Figs. 1 to 4, 1 designates the horizontal base, supported by castors 2 of a wheeled support for a steam boiler comprising a casing having a cylindrical body 3 supported at its lower end on the base plate 4 which is fastened by bolts 5 to the upper side of the base 1.

On top of the body 3 is mounted a horizontal plate 6 which is connected to the base plate 4 by vertical bolts 7. Mounted on the plate 6 is a dome 8 having at its upper end a steam outlet tube 9.

The boiler is provided with a water inlet, which also serves as a drain outlet, consisting of a vertical threaded pipe 10 mounted in a vertical hole extending through the base plate 4 and interiorly communicating with the body 3 of the boiler casing.

For supplying water to the boiler automatically, there is provided at one side of the boiler body 3 a horizontal float chamber 11 having at one end a water intake comprising a horizontal tube 12 which is adapted to be connected to a hose 13, which communicates with a suitable source of water supply, not shown.

To the other end and at the lower side of the float chamber 11 is connected a pipe 14 connected to one end of a T joint 15 to the other end of which is connected a horizontal drain pipe 16 having at its other end a shut-off valve 17.

Connected to the T 15 is a pipe 18 which is connected to the inlet pipe 10 of the boiler by an elbow 19.

Connected at the end of the float chamber 11, to which is connected the pipe 14 and adjacent to the upper side of the float chamber is a fluid conductor 20, the upper end of which is connected to the steam outlet tube 9. To the other end of the float chamber 11, is attached an upstanding plate 21, the lower end of which is fastened to the base plate 4 of the boiler.

The plate 21, fluid conductor 20, pipe 14, T joint 15, pipe 18, elbow 19 and inlet tube 10 serve to support the float chamber 11.

A cover 22 encloses the boiler and the float chamber 11 and has its cylindrical lower open end fitted within an annular upstanding flange 23 on the base 1.

Connected at one end to the steam outlet 9 on the dome 8, is a flexible steam conductor 24, which extends through the top of the cover 22 and is connected to the front side of the pan shaped steam applicator 25 having a handle 26, see Figs. 1, 4, 5, 11 and 12.

In the float chamber 11 is a float 27, which at one end has a right angled extension 28, Figs. 7, 8 and 9, which is pivoted on a horizontal pin 29 which extends through the arms of a U-shaped sheet metal member 30, the transverse portion of which is provided with a hole through which extends the externally threaded inner end portion of the tube 12. A nut 31 on said threaded inner end portion of the tube 12 clamps the transverse portion of the member 30 against the adjacent end of the float chamber 11.

The passage 33 through the tube 12 is provided with a valve seat 34 against which is seated a ball valve 35 by a pin 36, which is square in cross section and against the inner end of which bears one arm 37 of the right angled extension 28 of the float 27.

Water is supplied to the boiler in the following manner. When the water is supplied to the float chamber by the hose 13, through the tube 12, and the float 27 is in the lowered position, shown in Figs. 8 and 9, the valve 35 will be open, and the water will pass by it and the square pin 36 and enter the float chamber 11. The water will pass from the float chamber through the pipe 14, T joint 15, pipe 18, elbow 19 and pipe 10 into the boiler body 3, the shut-off valve 17 being closed.

When the float chamber is filled to a predetermined amount, as shown in Figs. 1 and 7, the float 27 will rise to the position shown in Fig. 7, and by its arm 37 will push the square pin 36 and thus seat the ball valve 35, thereby shutting off the water entering through the passage 33 of the tube 12. At this time the water level in the float chamber 11 and in the boiler body 3 will be the same, as indicated by 38 in Fig. 1.

For heating the water in the boiler, I provide the following described mechanism.

A heating pipe of heat conducting material, as copper, has a coiled portion 39 disposed in the water in the boiler below the water level 38. The end portions of the pipe 39 extend downwardly and are respectively tightly fitted in the upper ends of two vertical tubes 40 having threaded lower ends respectively fitted in threaded vertical holes provided in the base plate 4 of the boiler, Figs. 5, 6 and 10.

Each of the two tubes, which are externally threaded nipples, has an annular peripheral flange, shown in Figs. 5 and 10, which bears against the upper side of the base plate 4, thus preventing liability of leakage where the nipple extends through the base plate.

For preventing water from getting into the pipe 39 at its connections with the tubes 40, sealing means are provided comprising two cup-shaped internally threaded closures 41 respectively fitted on the threaded upper ends of the tubes 40. Encircling the tube 39 where it enters each tube 40, is a packing member consisting of a gland 42, which is engaged by the upper end of the adjacent closure 41, and forced tightly against the tube 39 and inner side of the adjacent tube 40, as shown in Fig. 10. The tube 39 extends through an opening provided in the upper end of each closure 41, as shown in Figs. 5 and 10. By having internally threaded closures 41 fitted respectively on the externally threaded inner ends of the tubes or nipples 40, the inner sides of the nipples will be smooth and the threading will not contact with the packing glands 42, so will not interfere with the tight sealing of the packing against the pipe 39, and will permit the easy extraction of the pipe and packing, for purpose of repairs, from the nipples.

As a heating element in the tube 39, there is extended a filamentary heating element 43, consisting of a coiled wire, of a suitable nature and high resistance, preferably the alloy, commercially known as "Nichrome," composed of nickel and chromium.

Disposed in the tube 39 and contacting with it and the heating element 43 is provided heat conductive electrical insulating means 44, preferably consisting of a comminuted material, such as porcelain.

For supplying electrical current to the heating element 43, any suitable means may be employed, such means, as in the structure shown, consists in two terminal members comprising two metal rods 45, which respectively extend from the outer side into the tubes 40 and are connected at their inner ends respectively with the ends of the heating element 43, as shown in Fig. 10. The terminal members 45 extend through insulation 46 disposed in the outer ends of the tubes 40. The outer ends of the members 45 are threaded and each has mounted on it two nuts 47 and 48. These pairs of nuts clamp respectively between them two electrical conductors 49 and 50 which are included in a suitable electric circuit, as the lighting or heating system in a house.

In the operation of the heating mechanism, the heat from the heating element 43 is conducted through the material 44 to the pipe 39 thus heating the pipe, which in turn converts the water in the body 3 of the boiler into steam, which passes through the dome 8 and outlet tube 9 and through the hose 24 into the applicator 25, which the operator, by means of the handle 26 holds against the wallpaper 51 to be removed, as shown in Fig. 11.

The steam in the applicator pan is condensed and moistens the wallpaper, so that it can be easily and quickly removed.

The fluid conductor 20 connecting the boiler with the float chamber 11 retains the pressure uniform and the same in the boiler and float chamber. As the steam is discharged into the applicator, the water level lowers as does the float 27, thus permitting the valve 34 to open and water to flow from the hose 13 through the passage 33 into the float chamber and from there through the course already described into the boiler body 3.

When it is desired to clean out the float chamber 11 and the boiler body and piping connecting them, the shut off drain valve 17 is opened, and the water will drain from the boiler body 3 through the pipe 18, the T joint 15 and pipe 16. The water will pass from the float chamber 11 through the pipe 14 into and through the pipe 16.

For cleaning the boiler, the hose 13 may be disconnected from the tube 12 and connected to the outlet tube 9, and will then pass through the dome 8 into the boiler body 3, and thence through the pipe 18, T 15 and drain pipe 16.

Many modifications of my invention, within the scope of the appended claims, may be made without departing from the spirit of my invention.

What I claim is:

1. In a heater of the kind described, in com-

bination, a steam boiler, a heat conductive pipe having a portion in the water in the boiler below the water level, an electrically conductive heating element in said pipe, two nipples extending through and tightly fitting against said casing, means tightly fitting the ends of said pipe within the inner ends respectively of said nipples, and insulated electrically conductive means extending through said nipples and connected with said heating element for supplying electric current to said heating element.

2. In a heater of the kind described, a boiler casing, two nipples extending through and tightly fastened in said casing, a heat conductive pipe having a portion disposed in said boiler below the water level therein and extending at its ends respectively into the inner ends of said nipples, an insulated electrically conductive heating element in said pipe, two electrically conductive terminal members fastened to said heating element and respectively extending through and insulated from said nipples, packing in the inner ends of said nipples and embracing said pipe, and two closures through which said pipe extends having threaded engagement respectively with the inner end portions of said nipples and engaging and tightly compressing said packing against said pipe and against said nipples.

3. In a heater of the kind described, a boiler casing, an externally threaded nipple extending through and tightly fastened in said casing, a heat conductive pipe having a portion disposed in said boiler below the water level therein and extending at one end into the inner end of said nipple, an insulated electric heating element in said pipe, and an electrically conductive terminal member fastened to said heating element and extending through and insulated from said nipple, a gland in the inner end of said nipple and embracing said pipe, and an internally threaded closure through which said pipe extends fitted on the inner end of said nipple and engaging and tightly compressing said gland against said pipe and against said nipple.

4. In a heater of the kind described, a boiler casing, a nipple having threaded end portions one of which extends through said casing and is externally threaded, and having between said end portions an annular peripheral flange bearing against the inner side of said casing, a heat conductive pipe having a portion disposed in said boiler below the water level therein and extending at one end into the inner end of said nipple, an insulated electrical heating element in said pipe, an electrically conductive terminal member fastened to said heating element and extending through and insulated from said nipple, a gland embracing said pipe and extending into and bearing against at one end against the inner end of said nipple and projecting inwardly from said inner end, and an internally threaded closure member having threaded engagement with the inner end portion of said nipple and encircling said pipe and compressing said gland against said pipe and said nipple.

5. In a heater of the kind described, a boiler casing, two nipples extending through and fastened to said casing, and having externally threaded inner ends, a heat conductive pipe having a portion disposed in said boiler below the water level therein and extending at its ends respectively into the inner ends of said nipples, an insulated electrically conducting heating element in said pipe, two electrically conductive terminal members fastened respectively to the ends of said heating element and extending through and insulated from said nipples, packing in the inner ends of said nipples and embracing said pipe, and two internally threaded closures through which said pipe extends having threaded engagement respectively with the externally threaded inner end portions of said nipples and engaging and tightly compressing said packing against said pipe and against said nipples.

MANFORD C. VAN TRIES.