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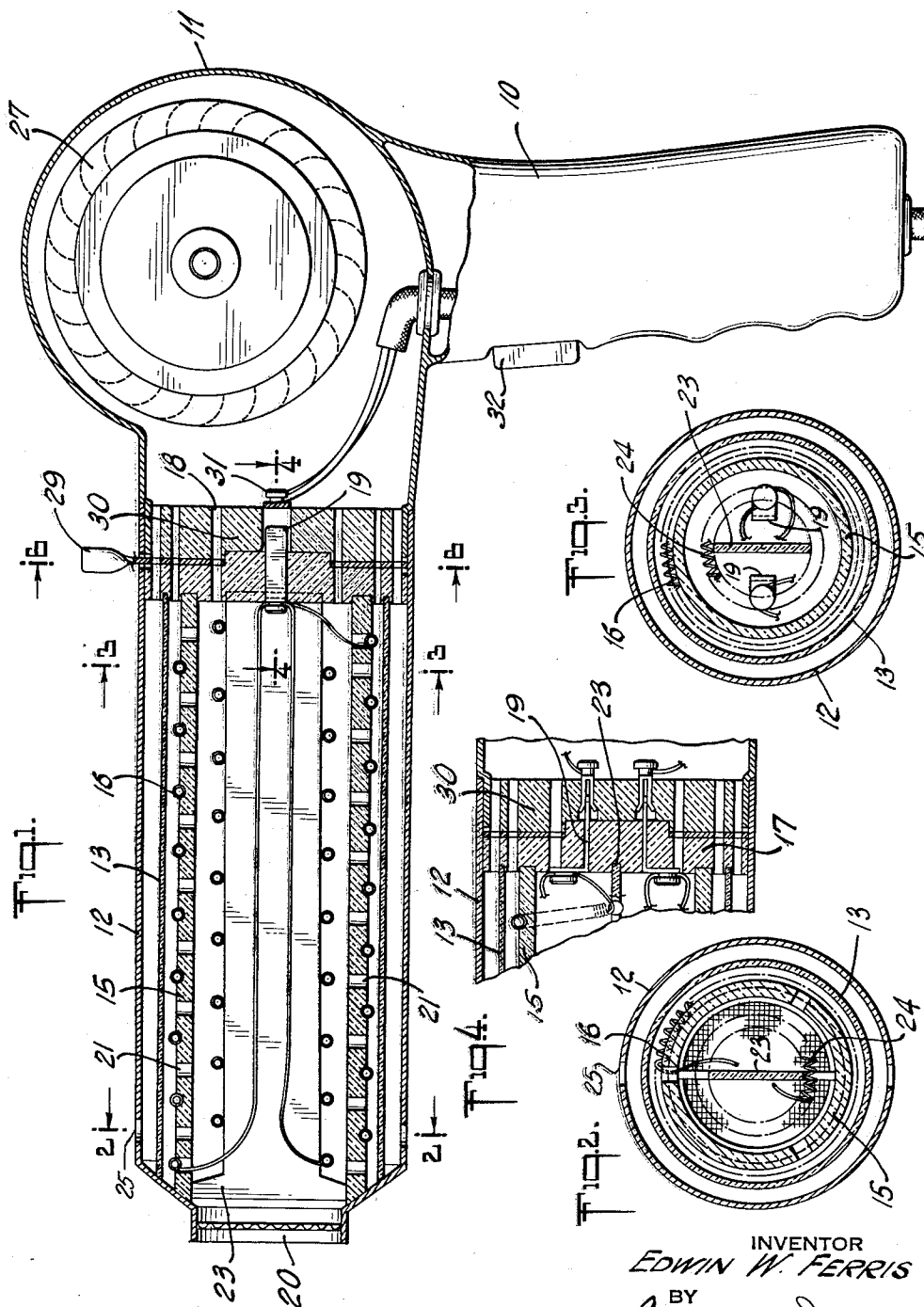
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3,094,606

ELECTRIC PAINT REMOVING DEVICE

Filed Oct. 29, 1958

2 Sheets-Sheet 1



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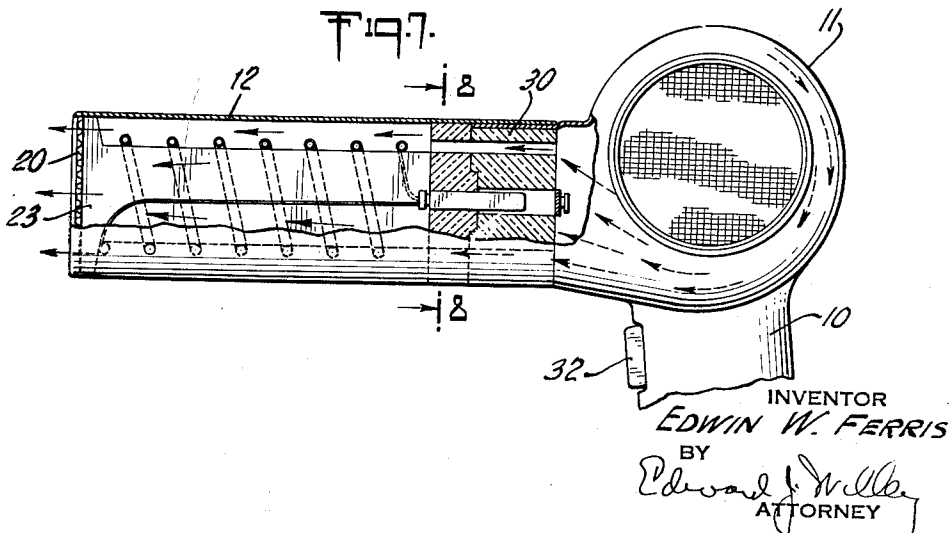
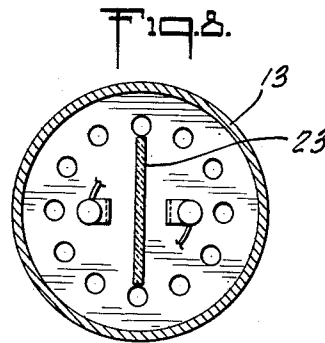
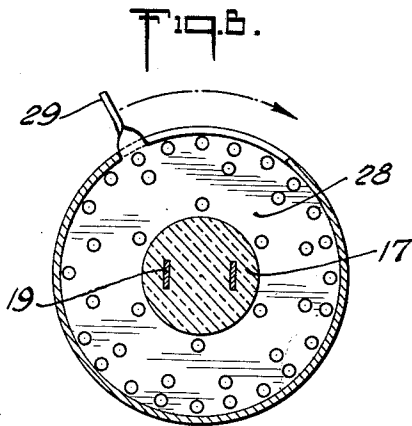
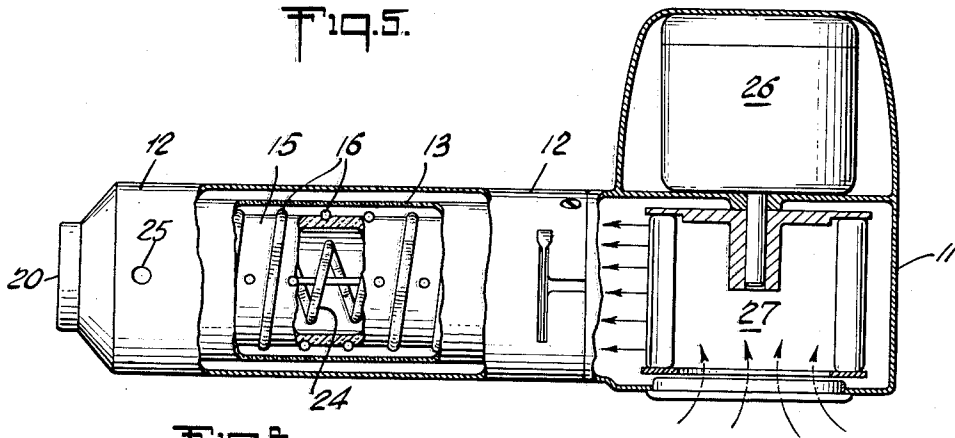
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ELECTRIC PAINT REMOVING DEVICE

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2 Claims. (Cl. 219—39)

The present invention relates to an electric paint removing device and more particularly to an electric device adapted to soften and loosen dried paint films, thus facilitating their removal from the painted surface.

Softening of old paint films is a well-known practice. It is usually accomplished by either solvents or "burning." This latter term means softening with heat but often or usually is accomplished by actual burning of the paint and the surface thereunder if it is combustible. Blow torches or other flame devices are most commonly used and these have been known to burn down houses. More recently electrical devices utilizing radiant heat or direct contact electric irons have been used. These devices do operate but only slowly and have thus not been generally utilized by professional painters.

It is an object of the present invention to provide an improved electric paint removing device.

It is a further object of the present invention to provide an improved electric paint removing device which will adequately remove paint without burning the surface under the paint.

It is a further object of the present invention to provide an improved electric paint removing device which will adequately remove paint without burning the surface under the paint and which will operate on regular household current.

These and other objects are attained by the present invention, which may be best understood by reference to preferred embodiments shown in the drawings, but it will be understood that variations and substitutions may be made within the scope of the claims.

In the drawings:

FIG. 1 is a side view, largely in section, showing the device of the present invention.

FIG. 2 is a cross-sectional view taken on the lines 2—2 of FIG. 1.

FIG. 3 is a cross-sectional view taken on the lines 3—3 of FIG. 1.

FIG. 4 is a segmental cross-sectional view taken on the lines 4—4 of FIG. 1.

FIG. 5 is a top plan view, partially cut away, of the device of FIG. 1.

FIG. 6 is a cross-sectional view taken on the lines 6—6 of FIG. 1.

FIG. 7 is a side view, largely in section, of an alternative to the device in FIG. 1.

FIG. 8 is a cross-sectional view taken on the lines 8—8 of FIG. 7.

With reference to FIG. 1, it will be seen that the device is a gun-like device with a handle 10, a fan housing 11 and a barrel 12. The barrel 12 has an inner wall 13, preferably of metal, forming a jacket which is adapted to permit the passage of cooling air from the fan housing 11 to the atmosphere. Within the inner wall 13 is a removable heater element unit comprising a cylindrical ceramic core 15 about which is wound resistance wire 16. The core 15 terminates at the inner end by a disk 17 of ceramic or the like. Disk 17 contains a plurality of air holes 18 and, as will be seen in FIG. 4, it has bayonet electrical connectors 19 so that the core may be removed and reinserted or replaced easily. At its outer end, core 15 terminates with an open mouth 20 which is shown to be round but which may take other shapes and which may bell out and be larger than the core. Core 15 also

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has a large number of holes 21 therein so that cool air from the fan housing which is adapted to pass outside the core and be heated by wire 16 may then pass inwardly through the core wall to the inner chamber and out of the mouth. Barrel 12 is provided, adjacent its forward end, with circumferentially spaced outlet openings 25.

Within core 15 is a core plate 23 which holds a second coil 24 of resistance wire. This is a flat plate which divides the interior of core 15 into two equal compartments lengthwise. Both coils 16 and 24 are connected in parallel through the bayonet connections as shown. In the case of the inner coils the conveying air from the fan housing may pass through holes 18 in disk 17 and the heated air out of the mouth 20. For best operation, however, the holes 18 need not be open but only the outer holes used.

Referring to FIG. 5, there is shown motor 26 which is a small motor operating on household current. It may have air cooling openings in its casing, not shown. Fan 27 may be any of a number of types but as illustrated is a drum type with air entering and leaving as shown at FIG. 5.

Control of the air flow is desirable and as illustrated at FIGS. 1 and 6 the control is an annular ring 28 having a lever 29 and arranged to be friction held between disk 17 and base 30. Base 30 is a ceramic or the like circular piece adapted to receive the bayonets and contains terminals 31 from which the electrical connections go to a switch 32, not shown in detail. Ring 28 contains a plurality of holes arranged in three circumferences. At any position of the lever 29 air will pass to the outer jacket of the device by reason of the large number of holes in the outer circumference of ring 28. However, movement of the lever 29 can cut down or increase the air passing over the heating elements which are reached by the two inner rows of holes.

FIGS. 7 and 8 show an alternative device. Here the barrel 12 is preferably of asbestos and is not continuous with the fan housing which may be of metal. In this alternative there is shown only one heating element mounted on a core plate 23, which is removable, but two elements could be used. Besides the asbestos barrel, base 30 in this case is very thick and may be of ceramic, asbestos composition or the like, non-heat-conducting material. No air control is shown but it may be included. It will be seen that in this alternative device insulation is relied upon rather than an air-cooled barrel to than an air-cooled barrel to keep them hot and handle section cool.

It will be seen that the present invention features a very limited flow of air over electric heating elements of large heating ability to yield a flow of air at a low speed and a high temperature. Further, there is some method of keeping the motor and especially the handle at a low temperature. The device softens paint for easy removal in a manner not heretofore obtainable. It not only quickly softens the paint so that it can be rapidly and completely removed but there is no charring of the wood, which would require subsequent sanding. Further, a painter can work rapidly without burning his hand with the pieces of removed paint. The air temperature at the mouth of the device should be in the range 500 to 1300 degrees F.

For use on household current the device is preferably wired for 110 volts and has a heater element of 1300 watts. The air flow from the fan should preferably be adjustable so that the heat at the mouth can be controlled and so the whole device can be cooled after the heater is shut off. Preferably also various wattage elements as well as various sizes and shapes of mouths can be easily attached.

The air passed over the heating unit is preferably in the range 1 to 10 cu. ft. per 1000 watts of heating element.

What I claim is:

1. A paint softening device comprising:

(a) a casing having an air inlet and an air outlet;
 (b) a tube having air inlet openings at one end thereof and an air outlet opening at its opposite end;

(c) a second tube concentrically surrounding said first-named tube in spaced relation thereto and having air inlet openings at one end thereof and an air outlet opening at its opposite end;

said inlet openings of said tubes communicating with said air outlet of the casing;

(d) a high temperature electric heating element disposed within said first-named tube;

(e) a fan in said casing for forcing air through its said outlet;

the aggregate area of the air inlet openings of said first-named tube being substantially less than the aggregate area of the air inlet openings of said second-named tube, such that a larger volume of air may be forced by said fan through said second-named tube than through said first-named tube; and

(f) means disposed intermediate said air outlet of the casing and the inlet openings of said tubes for controlling the flow of air through said tubes.

2. A paint softening device as defined in claim 1, wherein said inlet openings and said flow control means are arranged to permit the outer surface of said second-named tube to be maintained at a temperature low enough to be held in the hand while the air flowing through said first-named tube is heated by said heating element to a temperature in the range of 500 to 1300° F.

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