

Sept. 26, 1939.

E. F. MORKEN

2,174,387

GARMENT SPOTTING MACHINE

Filed Aug. 10, 1936

2 Sheets-Sheet 1

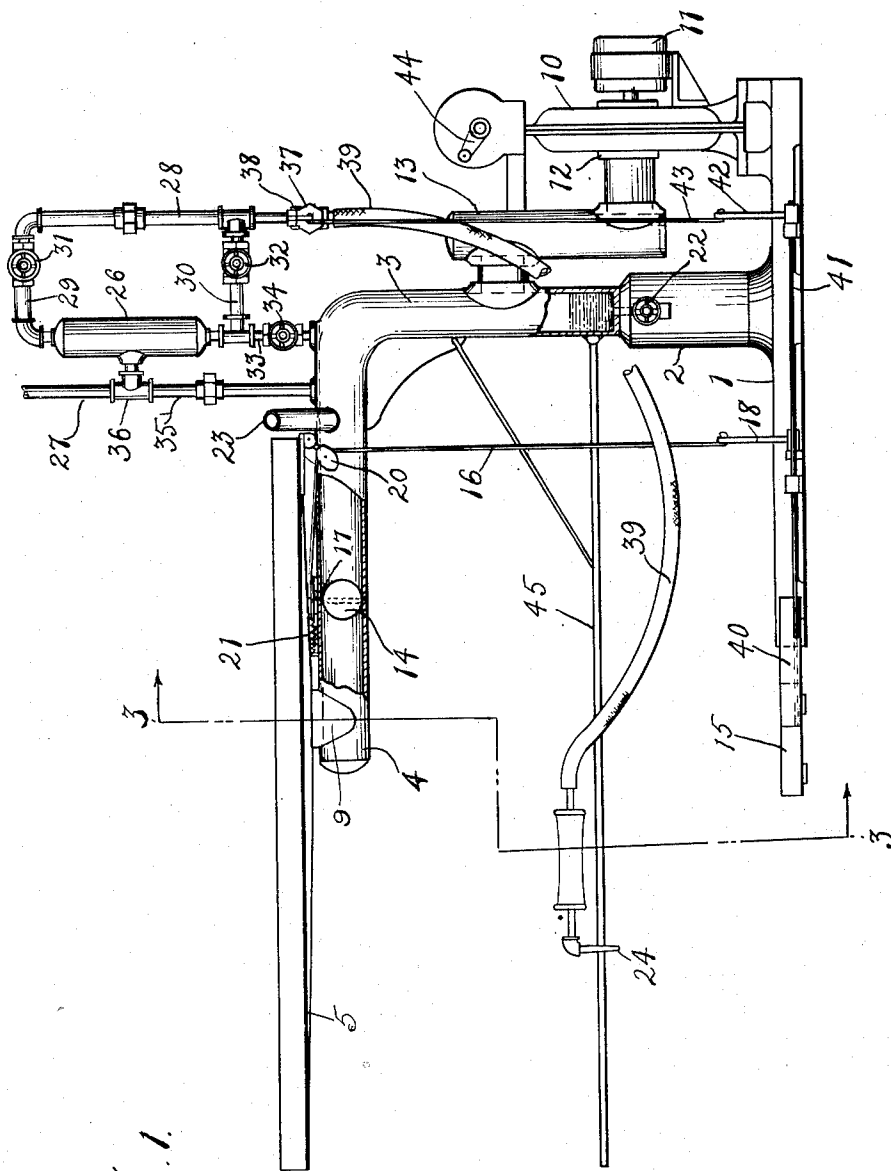


Fig. 1.

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2 Sheets-Sheet 2

Fig. 2.

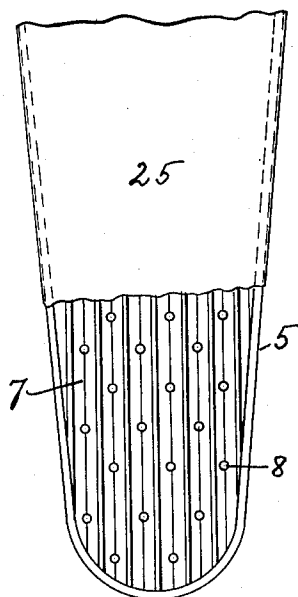


Fig. 4.

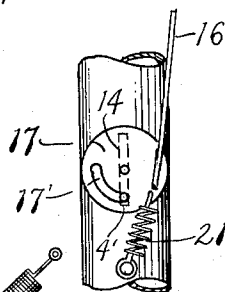


Fig. 3.

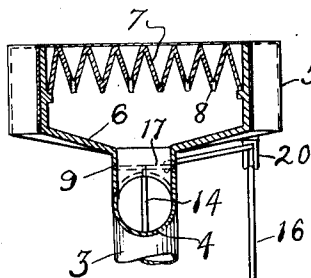
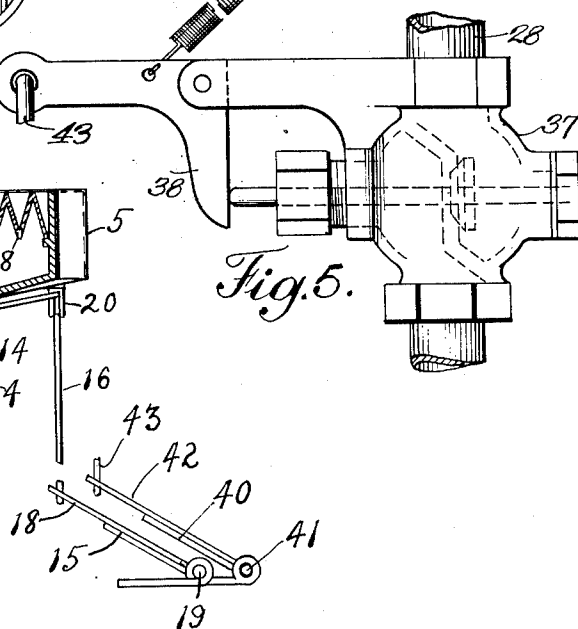


Fig. 5.



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GARMENT SPOTTING MACHINE

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2 Claims. (Cl. 68—5)

This invention relates to improvements in garment spotting machines such as are employed for the removal of stains from soiled clothing and adapted for use in dry cleaning or clothes renovating establishments.

An object of the invention is to afford an apparatus for conveniently subjecting soiled garments to the action of steam applied at close range under proper control and desired volume for the purpose of removing water-soluble deposits that ordinarily cause stains, spots, and discoloration of fabric, such as under-arm perspiration or other absorptions of foreign matter.

Another object is to provide apparatus for conveniently applying dry or wet steam to a garment, especially through the spotted or stained portions, and to remove from the garment the condensations of the steam together with the dross that becomes broken up and separated.

An illustrative embodiment of the invention is shown in the accompanying drawings, in which:

Fig. 1 is a side elevation of an apparatus embodying the invention, portions thereof being cut away;

Fig. 2 is a fragmentary plan view of the spotting table, a portion being cut away to show the under-construction of the table;

Fig. 3 is a detail view showing a cross-section of the appliance, the section being on the line 3—3 of Fig. 1;

Fig. 4 is a fragmentary plan view of the damper mechanism; and

Fig. 5 is a side elevation of the throttle valve and its operating lever.

The illustrative embodiment of the invention consists of a base 1 having a standard 2 from which extends a stand-pipe 3 having a horizontally extending hollow arm 4. Upon the arm is supported a spotting table 5 that is constituted of a tray 6 which is closed at its bottom and has in its top a corrugated plate 7. In the bottom creases of the corrugated plate are made numerous perforations 8 for the passage therethrough of condensations of steam, and the tray has a connection 9 with the hollow arm 4 for the passage of condensations and dross from the tray into said arm.

Upon the base 1 is mounted a suction fan 10 of any suitable type provided with an electric motor 11 by which it is driven. The intake port 12 of the fan is coupled with the stand-pipe 3 by means of a tubular connection 13, and when the fan is operated more or less vacuum is created in the stand-pipe, arm and tray according to the speed of the fan.

Within the arm 4 located between the connection 9 and the stand-pipe 3 is provided a damper 14 that is operatively associated with a pedal 15 by means of a cable 16 that is connected at one end with an operating disc 17 for the damper and at its other end with an arm 18 that extends from a rock-shaft 19, that is operated by the pedal 15, there being a pulley block 20 attached to the tray through which the cable extends and is thereby held in proper alinement with the operating disc 17 and the arm 18. A spring 21 is arranged in connection with the hollow arm 4 and operating disc 17 to hold the damper normally in open position and permits the damper to be closed by the pull of the cable 16 when the pedal 15 is depressed. A stop 4' extends upwardly from the arm and projects through an arcuate slot 17' made in the operating disc so that the closing and opening movements of the damper are thereby limited.

The lower end of the stand-pipe 3 is closed and is provided with a hand-operated drain-cock 22 through which accumulated condensations of steam and dross in the stand-pipe are removed. Also, the arm 4 has an upwardly extending tubular branch 23 adapted for the support of a nozzle 24, hereinafter referred to, when the tip of the nozzle is inserted therein, said branch having open communication with said arm.

The table 5 is provided with a covering 25 of fabric or other suitable pervious material that is secured to the marginal edges of the table and lies flat upon the upper ridges of the corrugated plate 7.

Means are provided for supplying steam from a suitable source (not shown) to the table top through the nozzle 24 which is adapted for manual operation. Preferably, there is provided a separator chamber 26 that is connected with a steam supply pipe 27 and has communication at its upper and lower ends with a discharge pipe 28 by means of corresponding pipe connections 29 and 30, said pipe connections being provided with hand-operated valves 31 and 32 respectively. Also, the lower end of the chamber 26 has communication with the stand-pipe 3 through a pipe 33 which is provided with a hand-operated valve 34. The chamber 26 receives support on the arm 4 by means of a post 35 that is conveniently connected with a supply pipe fixture 36 that connects the supply pipe with said chamber.

The lower end of the discharge pipe 28 has secured thereon a suitable self closing throttle valve 37, of any well known type, that is opened only upon operation of a spring-restrained oper-

ating lever 38. The valve 37 has connected thereto a flexible hose 39, the free end of which is connected with said nozzle 24 and is of sufficient length as to permit the nozzle to be moved freely over the spotting table. The throttle valve lever 38 is operatively associated with a pedal 40 through the medium of a second rock-shaft 41 which is provided with a swinging arm 42 and a rod 43 that has connection with the free end of said arm and the throttle valve lever 38, the arrangement being such that when said pedal 40 is depressed the throttle valve 37 is thereby opened accordingly more or less.

The motor 11 is connected with a suitable source of energy by an ordinary electric circuit (not shown) that is controlled by a manually-operated switch 44 preferably of the type adapted to cause variation of the motor speed, as in the customary practice.

A shelf 45 is supported conveniently in a horizontal plane between the base and the table which serves to prevent portions of garments that hang over the table from being soiled from contact with the floor.

Operation

In using the invention the garment to be treated is slipped upon the table and is spread out upon the covering 25. The motor is then set in motion, whereupon, through action of the fan, vacuum is created in the stand-pipe, and, the valve 14, being normally open, there is caused a down draft of atmosphere through that portion of the garment that overlies the covering 25 into the pan. In this manner the overlying portion of the garment is drawn flat against the covering where it is firmly held because of the suction induced by the fan. The regulating valves 31, 32 and 34 are then adjusted according to the moisture condition of the steam desired. For instance, if dry steam is required, the valves 31 and 34 are opened so that steam from the top of the separator chamber 28 is admitted to the discharge pipe 29 and the condensations of steam in the chamber are permitted upon opening of the valve 34 to drain through the pipe 33 into the stand-pipe. When wet steam is required the valve 32 is opened and the valves 31 and 34 are closed. Thus, the steam from the supply pipe passes through the chamber with entrained moisture from the bottom of the chamber into the discharge pipe. By adjustment of these valves is regulated the amount of moisture in the steam as it is admitted by the throttle valve into the hose to be discharged through the nozzle.

In applying steam to the garment the operator depresses the pedal 40, whereupon the throttle is opened and more or less steam is discharged through the nozzle. The nozzle tip is then directed toward the spots and stains that appear on the garment and is maneuvered at close range so that the steam under pressure of its flow from the nozzle tip passes directly through the garment against the table covering. During this operation the discharged steam is drawn through the covering onto the corrugated plate and through the perforations in the plate into the stand-pipe because of the vacuum sustained therein by operation of the fan. After that portion of the garment that overlies the table has been cleaned, the operator, thereupon, by depressing the pedal 40 causes the damper 14 to close with the result that the vacuum in the pan becomes substantially nil, thus permitting the garment to be maneuvered over the table top as

desired to draw other portions of the garment onto the top for treatment.

By applying the steam jet over the entire portion of the garment that is supported on the table top many spots and discolorations that ordinarily are invisible are quickly eliminated which otherwise might become visible when the garment is subjected later to the usual ironing process.

The apparatus thus constructed and applied facilitates renovation of spotted or stained garments without resort to the common use of spotting brushes, chamols, and often obviating use of chemicals.

By the arrangement of foot pedals upon the floor with the damper and throttle valve respectively for their control, the operator is enabled to regulate the vacuum in the pan and the discharge of steam through the nozzle by manipulating the pedals with his feet thereby permitting free use of his hands in maneuvering the nozzle and shifting the garment upon the table top.

Preferably, when operation of the apparatus is suspended, the nozzle 24 is placed in supported connection with the tubular branch 23 by inserting the tip of the nozzle therein so that drippings from the nozzle drain will fall into the stand-pipe.

What I claim is:

1. In garment spotting apparatus, a stand-pipe having a hollow supporting base and a hollow arm, the lower end of said stand-pipe having a valve-controlled drain-cock, a hollow table mounted on said arm, and having a communicating connection with said hollow arm and provided with a perforated plate in its top, a pervious covering disposed over said plate, a suction member having connection with said stand-pipe for maintaining vacuum therein, a pedal-operated damper, located in said hollow arm between said communicating connection and said suction member, a steam supply having a discharge pipe provided with a pedal-operated throttle-valve, the pedal for said throttle-valve being located in convenient juxtaposition with the damper pedal, a hose connected with said throttle-valve terminating with a nozzle, and a constantly open tubular branch on said arm adapted to support said nozzle when the tip thereof is inserted in said branch through which drippings of the nozzle are drained into said stand-pipe.

2. In garment spotting apparatus, a hollow supported stand-pipe having a horizontal hollow arm at its top and a drain-cock in its bottom, a hollow table mounted on said arm having a perforated top and a communicating connection with said arm, a thin pervious covering disposed over said top, a suction member having connection with said stand-pipe at a point spaced above said drain-cock for creating vacuum in said stand-pipe, a damper located in said hollow arm between said connection and said suction member, a steam supply having a discharge pipe provided with a throttle-valve, means to operate said damper and throttle valve, a hose connected with said throttle-valve terminating with a nozzle through which to apply steam to a garment when spread on the top of the table, and an opening in said arm adapted to receive the tip of said nozzle whereby drippings of the nozzle are drained into said stand-pipe.