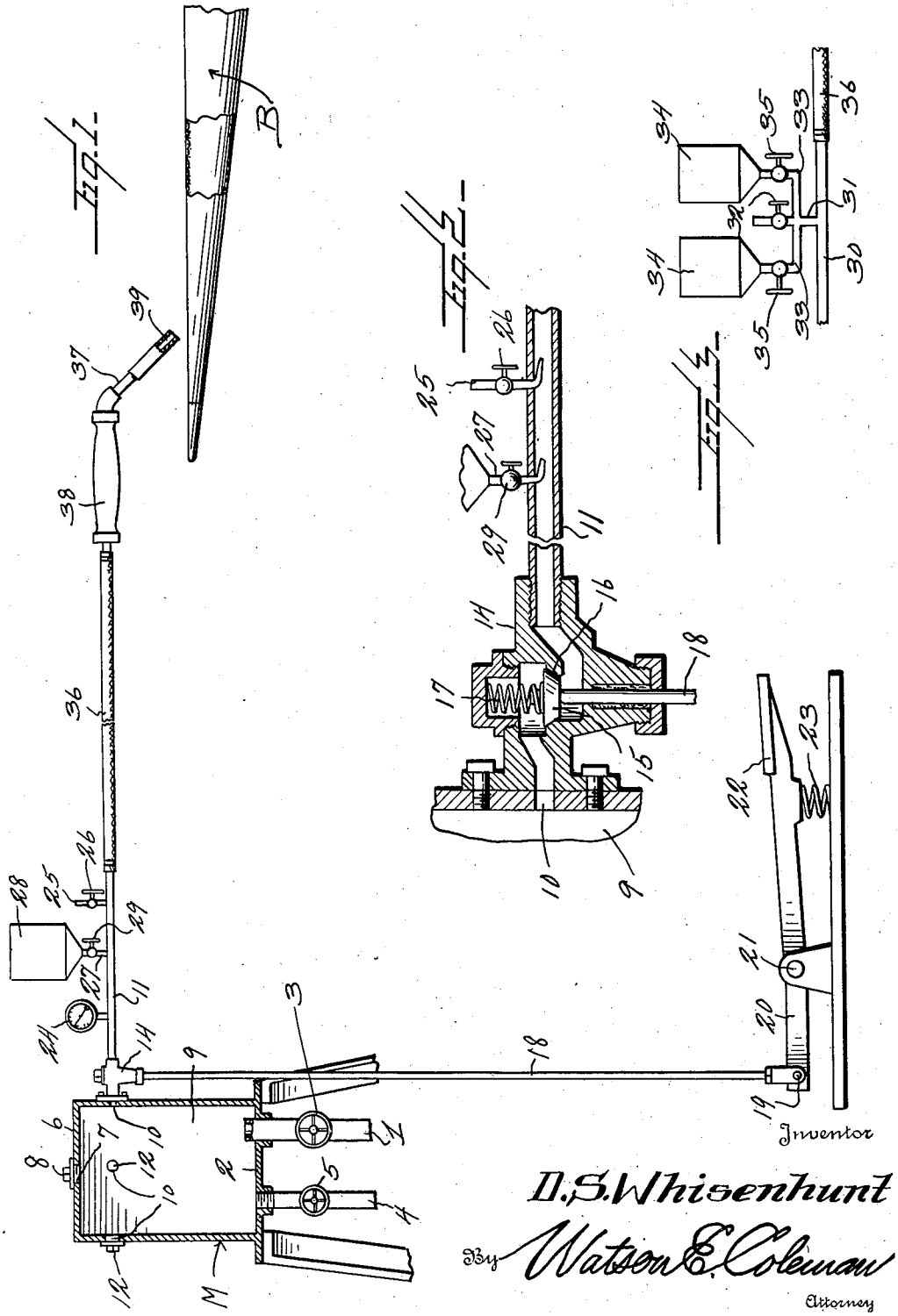
Oct. 29, 1940. D. S. WHISENHUNT 2,219,830

SPOTTING UNIT

Filed Sept. 27, 1938 2 Sheets-Sheet 1



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SPOTTING UNIT

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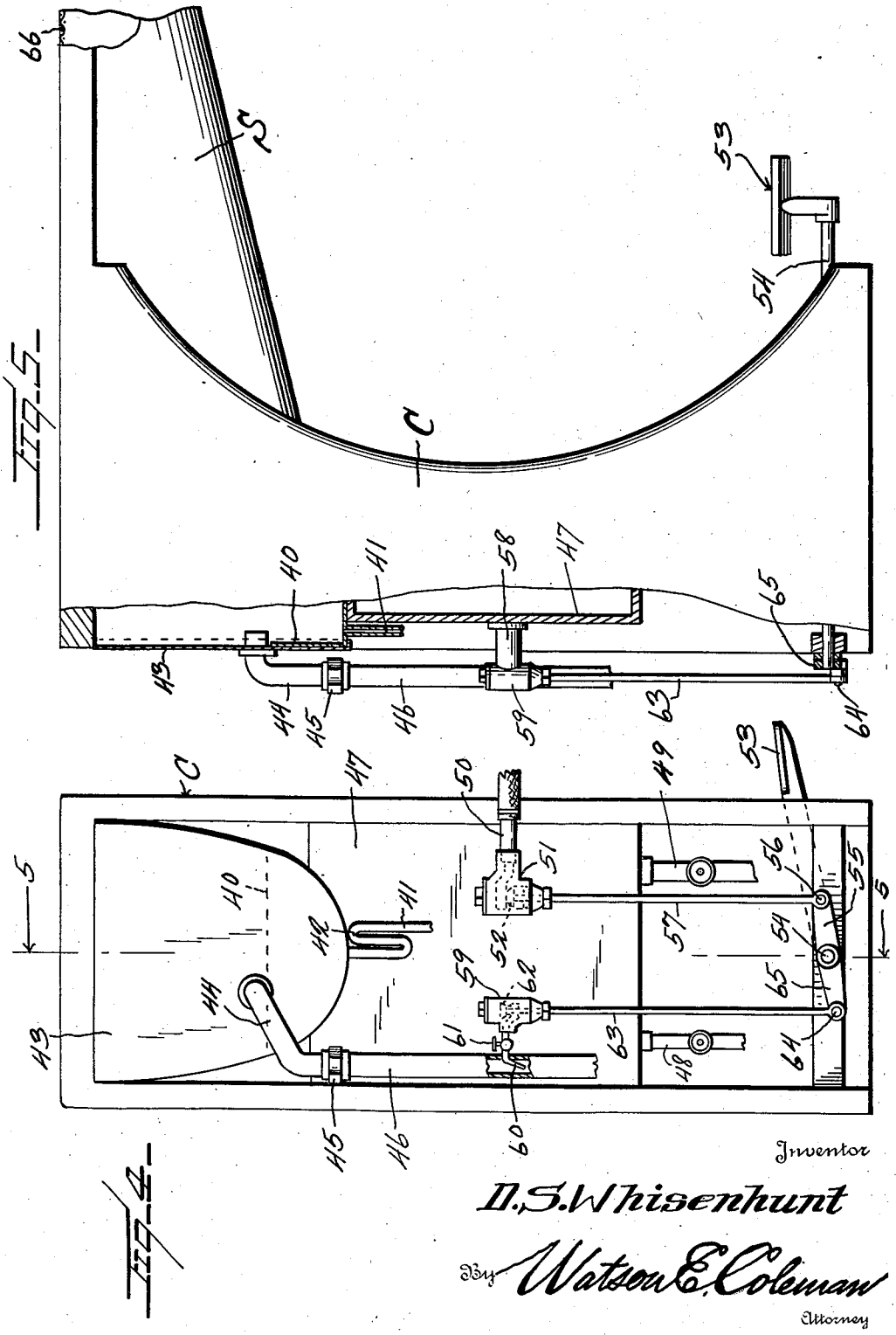


Fig. 1

Fig. 2

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Patented Oct. 29, 1940

2,219,830

UNITED STATES PATENT OFFICE

2,219,830

SPOTTING UNIT

David Sawyer Whisenhunt, Florence, S. C.

Application September 27, 1938, Serial No. 232,003

5 Claims. (Cl. 68—5)

This invention relates to a spotting unit, and it is an object of the invention to provide a unit of this kind including a manifold with which a flexible pipe or line is adapted to communicate, the valve for controlling the flow through said line or pipe being positioned a material distance inwardly from the nozzle or discharge end of the pipe or line and wherein said valve is operated by a pedal mechanism so that the hands of the operator at all times are free.

It is also an object of the invention to provide a unit of this kind wherein steam is permitted to flow through and discharge from the pipe line or hose without building up pressure within said line or hose, thus materially increasing the facility with which the nozzle may be manipulated by the operator.

Another object of the invention is to provide a unit of this kind which can be used for a considerable period of time without undue fatigue or strain on the part of the operator and wherein means are provided to modify the steam flow as may be preferred as by the addition of air, saponified liquid or such chemicals as might be desired to effect the elimination of a spot.

The invention also has for an object to provide a unit of this kind which is particularly designed and adapted for use with garments after the same have been first treated in a well known manner in a solvent solution and dried out, furthermore, the unit is of a type to be particularly employed in connection with a spotting board of a hollow type such as is disclosed in my copending application Serial No. 196,052 filed March 15, 1938.

The invention has for a further object to provide a unit of this kind with means whereby the steam after entering the spotting board is readily carried off.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved spotting unit whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:

Figure 1 is a view partly in section and partly in elevation and of a diagrammatic character illustrating a spotting unit constructed in accordance with an embodiment of my invention, the spotting board being incidentally shown;

Figure 2 is an enlarged longitudinal sectional view taken through a rigid outlet pipe and associated valve as herein comprised;

Figure 3 is a fragmentary view in elevation illustrating a slightly modified form of invention;

Figure 4 is a view in end elevation with portions in section of a unit constructed in accordance with a further embodiment of my invention;

Figure 5 is a fragmentary view in side elevation of the structure as illustrated in Figure 4 with the portions in section.

As disclosed in the accompanying drawings, M denotes a manifold of desired design and capacity and which is adapted to have communication with a source of steam under pressure. As illustrated in Figure 1, the pipe line 1 which enters the manifold M through the bottom wall 2 thereof leads from the steam supply and has interposed therein a controlling valve 3. It is to be noted that this pipe line 1 extends slightly above the bottom wall 2 of the manifold so that condensation within the manifold M will not flow back through the pipe 1 but will only pass out through the drain pipe 4. This pipe 4 also has interposed therein a conventional valve 5.

The top wall 6 of the manifold M is provided with an opening 7 closed or sealed by a plug 8 or otherwise as may be preferred. This opening 7 is provided in the event it is preferred that the line leading from the source of steam discharge within the manifold M thru the top wall 6 instead of the bottom wall 2.

Each of the side walls 9 of the manifold M adjacent the top thereof is provided with an opening 10 to provide means whereby a rigid discharge pipe 11 may be placed in communication with the manifold. It is preferred that these openings 10 be of various diameters in order to provide for the discharge from the manifold M of varying amounts of steam as the character of the cloth to be treated may require. Obviously light fabrics, such as silks and velvets, require light pressure while heavier weaves, such as worsteds, serges, etc., require higher pressure.

The openings 10 when not in use are closed or sealed by a plug 12 or the like.

In the present embodiment of my invention I have disclosed the use of only a single pipe or line 11. It is to be understood, however, that several of such pipes or lines may be used at the same time but for the purposes of disclosure it

is not believed necessary that these be illustrated in detail or further described.

The pipe or line 11 includes at its upper end portion a valve casing 14 in which works a valve member 15 normally held to its seat 16 by an expansible member or spring 17. The valve member 15 is carried by an elongated rod 18 extending from below within the casing 14. This rod 18 is of desired length and has its lower or outer end portion operatively connected, as at 19, with an end portion of a lever 20 pivotally mounted intermediate its length, as at 21, for rocking movement. The end portion of the lever 20 remote from the rod 18 constitutes a pedal 22 normally urged upwardly in the present embodiment by an expansible spring or member 23. This pedal is adapted to be operated by a foot of the operator and provides means whereby the pipe or line 11 may be readily opened and closed as required during a spotting operation and without the necessity of the operator using either hand for such purpose.

In communication with the pipe or line 11 is a conventional gauge 24 to provide means whereby the operator can readily determine the pressure of the steam as discharged from the manifold M. Also in communication with the pipe or line 11 is an air vent 25 under control of a conventional valve 26. This vent 25 provides means whereby a regulated amount of air under atmospheric pressure may be admitted within the pipe or line 11 to cool down the steam as may be deemed necessary in connection with a spotting operation. Also in communication with the pipe or line 11 through a line 27 is a container 28, the discharge from which being under control of the valve 29 interposed in the line 27. This container 28 is adapted to hold a supply of saponified liquid or such chemicals as employed by the operator to facilitate a spotting operation.

In the embodiment of the invention as illustrated in Figure 3, the line or pipe 30 which is mounted the same as the pipe or line 11 hereinbefore referred to, has in communication therewith an upstanding pipe 31 which opens to the atmosphere and provides means under control of the interposed valve 32 for admitting air within the pipe or line 30. Communicating with this pipe 31 between the line or pipe 30 and the valve 32 are the branch pipes 33 leading from the containers or hoppers 34 and each of these lines 33 has interposed therein a controlling valve 35. One of these hoppers or containers 34 is to hold a supply of saponified liquid while the other is adapted to hold a supply of suitable chemical, and it is believed to be clearly apparent that through the medium of the valves 32 and 35 the contents of the containers or hoppers 34 may deliver within the line or pipe 30 one independently of the other and also independently of the air pipe 31 and also that the air pipe 31 can readily be employed independently of the containers or hoppers 34. It is also to be stated that if deemed advisable more than two containers or hoppers may be used to facilitate the work of spotting.

Leading from and in communication with the outer end portion of either the pipe or line 11 or 30 is an elongated flexible hose 36. This hose is comparatively slight and is of such length as to best comply with the requirements of practice. The outer end portion of the hose or tube 36 is in communication with a discharge nozzle 37 provided at its rear part with a hand grasp 38. It is to be particularly stated that the bore 39 of the nozzle 37 at the delivery end thereof is of a diameter not less than the diameter of the ingress end of the pipe or line 11. This is of importance as by these relative diameters it is assured that there is no backing up of pressure within the hose or tube 36 which would have a tendency to cause the same to buckle and thereby cause considerable strain and annoyance to the operator and which disadvantages are furthermore avoided by having the valve mechanism arranged at a point materially spaced away from the nozzle 37. In other words, the control of the steam flowing through the tube or hose 36 is effected at the entrance end portion of the pipe or line 11. As the bore of the nozzle 37 is at all times open, upon closing of the valve member 15 there will, of course, be no building up of pressure within the hose or tube 36 but, on the contrary, any pressure which may be therein will be substantially instantaneously reduced.

This operation has the further advantage in many instances of obviating the necessity of requiring a cloth after being spotted to be returned to the drying room because at the conclusion of the spotting operation the fabric is substantially dry. My improved unit is particularly adapted for use in connection with a spotting board B of a hollow type such as is disclosed in my copending application Serial No. 196,052 hereinbefore referred to, although I do not wish to be understood as limiting myself to this particular use.

It is believed to be obvious that when it is desired to add a saponified liquid to the steam as it passes through the nozzle 37 it is only required to open as desired a valve 29 or 35 or if desired to admit air to the steam so passing through the hose or tube 36, it is only necessary to suitably open the valve 26 or 32.

The container or hopper 28 or one of the hoppers or containers 34 may hold a supply of water to be delivered to the steam passing out through the pipe or line 11 or 30. This is to give additional moisture to the steam as may be required to facilitate the removal of spots of various sizes that may be embedded in materials of different weight and weave. The amount of moisture depends upon the substances comprised in the spots to be removed.

In the form of the invention as illustrated in Figures 4 and 5 the spotting board S is substantially the same as the board B with the larger end of the board S supported by the column C of desired configuration and dimensions. The larger end of the board S is provided at its low point with an upstanding dam plate 40 which serves to prevent condensation within the board S from discharging out through the enlarged open end thereof. Immediately adjacent to this dam plate 40 the lower portion of the board S has in communication therewith a carry-off pipe 41 leading to any desired point of discharge and through which the water of condensation is carried off. This pipe 41 has interposed therein a trap 42 of a conventional type and wherein said pipe 41 is sealed.

Under certain conditions it is desired to draw out from within the board S steam and other vapors therein and when this is desired the larger open end of the board S is closed by a cap 43. Extending through this cap 43 for communication within the board S when the cap is applied is a second carry-off pipe 44 detachably coupled, as at 45, to the pipe line 46 leading to a suitable point of discharge.

Suitably held within the column C immediately

below the larger end of the board S is a manifold or box 47 having in communication therewith a valved control line 48 leading from a suitable source of steam supply and also having in communication therewith a valved control drain pipe 49.

The manifold or box 47 also has in communication therewith a steam discharge pipe 50 which is adapted to lead to a discharge nozzle such as hereinbefore described in connection with the first embodiment of the invention. This pipe or line 50 includes a valve casing 51 in which works a valve member 52 moving into open position upon depression of the pedal 53. In the present embodiment of the invention the pedal 53 is carried by a rock shaft 54 suitably supported by the lower portion of the column C and this rock shaft 54 carries a rock arm 55 which is operatively connected, as at 56, with the elongated operating rod 57 for the valve 52. As the pedal 53 is depressed the valve 52 will be opened to allow steam as required to pass out through the line 50 to the spotting nozzle.

The manifold or box 47 also has in communication therewith, as at 58, a second valve casing 59. Leading from this casing 59 is an injector nozzle 60 which extends within the pipe line 46 and discharges toward the delivery end of such pipe line 46. This nozzle 60 has interposed therein a conventional valve 61 whereby the same can be closed off when so desired.

Within the valve casing 59 is a valve member 62 which moves into open position at the same time the valve member 52 is moved into open position and in the present embodiment of the invention the valve members 52 and 62 move simultaneously but in opposite directions. The valve member 62 has associated therewith an elongated stem 63 operatively connected, as at 64, with a second rock arm 65 carried by the shaft 54 oppositely disposed with respect to the rock arm 55.

Upon depression of the pedal 53 flow through the pipe 50 to the nozzle 60 will be simultaneously opened and the steam injected within the pipe line 46 will be sufficient to create a suction through the pipe 44 to draw out from within the board S steam and kindred vapors within the board S as discharged therein by the spotting nozzle through the fabric and the reticulated top panel 66 of the board S.

In the assembly as illustrated in Figures 4 and 5, it has also been found that by having the larger end of the board S above the box or manifold 47 the operator is effectively protected against the heat radiating from the box or manifold 47.

It is to be stated that in referring to the panel 66 as being reticulated or foraminous I have in mind a panel of any character through which fluid may pass under pressure.

This application is a continuation in part of my application Serial No. 197,914 filed March 24, 1938.

From the foregoing description it is thought to be obvious that a spotting unit constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:

1. In combination, a hollow spotting board having a portion of its top reticulated, a pipe line adapted to supply steam to a nozzle carried by the pipe line for use in connection with the spotting board, a valve member in the pipe line for controlling the flow of steam out through the nozzle, a carry-off pipe in communication with the interior of the board, an injector to discharge a fluid under pressure within the carry-off pipe to produce a suction to draw off steam or other vapor within the board, a valve member for controlling the flow of fluid out through the injector, and operating means for both of the valve members for simultaneously moving the valve members into either open or closed position.

2. In combination, a hollow spotting board having a portion of its top reticulated, a supporting column for the spotting board, a manifold carried by the column below the board whereby the board is utilized as a thermal shield to protect the operator from the heated manifold, means for delivering steam within the manifold and a pipe line leading from the manifold adapted to supply steam to a nozzle carried by the outer end portion of the pipe line for use in connection with the spotting board.

3. In combination, a hollow spotting board having a portion of its top reticulated, a manifold means for delivering steam within the manifold, a pipe line leading from the manifold adapted to supply steam to a nozzle carried by the outer end portion of the pipe line for use in connection with the spotting board, a valve member in the pipe line for controlling the flow of steam out through such line, a carry-off pipe in communication with the interior of the board, an injector in communication with the manifold and discharging within the carry-off pipe to produce a suction to draw off steam or other vapor within the board, a valve member for controlling the flow of steam out through the injector, and operating means for both of the valve members for simultaneously moving the valve members into either open or closed position.

4. In combination, a hollow spotting board having a portion of its top reticulated, a pipe line adapted to supply steam to a nozzle carried by the pipe line for use in connection with the spotting board, a valve member in the pipe line for controlling the flow of steam out through the nozzle, a carry-off pipe in communication with the interior of the board, means to deliver a fluid under pressure within the carry-off pipe to produce a suction to draw off steam or other vapor within the board, a valve member for controlling the discharge of fluid by said means, and operating means for both of the valve members for simultaneously moving the valve members into either open or closed position.

5. In combination, a hollow spotting board having a portion of its top reticulated, a pipe line adapted to supply steam to a nozzle carried by the pipe line for use in connection with the spotting board, a carry-off pipe in communication with the interior of the board, a second pipe line to deliver a fluid under pressure within the carry-off pipe to produce a suction to draw off steam or other vapor within the board, and means for simultaneously opening the flow through both of the pipe lines.

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