Dec. 25, 1928.

C. W. ROBERTS

1,696,414

CLOTHES AND FABRIC CLEANING DEVICE

Original Filed April 16, 1926 2 Sheets-Sheet 1

Fig. 1.

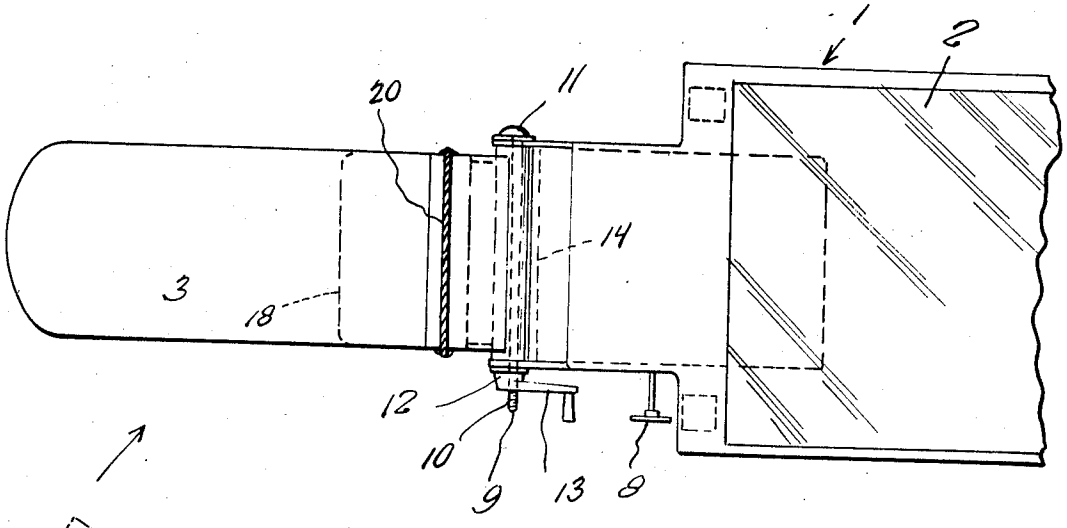
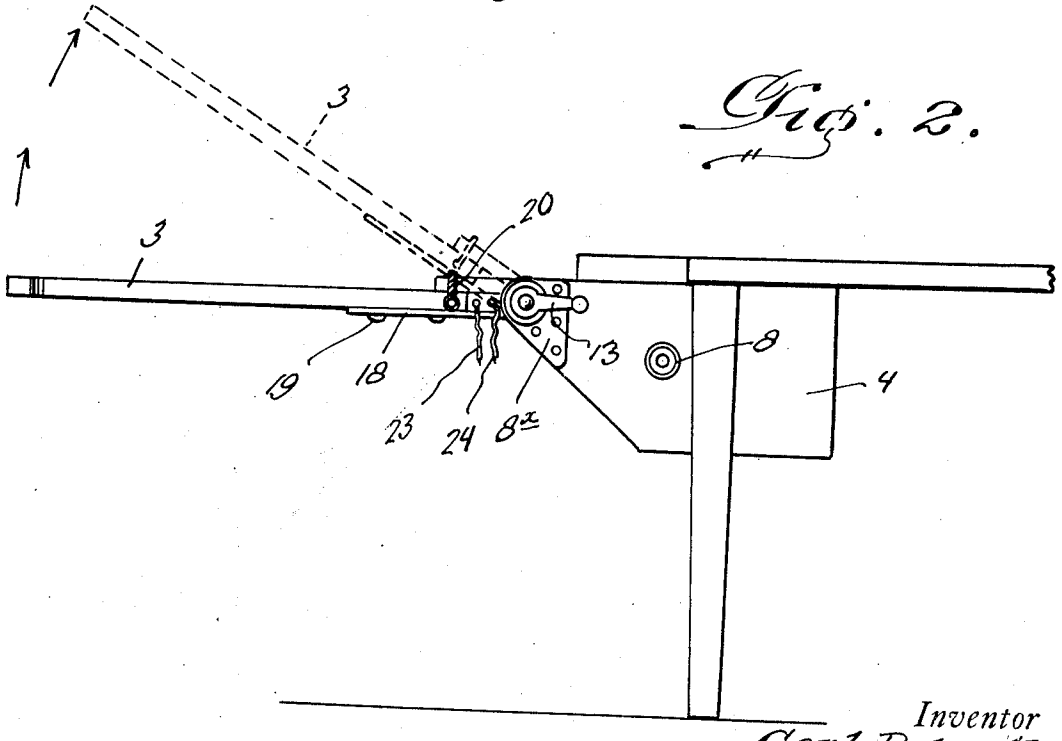


Fig. 2.



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Fig. 3.

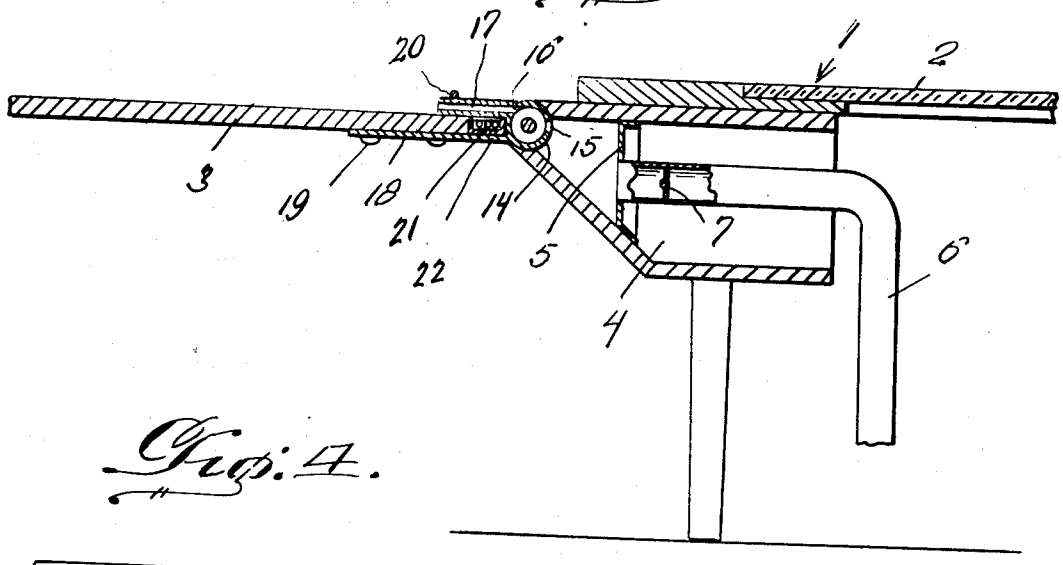


Fig. 4.

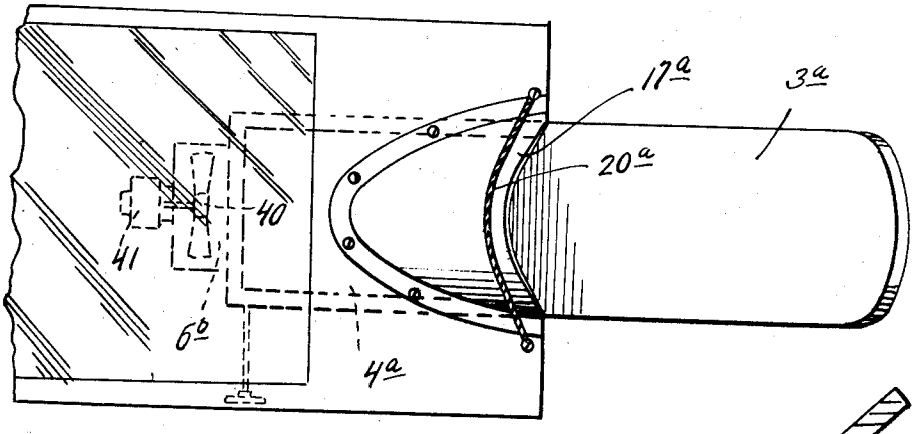
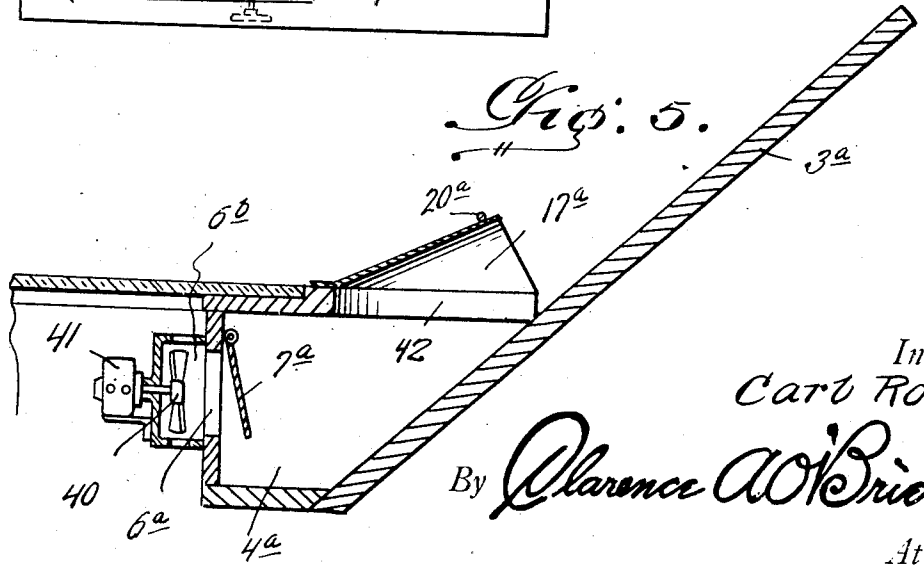


Fig. 5.



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UNITED STATES PATENT OFFICE.

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CLOTHES AND FABRIC CLEANING DEVICE.

Application filed April 16, 1926, Serial No. 102,600. Renewed August 31, 1928.

My present invention has to do with the cleaning or removal of spots from clothes and fabric; and it contemplates the provision of a device which is adapted to facilitate the cleaning or removing of spots from clothes and fabric and is also adapted to assure the elimination of spots without discoloring, bleaching, or otherwise deteriorating the cloth or textile material operated upon.

With the foregoing in mind, the invention in all its details is described in the following description and claims when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:—

Figure 1 is a top plan view of a device constituting one embodiment of my invention.

Fig. 2 is a side elevation of the same.

Fig. 3 is a longitudinal vertical section of the same.

Fig. 4 is a top plan view of a modification hereinafter explicitly referred to.

Fig. 5 is a longitudinal vertical section illustrative of the modification.

Similar numerals designate corresponding parts in Figs. 1 to 3 to which reference will first be made.

I show in said figures, a support 1 which may be and preferably is in the form of a table, as shown, and at this point I would have it understood that in the discretion of the manufacturer, the table may have a glass top 2, and when deemed expedient or desirable the board 3 of my improvement may also have a glass top although in the present instance, I do not show the board 3 as so equipped.

In the embodiment alluded to, I employ a hollow body 4 under and fixed with respect to the table top, and in the said body 4 I arrange a diaphragm 5 thru which leads a conduit 6 adapted to be connected with any desired source of compressed air or any desired means for supplying air or other appropriate fluid under pressure. In the said conduit 6, I dispose a manually operable valve 7, the said valve 7 being provided with a handle 8, Figures 1 and 2, so that when desirable or necessary, the blast of air or other fluid under pressure may be quickly and easily cut off.

Connected to and extending forwardly from the body 4 are brackets 8^{x}, preferably possessed of resiliency, and extending through and supported by the said brackets 8^{x} is a rod 9, threaded at 10 and provided with a head 11, the head 11 being opposed to one of the brackets 8^{x} and a nut 12 being mounted on the threaded portion 10 and equipped with a crank 13 so that it may be quickly and powerfully turned. Interposed between the brackets 8^{x} and surrounding the rod 9 is a cylinder 14, the ends of which abut against the inner sides of the said brackets 8^{x}. The said cylinder 14 is provided with an induction opening 15 and with an eduction opening 16, the former being in communication with the forward open end of the conduit 6, and the aperture 16 being in communication with a forwardly directed discharge conduit 17, arranged in a plane immediately above the upper surface of the board 3. It will be also understood in this connection that the cylinder 14 has fixed with respect thereto a forwardly extending plate 18, said plate 18 being fixed at 19 in appropriate manner to the board 3.

It will be apparent from the foregoing, that the board 3 and the cylinder 14 and the conduit 16 are turnable or movable vertically in swingable fashion relative to the brackets 8^{x} as a unit, and that by tightening the nut 12, the operator is enabled to hold the brackets 8^{x} under pressure against the ends of the cylinder 14 and in that way adjustably fix the board 3 either in a horizontal position as illustrated by full lines in Figs. 1, 2 and 3 or in an inclined position as shown by dotted lines in Fig. 2, it being highly desirable in some instances to maintain the board 3 in an inclined position as hereinafter set forth.

At 20, I show an elastic cable. The said elastic cable 20 is arranged over the conduit 17 and is connected at its ends to opposite portions of the board 3, and has for its function to clamp and secure a piece of clothes or fabric over the mouth of the conduit 17 and in spaced relation to the upper side of the board 3, so that the blast of air discharged from the conduit 17 may freely pass under the piece of clothes or fabric and be discharged outwardly through the interstices of the material and in that way discharged to the atmosphere, this passage of the blast of air or fluid under pressure outwardly from the inner side of the cloth, piece of clothes, or fabric being highly advantageous for reasons hereinafter pointed out.

As illustrated in Fig. 3, a heating element 21 is arranged in a chamber 22 immediately

under or otherwise in close proximity to the conduit 17 so as to heat the said conduit 17 and thereby raise the temperature of the air or other fluid under pressure en route through the said conduit 17. The said heating element 21 may be of any desired character, though I prefer to employ an electric heating element of appropriate description, the said element being in connection with circuit wires 23 and 24, Fig. 2.

The practical advantage of my device as described in detail, will be fully appreciated when it is stated that for the removal of spots and stains on clothes and textile fabrics, it is frequently necessary to invoke the assistance of different kinds of chemicals, it first being necessary to determine, if possible, the cause of the spot or stain and then employ the chemical best suited for the elimination of the spot or stain. It is desirable in practically all cases where chemicals are made use of for the purpose indicated, to allow the chemical to remain but a very short time on the spotted or stained portion of the piece of clothes or fabric for if the chemical is permitted to remain on the material too long, the chemical will frequently bring about bleaching or running of the color of the fabric. On this point, it will be understood that with the fabric applied to the board 3 and arranged relative to the conduit 17 in the manner described, the chemical employed may be applied to a spot or stain, and then by opening the valve 7 a blast of air may be sent through the interstices of the fabric with the result that the chemical employed will be removed into the atmosphere, and this from within the piece of fabric so that there will be no liability of the chemical or the material that formed the spot or stain being disseminated in the fabric as is sometimes the case when after the removing chemical is applied a hand fan is manipulated above the fabric for the evaporation of the chemical. Manifestly after the blast of air under pressure has been sent for a desired period of time through the piece of material, the said blast may be quickly and easily cut off by closing of the valve 7.

It will be appreciated from the foregoing that after the application of chemicals to the fabric, the blast of air under pressure may be quickly put into operation for the removal of the chemical from the fabric so as to assure the elimination of a spot or stain without injury to the same or changing the shade of the fabric.

In many instances, when a stain on a garment or piece of fabric is very faint, it is impossible to see the stain when the piece of fabric and the board 3 are in horizontal or approximately horizontal position. The adjustable capacity of the board 3, however, permits of the board and the piece of material thereon being inclined at an angle where the stain no matter however faint will be plainly discernible. From this it follows that the adjustable capacity of the board 3 and its appurtenances are of material importance.

It is within the purview of my invention to connect the conduit 6 with any appropriate device for supplying fluid under pressure or with any desired source of fluid under pressure, the fluid employed by preference being specifically compressed air.

In the modification shown in Figs. 4 and 5, the board which is designated by 3^a is fixed in inclined position and is disposed in front of a hollow body 4^a, in communication at 6^a with a blower chamber 6^b, the communicating means which in this case is in the form of an aperture, being controlled by a manually operable valve 7^a. In the chamber 6^b is arranged a blower fan 40, said fan 40 being operable by an electric motor 41. It will be also noted that the upper side of the hollow body 4^c is open as designated by 42, and over the opening 42 is arranged a conduit 17^a, preferably flared as illustrated, and over the said conduit 17^a, in turn, is an elastic cable 20^a for the purpose before ascribed to the elastic cable or strap 20 used in conjunction with the conduit 17.

In the operation of the modification, the fan is set in motion and the blast from the fan may be readily cut off when desired through the medium of the valve 7^a. It will be also understood that when a piece of clothes or fabric is secured by the cable or strap 20^a on the conduit 17^a, the piece of material will be maintained in spaced relation to the board 3^a, so as to permit the blast of air to impinge against the inner side of the piece of material and force the chemical applied from the material outwardly into the atmosphere.

It will be appreciated from the foregoing that notwithstanding the usefulness of both embodiments of my invention, the said embodiments are simple and inexpensive in construction, are not liable to get out of order after a short period of use, and each embodiment in every respect is adapted to lend itself to the thorough removal of a spot or stain from a piece of clothes or fabric without liability of the fabric being discolored or otherwise injured incident to the removing operation.

I have entered into a detailed description of the construction and relative arrangement of the parts embraced in the present embodiments of my invention in order to impart a full, clear and exact understanding of the said embodiments. I do not desire, however, to be understood of limiting myself to any precise structure or relative arrangement of elements, my invention being defined by my appended claims within the scope of which structural changes may be made without departure from my invention.

Having thus described my invention, what I claim as new is:—

1. In combination, means for maintaining a piece of clothes or fabric in spaced relation to supporting means, means for supplying a blast of fluid to the space between the supporting means and the piece of clothes or fabric, and means for detachably securing a piece of clothes or fabric on the blast supply means.

2. A clothes and fabric cleaning device comprising supporting means, means for maintaining a piece of clothes or fabric in spaced relation to the supporting means, and means for supplying a blast of fluid to said space maintaining means and said space, and manually controllable means through the medium of which the blast may be established and cut off.

3. In combination, means for maintaining a piece of clothes or fabric in spaced relation to supporting means and supplying a blast of fluid to said space, and manually controllable means through the medium of which the blast may be established and cut off, the means for maintaining the piece of clothes or fabric in spaced relation and supplying a blast of fluid to the space being equipped with means for detachably securing the clothes or fabric thereon.

4. In combination, means for maintaining a piece of clothes or fabric in spaced relation to supporting means and supplying a blast of fluid to said space, manually controllable means through the medium of which the blast may be established and cut off, the means for maintaining the piece of clothes or fabric in spaced relation to supporting means and for the supply of a blast of fluid to the space being equipped with means for detachably securing a piece of clothes or fabric thereon, and the said securing means being in the form of an elastic cable extending across the space maintaining and blast supplying means.

5. A clothes and fabric cleaning device comprising supporting means, means for maintaining a piece of clothes or fabric in spaced relation to said supporting means, and means for supplying a blast of fluid under pressure to the space between the supporting means and the piece of clothes or fabric.

6. In combination, an appropriately supported board, a conduit arranged to discharge a blast of air along the side of the board, said conduit being adapted to maintain a piece of clothes or fabric in spaced relation to the board, and means for supplying a blast of fluid under pressure to the said conduit.

7. In combination, an appropriately supported board, a conduit arranged to discharge a blast of air along the side of the board, said conduit being adapted to maintain a piece of clothes or fabric in spaced relation to the board, and means for supplying a blast of fluid under pressure to said conduit; the said conduit being associated with means for detachably securing a piece of clothes or fabric thereon.

8. In combination, an appropriately supported board, a conduit arranged to send a blast of fluid under pressure along the side of the board and to maintain a piece of clothes or fabric in spaced relation to said side of the board, means for detachably securing a piece of clothes or fabric on the conduit and in spaced relation to said side of the board, means for detachably securing a piece of clothes or fabric on the conduit and in spaced relation to the board side, means for supplying fluid under pressure to said conduit, and a valve for establishing and cutting off the supply of fluid under pressure to the conduit.

9. In combination, a chamber, a valved conduit for supplying fluid under pressure to the chamber, a rockable hollow cylinder having an induction port in communication with said chamber and having also a discharge conduit, a board fixed with respect to said cylinder, and means for adjustably fixing the cylinder and the board so that the board may be arranged horizontally or at various angles of inclination.

10. In combination, a chamber, a valved conduit for supplying fluid under pressure to the chamber, a rockable hollow cylinder having an induction port in communication with said chamber and having also a discharge conduit, a board fixed with respect to said cylinder, means for adjustably fixing the cylinder and the board so that the board may be arranged horizontally or at various angles of inclination, and the said conduit being associated with means for securing a piece of clothes or fabric on the same and being also associated with means for heating fluid under pressure enroute through the same.

11. In combination, a support, means for maintaining a piece of clothes or fabric in spaced relation to the support, means for supplying a blast of fluid under pressure to the space between the support and the piece of clothes or fabric, and means for heating the fluid under pressure enroute to the space between the support and the piece of clothes or fabric.

12. In combination, an appropriately supported chamber, a rod headed at one end and threaded at its opposite end, brackets receiving said rod, a hollow cylinder interposed between the brackets and having a port in communication with said chamber and also having a discharge conduit, a nut mounted on the threaded portion of said rod for clamping and adjustably fixing the cylinder between the brackets, a board fixed with respect to the cylinder and the discharge conduit thereof, and adjustable therewith, and valved means for supplying fluid under pressure to the said chamber.

13. In combination, an appropriately supported chamber, a rod headed at one end and threaded at its opposite end, brackets receiving said rod, a hollow cylinder interposed between the brackets and having a port in communication with said chamber and also having a discharge conduit, a nut mounted on the threaded portion of said rod for clamping and adjustably fixing the cylinder between the brackets, a board fixed with respect to the cylinder and the discharge conduit thereof and adjustable therewith, and valved means for supplying fluid under pressure to the said chamber; the said discharge conduit of the cylinder being equipped with means for detachably securing a piece of clothes or fabric thereover, and being also associated with means for heating the fluid under pressure enroute through said discharge conduit.

In testimony whereof I affix my signature.

CARL W. ROBERTS.