March 12, 1929. W. A. ZEIDLER 1,704,816

GARMENT PRESSING MACHINE

Filed March 18, 1922 2 Sheets-Sheet 1

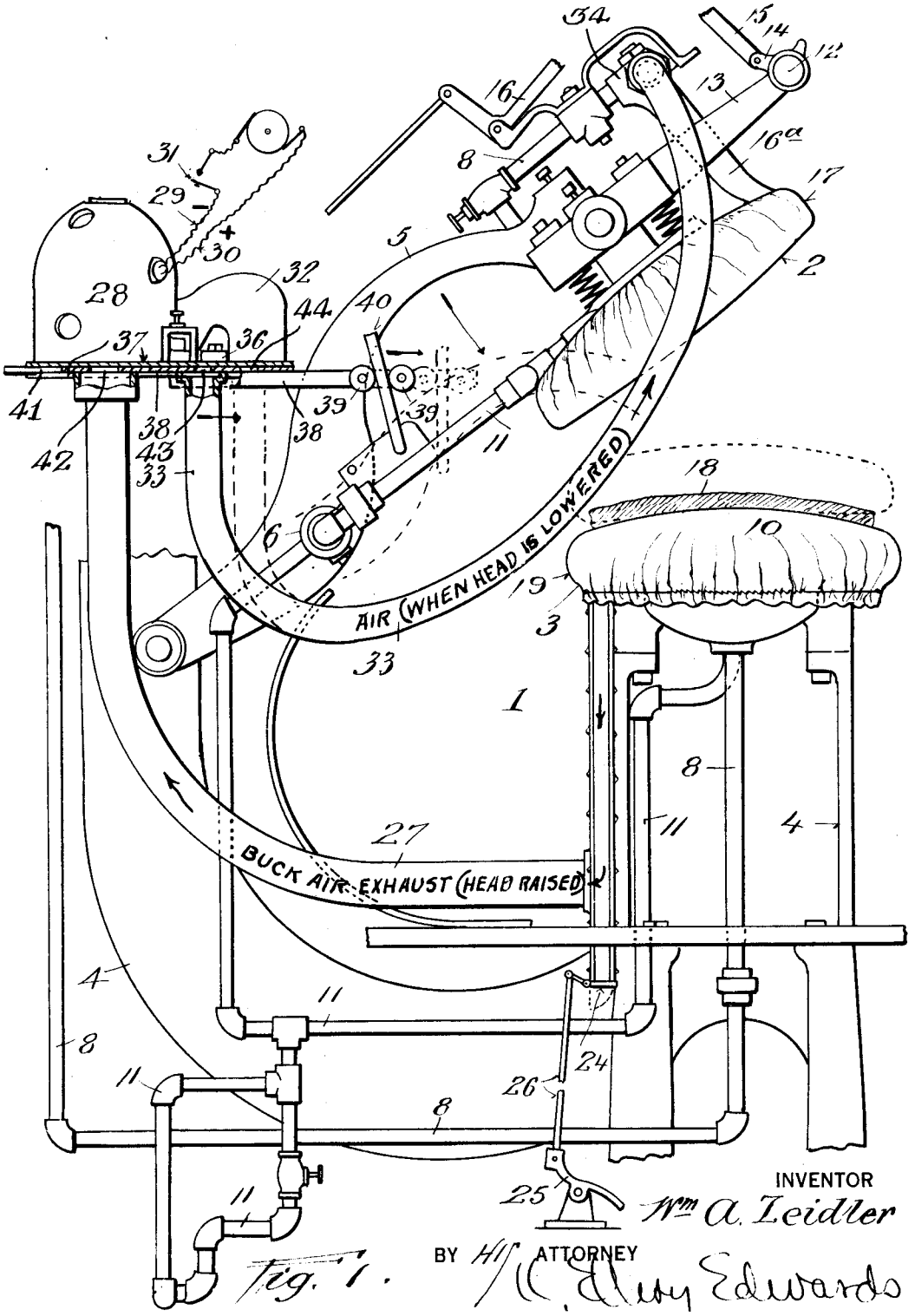


Fig. 1.

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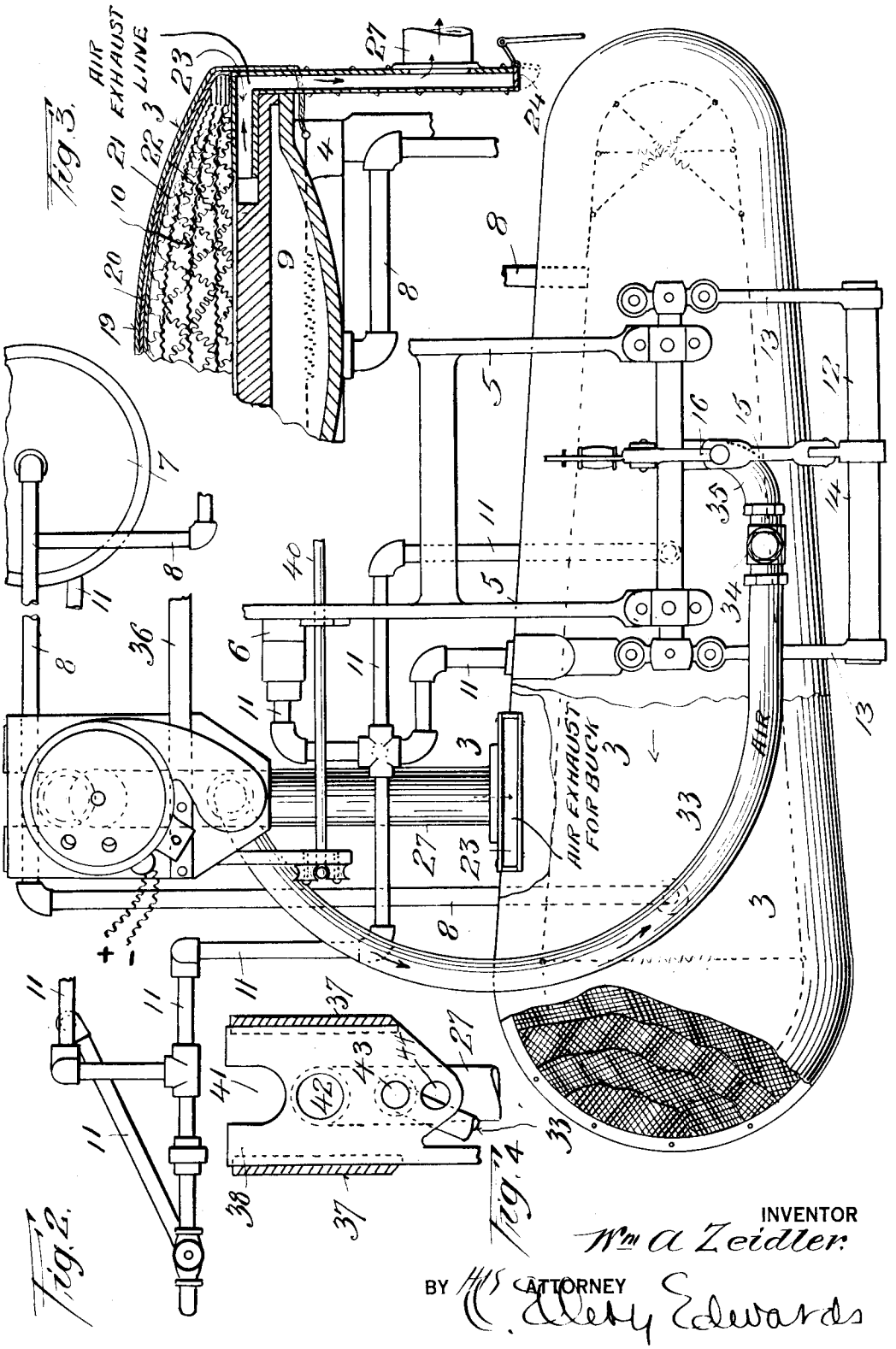


Fig. 3.

Fig. 2.

Fig. 4.

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Patented Mar. 12, 1929. 1,704,816

UNITED STATES PATENT OFFICE.

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GARMENT-PRESSING MACHINE.

Application filed March 16, 1922. Serial No. 544,734.

The object of my invention is to provide a machine of this type in which a garment may be pressed while hot and moist under the influence of steam and then dried and cooled before being removed from the machine so that the effect of the pressing will be substantial and more permanent than is possible with machines from which the garment is removed while hot. This and other objects are accomplished by my invention, one embodiment of which is hereinafter more particularly set forth.

For a more detailed description of my invention, reference is to be had to the accompanying drawings, forming a part hereof, in which

Figure 1 is a side elevation of a machine embodying my invention.

Figure 2 is a plan view of the same with parts broken away to more clearly reveal the structure.

Figure 3 is a sectional view, taken on the line 3—3 of Figure 2, looking in the direction of the arrows.

Figure 4 shows a portion of a sliding air valve.

Throughout the various views of the drawings, similar reference characters designate similar parts.

My improved machine 1 is provided with a head 2 of the conventional kind which is supplied by steam, in a manner which will be described below, and a buck 3 which is fixedly mounted on the frame 4 of the machine. The head 2 is carried by arms 5 which are pivoted at 6 to the frame 4. Steam is supplied to the apparatus by means of a boiler 7 which has steam pipes 8 which supply both the head and the buck with steam in the conventional manner so that both are supplied at all times when the machine is in use. In Figure 3 the buck is shown in section and there appears a steam chamber 9 which is constantly heated and under the pad 10. There are no openings between the steam chamber 9 and the pad 10 and the pad is constantly heated, as is obvious. The boiler 7 receives the condensed steam from the chamber 9 and a corresponding chamber in the head 2 by means of the return pipes 11, all of which are mounted and connected in the conventional way and require no explanation here. From this it will be understood that steam passes from the boiler into the head and buck and thence either in the form of steam or water back into the boiler, and if necessary, a pump or inspirator may be used to force the condensed water or cooled steam back into the boiler.

The head 2 is raised or lowered by means of a handle 12 which turns in suitable bearings 13 which are secured to the head 2 in the conventional manner. This handle carries a crank 14 which is fixed thereon and pivoted to a link 15 which in turn is connected to a valve gear 16 in a pipe 8 so that live steam may go through a pipe or projection 16^a and immediately under the cloth 17 on the head 2, as is customary in such structures. It is obvious from the foregoing that the handle 12 may be turned so that steam will be admitted to the under surface of the head whence it passes through the cloth 17 which is secured thereon in the conventional manner. Assuming that a garment 18 is placed on the buck 3 and rests on the cloth 19 of the pad 10 and the head 2 is lowered, steam will pass through the cloth 17 and garment 18 and pad 10 in a manner which will now be described.

The pad 10 is composed of an outer cloth 19 and inner cloths, or felts 20 which surmount a plain gauze 21 which in turn is on top a number of corrugated spring gauzes 22 which have adjacent layers with corrugations running in different directions so that corrugations in one layer will run across and not with the corrugations in other layers. This not only gives a resilient support for the cover 19 which is secured on the buck 3 in the usual manner, but it also provides a medium through which steam and air may pass in a manner which will be described below. This steam and air is exhausted, but never supplied by means of a suitable port 23 which has its bottom normally closed by a flat valve 24, but which may be opened through a treadle 25 and link 26, if desired, and at the volition of the operator using the apparatus. This port 23 is also connected to an exhaust pipe or tube 27 which runs to the intake of a centrifugal air pump 28 which is run by an electric motor, not shown, and supplied by wires 29 and 30, from any suitable source, and controlled by a switch 31 so that by closing the switch the pump will operate and by opening the switch it will cease to operate. This pump forces air through an outlet 32 and downwardly in a vertical direction either

directly into the atmosphere or into a tube 33 which runs to a check valve 34 which is connected by an elbow 35 to the interior of the upright 16^a and the check valve is so made that air can flow towards this projection 16^a and through it and from the pump 28, but not in the reverse direction and steam cannot flow through this tube 33.

The pump 28 is supported by a rod 36 that runs to the frame 4 and is connected thereto in any suitable manner, not shown. An under plate 37 of this pump carries a slide 38 to which the tubes 27 and 33 are connected. This slide 38 at its inner end is provided with two pintles or rollers 39 which are engaged by the upstanding end of an arm 40 fixedly connected to one of the arms 5 and swings with them. The slide is shown in Figure 4 where it appears there is a recess 41 which registers with the intake of the pump 28 and is in communication with the atmosphere, a second opening 42 which is connected with the tube 27, a third opening 43 which is connected to the tube 33 and a fourth opening 44 which leads to the atmosphere. It will be noted that the openings 42 and 44 may be under the pump 28 in which event the pump will draw from the tube 27 and discharge into the atmosphere, or it may function through the openings 41 and 43, in which event the pump 28 will draw from the atmosphere and force air under pressure into the tube 33, and it will be further noted that the rod 40 and its connected parts are so placed that when the head 2 is lowered on a garment 18, the openings 41 and 43 will function, and when the head is raised the openings 42 and 44 will function, as above described.

When the pump is acting to force air through pipe 33, the operator may open valve 24 and under such conditions air will be forced through the head and buck and through the garment held between the same, passing through the spring padding and out through port 23. Inasmuch as the head is heated at all times, the air will be warmed and its passage through the garment in such condition tends to quickly dry the garment while it is still held under pressure.

In view of the foregoing, the operation of my improved machine will be readily understood. The principal parts of the head and buck are always hot, as above described, and assuming this to be the case, a garment 18 is put in position on the buck 3 and is ready to be pressed. The handle 12 is then turned to let a little steam pass through the cloth 17 and at this time the head is lowered and preferably clamped in the conventional manner by means, not shown, on the garment which rests on the buck. The garment is steamed say for about twenty seconds and pressed, the steam is then shut off and the switch is closed. As a consequence, air is forced through the pipe or tube 33, projection 16^a, cloth 17, garment 18, cloth 19, and the rest of the pad 10 and then is forced into the port 23 while the valve 24 is held open until all the steam is blown out, this operation which acts to dry the garment taking about fifteen seconds. Then without shutting off the motor, the head is unclamped and raised, which operation shifts the slide 38, as above described, so that the tube 33 is disconnected from the pump and the tube 27 is connected. Meanwhile the valve 24 has been closed so that air is sucked through the garment and pad 10 until the garment is cooled and dried and set whereby the effect of the pressing is made durable as compared with ordinary pressing where the pressed goods are removed while hot and perhaps a little moist from the steam. Not only is the pressing made more permanent than before, but the cycle of operation is much shortened by the free use of atmospheric air for the purposes specified. The switch 31 is then opened and the garment may be immediately removed almost as soon as the head is brought to rest and then another garment inserted, and this cycle of operations may be repeated indefinitely.

From the foregoing it will be seen that when the head is opened or raised, the valve will be shifted so that the exhaust pump 28 will create a suction through the line or pipe 27 and the exhaust port or passage 23, which is connected thereto, and which extends to the buck or lower pressing member. The shifting or opening of the valve to connect the exhaust line is automatically effected through the mechanism above described. It is to be noted that the operating means for said valve is actuated by the actuating means for the movable pressing element, to wit, the head.

While I have shown and described one embodiment of my invention, it is obvious that it is not restricted thereto, but that it is broad enough to cover all structures that come within the scope of the annexed claims.

Having thus described my invention, what I claim is:

1. In an apparatus of the class described, a buck and means for supporting the same, a movable head and means for supporting the same, means for turning steam into the head and passing the same through a garment while clamped and means for blowing air through the head so as to expel the steam while the garment remains in its clamped position.

2. In an apparatus of the class described, a movable head and means for supporting the same, means for allowing steam to pass through the lower surface of said head, a buck and means for supporting the same adjacent to said head, means for turning steam

into a chamber in said buck, a pad mounted on said buck and disconnected from said chamber so that steam cannot pass from the chamber to the pad and means for blowing steam and air downwardly through the pad.

3. In an apparatus of the class described, a movable head and means for allowing steam to pass through the lower surface of the same, a buck adapted to cooperate with said head, a cushion on said buck, means for forcing air into said head and through the lower surface of the same and while the head engages the buck and means for exhausting air through said pad when the head is off the buck.

4. In an apparatus of the class described, cooperative pressing elements, one of which is provided with a pad, means for introducing steam between said elements and means for forcing the same from between said elements by means of an air blast under pressure and through the pad.

5. In an apparatus of the class described, cooperative pressing elements, one of which has a pad, means for introducing steam from the element which does not carry the said pad and means for providing the same with air through the pad while the two elements are in contact and not otherwise and means for exhausting steam and air through the pad when the elements are separated.

6. In an apparatus of the class described, the combination of cooperative pressing elements adapted to be brought together to press a garment between them, means for passing steam through the garment when under pressure so as to heat the same, means for passing air through the steamed garment so that the steam is somewhat condensed and the garment moistened, means for separating the pressing elements leaving the garment on one of the elements, and means for passing air through the garment while so supported so as to thoroughly dry and set the same.

7. In a garment press, the combination of cooperating pressing elements; means for ejecting steam onto a garment held between the same; means for forcing air through the garment held between the pressing elements; and means for subsequently drawing air through the garment, when said pressing elements are separated.

8. In a garment press, the combination of a buck; a padding mounted thereon, said padding being of such form that air or steam may pass therethrough; a head movable into pressing relation with the buck; means for ejecting steam onto the garment being pressed; means for forcing air through the garment and the garment supporting padding when the press is closed; and means for subsequently drawing air through the garment and padding when the press is opened.

9. In a garment press, the combination of a buck; a padding mounted thereon, said padding being pervious so that air or steam may pass therethrough; a head movable into pressing relation with the buck; means for ejecting steam onto the garment being pressed; an air forcing pump; a valve controlling the passage of air to and from the same; a conduit extending from the pressure side of the pump to the head; a conduit extending from the exhaust side of the pump to the padding; and means actuated by the press, as the same is opened and closed, to shift the valve and to thereby place the pump in operative relation with one or the other conduit.

10. In a garment press, the combination of a buck; a padding mounted thereon, said padding being pervious so that air or steam may pass therethrough; a head movable into pressing relation with the buck; means for ejecting steam onto the garment being pressed; an air forcing pump; a valve controlling the passage of air to and from the same; a conduit extending from the pressure side of the pump to the head; a conduit, embodying a valve opening to the atmosphere, extending from the exhaust side of the pump to the padding; and means actuated by the press, as the same is opened and closed, to shift the valve and to thereby place the pump in operative relation with one or the other conduit.

11. In apparatus of the class described, the combination of a pair of pressing members, actuating means therefor, a suction pipe connected with one of said members, a valve in said pipe, and operating means for said valve actuated by the first-mentioned means to close said valve when said members are closed and to automatically hold said valve open when said members are opened.

In witness whereof, I have hereunto set my hand this 13 day of March, 1922.

WILLIAM A. ZEIDLER.