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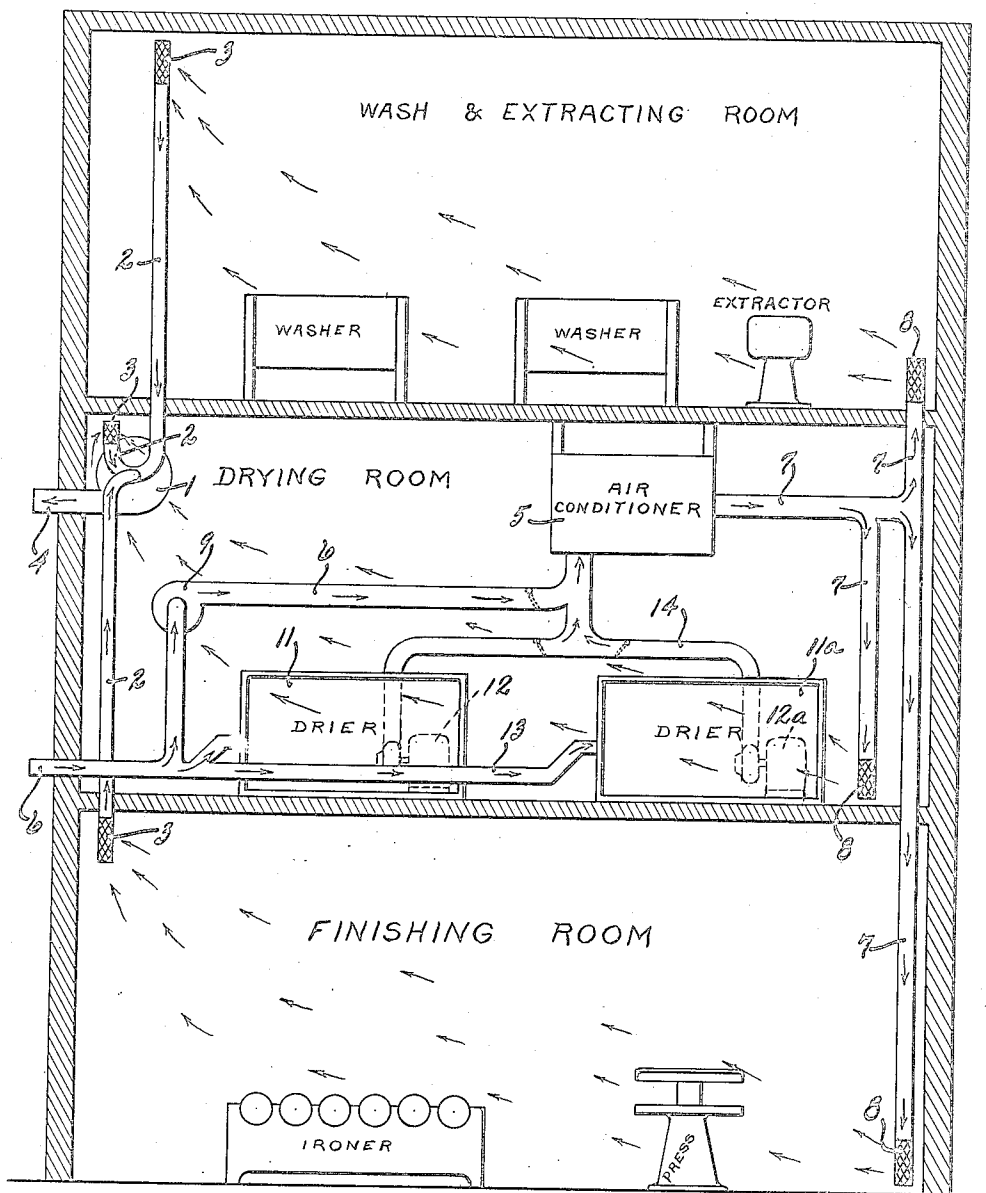
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AIR CONDITIONING SYSTEM

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2 Sheets-Sheet 1

Fig. 1.



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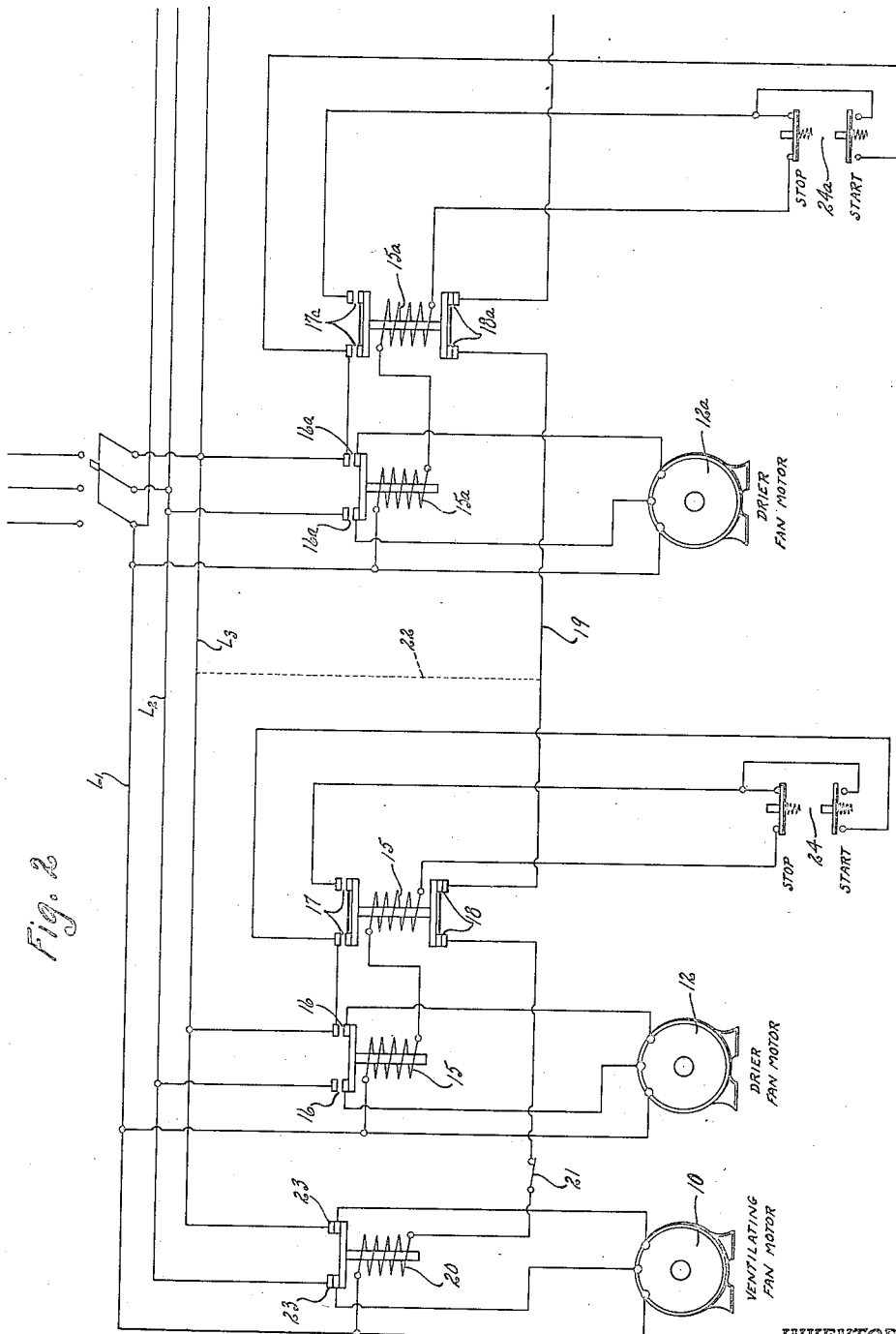
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AIR CONDITIONING SYSTEM

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Application February 26, 1932, Serial No. 595,296

3 Claims. (Cl. 98—33)

This invention relates to ventilating and air conditioning means for laundries. The nature of the work in every laundry is such as to produce a very high humidity in the laundry building, so that every laundry either has or should have a ventilating system including air conditioning means for correcting this humidity condition to which the operators are otherwise subjected. Usual laundry equipment includes one or more drying machines each including a motor-driven blower arranged to pass air through the drier, the drier having inlet and outlet openings for the air.

The object of the present invention is to provide an association between the ventilating system and such a drier or driers whereby the blowers of the latter may serve to produce air circulation in the former during the drying operation, so that operating expenses will be proportionally reduced.

The exact nature of this invention together with further objects and advantages thereof will be apparent from the following description taken in connection with the accompanying drawings, in which Fig. 1 is a conventionalized showing of a typical laundry with its pertinent equipment; and Fig. 2 is a wiring diagram of the pertinent electrical equipment.

With reference now to the drawings, the laundry illustrated includes three rooms: finishing room, drying room, and washing and extracting room, respectively, arranged in ascending order. Ironers and presses are located in the finishing room, driers in the drying room, and washers and extractors in the washing and extracting room, all as indicated.

The laundry is provided with a ventilating system in two parts, one for ejecting air from the laundry rooms, and the other for inducing air thereinto.

The ejector part comprises a motor-driven fan or blower 1 connected by piping 2 to grills 3 located adjacent the upper extremities of the rooms, and having an outlet pipe 4 opening outside of the building. Thus operation of the blower 1 removes air from the interior of the laundry and delivers such air outside the laundry.

The induction part of the ventilator system comprises an air conditioner 5, piping 6 leading thereto from the outside of the building and piping 7 leading from the air conditioner to grills 8 in the various rooms at low levels therein. The details of the air conditioner are immaterial here, where it will suffice to state that the principal functions of the conditioner are to wash the air

which passes therethrough and remove moisture therefrom. A blower 9 driven by a motor 10 is arranged in the piping 6 whereby outside air is delivered to the air conditioner and thence to the rooms by way of the piping 7 and grills 8.

It will be apparent that when the blowers 1 and 9 are operating, fresh, conditioned air will be forced into the rooms, and overheated overly moist air removed therefrom.

There are usually a plurality of driers 11, 11a, and they are preferably located as indicated on the same floor with the air conditioner 5. Each drier is provided with a blower, driven by a motor 12, 12a, that drying air may be circulated therethrough.

According to my invention I arrange piping 13 that the driers may take air from the pipes 6 ahead of the ventilating blower 9, and piping 14 that the driers may deliver air to the air conditioner 5. Air circulation is therefore parallel through the driers and the blower 9. Thus, if any of the driers including its blower be in operation, it is unnecessary that the fan 9 be also in operation.

My invention, therefore, provides that operation of the motor 10 of the ventilating blower 9 shall automatically cease to function when any of the drier motors 12 are functioning. Fig. 2 of the drawings shows a manner of such accomplishment. In this figure control parts to be generally described and associated with the second drier fan motor 12a, bear reference characters corresponding to those applied to the corresponding parts hereinafter specifically described as associated with the first drier fan motor 12, but bearing the suffix "a" to indicate that they are parts of the second of the possible plurality of drier fans which may be employed, as has been described.

Current is supplied through the line wires L1, L2, and L3. One of the line wires L1 has a constant connection with the ventilating motor 10 and each of the motors 12, 12a of the driers 11, 11a. Each drier motor 12 is provided with the usual start and stop switches 24 controlling energization of the coil 15 of a double pole relay switch having its contactors 16 in circuit with the L2, L3, motor leads; each relay switch including also a maintaining contactor 17 whereby the coil 15 will be maintained energized or de-energized, and the motor 12 consequently in operation or out of operation, dependent upon which of the switches 24 has last been depressed.

Each dried motor controlling relay switch is provided with a four contactor 18 in circuit with

a line 19 running between L1 and L3 and including the relay coil 20 and preferably an emergency switch 21. The broken line 22 indicates the connection with L3 in the case of only one drier. Where two or more driers are employed this connection would be beyond the motor 12 most removed to the right Fig. 2.

The coil 20 is one of a relay switch having a pair of contactors 23 in the L2, L3 connections for the motor 10 of the ventilating blower 9, the arrangement being such that when the coil 20 is energized the motor 10 will have complete operating connections.

The entire arrangement will be recognized as one whereby the switch controlling the motor 10 is opened to stop operation of that motor, whenever but only when one or more of the drier motors 12 are in operation, the coil 20 of the ventilating motor relay switch being simply in a circuit including the switches 18 of the drier motors in series relation.

In Fig. 2 neither of the two drier motors are operating, their switches being open, the switches 18 being closed to energize the coil 20, so that the contactors 23 are closed and the ventilating motor 10 is indicated as operating—this assuming the three pole line switch closed. Instantly one of the start buttons 24 is depressed the coil 15 will be energized to start the corresponding drier motor 12, opening the corresponding contact at 18, thus de-energizing the coil 20 and stopping the ventilating motor 10.

It will be obvious that by the described arrangement whenever power is being supplied to any of the driers, no power is expended in operating the blower 9, the drier blowers serving in the ventilating system and thus functioning in dual capacity.

While an automatic association has been illustrated and described, between the motor of the fan 9 of the ventilating system, and the motors 12, 12a of the drier blowers, it will be apparent

that even without automatic operation there are advantages derived from my arrangement. Thus, where the motors are manually operated one or more of the drier blowers may be used to speed up the ventilating system as on extremely hot days, whether or not their driers are in operation.

What I claim is:

1. In a laundry, in combination with a ventilating system having an air-circulating blower, a drier having an operator-controlled air-circulating blower, conduit means connecting said blowers in parallel relation, driving motors for said blowers, and means interassociating said motors to make the operation of the blower of said ventilating system dependent upon non-operation of that of said drier, whereby said drier may have intermittent operation, and when operating its blower will function in said ventilating system, but functioning of said ventilating system will be maintained independent of operation of said drier.

2. In a laundry, in combination with a ventilating system having an air-circulating blower, a plurality of driers having air-circulating blowers, conduit means connecting said blowers in parallel relation, individual driving motors for said blowers, and means interassociating said motors to make the operation of the blower of said ventilating system dependent upon coincident non-operation of those of said driers.

3. In a laundry, in combination with a ventilating system having an air-circulating blower, a drier having an air-circulating blower, conduit means connecting said blowers in parallel relation, and individual driving motors for said blowers, whereby the blower of said drier may be caused to serve in said ventilating system, said ventilating system including air conditioning means arranged in the system after said blowers to be effective upon air discharged from both.

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