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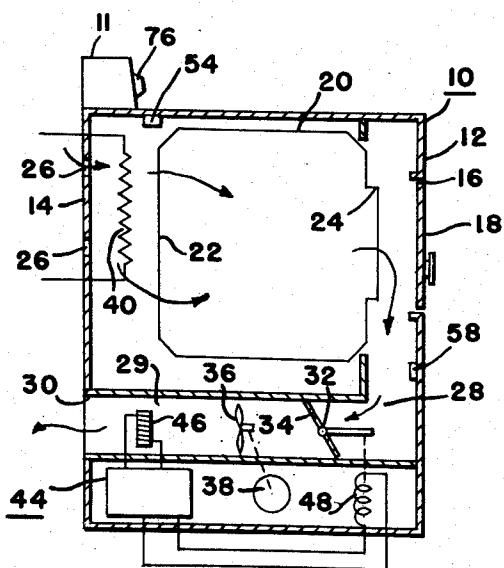
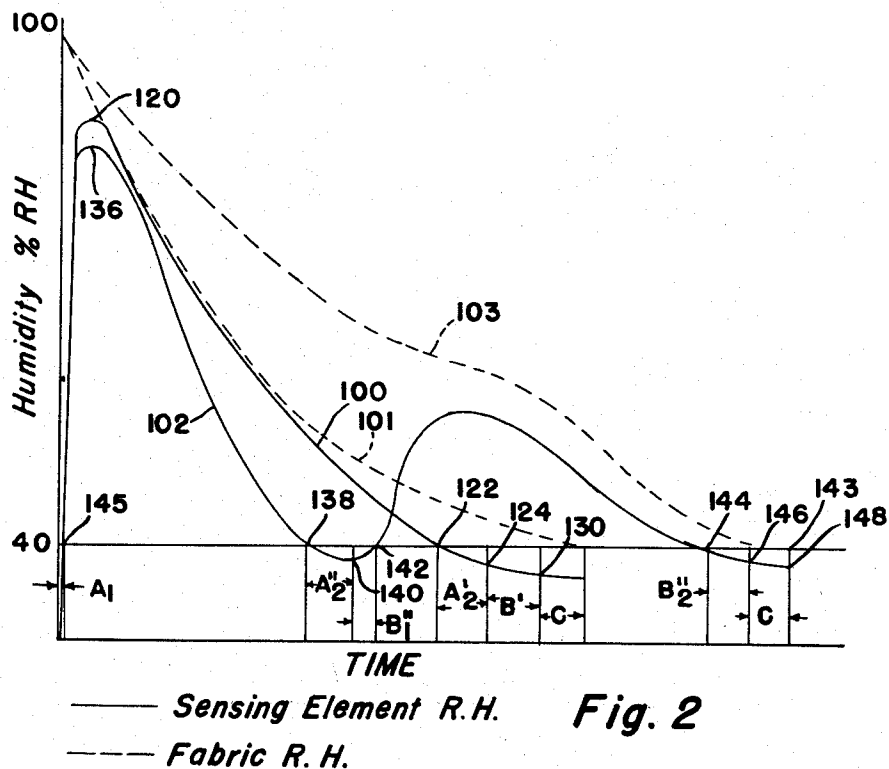
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3,071,864

TIMER CONTROLLED CLOTHES DRYER

Filed May 19, 1960

2 Sheets-Sheet 1



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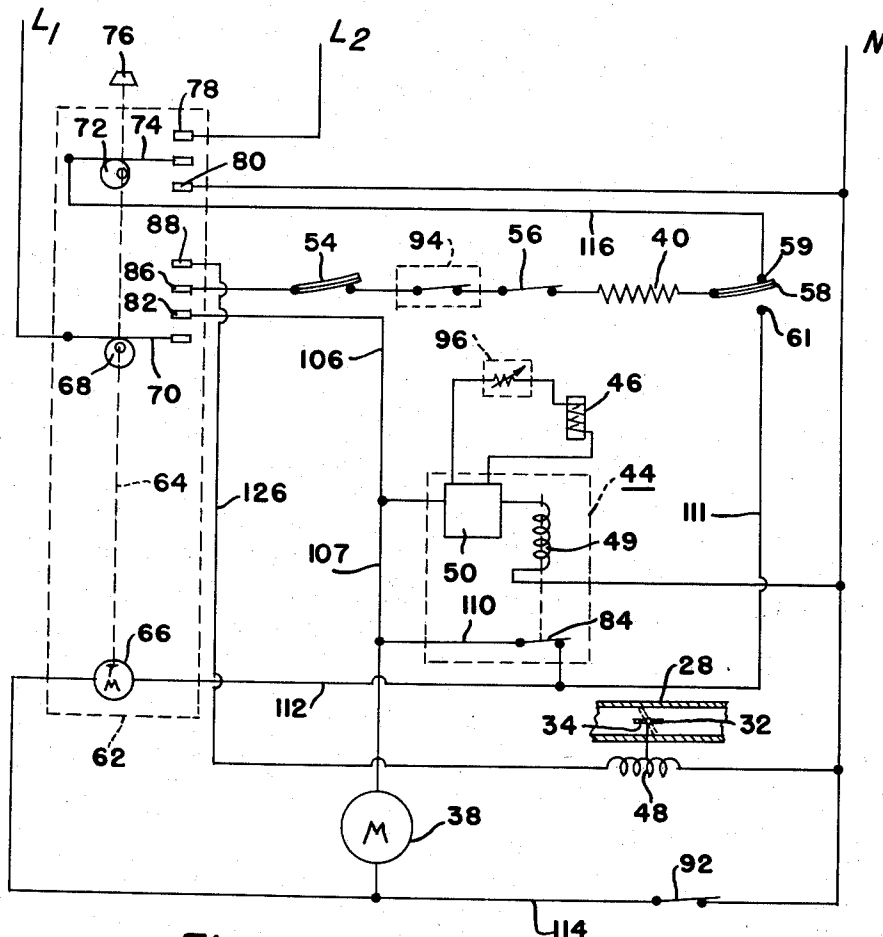


Fig. 3

Timer Cycle Chart				
CONTACT	HIGH HEAT HIGH AIR FLOW (A)	LOW HEAT LOW AIR FLOW (B)	COOL OFF (C)	OFF
70-82	ON	ON	ON	ON
70-86	ON	ON	ON	ON
70-88	ON	ON	ON	ON
74-78	ON	ON	ON	ON
74-80	ON	ON	ON	ON
	0	6	12	17
	TIME (MINUTES)			

Fig. 4

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3,071,864

TIMER CONTROLLED CLOTHES DRYER

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7 Claims. (Cl. 34-45)

This invention relates to a domestic appliance and more particularly to an improved control system for a clothes dryer.

The clothes drying art has long sought a control system which will terminate the drying cycle when the fabric or clothing being dried is at the proper degree of dryness. However, none of the prior art devices satisfactorily meets all the requirements for all the different types of loads which may confront a domestic clothes dryer. Some dryers may perform satisfactorily with a regular or normal clothes load of eight or nine pounds, but will not dry satisfactorily a bulky load, such as a shag rug, or a light load, such as one or two shirts. A device is needed which will dry moist fabrics, without overdrying, when they comprise either light loads, normal loads or bulky loads. It is to this end that the present invention is directed.

Accordingly, it is an object of this invention to balance the air flow and heat input to a dryer to the rate at which the fabric being dried can give up its moisture to the heated air passing thereover.

It is also an object of this invention to superimpose a humidity responsive drying cycle on a timed drying cycle.

A further object of this invention is the provision of a predetermined minimum time drying period with a normally humidity-controlled drying cycle.

Another object of this invention is the provision of an adjustable humidity sensing control for selecting the fabric dryness desired at the end of the drying cycle.

It is also an object of this invention to provide a humidity-controlled dryer with an integrating timer.

A further object of this invention is the provision of a humidity-controlled dryer with a timer which can be used for auxiliary timed features operable at the user's preference.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings wherein a preferred embodiment of the present invention is clearly shown.

In the drawing:

FIGURE 1 is a schematic sectional view of a domestic clothes dryer suitable for use with this invention;

FIGURE 2 is a graphic representation of percent relative humidity versus time to show the operation of this invention for different clothes drying loads;

FIGURE 3 is a schematic wiring diagram of this invention; and

FIGURE 4 is a timer cycle chart showing the relationship of the timer switches illustrated in FIGURE 3.

In accordance with this invention and with reference to FIGURE 1, a clothes dryer 10 is schematically illustrated. The clothes dryer is comprised of a casing having a front wall 12 and a rear wall 14. The front wall 12 has an opening 16 closed by an access door 18. Enclosed within the casing is a rotatably mounted tumbling drum 20 having a perforated rear wall 22 and a front access opening 24 in axial alignment with the cabinet opening 16. The rear wall 14 is cut out at 26 to permit the ingress of air to the dryer casing. A front duct 28 and an exhaust duct 29 is in air flow receiving communication with the drum access opening 24 and includes an exhaust opening 30 in the rear wall of the clothes dryer. Disposed

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within the duct 29 is a damper 32 which has a closed position shown in FIGURE 1 and an open position generally horizontally disposed within the duct. The damper 32 includes a port 34 which is sized to pass a regulated quantity of air for effecting a low air flow when the damper 32 is closed.

To induce a circulation of air through the tumbling drum 20 a blower 36 is positioned in air circulating relationship with the duct 28 and is adapted to be driven by a main motor or prime mover 38. Thus, an air circulation is set up by the operation of the blower 36. Air is drawn into the cabinet through the rear wall openings 26 and after flowing over a primary heater 40 enters the tumbling drum 20 through its perforated rear wall 22. Moisture is entrained in the circulating heated air from the fabrics being tumbled therein. The hot humid air then leaves the tumbling drum by way of the drum access opening 24 and enters the front duct 28. The air flow may either be a high flow with the damper 32 in horizontal position or a low air flow, regulated by the opening 34, when the damper is in generally vertical or closed position.

One aspect of this invention involves a drying cycle having an automatic drying cycle termination control shown generally at 44. This termination control includes a humidity sensing element or sensor 46 disposed in the exhaust duct 29 in the path of the humid air being exhausted from the clothes dryer. Although this humidity sensing element may be of any conventional resistance changing type, it may follow the teachings of copending applications Ser. No. 855,756 and Ser. No. 855,812, both filed November 27, 1959, and assigned to the same assignee as this invention. In addition, the termination control 44 includes a solenoid 49 (FIGURE 3) which is actuated selectively depending upon the humidity signals sensed by the sensor 46 and amplified through an amplifier 50. This solenoid 49 acts to open and close a circuit to the timer motor 66 for intermittently advancing the drying cycle as will be understood more fully herein-after.

The control circuit for the dryer (FIGURE 3) includes a high limit thermostat 54 located in the area adjacent the heater 40 to denegize the heater in case the temperatures within the casing rise above approximately 240° F. Another safety feature is a centrifugally actuated motor switch 56 which is closed whenever the main motor 38 is in operation. This safety switch will prevent the energization of the heater 40 in case the motor 38 should fail to start. Another safety device included in this invention is a safety thermostat 58 which has been added to advance the drying cycle in case the amplifier 50 or the sensing element 46 fails or the heater becomes stuck in the energized position. The main function of the safety thermostat 58 is to run out the timed cycle when the system is otherwise malfunctioning to cause the circulating air to be overheated. This will be further explained herein-after.

One of the features of this invention embodies the application of a timed cycle in conjunction with a humidity controlled drying cycle. For this purpose, a timer 62 is included. The timer 62 includes a timer shaft 64 operated by a timer motor 66. On the timer shaft 64 are disposed a cam 68 for manipulating a cam actuated timer switch blade 70 and a cam 72 or operating a cam actuated timer switch blade 74. The timer shaft 64 extends out of the control housing 11 and has attached thereto an operating knob 76 for initiating the drying cycle. Within the timer 62 the timer switch 74 operates between a fixed contact 78 leading to one side L₂ of the power supply and a fixed contact 80 leading to the neutral line of the power supply. The timer switch 70 is operable to close on a

yieldable spring contact 82 leading to the termination control 44, the main motor 38 and the timer motor 66 by way of the humidity sensitive switch 84 in the termination control. The timer switch 70 is also capable of engaging, in addition to contact 82, the yieldable spring contact 86 in the circuit for the heater 40. Lastly, the timer switch 70 has a position in which it engages a contact 80, in addition to the contacts 82 and 86, for energizing the damper regulating solenoid 48. Other optional features which may be used with the circuit of this invention include the door switch 92 which interrupts the motor circuit when the dryer door 18 is opened.

In accordance with one object of this invention, the combined timed and humidity controlled drying cycle permits the addition of certain user's preference auxiliary items, such as a no-heat switch 94 which when opened prevents the heater 40 from being energized. Further, the humidity sensing element 46 may be provided with a variable resistance 96 to vary the degree of sensitivity of the amplifier 50 to various percents of relative humidity. For instance, in one setting of the resistance 96, the sensing element 46 may be set to cause the switch 84 to actuate whenever the air circulating over the sensing element has a relative humidity of 80% or, as is more normally the case, another setting wherein the switch 84 is opened in the area of approximately 40% to 50% R.H. Both of the user's preference devices 94 and 96 may be positioned on the control housing and provided with exposed adjustable knobs, such as the timer knob 76.

With reference to the timer cycle chart of FIGURE 4, the aforementioned switch blades and contacts 70, 74, 78, 80, 82, 86 and 88 are set forth on the legend of the chart to illustrate the relationship of the timer switches throughout the timed cycle. A timed cycle has been built into the timer 62 as shown by the filled-in areas of the cycle chart. Empirical studies have developed what fixed drying times are needed to dry satisfactorily the unusually light loads suggested hereinabove. Thus, the timer sequence includes approximately a fixed six minute period of high heat with high air flow. During this time the heater 40 is energized on 236 volts for maximum heat input and the damper 32 is open. A second timed period of approximately six minutes is designed for low heat with low air flow, the heater 40 being energized on 118 volts and the damper 32 being closed. Lastly, a cool-off period of approximately five minutes is used wherein no heat at all is used in conjunction with a high air flow, the heater 40 being deenergized and the damper 32 being open. At the conclusion of the approximately seventeen minute time interval, the minimum time drying cycle is terminated. Whereas the minimum time cycle just set forth is adequate for certain unusually light loads, such as a couple of shirts or a few handkerchiefs, a considerably longer period of drying is needed for the normal and bulky loads. For this reason, a humidity controlled drying device is incorporated and superimposed upon the timed cycle. The humidity sensing arrangement operates to interrupt the advance of the timed cycle by periodically deenergizing the timer motor 66. This in effect extends the overall length of the drying cycle by delaying the progress of the timed cycle for varying periods of time depending on the length of time it takes for the humidity sensing arrangement to actuate the timer motor switch 84.

The operation of the foregoing drying cycle termination control will best be understood with reference to FIGURE 2 wherein the characteristics for a normal load drying cycle are shown in a solid line curve 100 and for a bulky load drying cycle in the solid line curve 102. The dashed line curves represent the actual relative humidity or moisture content of the fabric itself—curve 101 for the fabric in a normal load and curve 103 for the fabric in a bulky load. Thus when the curves 101 and 103 indicate the fabric is at the ambient relative humidity of approximately 40%, the fabric is properly dried. The unusually light load is not shown on the graph of FIG-

URE 2 and embodies merely the characteristics of the timed circuit as shown in the cycle chart of FIGURE 4. The foregoing categories will now be explained separately.

Light Load

The light load is generally comprised of approximately two shirts or two shirts and a few handkerchiefs and there is not enough moisture present in this small amount of clothes to cause the sensor switch 84 to open. In other words, the air flowing over the drying clothes will remain at such a low relative humidity that the sensing element 46 will never operate through the amplifier 50 to energize the solenoid 49 to open the switch 84. Consequently, the timer motor 66 runs continuously throughout the timed cycle for the light or small load. The entire cycle will result in a timed duration shown in FIGURE 4, i.e. approximately six minutes of high heat with high air flow (A) followed by approximately six minutes of low heat with low air flow (B) and concluded with a cool-off period of approximately five minutes in which there is no heat and high air flow. The circuitry involved during the light load operation will be understood next following in connection with a normal load.

Normal Load

In accordance with this invention, a normal or regular load consists of approximately 8 or 9 pounds of varied clothing, such as shirts, tablecloths and children's play clothes. In operation the drying cycle for a normal load is initiated by placing a load of clothing within the tumbling drum 20. The timer knob 76 is manipulated to rotate the timer shaft 64 to position the timer switches as shown just after the zero setting on the timer cycle chart. Since the relative humidity within the dryer 10 is below approximately 40%, the humidity sensitive switch 84 is closed and the timer motor 66 will be energized from L₁ through the timer switch 70 to the fixed timer switch 82, line 106, line 107, line 110, the humidity actuated switch 84, line 112, the timer motor 66, line 114, the door switch 92 to the neutral (N) side of the line. Thus, the timed cycle is advanced through the high heat, high air flow portion (A) of the cycle. To accomplish this, the heater 40 is energized from L₁, timer switch 70 which is biased upwardly into engagement with the contacts 82 and 86, the high limit thermostat 54, the no-heat switch 94 (closed during normal drying operation), the motor centrifugal switch 56, the heater 40, the safety thermostat 58, line 116, the timer switch 74 and the fixed timer contact 78 to L₂. The heater 40 is thus connected across 236 volts to provide a maximum heat input to the tumbling drum 20. With this circuitry established and with reference to the graph of FIGURE 2, the relative humidity of the air circulating past the sensor 46 starts to increase. In point of time this occurs very quickly during the interval A₁ which is in effect less than one minute. As soon as the relative humidity reaches point 145 (40% relative humidity or any other RH selected to fit a particular ambient condition), the sensing element 46 passes a signal to the amplifier 50 which energizes the solenoid 49 to open the humidity sensing switch 84 and the timer motor 66 is deenergized. For the first portion of the normal load drying cycle shown in curve 100, the humidity will continue to rise as more and more of the moisture is evaporated from the drying fabric.

After reaching the perk, as at 120, the relative humidity of the circulating air starts to fall along the curve 100 until it reaches approximately 40% again as at point 122 on the graph. At this point the sensing element 46 will act through the termination control 44 to close the switch 84 and the timer motor 66 will again be energized to advance the timed cycle. From the point 122 to the point 124 on the graph, (A'₂), the timed cycle will exhaust the timed period (A) of high heat and high air flow and at the point 124 the timer switch 74 will move from the high heat contact 78 to the low heat contact 80 to connect the heater 40 to the neutral line (N) to energize the heater on

118 volts. In other words, the high heat high air flow period (A) in the normal drying cycle is comprised of A_1 plus A_2 . Simultaneously with this shift of timer switch 74, the timer switch 70 will move upwardly further to engage the fixed contact 88 in addition to contact 82 and contact 86 and the damper solenoid 48 will be energized by way of L_1 , timer switch 70, contacts 82, 86 and 88, line 126, solenoid 48 to neutral (N). The damper 32 will be moved to its phantom line position in FIGURE 3 and the air flow circulating will be reduced in accordance with the size of the opening 34 in the damper. Thus, we see that the timed cycle has moved into the period (B) of low heat and low air flow which will extend for approximately another six minutes.

Again with reference to FIGURE 2, at approximately the point 130 the period (B') will have expired and the circuitry will be established for the cool-off period (C). During the cool-off period the timer switch 70 is made with the contact 82 only and the heater circuit and the damper solenoid circuit are deenergized. Only the main motor 38 is energized to maintain a high ambient air flow through the tumbling drum. Also energized during the cool-off period is the timer motor 66 since the relative humidity within the dryer remains below the 40% figure as shown by the curve 100. The cool-off period may be about five minutes in duration and at conclusion of this predetermined interval the drying cycle for the normal load shown on graph 100 is completed.

Note on the dashed line companion curve 101 the relative humidity or moisture content of the fabric included in a normal load is plotted against time. As you would expect, the fabric relative humidity drops from a high of approximately 100% to the desired room relative humidity of approximately 40% during the course of the drying cycle. Thus, the curve 101 terminates at the same point as does the curve 100. By way of relating the curve of FIGURE 2 to the cycle chart of FIGURE 4, it may be shown that A_1 plus A_2 equals the duration of the period (A) in the timed cycle, i.e. approximately six minutes in our example. Further, the entire period of low heat and low air flow (B) is comprised of the interval on the graph designated as B_1 and this is followed immediately by the entire timed cool-off period (C).

Bulky Load

A bulky load is comprised primarily of items such as shag rugs which have a very dense construction. Consequently, moisture deep within the pile of the object is slow to be given off and only the surface moisture evaporates quickly. The slow evaporation of the moisture within a bulky load does not give the sensor a true indication of the dryness of the clothes and, for this reason, another characteristic drying load curve 102 results for bulky loads. The moisture content or relative humidity of the bulky load fabric itself is shown in the dashed line companion curve 103.

As with the normal load described hereinbefore, the drying cycle is initiated when the knob 76 is manipulated to place the timer switches 70 and 74 selectively into engagement with the contacts 78, 80, 82, 86 and 88 as shown in the timer cycle chart during the period (A) of high heat and high air flow. For a brief intercal (A_1) of approximately 30 to 60 seconds, the humidity sensing switch 84 remains closed and the timer rotor 66 is energized continuously. In other words, the timer motor is energized whenever the relative humidity of the circulating air is below a certain figure and deenergized when above that figure. As the moisture is given off by the bulky load, the humidity of the circulating air will climb above 40%, the timer stops and the drying cycle will continue with high heat and high air flow along the bulky load curve 102 until it peaks at a point 136. From this point, the relative humidity will fall off along the curve 102 until it reaches a point 138. At this point the air passing over the sensing element 46 will cause a signal to be transmitted to the amplifier which will be trans-

lated into actuation of the solenoid 49 to reenergize the timer motor 66. The circuitry established is the same as that in conjunction with the normal load described hereinbefore. From the point 138 on the bulky load curve to a point 140, the remainder (A'_2) of the period A of high heat and high air flow continues. However, at the curve point 140 the timer shaft 64 will have rotated the cams 68 and 72 to position the timer switch 70 into engagement with fixed contacts 82, 86 and 88 and the timer switch 74 into engagement with the low heat fixed contact 80. Thus, the period (B) of low heat and low air flow will be established since the damper 32 is also closed by this timer action.

From the point 140 to the point 142 (B'_1) on the bulky load curve, it will be seen that the bulky load still contains some moisture and thus the relative humidity of the circulating air starts to increase again—the low heat, low air flow relationship established being ineffective to carry off the moisture faster than the bulky load can give it off. At the point 142 the relative humidity of the air passing the sensor 46 has increased above the 40% R.H. figure and the humidity switch 84 is opened. This interrupts the circuit to the timer motor 66 and the drying cycle continues with the timer in a state of suspended operation.

After a further extension of the untimed drying period, the relative humidity of the air passing the sensor will start to fall again as the bulky load approaches its true proper dryness end point 143. At the point 144 on the curve 102 the relative humidity will again fall below the critical actuating point of the switch 84 and the switch will close to start the timer motor 66 running again. From 144 to the graph point 146 the balance (B'_2) of the low heat, low air flow period (B) will be run out and the bulky load drying cycle will terminate with the fixed cool-off period (C) and conclude at the point 148 on the graph. In analyzing the bulky load curve the approximately six minutes of high heat and high air flow for the period (A) include the timed portion (A_1) from the start to point 145 plus the timed portion (A'_2) from curve point 138 to 140. The timed portion for the low heat, low air flow period (B) is comprised of that interval (B'_1) from curve point 140 to curve point 142 plus the portion (B'_2) from curve point 144 to curve point 146. Lastly, the cool-off period from curve point 146 to 148 includes all of the approximately five minute cool-off period. The time allocations to the various periods A, B and C on the timer cycle chart have been found by empirical study to provide a complete drying cycle for even the lightest loads. The intermittent operation of the timer motor in response to the humidity sensing arrangement of this invention makes the system applicable to all normal and bulky loads and prevents overdrying of the fabric.

The operation of the safety thermostat 58 set forth hereinbefore will now be described. An operating temperature differential of 150° F.–135° F. is provided for the thermostat such that the bimetal will be closed on the contact 59 so long as temperatures in the front duct 28 remain below 150° F. Should the heater 40 become locked in the heater energized position and temperatures leaving the tumbling drum exceed 150° F., the safety thermostat 58 will move from the contact 59 to the contact 61. In this latter relationship, it will be noticed that the humidity sensing system is by-passed and the timer motor 66 will run out the timed drying cycle. In this situation the timer motor 66 is energized from L_1 , timer switch 70, spring contacts 82 and 86, the heater circuit through the heater 40, thermostat bimetal 58 and line 111 and 112 to the timer motor 66 and from there by way of line 114 to the neutral side of the line. The moisture given off by the drying fabric holds temperatures in the tumbling drum at approximately 125° F. during most of the drying cycle. Under normal or bulky drying operations, when the temperature does start to

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climb, the sensing element 46 will shut down the dryer before the thermostat 58 is actuated.

The no heat cycle works as follows. Where the user selectable no-heat switch 94 is opened, the timed cycle will proceed sequentially as shown in FIGURE 4 with high air flow, low air flow and the cool-off period, but in none of the periods A, B and C will there be any energization of the heater 40—thus a no-heat cycle for airing things such as blankets.

In order to have the drying cycle terminate with the clothes still damp for ironing, the user's control 96 may be manipulated to predetermine the point at which the sensing element 46 will actuate the switch 84. Thus, the end point dryness of the clothes being dried may be preselected at will therein.

It should now be seen that an improved drying cycle control has been provided which is effective to dry properly clothes loads of different size and character.

While the embodiment of the present invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted.

What is claimed is as follows:

1. In combination with a clothes dryer having means defining a drying chamber for said clothes, means for selectively circulating air through said chamber in high and low air flows, means for selectively heating said air with high and low heat inputs, first switch means for said heating means having a first position for said high heat input and a second position for said low heat input, second switch means for said circulating means having a first position for said high air flow and a second position for said low air flow, motor driven timing means for actuating said first and second switch means in a predetermined timed sequence including periods of high heat with high air flow, low heat with low air flow and no heat with high air flow, air flow humidity sensitive switch means in series electrical flow relationship with said second switch means and said timing motor and operable to energize intermittently said timing motor during said periods of high heat with high air flow and low heat with low air flow and to energize continuously said timing motor during said period of no heat with high air flow, and a power source having a first conductor connected continuously to said second switch means, a second conductor connected to said first switch means when said first means is in said first position, and a third conductor connected to said first switch means when said first switch means is in said second position.

2. In combination with a clothes dryer having means defining a drying chamber for said clothes, means for circulating air through said chamber in high and low air flows, means for heating said air with high and low heat inputs, first switch means for said heating means having a first position for said high heat input and a second position for said low heat input, second switch means for said circulating means having a first position for said high air flow and a second position for said low air flow, motor driven timing means for selectively actuating said first and second switch means in a predetermined timed sequence including periods of high heat with high air flow, low heat with low air flow and no heat, air flow humidity sensitive switch means in series electrical flow relationship with said second switch means and said timing motor and operable to energize intermittently said timing motor during said periods of high heat with high air flow and low heat with low air flow and to energize continuously said timing motor during said period of no heat, means for adjusting the humidity to which said last named switch means is sensitive, and a power source having a first conductor connected continuously to said second switch means, a second conductor connected to said first switch means when said first means is in said first position, and a third conductor connected to said first switch means when said first switch means is in said second position.

3. A control system for a clothes dryer having means

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forming a drying chamber, means for circulating air through said chamber, heating means for effecting a high or low heat input to said air and regulating means for said circulating air to effect high or low air flow and comprising, means for selectively energizing said heating means said circulating means, and said regulating means, motor driven timing means for controlling said last named selectively energizing means throughout a predetermined timed drying cycle including a first period of high heat input with high air flow and a second period of low heat input with low air flow, and switch means in humidity responsive relationship to the air leaving the drying chamber and in series electrical flow relationship with said timing motor for interrupting the progress of said predetermined timed drying cycle when the relative humidity of the air circulating from said drying chamber is above a predetermined value, thereby to extend said predetermined timed drying cycle.

4. A control system for a clothes dryer having means forming a drying chamber, means for circulating air through said chamber, heating means for effecting a high or low heat input to said air and regulating means for said circulating air to effect high or low air flow and comprising, means for selectively energizing said heating means, said circulating means and said regulating means, motor driven timing means for controlling said last named selectively energizing means throughout a predetermined timed drying cycle including a first period of high heat input with high air flow and a second period of low heat input with low air flow, and switch means in humidity responsive relationship to the air leaving the drying chamber and in series electrical flow relationship with said timing motor and a portion of, said selectively energizing means for interrupting the progress of said predetermined time drying cycle when the relative humidity of the air circulating from said drying chamber is above a predetermined value, thereby to extend said predetermined timed drying cycle.

5. A control system for a clothes dryer having means forming a drying chamber, means for circulating high and low quantities of air through said chamber including an air quantity regulating means and heating means adapted for normally continuous high or low heat input to said air and comprising, means for selectively energizing said circulating means and said heating means, motor driven timing means for actuating said last named selectively energizing means throughout a drying cycle of predetermined time including sequential periods of high heat input with high air quantity and low heat input with low air quantity, humidity sensitive means in the path of said air leaving said drying chamber, and switch means responsive to said humidity sensitive means and in series electrical flow relationship with said timing motor for interrupting the progress of said drying cycle in accordance with the relative humidity of the air circulating from said drying chamber.

6. In combination with a clothes dryer having means defining a drying chamber for said clothes, duct means communicating with said chamber, means for circulating air through said chamber and said duct means in high and low air flows including a ported damper in said duct, means for heating said air with high and low heat inputs, first switch means for said heating means having a first position for said high heat input and a second position for said low heat input, second switch means for said circulating means having a first position for said high air flow and a second position for said low air flow, motor driven timing means for actuating said first and second switch means in a timed sequence of predetermined duration including periods of high heat with high air flow, low heat with low air flow and no heat with high air flow, air flow humidity responsive switch means in series electrical flow relationship with said second switch means and said timing motor and operable to energize intermittently said timing motor during said periods of

high heat with high air flow and low heat with low air flow and to energize continuously said timing motor during said period of no heat with high air flow, thermally responsive means in said duct means including safety switch means in parallel with said humidity responsive switch means for energizing said timing motor continuously when the temperature in said dryer exceeds a predetermined value and a power source having a first conductor connected continuously to said second switch means, a second conductor connected to said first switch means when said first means is in said first position, and a third conductor connected to said first switch means when said first switch means is in said second position.

7. A control system for a clothes dryer having means forming a drying chamber, means for circulating variable quantities of air through said chamber including an air quantity regulating means and heating means adapted for variable heat input to said air and comprising, means for selectively energizing said circulating means and said heating means, motor driven timing means for actuating said last named selectively energizing means throughout a drying cycle of predetermined time including sequential

periods of one heat input with one air quantity and another heat input with another air quantity, humidity sensitive means responsive to the humidity of air leaving said drying chamber, and switch means responsive to said humidity sensitive means and in series electrical flow relationship with said timing motor for interrupting the progress of said drying cycle in accordance with the relative humidity of the air circulating from said drying chamber.

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