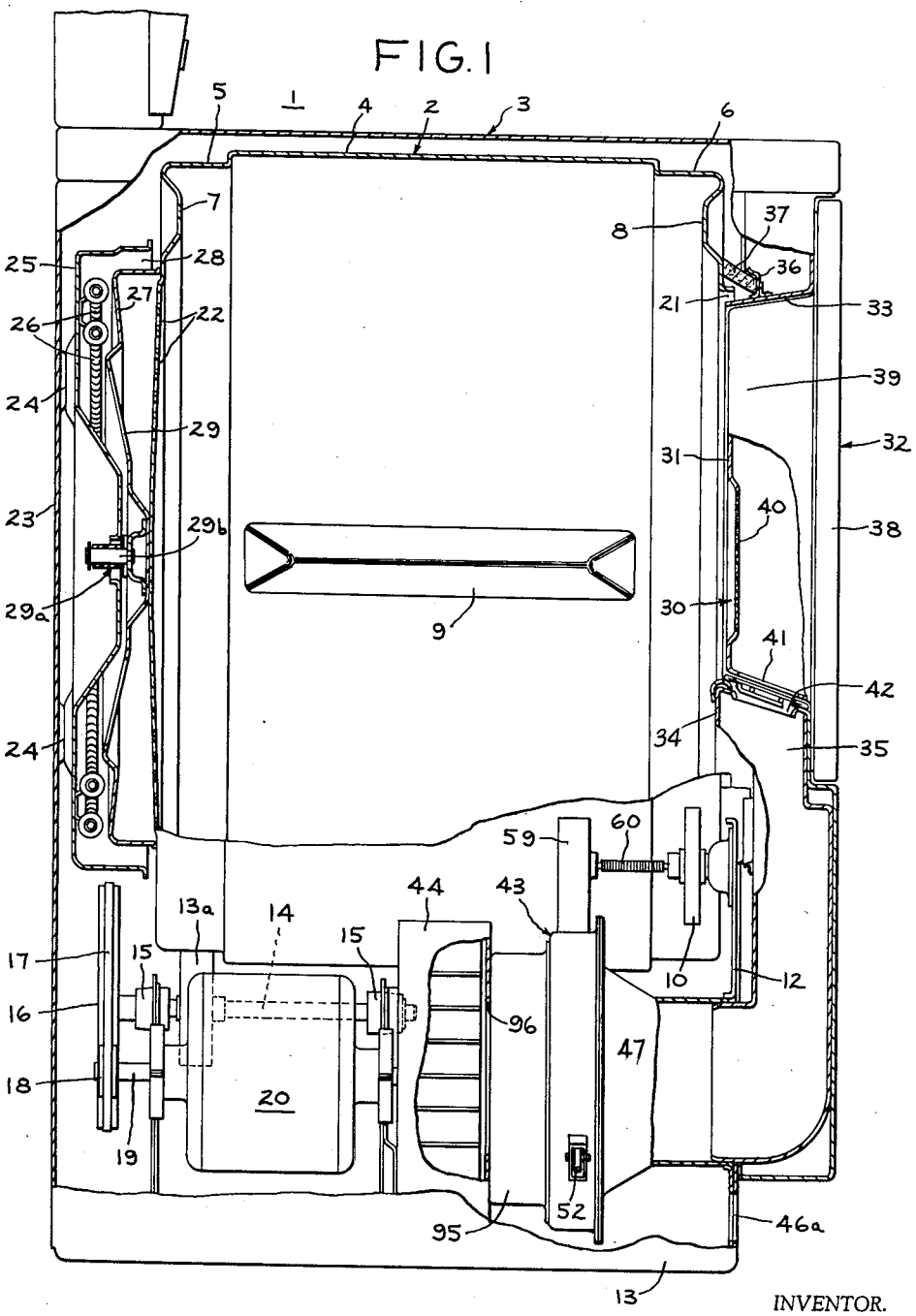
May 1, 1962 R. M. SASNETT 3,031,772

CLOTHES DRYING MACHINE

Filed Feb. 9, 1960

4 Sheets-Sheet 1

FIG. 1



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CLOTHES DRYING MACHINE

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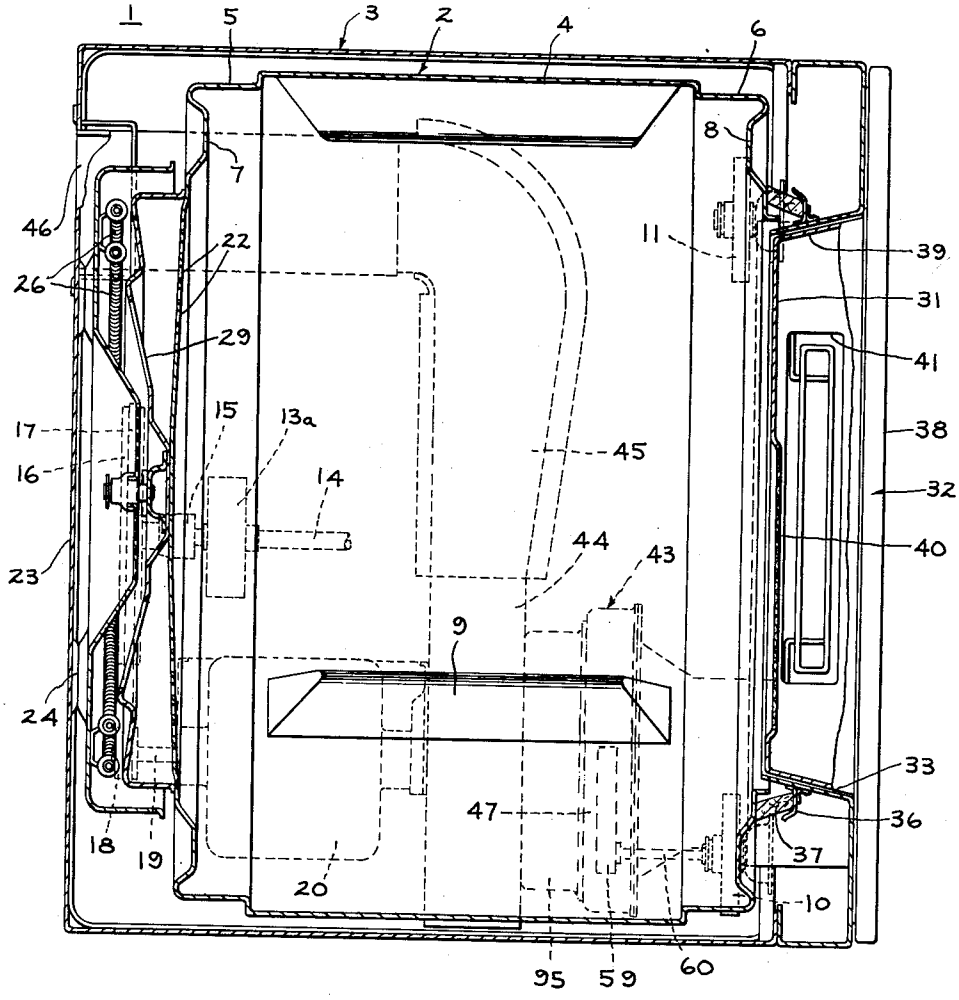


FIG. 2

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CLOTHES DRYING MACHINE

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FIG. 3

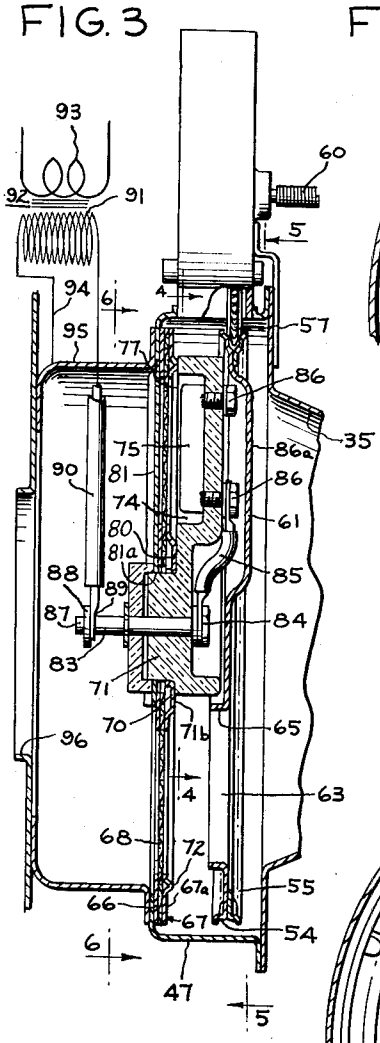


FIG. 4

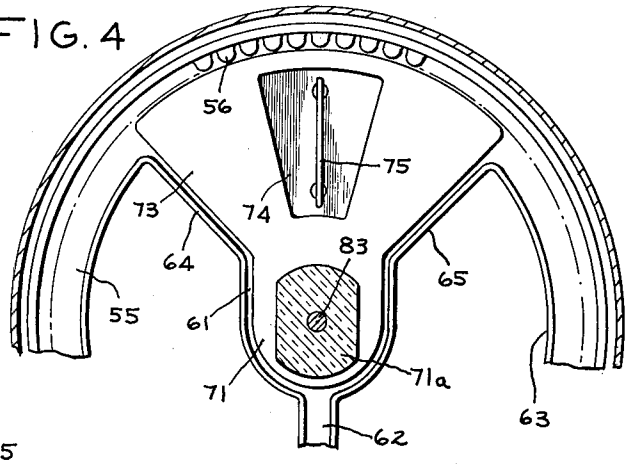
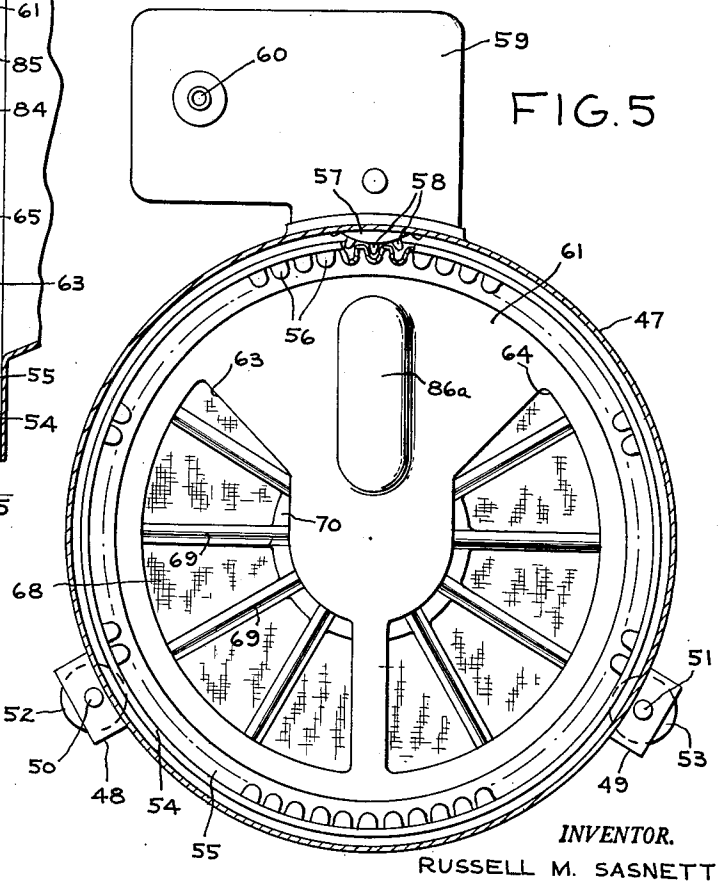


FIG. 5



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CLOTHES DRYING MACHINE

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FIG. 6

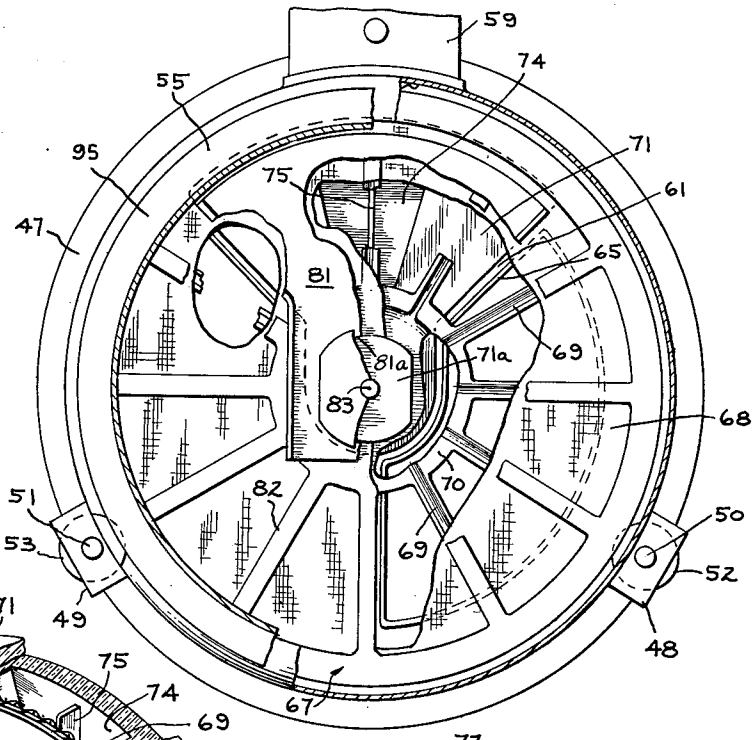


FIG. 8

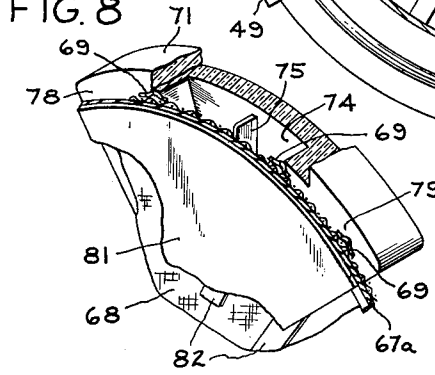


FIG. 7

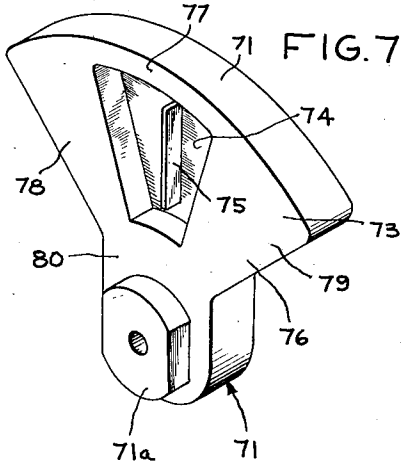
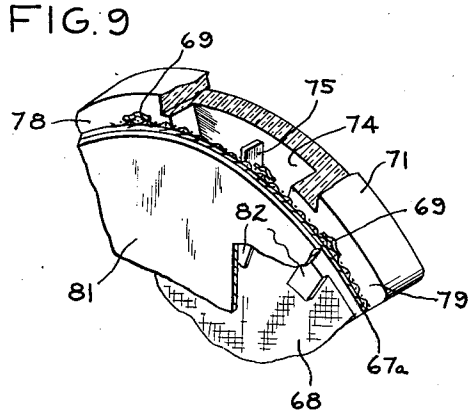


FIG. 9



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United States Patent Office 3,031,772 Patented May 1, 1962

3,031,772

CLOTHES DRYING MACHINE

Russell M. Sasnett, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Feb. 9, 1960, Ser. No. 7,558
12 Claims. (Cl. 34—82)

This invention relates to clothes drying machines, and more particularly to such machines which are provided with arrangements for automatically disposing of lint from the clothes without any attention or effort being required of the operator of the machine.

Most clothes drying machines now available are of the type wherein a forced draft of heated air is used to achieve vaporization of the moisture out of the clothes. This process tends to generate a substantial amount of lint which is carried away from the clothes with the draft of air and which somehow or other must be disposed of. The general approach toward disposal of the lint has been to provide suitable trap means for the lint, which is then cleaned by the machine operator at suitable intervals. However, various arrangements have also been proposed whereby the lint is automatically consumed, and thus requires no attention from the operator of the machine. In such arrangements, it is of prime importance that the consumption of the lint require as little additional energy as possible. One reason for this is that the more additional energy consumed the more the cost of running the machine; another and equally important reason is the fact that many electric dryers have power consumptions which already approach the limited capacity of the wiring in many homes, and any further power consumption in such cases must be subtracted from the power used directly for clothes drying purposes. It is, of course, a further prime consideration that where, as is contemplated, the lint is consumed by combustion, the space in which combustion takes place must be positively limited for safety's sake.

It is, therefore, an object of this invention to provide an improved clothes dryer wherein a lint consuming arrangement using very little energy is provided.

It is a further more specific object of this invention to provide an improved clothes dryer wherein the arrangement for consuming lint effects the desired purpose by heat, and the heat is provided by use of an electrical spark travelling between a first electrode and a lint catching screen which constitutes a second electrode.

Yet another more specific object of the invention is to achieve a reduction in the energy required for lint consumption and a positive limitation on the space boundaries of the combustion process by substantially enclosing the space in which the lint consumption takes place.

In carrying out the invention in one form thereof, I provide a clothes dryer with an appropriate container for the clothes through which a draft of warm air is provided. An exhaust duct arrangement is connected to the container, and in order to catch lint carried from the clothes into the exhaust duct I provide a screen member which is formed of conductive material extending across the duct so as to form a lint catching barrier. To consume the lint caught on the screen member, an electrode member is positioned adjacent the screen member and is connected to means for creating a potential drop between the members sufficiently high to cause passage of a spark between the members. I also provide means for moving one of the members relative to the other so as to bring different parts of the screen member adjacent to the electrode member. In this manner different parts of the screen member act as the other electrode and the spark travelling between the two electrodes provides enough heat to consume all lint on that part of the screen member which is adjacent to the electrode member at any given time.

In order to provide substantially complete separation of the combustion area from the draft of air being forced through the duct, I provide a housing assembly around the electrode member, and on the screen member I provide spaced raised members so positioned relative to the relative path of movement of the two members as to always insure a substantially enclosed combustion chamber about the electrode.

The subject matter which I regard as my invention is particularly pointed out and distinctly claimed in the concluding portion of this specification. However, my invention, both as to organization and method of operation together with further objects and advantages thereof, may best be understood by reference to the following description taken in conjunction with the accompanying drawings:

In the drawings, FIGURE 1 is a side elevational view of a clothes dryer incorporating my improved lint consumer, the view being partially broken away and partly sectionalized to illustrate details;

FIGURE 2 is a horizontal sectional view of the dryer of FIGURE 1, with the drum removed and with certain surfaces broken away and partly sectionalized to illustrate further details;

FIGURE 3 is an enlarged side elevational view, with certain surfaces broken away and partly sectionalized, of the lint consuming equipment incorporated in the machine of FIGURES 1 and 2;

FIGURE 4 is a view along line **4**—**4** in FIGURE 3;

FIGURE 5 is a view along line **5**—**5** in FIGURE 3;

FIGURE 6 is a view along line **6**—**6** in FIGURE 3;

FIGURE 7 is a view in perspective of the electrode housing assembly forming a part of the lint consuming apparatus of my invention;

FIGURE 8 is a fragmentary view in perspective showing the electrode housing assembly in a first relationship to the lint catching screen in my lint consuming invention; and

FIGURE 9 is a perspective view similar to FIGURE 8 showing the electrode housing assembly and the lint catching screen in a different relationship to each other.

Referring now to FIGURES 1 and 2, I have shown therein a domestic clothes dryer **1**, the dryer includes a clothes tumbling receptacle or drum **2** provided within a suitable outer casing or cabinet **3** which completely encloses it on all sides. The drum is mounted for rotation within the cabinet on a substantially horizontal axis, and is generally cylindrical in shape, having a first central outer wall portion **4**, second and third outer wall portions **5** and **6** located respectively adjacent the ends of the drum, a back wall **7**, and a front wall **8**. Outer wall sections **4**, **5** and **6** are imperforate over their entire lengths, so that the entire outer shell of the basket is imperforate; on the interior surface of central portion **4** there is provided a plurality of clothes tumbling ribs **9**.

The front of drum **2** is rotatably supported on the outer casing **3** by means of a pair of idler roller wheels **10** and **11** which are rotatably secured to the top of an upwardly extending member **12** fastened at its bottom to the base **13** of the machine (FIGURE 1). It will be observed that rollers **10** and **11** are disposed beneath the drum in contact with portion **6** thereof so that the drum is supported on the rollers and is free to rotate. The rear end of drum **2** receives its support from a roller wheel **13***a* which is positioned beneath portion **5** of the drum in supporting and frictionally driving engagement therewith. While there is obviously a wide choice of suitable materials for the driving engagement, one proven effective combination includes steel plate for the drum and relatively hard rubber (on the order of 60 durometer units of hardness) for the roller **13***a*.

Roller **13***a* is mounted on a shaft **14** supported in

bearings 15. At one end of shaft 14 is secured a pulley 16 driven from a belt 17 in turn powered by a pulley 18 mounted on the end of shaft 19 of an electric motor 20. The motor, pulleys and roller 13*a* are so proportioned to the drum and to each other that drum 2 is rotated by roller 13*a* at an appropriate relatively low speed to provide tumbling action for articles of clothing placed therein. It will be observed that with the driving arrangement described, the driving roller 13*a* provides the entire support for the rear end of drum 2 so that the force with which the drum presses down on it is a direct reflection of the weight of the clothes in the basket.

In order that a stream of drying air may be introduced into and passed through the clothes drum, the drum is provided with a central aperture 21 in its front wall 8 and with a plurality of perforations 22 extending in an annulus around its back wall 7. Rigidly secured to the rear wall 23 of cabinet 3 by any desired means such as, for instance, welding at suitable points 24, is a baffle shaped member 25 which has secured thereto heating elements 26 appropriately insulated from the baffle member. Heating elements 26 may be annular in shape so as to be generally coextensive with perforations 22 in drum 2. A second baffle member 27 is rigidly secured to the back wall 7 of the drum outside the ring of perforations 22 and within the stationary baffle 25 so that an annular air inlet 28 is in effect formed by the two baffles 25 and 27. Baffle 27 is further provided with an annular series of openings 29. In this manner the baffles form inlet duct means, and a passage is provided for air to enter annular inlet 28 between the baffles, pass over the heating elements 26 thereby to be warmed, through openings 29, and then through perforations 22 into the interior of drum member 2.

In order to secure drum 2 so that it is supported by the idler members 10, 11 and 13*a* without any undue horizontal motion but with a reasonably limited and permissible amount of vertical motion, a suitable thrust bearing arrangement, such as that generally indicated at 29*a*, is provided in baffle member 25 to receive a stub shaft 29*b* secured to baffle member 27. The bearing arrangement 29*a* permits the entire weight of the drum 2 and its contents to be taken up by the roller members while at the same time preventing any tendency toward displacement of the drum in any horizontal direction. The construction including bearing arrangement 29*a* is described in full detail and is claimed in copending application Serial No. 789,869, filed January 29, 1959, now Patent 3,009,259 by William F. Simpson and assigned to General Electric Company, assignee of the present invention.

The front opening 21 of the drum is substantially closed by means of a stationary bulkhead generally indicated by the numeral 30. Bulkhead 30 is made up of a number of adjacent members including the inner surface 31 of an access door 32 mounted on the dryer cabinet, a stationary frame 33 for the door, the inner surface 34 of an exhaust duct 35 leading from the drum, and an annular flange 36 mounted on the frame 33 and on the duct wall. It will be noted that a suitable clearance is provided between the inner edge of the drum opening 21 and the edge of bulkhead 30 so that there is no rubbing between the drum and the bulkhead during rotation of the drum. In order to prevent any substantial air leakage through opening 21 between the interior and the exterior of the drum a suitable ring seal 37, preferably formed of felt-like material, is secured to flange 36 in sealing relationship with the exterior surface of drum wall 8.

Front opening 21, in addition to serving as part of the air flow path through the drum, also serves as a means whereby clothes may be loaded into and unloaded from the tub. The door 32, whose inner surface forms part of the bulkhead 30 closing the opening, is mounted on cabinet 3 and when the door is opened the clothes may be inserted into or removed from the drum through the door frame 33. It will be noted that the door includes an outer imperforate section 38 and an inwardly extending hollow section 39 mounted on the flat outer section. Hollow section 39 extends into the door frame 33 when the door is closed, and the door surface 31 which comprises part of the combination bulkhead 30 is actually the inner wall of this hollow section. The air outlet from the basket is provided by a perforated opening 40 formed in the inner wall 31 of hollow door section 39. The bottom wall of the door section 39 and the adjacent wall of door frame 33 are provided with aligned openings 41 and 42, with opening 42 providing the entrance to duct 35.

Duct 35 leads to a lint consuming assembly 43 which comprises the essence of my invention and which will be described in detail hereafter. From the lint consumer 43, the air flow passes through a centrifugal blower 44 mounted on the motor shaft and thus driven by motor 20. The outlet of blower 44 communicates with an outlet duct 45 which extends to an opening 46 in the rear wall 23 of cabinet 3. Thus, ducts 35 and 45 and blower 44 together form exhaust duct means carrying air from the container out to atmosphere. During operation of motor 20, the rotation of blower 44 causes air to be drawn into cabinet 3 through suitable openings, such as, for instance, opening 46*a* to atmosphere, through annular opening 28 over heaters 26, through openings 29 and perforations 22 into drum 2, across the drum, through perforated opening 40 and aligned openings 41 and 42 into duct 35, and then through lint consumer 43 into blower 44, through outlet duct 45 and opening 46 to atmosphere.

As stated above, when the air passes through drum 2 during rotation of the drum, the combination of the tumbling action of the clothes and the movement of the air evolves a substantial amount of lint, the amount varying somewhat with the type of clothes being dried. In order to completely remove the burden of disposing of the lint from the operator with only an exceedingly small increase in the power consumption of the dryer, the lint consuming arrangement 43 is provided within the exhaust means made up of the duct 35, blower 44, and duct 45.

Referring now to FIGURES 3, 4 and 5 of the drawings together with FIGURES 1 and 2, it will be observed that the lint consumer 43 includes an outer casing 47 which communicates with the duct 35 as shown in FIGURE 3. As shown in FIGURE 5, a pair of roller supports 48 and 49 are supported by the casing 47 and in turn support pins 50 and 51 on which rollers 52 and 53 are rotatably mounted. The rollers ride in a peripheral groove 54 formed in a substantially annular member 55. Thus, with the rollers 52 and 53 below the annular member (as shown in FIGURE 5) the rollers support the annular member. Equally spaced indentations 56 are provided in the base of groove 54 all around member 55. A driving wheel 57 is provided with teeth 58 which are formed to mesh with the indentations 56 so that, when wheel 57 rotates, engagement of teeth 58 in indentations 56 causes rotation of the annular member 55 on rollers 52 and 53.

Wheel 57 is contained in a housing 59 secured to casing 47. The housing contains a gear reduction assembly with the input being provided through a flexible spring shaft 60 driven by idler roller 10 (FIGURE 1). The particular type of speed reduction is, of course, not pertinent to this invention and any conventional speed reduction may be employed which provides a suitable slow speed of rotation of wheel 57.

Referring now to FIGURE 4, it will be seen that annular member 55 includes an inwardly extending section 61 which may be strengthened by being joined by an arm 62 to the other side of the member 55 so that there are two open portions 63 and 64 in the member 55. Along the entire periphery of each of the openings 62 and 63 member 55 is provided with a flange 65.

Secured by any suitable means, such as welding, to

an inwardly turned flange 66 of casing 47 is a member 67 having an outer annular portion 67*a* with a U-shaped cross section forming a clamp within which is secured a screen member 68.

The screen member is formed of fine wire of electrically conductive material in the conventional manner. The outer part 67*a* of member 67 is joined on the upstream side of screen 68 by equally spaced raised imperforate radially extending members 69 to an inner hub portion 70 within which is rotatably mounted portion 71*a* of a member 71 formed (for purposes which will be explained hereafter) of a suitable rigid insulating material. Hub portion 70 has an annular section 71*b* raised to the same extent as members 69 and joining them at their inner ends, and the outer portion 67 also has a raised ring section 72 joining members 69 at their outer ends. In this manner, with the inner hub portion 71*b* and the outer raised portion 72, each two adjacent raised members 69 enclose a section of the screen 68. It will be observed that the hub section 70 is also circular so that in addition to forming a supporting bearing for member 71 it also secures the inner part of screen 68.

Besides its portion 71*a* which is rotatably supported within hub 70, the member 71 includes a somewhat fan shaped section 73 which has formed in it a combustion chamber or recess 74 containing an electrode member 75. Electrode 75 is preferably elongated and positioned substantially radial to the center of rotation of rotatably held portion 71*a* of member 71. The surface 76 of section 73 which faces toward the screen member 68 is flat so that when there is relative movement between the screen member and member 71 by virtue of rotation of member 71 relative to screen 68 the raised portions 69, 71*b* and 72 will rub over the surface 76. It will further be observed (viewing, in particular, FIGURE 7) that surface 76 may be divided into four portions, an outer portion 77, side portions 78 and 79, and an inner portion 80. As can best be seen in FIGURE 3, inner portion 80 is always in rubbing contact with the raised hub portion 71*b* of member 67. In the same fashion, portion 77 of surface 76 is always in rubbing contact with the raised ring 72 formed on the outer part 67*a* of member 67. Each of the two sides 78 and 79 of surface 76 is of a sufficient width relative to the spacing of members 69 that, as the screen 68 and member 71 rotate relative to each other with screen 68 and surface 76 in parallel planes, there will always be at least one member 69 rubbing over each of the surfaces 78 and 79.

This can best be explained by reference to FIGURES 8 and 9 which show the screen 68 and member 71 in two different positions of relative rotation to each other. In FIGURE 8, it will be seen that two of the members 69 are in contact with surface 79, one at the very inner edge adjacent combustion chamber 74 and the other near the outer edge of the member 71. In other words, before the first mentioned of these two members 69 passes by surface 79 in front of chamber 74, the second of the two members 69 has moved into rubbing relationship with the surface 79. This latter condition can be seen by reference to FIGURE 9. It will thus be seen that the combustion chamber 74 is always fully enclosed on the upstream side of screen 68 by virtue of two of the members 69, the raised hub portion 71*b*, and the raised ring 72.

As stated, referring again to FIGURE 4, member 61 has flanges 65 formed extending therefrom. It can be seen from FIGURE 3 that, when the member 55 is moved, one of the flanges 65 will engage the side of member 71. Since the member 71 is rotatably mounted as previously described, rotation of the member 55 by the engagement of teeth 58 in recesses 56 will cause the member 71 to be rotated therewith. The rotation of wheel 57 with teeth 58 is relatively slow because of the gear reduction 59 and therefore the rotation of member 55 is even slower. With member 55 having its flange 65 engaging member 71 and carrying that member around with it, there is thereby obtained a slow rotation of the member 71.

It will be observed that portion 71*a* of member 71 has two flats formed thereon on opposite sides. A flat member 81 formed of insulating material has an opening 81*a* formed therein which mates with the portion 71*a* on the downstream side of screen 68 so that when member 71 rotates member 81 is carried with it. Member 81 preferably has a fan-like shape similar to that of portion 73 of member 71. A number of imperforate spoke members 82, each preferably positioned directly behind one of the spokes 69, join outer part 67*a* of member 67 to hub 70 on the downstream side of screen 68. The engagement of member 81 with spokes 82 is similar to that of member 71 with spokes 69: as relative rotation of the member 71 and the screen 68 occurs, the flat member 81 rubs over spokes 82 so as to complete the enclosure of the combustion chamber 74.

Secured so as to extend axially through the center of member 71 is an electrically conductive member 83 (FIGURE 3) which is connected at its end 84 to a conductor 85. Conductor 85 in turn is connected to one of two metallic fastening member 86 which are used to secure electrode 75 within chamber 74 of portion 73 of member 71; in this connection, it will be noted that a portion of member 55 may be indented, as shown at 86*a*, to ensure that there will be no electrical contact between member 55 and members 86. At its other end 87, member 84 has a portion 88 in sliding electrical engagement with the end 89 of a conductor 90. It will readily be recognized that the conductor 90 may be rigidly mounted by any suitable means (not shown) so that the end 89 thereof remains in sliding engagement against portion 88 of member 84. This permits transmission of electric current from the stationary conductor to the rotating parts. As shown schematically, conductor 90 connects with one side of the secondary coil 91 of a high voltage transformer generally indicated by the numeral 92. Such transformers typically have a primary winding 93 of relatively few turns of heavy wire connected across a conventional source of power such as the 110 volt alternating current generally available, and a secondary winding 91 formed of a large number of turns of fine wire. The other end of secondary winding 91 is connected by a conductor 94 to ground which, in this case, is shown as constituting an engagement with the casing member 95 which connects casing 47 to the entrance 96 of the blower assembly 44.

When the conventional source of power is connected across primary winding 93 a very high voltage, which may be on the order of 8,000 to 10,000 volts, is provided across conductors 94 and 90. Since conductor 94 is at ground, this puts conductor 90 at a relatively high potential which is transmitted through the conductive member 83 and conductor 85 to electrode 75. There is thus a high potential difference between the electrode 75 at such a time and the adjacent portion of screen 68 which, of course, is connected to ground since it can readily be seen that it is secured through metallic members to the member 95 which in this case is considered to constitute ground. As a result, a high intensity spark passes between the electrode 75 and the adjacent portion of screen 68. It has been found that with an elongated electrode 75 such as that shown, this spark tends to travel up and down along the electrode seeking out the path of least resistance through the air. This generally occurs where lint from clothes has been caught on the adjacent part of screen 68 because the lint constitutes an easier path for the spark than air. The spark then travels through the line and by virtue of its high temperature consumes the lint entirely, reducing it to very fine ashes which then pass through the screen and are carried away through the exhaust duct.

Because there is exceedingly little current involved in

the use of the transformer 92, the production of the high voltage spark requires very little power, generally on the order of perhaps fifteen watts. Thus, with only thirty watts, not only is a high temperature source provided adjacent a portion of the screen for consuming the lint on that adjacent portion of the screen but, in addition, this source will have an inherent tendency to travel about tending to seek out lint to be consumed rather than merely remaining fixed in one spot.

A brief description of the operation of the construction thus far described will provide a full understanding of the advantages of my invention. During operation of the machine the motor 20 causes, through roller 13*a*, relatively slow rotation of drum 2 and a high speed rotation of the blower 44. Also, in the conventional manner, the heaters 26 are energized during at least part of the time that the drum 2 is rotated. The rotation of drum 2 serves to tumble the clothes in the desired manner while the rotation of blower 44 serves to pull air into opening 46*a*, then through the opening 28 between baffles 25 and 27, over heaters 26, through openings 29 and perforations 22, substantially axially through drum 2, then in through the opening 40 in panel 31 of the door 32, down through openings 41 and 42, through duct 35 and the lint consumer 43, then through the blower itself to the exhaust duct 45 and the exhaust outlet 46. When the air passes over the heaters 26 it is heated so that the air passing through the drum is at a relatively high temperature. Thus, hot air contacts the tumbling clothes to effect drying in the conventional manner.

As described, a substantial amount of lint is often entrained with the air after it passes from the clothes into the exhaust system. Substantially all of this lint is then caught on the screen 68 so as to prevent passage of excess quantities of lint through the blower 44 and, especially, from the outlet 46.

As the drum rotates it causes rotation of the idler rollers 10 and 11 which support it. Rotation of roller 10 causes, by its connection through flexible shaft 60, a low speed rotation of the wheel 57. As described, this in turn causes a very low speed rotation of the annular member 55 and thus, by engagement of flange 65 with the side thereof, of member 71, which may be on the order of four revolutions per hour during this time. It is to be understood that a conventional control system (not shown) may, in addition to its usual functions, be utilized to energize the transformer 92 so as to provide the aforementioned high voltage drop across conductors 90 and 94 to create a spark passing between the electrode 75 and the screen 68. Thus, during the operation of the machine, the spark is continually passing between the electrode and the screen so as to consume all lint which is on that portion of the screen facing the combustion chamber 74 at any given time. The slow rotation of member 71 causes the combustion chamber 74 and the electrode 75 to continually sweep around the screen so that substantially each portion of the screen, in the course of a full revolution of member 71, is exposed to the combustion chamber (and thus consumption of the lint).

The shape of member 71 and the cooperation with spokes 69, ring 72 and raised hub portion 71*b* causes substantially complete enclosure of the combustion chamber on the upstream side. This is of high importance in causing the combustion area to be substantially enclosed and to prevent any spread of the combustion area which could occur by virtue of the substantial quantities of lint being carried by the warm air after it is passed over the clothes. With my construction, the combustion area is completely enclosed on the upstream side, and this is true regardless of the position of member 71 at any given time because of the relationship of spokes 69 to the surface 76 of member 71. In addition the structure effects the dissipation of heat from combustion chamber 74 so that there is no concentration of heat except within the chamber.

The back plate 81 further enhances this enclosure of the combustion chamber. However, the primary purpose of the back plate is, rather, to effect complete enclosure of the combustion chamber from the rear of the screen 68 so that drafts of air whipping around from the back of the screen will not have ready access to the combustion chamber and thus will not be able to blow out the spark passing between the electrode 75 and the screen 68. It will be recognized that this permits the use of less power to be consumed by transformer 92, but it will further be understood that if sufficient power is provided to cause a spark to pass despite the presence of some mall drafts of air within the combustion chamber the back plate 81 may be smaller or possibly omitted entirely.

The consumption of the lint continues as long as the operation of the machine proceeds. While lint will tend to accumulate to some small extent on those portions of the screen which are not adjacent the combustion chamber, the build-up of lint is small enough with every known type of clothes load so that for a rotational rate of four revolutions per hour of the member 71 each portion of the screen will come into adjacency with the electrode 75 often enough so that, with virtually no smoke whatsoever, the lint is taken care of without any effort or awareness being required of the operator.

Where the very small amount of smoke may present a problem, such as where venting to the interior of a building is concerned, suitable catalyst materials such as platinum may be used in very small quantities on the screen. It is well known that provision of materials of this type causes substantially all odor and smoke to be removed and the combustion to be substantially complete so that no inconvenience whatsoever is suffered as a result of the exhausting of the products of combustion.

It will be seen from the foregoing that I provide a new and improved type of lint consumer for a domestic clothes drying machine wherein even less power than in previous types of structures is required, and wherein the particular construction provides complete safety insofar as limitation of the area of lint consumption is concerned, without any possibility that the burning of the lint will extend outside the desired boundaries.

While in accordance with the patent statutes I have shown what at present is considered to be the preferred embodiment of my invention, it will be obvious to those skilled in the art that various changes and modifications may be made without departing from the invention, and I therefore aim to cover in the appended claims all such equivalent variations as fall within the true spirit and scope of the invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A clothes dryer comprising: a clothes container; means for providing a draft of warm air through said container; exhaust duct means for the air connected to said container; and low energy means for consuming lint carried from the clothes into said exhaust duct means comprising a screen member formed of electrically conductive material extending across said duct means to form a lint catching barrier thereacross, an electrode member positioned adjacent and upstream of said screen member, means for creating a potential drop between said members sufficiently high to cause passage of a spark between said members, and means moving one of said members relative to the other so as to bring substantially all the different parts of said screen member adjacent said electrode member.

2. The apparatus defined in claim 1 wherein the moving one of said members has a circular motion relative to the other thereof in a plane parallel thereto.

3. The apparatus defined in claim 2 wherein said electrode member is the moving member.

4. The apparatus defined in claim 1 wherein said electrode member is formed as an elongated member having

its lengthwise dimension in a plane substantially parallel to said screen member.

5. A clothes dryer comprising: a clothes container; means for providing a draft of warm air through said container; exhaust duct means for the air connected to said container; and low energy means for consuming lint carried from the clothes into said exhaust duct means comprising a screen member formed of conductive material extending across said duct means to form a lint catching barrier thereacross, an electrode member positioned adjacent and upstream of said screen member, means for creating a potential drop between said members sufficiently high to cause passage of a spark between said members thereby to effect combustion of lint caught on said screen member adjacent said electrode member, means moving one of said members relative to the other so as to bring substantially all the different parts of said screen member adjacent said electrode member, and means forming a combustion chamber comprising a housing assembly for said electrode member having a recess facing said screen member, said electrode member being secured within said recess whereby said combustion chamber cooperates at all times with said screen member to substantially enclose said electrode thereby to limit the space in which combustion takes place, said housing assembly being formed of insulating material.

6. The apparatus defined in claim 5 including a closure member secured to said housing assembly on the downstream side of and adjacent said screen member and formed so as to be at least coextensive with said combustion chamber thereby to substantially complete the enclosure of said combustion chamber.

7. A clothes dryer comprising: a clothes container; means for providing a draft of warm air through said container; exhaust duct means for the air connected to said container; and low energy means for consuming lint carried from the clothes into said exhaust duct means comprising a stationary screen member formed of electrically conductive material extending across said duct means to form a lint catching barrier thereacross, a movable electrode member positioned adjacent and upstream of said screen member, means for creating a potential drop between said members sufficiently high to cause passage of a spark between said members, and means moving said electrode member in a circular path around the surface of said screen member so as to bring substantially all the different parts of said screen member adjacent said electrode member, said electrode member being formed as an elongated member substantially parallel to the plane of said screen member and substantially radial to the circle of rotation of said electrode member.

8. A clothes dryer comprising: a clothes container; means for providing a draft of warm air through said container; exhaust duct means for the air connected to said container; and low energy means for consuming lint carried from the clothes into said exhaust duct means comprising a stationary screen member formed of electrically conductive material extending across said duct means to form a lint catching barrier thereacross; a housing assembly of insulating material having a recess formed therein movably positioned adjacent and upstream of said screen member so that said recess faces said screen member, an electrode member secured within said recess, means for creating a potential drop between said members sufficiently high to cause passage of a spark between said members, means moving said housing assembly in a circular path relative to said screen member so as to bring said electrode member adjacent substantially all the different parts of said screen member, a plurality of radial spokes secured on the upstream side of said screen member, said housing assembly having a substantially flat surface and being positioned to have said surface in rubbing engagement with at least one of said spokes on each side of said recess at all times during its rotation.

9. The apparatus defined in claim 8 wherein said housing assembly includes a hub portion extending through the center of said screen member to the downstream side thereof, and a closure member secured to said hub portion on the downstream side of said screen member, said closure member being at least coextensive with said recess.

10. A clothes dryer comprising: a clothes container; means for providing a draft of warm air through said container; exhaust duct means for the air connected to said container; and low energy means for consuming lint carried from the clothes into said exhaust duct means comprising a substantially flat screen member extending across said duct means to form a lint catching barrier thereacross; a source of heat positioned adjacent and upstream of the surface of said screen member, a plurality of elongated joined imperforate members secured on the upstream surface of said screen member, a housing assembly secured to said source and forming a combustion chamber therearound, said assembly enclosing said source on all sides except on the side thereof adjacent said screen member and being open on that side, means effecting relative motion in a predetermined path between said screen member and said source so as to bring different parts of said screen member surface adjacent said source, some of said imperforate members being equally spaced in said path, said assembly having flat surfaces formed on the sides of said combustion chamber facing said screen member, said flat surfaces being substantially parallel to said screen member and moving relative to said equally spaced members thereover in rubbing relation thereto, the dimension of each said flat surface in the direction of said path being at least equal to the distance between each two adjacent ones of said equally spaced members.

11. The apparatus defined in claim 10 wherein said equally spaced members are formed as radially extending spokes, and said means for effecting relative motion between said screen member and said source moves one of said screen member and said source in a circle about the center point of said radially extending spokes.

12. The apparatus defined in claim 11 wherein said means effecting relative motion moves said source of heat.

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