

Sept. 30, 1952

A. L. REITER ET AL

2,611,976

DRIER

Filed Jan. 8, 1947

4 Sheets-Sheet 1

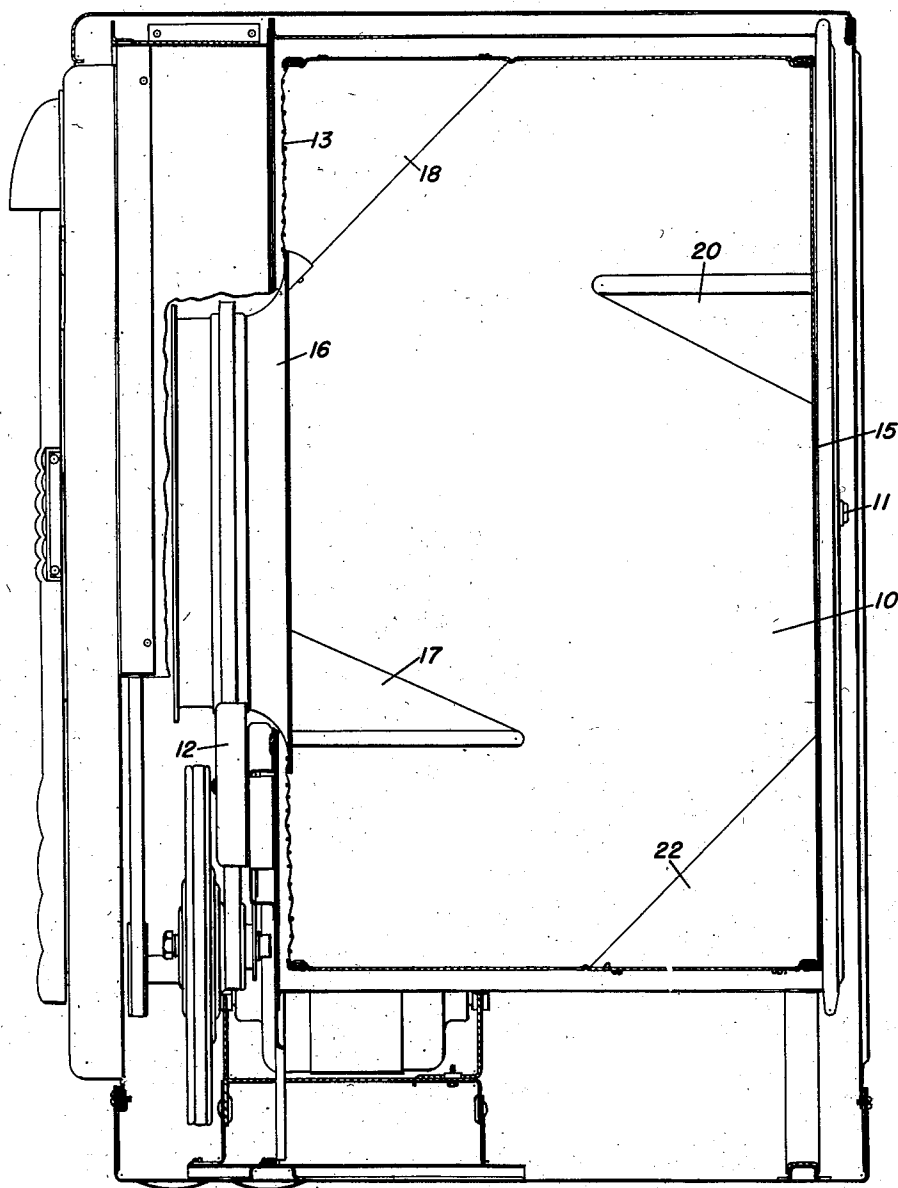


FIG. 1

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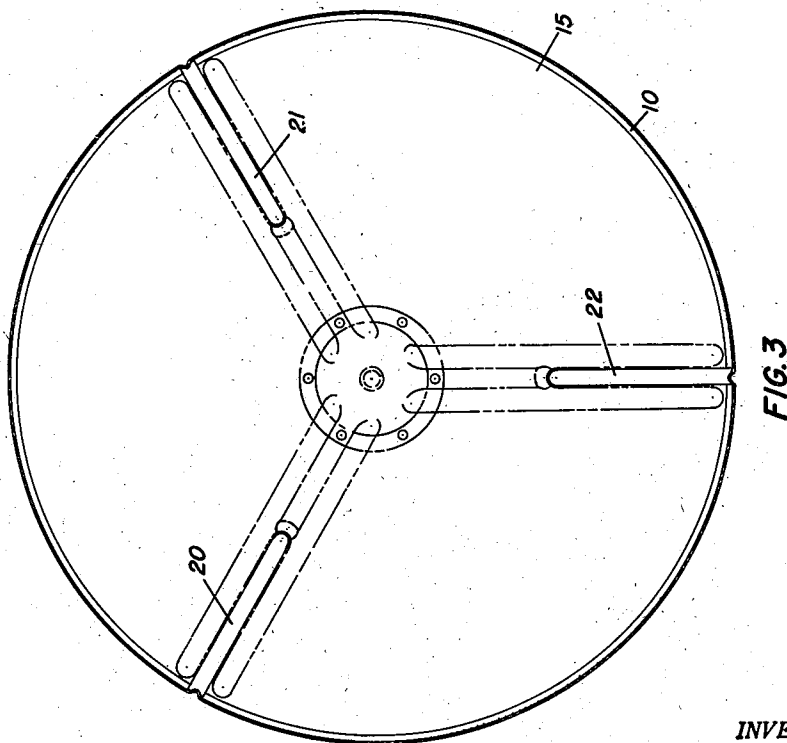
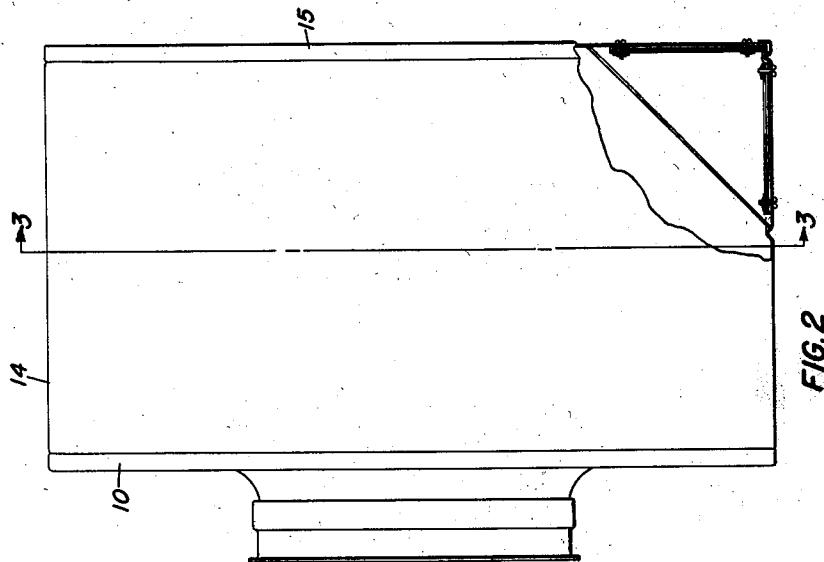
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4 Sheets-Sheet 2



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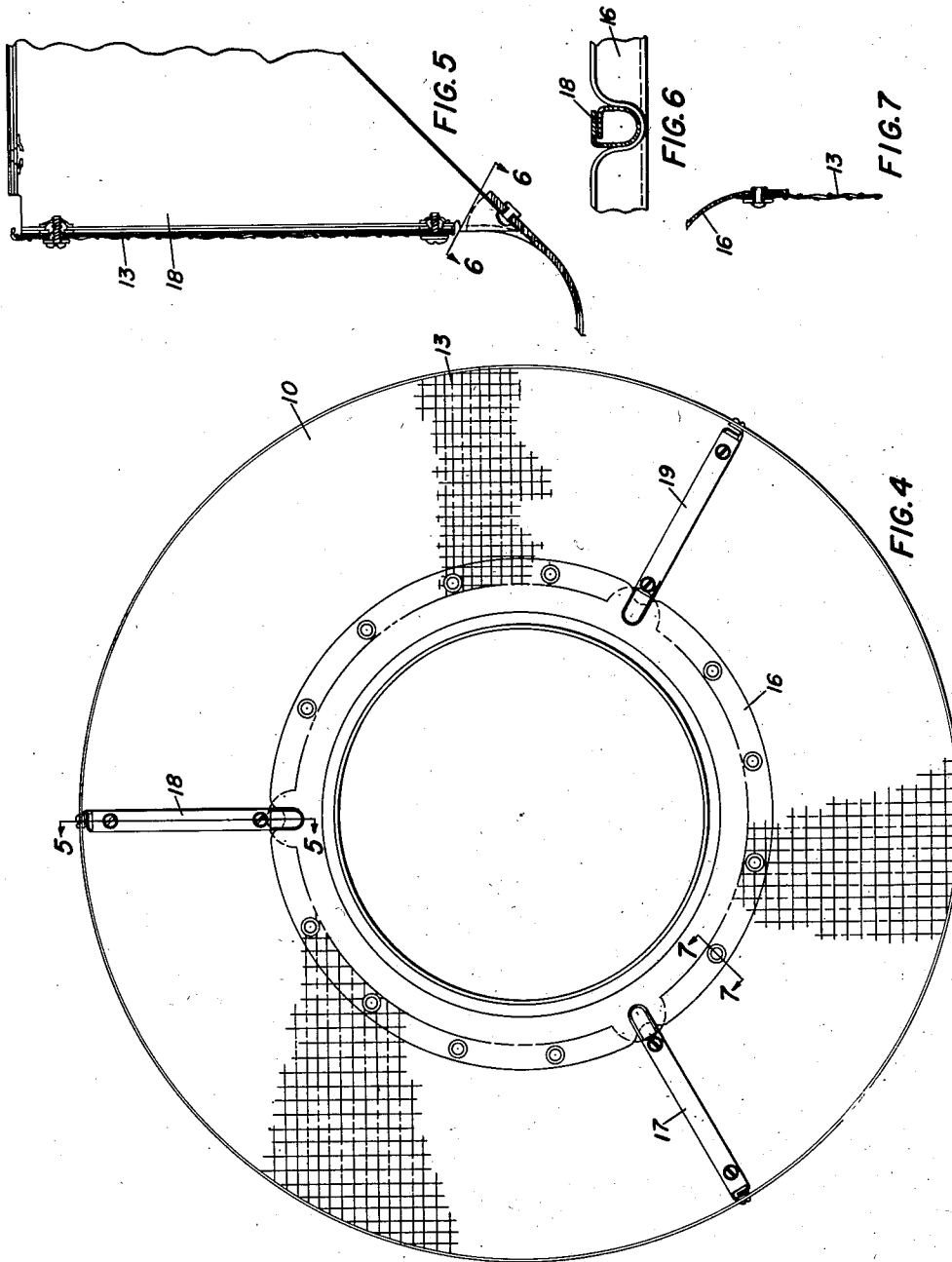
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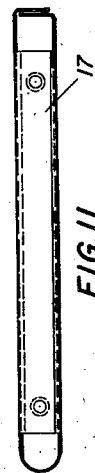
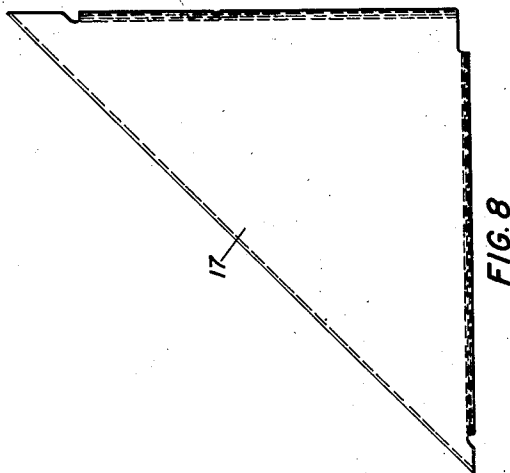
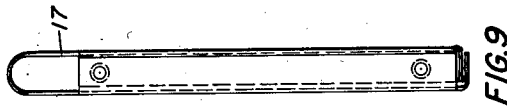
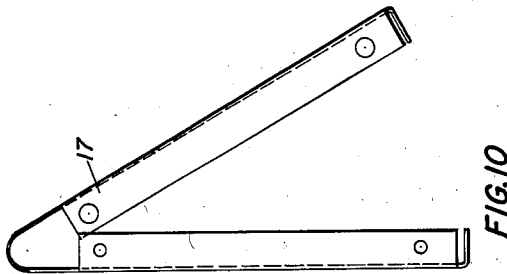
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Filed Jan. 8, 1947

4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE

2,611,976

DRIER

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Application January 8, 1947, Serial No. 720,818

5 Claims. (Cl. 34—139)

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This invention relates to clothes dryers having a horizontally positioned cylinder designed to tumble clothes for drying.

It is a primary object to provide a cylinder for a tumbler dryer having an annular front wall of large mesh screen or other open material capable of allowing air to move into and out of the cylinder with minimum obstruction while supporting the cylinder at its front side on a central flanged opening by means of a plurality of generally triangular shaped baffles extending from the wall of the cylinder to the central flanged opening, thus producing a satisfactory structure without relying on the screened front wall for major support.

It is a further object to provide a novel arrangement of the baffles inside the cylinder and located in the corners of the cylinder adjacent the end walls which will permit a greater use of a maximum diameter of the cylinder for tumbling and allow greater portions of the clothes to be dried to fall to the outside wall of the cylinder.

Still another object is to provide a staggered arrangement of baffles inside the cylinder which will produce tumbling of the contained clothes from front to back as well as across the cylinder thereby to expose surfaces of said clothes to drying air currents in said cylinder and to constantly vary the position of said clothes in said drum.

The above and other objects of the invention will appear more fully from the following more detailed description and by reference to the accompanying drawings forming a part hereof and wherein:

Figure 1 is a side view of a dryer partly in section showing the interior of the cylinder constructed according to the present invention.

Figure 2 is a side view of the cylinder one corner thereof broken away to show the construction of the baffles.

Figure 3 is a section through the central portion of the cylinder on line 3—3 of Figure 2 looking through the back face of the cylinder showing the three baffles in that portion of the cylinder.

Figure 4 is a front view of the cylinder showing the three baffles and the connection of the baffles to the central flanged member and also showing the screened front wall.

Figure 5 is a section on the line 5—5 of Figure 4 through one of the baffles.

Figure 6 is a section on the line 6—6 of Figure 5.

Figure 7 is a section on the line 7—7 of Figure 4.

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Figure 8 is a side view of a triangular baffle before assembly to the cylinder.

Figure 9 is an end view of the baffle shown in Figure 8.

Figure 10 is an end view of the baffle before it is completely bent into the form shown in Figure 8.

Figure 11 is a bottom view of the baffle shown in Figure 8.

Referring to the drawing, Figure 1 shows a cylinder 10 mounted for rotation on a horizontal axis. This cylinder is supported at its back wall 15 by a single bearing 11 and at the front on rollers 12. The general arrangement is in accordance with co-pending application Serial No. 649,011 in the name of Arthur R. Constantine, filed February 20, 1946. In that application mechanism is disclosed for circulating air into and out of a rotatable clothes tumbling cylinder by inlet and outlet through the front wall of a cylinder corresponding to but differing in structure from the cylinder 10 herein described. The cylinder 10 herein disclosed is made up of a cylindrical outer drum portion 14, a circular back wall 15, and a front wall 13 which is constructed of large mesh screen or other open material capable of allowing air to pass through it with little resistance. The screened front wall 13 forms no substantial part of the supporting structure of the cylinder as the cylinder is primarily supported by other structure. A tubular flanged member 16, which serves as a pulley for driving the cylinder as well as forming a central opening in the cylinder for the insertion and removal of clothes, is supported from the cylindrical outer drum portion 14 of the cylinder by three triangular shaped baffle members shown in Figure 4 as numbers 17, 18 and 19. Each triangular shaped baffle is formed by bending a single square sheet of metal along a line which is a diagonal of the square as shown in Figures 8, 9, 10 and 11, thus giving the baffle substantial strength as well as eliminating any rough edges or corners in positions such that might tend to wear or fray the clothing to be dried. Each of the baffles (see baffle 18, Figure 1) form a right triangle with one leg adjacent to the right angle of the triangle extending horizontally from a point slightly short of the center of the drum portion 14 to the front wall 13, the other leg adjacent to the right angle extends vertically from the front edge of the drum portion 14 to the bent out portion of the tubular flanged member 16 to which said baffle 18 is connected as shown in Figures 5 and 6. The hypotenuse of the triangle extends diagonally across the front of the cylinder forming a sur-

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face for lifting the clothes. The triangular baffle thus formed gives complete support to the tubular flanged member 16 without relying on the front wall 13 which, since it is composed of screening is incapable of affording the necessary support. The triangular baffles 17, 18 and 19 (Figure 4) just described are three in number and are 120 degrees apart, that is equally spaced about the circumference of the cylinder 10. At the rear of the cylinder are three additional baffles 20, 21 and 22 (Figure 3), which are identical with those in front, and which are also equally spaced about the circumference of the cylinder, but which are 60 degrees from the baffles 17, 18 and 19. In other words, the baffles in the front drum are between baffles in the rear of the drum in so-called staggered relationship.

To put the dryer in operation, clothes or other fabric materials are inserted in the cylinder 10 through the opening formed by the tubular flanged member 16. When the cylinder is put in rotation by suitable drive mechanism, the clothing is tumbled in the cylinder, the baffles lifting it to the top of the rotating cylinder where it is free to fall or tumble to the bottom. By this agitation the various surfaces of the clothes are exposed to the heated air currents inside the cylinder which may be supplied by structure disclosed in the aforementioned co-pending application or by other means, and the fact that the exposed surfaces are constantly changing position as the cylinder rotates is advantageous and tends to improve uniformity of drying. The staggered arrangement of the baffles plus the fact that they taper down toward the center of the cylinder presents a maximum surface available at the circumference of the cylinder, and this space is utilized to the fullest extent when the cylinder is rotated and more of the clothes are thus enabled to fall to the outside wall of the cylinder than would be possible with baffles extending completely across the cylinder. Since the clothes are more nearly evenly distributed around the circumference of the drum, better circulation of the heated air through the spaces between the clothing is made possible. Another beneficial effect of the staggered arrangement of the baffles is to cause the clothes to crisscross as they rotate inside the cylinder. And in addition there is utilization of a greater portion of the cylinder by permitting the clothes to tumble to a certain degree in a lateral direction, and this crisscrossing also acts to prevent the clothes from being knotted or twisted.

While the baffles and the arrangement therefor as set forth above have been described in connection with a particular clothes drying machine, it is adaptable for use with other dryers of the same general type, and it is not intended to limit the scope of this invention by the description or otherwise than by the terms of the appended claims.

We claim:

1. In a clothes drying apparatus having a rotatable cylinder mounted on a substantially horizontal axis, said cylinder having a cylindrical member forming an outer wall of said cylinder, a circular back wall, a front wall with openings therein capable of allowing air to move into and out of said cylinder, a tubular flanged member forming a central opening in said front wall of said cylinder, a plurality of baffles substantially in the shape of a right angle triangle with one side adjacent the right angle of each baffle secured to said outer wall of said cylinder and with

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the other side of said baffle adjacent said right angle secured to said central tubular flanged member and the side forming the hypotenuse of said triangle extending longitudinally across the interior of said cylinder, and said baffles affording said central tubular member and said front wall of said cylinder structural support as well as serving to agitate articles to be carried in said cylinder in such a manner as to expose various parts of said articles to drying air currents inside said cylinder.

2. In a clothes drying apparatus having a rotatable cylinder mounted on a substantially horizontal axis, said cylinder having a cylindrical member forming an outer wall of said cylinder, a circular back wall, a front wall sufficiently open to be capable of allowing air to move into and out of said cylinder, a tubular flanged member forming a central opening in said front wall of said cylinder, triangular shaped baffles having one end thereof attached to said flanged member adjacent said front wall of said cylinder and the opposite end thereof attached to said outer wall, said baffles extending longitudinally of said cylinder and being equally spaced about the circumference thereof thereby to support said tubular flanged member and said front wall from said outer wall and to serve as agitators, and additional triangular shaped baffles adjacent said back wall also equally spaced about said circumference, but in staggered relationship relative to the aforesaid baffles in the front of said cylinder.

3. In a clothes drying apparatus having a rotatable cylinder mounted on a substantially horizontal axis, said cylinder having a cylindrical member forming an outer wall of said cylinder, a circular back wall, a front wall with openings therein capable of allowing air to move into and out of said cylinder, a tubular flanged member forming a central opening in said front wall of said cylinder, triangular shaped baffles adjacent said front wall of said cylinder having one end thereof attached to said flanged member and the other end thereof attached to said outer wall of said cylinder, said baffles equally spaced about the circumference of said cylinder thereby to support said tubular flanged member and said front wall from said outer wall of said cylinder, said baffles also extending longitudinally about half way across the interior of said cylinder to agitate clothes contained in said cylinder, and additional triangular shaped baffles adjacent said back wall of said cylinder also equally spaced about said circumference but in staggered and non-overlapping relationship to said first mentioned baffles thereby to provide a relatively clear space centrally of said cylinder for causing contained clothes to tumble on a major diameter thereof.

4. In a clothes drying apparatus having a rotatable cylinder mounted on a substantially horizontal axis, said cylinder having a cylindrical member forming an outer wall of said cylinder, a circular back wall, a front wall capable of allowing air to move into and out of said cylinder, a tubular flanged member forming a central opening in said front wall of said cylinder, a plurality of baffles each formed by bending a single substantially square sheet of material along a line running diagonally of said sheet, said baffles thus formed extending laterally across the interior of said cylinder and being devoid of rough edges along said bend, and securing means for fastening said baffles to said outer wall and said back and front walls thereby to support said front

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wall and said tubular member from said outer wall and to form a diagonal lifting portion on each of said baffles.

5. In a clothes drying apparatus having a rotatable cylinder mounted on a substantially horizontal axis, said cylinder having a cylindrical member forming an outer wall of said cylinder, a circular back wall, a front wall with perforations therein capable of allowing air to pass freely into and out of said cylinder, a tubular flanged member adapted to receive a driving belt on the major portion of the outer periphery thereof for rotation of said cylinder, said tubular flanged member also forming a central opening in the front wall of said cylinder, triangular baffles adjacent said front wall of said cylinder having one end thereof attached to said tubular flanged member and the other end thereof attached to said outer wall of said cylinder, said baffles ex-

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tending longitudinally across the interior of said cylinder thereby to afford means for agitation as well as affording adequate support for said flanged member without relying upon said perforate front wall of said cylinder.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,129,219	Marshall	Feb. 23, 1915
2,137,376	Altorfer	Nov. 22, 1938
2,262,186	Lindberg	Nov. 11, 1941
2,344,135	Downes	Mar. 14, 1944
2,372,790	Morgenstern	Apr. 3, 1945