Review Paper on Design and Fabrication of Cloths Drying Machine

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Abstract:
This project was to study the clothes dryer machine by using heat. There are many cabinet dryers are widely used today as an alternative to natural clothes drying, especially for those who are busy working from morning until evening, having limited time and for the residents in urban areas. Nowadays cabinet dryer already offered in the market, but they were so expensive to afford. A cloth dryer was made with the help of available materials. Its efficiency was investigated with respect to how fast it was able to dry the clothes. Hence a set of experiments were performed to determine the worthiness of this dryer. The experiments showed that the dryer works fine as per its objectives. The main advantage of this dryer is that it can work all round the year, with a built-in auxiliary heating system. Also, with no moving parts, it consumes less power than conventional dryers in washing machines. It can easily be built with commonly available materials. Tests has been done on this dryer and it working with desired output.

Keywords: Clothes dryer, heater, semi-automatic, design.

I. INTRODUCTION

Nowadays drying clothes usually use natural way by using the energy from the Sunlight and the wind, but nowadays the technology is plentifully developed upward and the clothes dryers that use the electric energy or other energy come to use extensively. Especially in the urban area where limited sunlight (cloudy days) and restricted air flow for house types such as high rise condominiums and apartments, natural drying is prohibited in some housing areas for aesthetic reasons and conventional domestic electric dryers are too expensive and inefficient decreasing energy losses and heat recovery is important research topics, nowadays. Many cabinet dryers widely use, especially those who are busy working. Besides that, most of laundries today have their own dryer cabinet. It is not just because to run their operation at all the time, but they also can prevent the risk to the clothes that might lose or dirty. Cabinet dryer on the market nowadays is using electrical power as a source in generating heat. The design available in markets are very bulky and uses lots of energy because it is not utilized properly half of energy get wasted to the surrounding. The size of the product made very compact so when it needs to be get used we can unfold it and extend it to its ultimate size where we can hang clothes and two heating sources. Because two heating sources are provided time required to dry clothes is less as compared to other expensive devices which also uses lots of energy to dry the clothes.

II. LITERATURE REVIEW

The first electric dryer was invented in the early 20th century. Inventor J. Ross Moore was tired of hanging his clothing outside, especially during the winter. To help keep his wardrobe out of the freezing weather, he built a shed to house his clothes while they dried. In addition, he added a stove. The clothing would hang on the line in front of the fire and dry. This was the beginning of the development of electric dryers. For the next three decades, Moore worked to eventually build a gas and electric unit, but couldn’t find anyone to help him get his idea manufactured. The drum-type model was built and eventually picked up by Hamilton Manufacturing in Wisconsin. The new dryers were sold under the name June Day beginning in 1938. In England and France during the end of the 18th century, clothes dryers were being made. Called ventilators, these large contraptions were made of metal. The drum had ventilation holes in it that allowed heat into it while it was hand cranked over an open fire. This invention was used for decades. As time moved on, America caught onto the idea of these ventilators. Unfortunately, the clothing consistently smelled of smoke, was covered in soot and occasionally caught on fire during the drying process. As you can imagine, this wasn’t an ideal situation. George T. Sampson of Ohio decided that the ventilator invention needed to be tweaked. Instead of using heat from an open fire, he chose to place a rack over a stove. This heat source was much better, as it didn’t dirty the clothing or catch it on fire! On June 7, 1892, Sampson was granted a patent for his idea. These “dryers” were used well into the 19th century.

Earliest Dryers
• The earliest clothes dryers were made in England and France in the late 18th and early 19th centuries. Known as “ventilators,” they were large metal drums with ventilation holes, powered by hand cranks, and used over open fires. Their invention can’t be traced to any one person, but perhaps no one would have wanted the credit, since the clothes always smelled of smoke, were often covered with soot and sometimes caught fire.

First Patented Clothes Dryer
• An American inventor, George T. Sampson of Dayton, Ohio, came up with a better ventilator-type dryer. It had a rack and used heat from a stove, rather than an open fire. He was granted a patent for his invention in on June 7, 1892.

First Electric Dryer
• Inventor J. Ross Moore lived on a North Dakota farm in the early 20th century. Tired of hanging wet clothes outside in
the frigid winters, he built a shed, installed a stove and hung the clothes there to dry. Over the next 30 years, Moore developed his idea for an automatic clothes dryer. He finally built a drum-type model that worked. He developed both gas and electric models but, due to financial difficulties, needed to find a manufacturer to produce them. After many rejections, he struck a deal with Hamilton Manufacturing Company of Two Rivers, Wis. Hamilton began selling the new automatic clothes dryer, named the “June Day,” in 1938.

1700s
In 1799, a Frenchman known as Pochon invented the ventilator, a precursor to the modern tumble dryer. This early clothes dryer was a rotating metal drum with holes bored into it. Wet clothes were placed inside the drum which was then positioned over an open fire and cranked by hand.

1800s
On June 7, 1892 an African American named George T. Sampson received a patent for a device similar to Pochon’s ventilator. Sampson’s invention used the heat from a stove rather than an open fire.

1900s
1915 saw the invention of the first electric clothes dryer, which was similar to those invented by Pochon and Sampson, but it could also sense when the clothes were dry. In 1935 J Ross Moore, a North Dakota man trying to protect his mother from having to hang clothes outside in the dangerous winters, constructed an oil-heated drum in an outside shed, thereby inventing the first version of the modern clothes dryer. He patented his invention to run on either gas or electricity, but he saw very little financial gain, as money troubles forced him to sell the patent to the Hamilton Manufacturing Company in 1936. The Huebsch Manufacturing Company, which had patented an open-air dryer in 1931, introduced the stacked dryer to the market place in 1941 and continued their run in 1954 when they introduced a coin-operated dryer for laundromats. The American Dryer Corporation got into the game in 1965 with two different coin-operated models designed for laundromats. Fourteen years later they introduced the first computerized dryers.

1990s
The 1990s saw the arrival of environmentally friendly and allergy reducing dryers. Equipped with sensors rather than timers, the dryers were designed to turn off the moment the clothes were dry, to save energy. They were also equipped with HEPA/ULPA filters to reduce airborne particles.

III. IMPROVEMENTS

- In 1946, dryer manufacturers moved controls to the front of the dryer, added a timer, an exhaust for moist air, temperature controls and a cool-down cycle. In 1958, a 30-inch-wide dryer using a negative pressure system was first offered to the public. This system is still used in dryers. In 1959, dryness-sensors were first used to shut off the power when the load was dry. In 1965, dryers with permanent-press cycles were introduced. In 1972, manufacturers put electric starters on gas dryers. In 1974, microelectronic controls were put on dryers to time drying cycles. In 1983, the first clothes dryers with delayed start timers allowed users to run dryers in off-peak hours. In 1985, clothes dryers were offered with all-Spanish instructions on labels, consoles and manuals. Other models offered large type, big graphics and over-sized controls.

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