Aug. 18, 1959 G. M. JOLLY 2,900,512

CLOTH DEMONSTRATION DEVICE

Filed Nov. 7, 1952

Fig 1

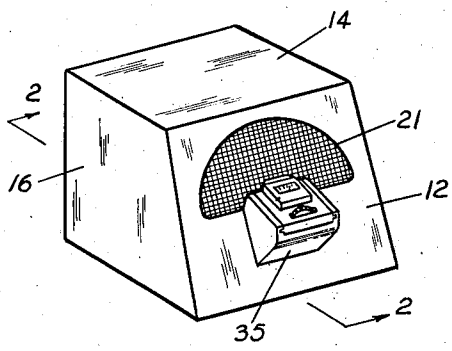


Fig 2

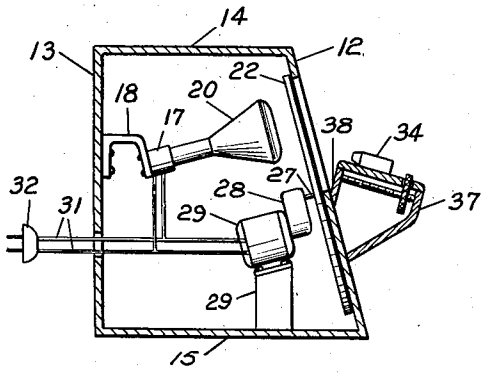


Fig 3

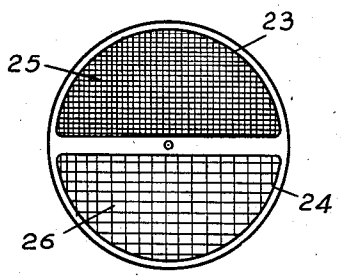
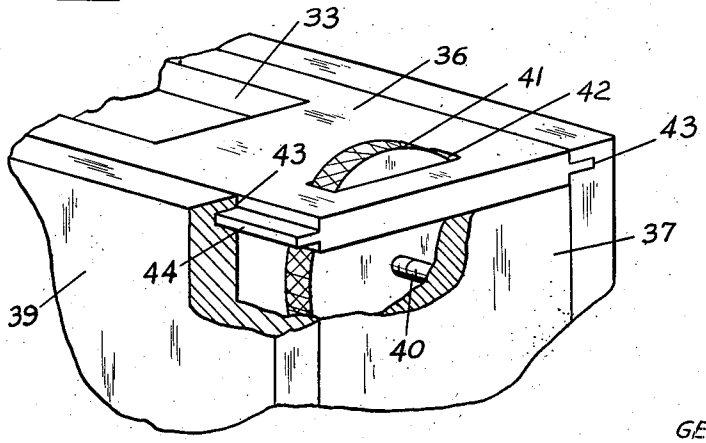


Fig 4



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United States Patent Office 2,900,512
Patented Aug. 18, 1959

2,900,512

CLOTH DEMONSTRATION DEVICE

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Application November 7, 1952, Serial No. 319,393

2 Claims. (Cl. 250—52)

The present invention relates to a cloth demonstrating device and is directed more particularly to an instrument for demonstrating the relative heat transmissive properties of a pair of cloth samples which device may be advantageously employed with fabrics made of any animal or man-made fibers and combinations thereof and any of such fabrics treated or finished with any desired chemical or heat reflective material.

The primary object of the invention is to provide a cloth comparator which consecutively indicates the relative heat transmissive properties of a pair of samples of cloth.

Another object of the invention is to provide a cloth demonstration device suitable for use with fabrics made of any animal or man-made fibers and combinations thereof and any of said fabrics treated or finished with any chemicals or heat reflective materials.

Still another object of the invention is to provide a device of the above described character in which the pair of samples of cloth are continuously rotated so that the relative heat transmission of each sample is alternately demonstrated.

A further object of the invention is to provide a cloth demonstrating device in which the distance between a heat indicating means and a rotating sample of cloth may be varied in order to regulate the sensitivity of the meter to suit the circumstances.

Other objects of the invention will become apparent as the description proceeds.

The cloth demonstration device embodying the present invention is illustrated in the accompanying drawings of which:

Figure 1 is a perspective view of my improved cloth demonstration device.

Figure 2 is a sectional view along line 2—2 of Figure 2.

Figure 3 is a front view of the circular sample supporting frame employed in this invention.

Figure 4 is a perspective view partially in section of a portion of the indicator support with the indicator removed, illustrating the adjustable feature of my invention.

In the illustrative embodiments of the invention hereinafter to be described in detail, a heat lamp transmits infra-red radiation toward a rotatable frame or disk having two equal semicircular openings therein over which a pair of cloth samples are placed. Thus, as the frame is rotated the samples of cloth are intermittently subjected to the radiation emitted by the heat lamp for equal intervals of time. The heat transmissive properties of each of the samples are measured by a heat indicating means spaced from the rotatable disk in a direction opposite from the heat lamp, the indicating means being adjustable axially of the disk in order to permit the comparison of samples having a wide range of heat transmissivity.

In Figure 1 and 2, there is illustrated a box or cabinet of generally rectangular construction having front and rear walls 12 and 13, top and bottom walls 14 and 15

and side walls 16, the front wall 12 being slightly inclined in the direction of rear wall 13. Mounted on rear wall 13 is a socket member 17 which is preferably supported by a resilient member, such as bracket 18. An electric lamp 20 of the type which emits infrared radiations when current is supplied thereto is removably held by socket 17. The top portion of front wall 12 is partially cut away to provide a semi-circular opening 21 therein which is in substantial alignment with lamp 20. Disposed internally of front wall 12 is a circular disk or frame 22, the top half of which is in general registration with opening 21. There are formed in frame 22 an identical pair of apertures 23 and 24 of substantially the same size and configuration as opening 21 which apertures occupy a major portion of the area of frame 22. It is into these apertures that the cloth samples 25 and 26 are inserted, being secured there by any desired means, as, for example, being cemented in place, or being held by a snap ring. The frame is fixed axially to the shaft 27 of a gear reduction unit 28 mechanically coupled to an electric motor 29, the latter being bolted to a mounting block 29 which is, in turn, fastened to the bottom wall 15 of the cabinet.

Electrical current is supplied to the lamp and motor through conductors 31 wired in parallel and terminating in a male plug 32 which may be inserted in any convenient receptacle.

A heat indicator 34, such as an infra-red radiation meter manufactured by the General Electric Corporation, is carried by a platform, generally indicated at 35, which projects upwardly and forwardly of the lower center portion of the front wall 12 in order that the meter may be in line to receive the transmitted radiations from the cloth samples 25 and 26. The platform consists of a top plate 36, which is recessed at as 33 to receive the indicator 34, front and back walls 37 and 38 and side walls 39.

It will be appreciated that an instrument of this character should be capable of comparing fabrics having a wide range of heat transmissive properties and, in addition, that such properties may be more effectively demonstrated to the viewing public by regulating the meter to read at a given level from which plus or minus deviations can be observed. To this end, I have provided a simple means whereby adjustment of the indicator relative to the samples may be effected. Female grooves 43 are formed in the top marginal portions of each of the side walls 39 which mate with male tongues 44 projecting from the sides of top plate 36, so that the plate is slidable longitudinally of the remainder of the platform 35. A threaded rod 40 is disposed within the platform beneath the plate 36, the ends of rod 40 being fixed in front and back walls 37 and 38. A wheel 41 moves threadwise on said rod, extending upwardly through a slot 42 furnished in plate 36, the periphery of the wheel being knurled to facilitate rotation by hand. Thus, as the wheel is manually revolved, it engages the walls of slot 42, causing the plate 36 to move with it. By selective displacement of the indicator, virtually any reading, within the limits of the instrument, can be obtained therewith.

In operation, a pair of cloth samples possessing different heat transmissive properties, for example, porous sample 26 and dense sample 25, are inserted in the circular frame 22. The male plug 32 is connected to a source of electric power, energizing lamp 20 and motor 29, the latter operating through reduction unit 28 to revolve frame 22 at a low rate, i.e. about 6 r.p.m. The heat indicator 34 is then positioned by turning wheel 41 about rod 40 until the desired reading appears on its face. As the samples slowly pass across the opening 21, the indicator will measure the heat transmitted thereby, giving an effective comparison of the relative trans-

missivities of the two samples, which is quite convincing to the viewing public.

Obviously, minor variations in the construction and arrangement of the elements of my invention may be made by one skilled in the art. Therefore, I do not wish to be limited by the specific embodiment illustrated, but only by the scope of the claims hereunto appended.

The following is claimed:

1. An educational cloth demonstration device comprising a cabinet having a heat radiation transmitting aperture formed in one wall thereof, a heat source mounted in said cabinet and emitting heat radiation in the direction of said aperture, a disc rotatably supported by said cabinet and having its axis adjacent a peripheral edge portion of said aperture, said disc having at least two openings therein each adapted for mounting of a separate sample of cloth thereover, said disc being at least of a size and diameter corresponding to the size of said cabinet aperture sufficient to cover said aperture in all rotative positions of said disc, and whereby a sample being tested is easily in view of an observer, said openings and samples being each successively brought into registry with said aperture upon rotation of said disc, a heat sensing element mounted on and externally of said cabinet and in the path of radiation from said heat source, an indicating meter mounted on said cabinet at one side of said aperture and in full and clear view to an external observer, a motor connected in driving relation to said disc and driving said disc at a slow speed within the speed range in which the human eye can easily discern each individual cloth sample and a corresponding meter reading upon each cloth sample passing between said heat source and said heat sensing element, said meter being operatively connected to said heat sensing means and adapted to successively indicate the heat radiation transmitted to said heat sensing element through said cabinet aperture and the individual samples as they slowly pass into registry with said cabinet aperture and between said heat radiation source and said heat sensing element, whereby an observer is given an effective visual display of successive samples of cloth under test and the test results in one visual observation.

2. An educational device according to claim 1 wherein said motor is an electric motor mounted within said cabinet and is operatively connected in driving relation to said disc through a gear reduction unit of an order relative to the normal speed of said motor so as to drive said disc at a rotational rate within the range of visual discernibility of the individual samples of cloth and the individual meter indications.

References Cited in the file of this patent

UNITED STATES PATENTS

1,605,395	De Ybarrondo	Nov. 2, 1926
1,954,329	Schoenberg	Apr. 10, 1934
1,967,583	McFarlane	July 24, 1934
2,145,686	Dessauer	Jan. 31, 1939
2,204,836	Waldo	June 18, 1940
2,496,333	Cary et al.	Feb. 7, 1950
2,534,657	Bray	Dec. 19, 1950
2,621,298	Wild	Dec. 9, 1952