

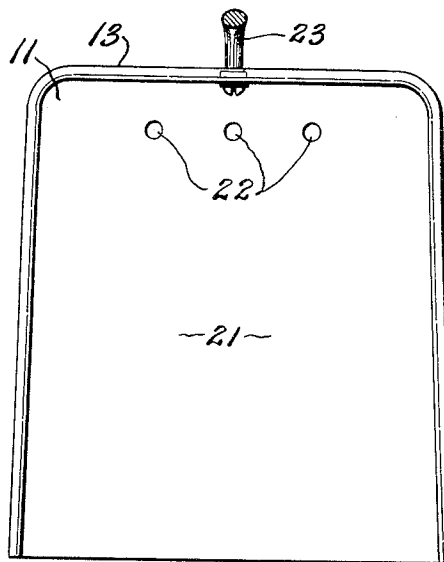
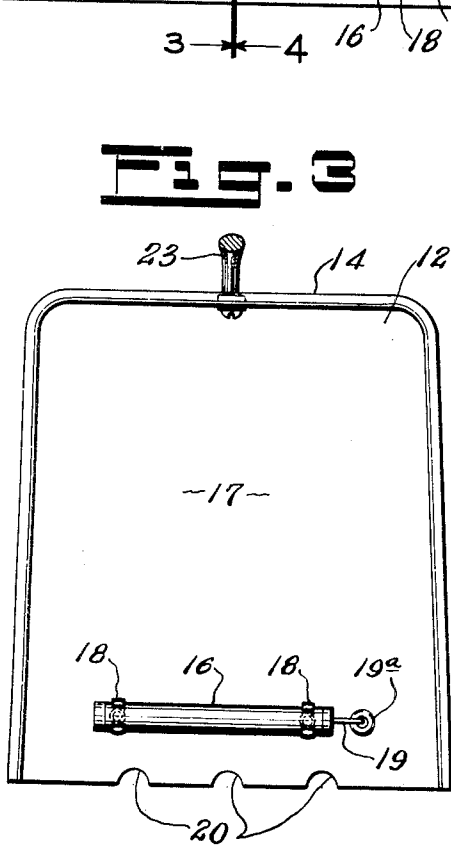
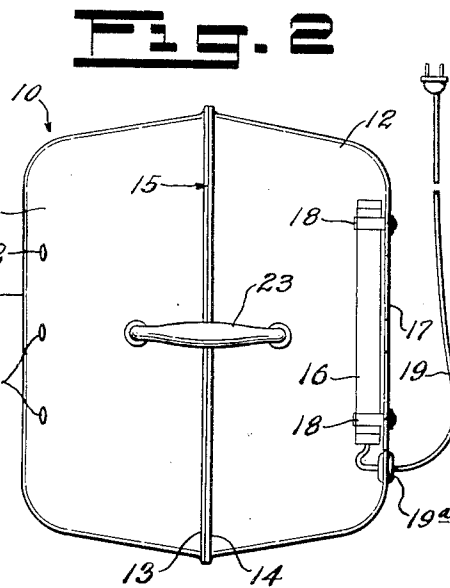
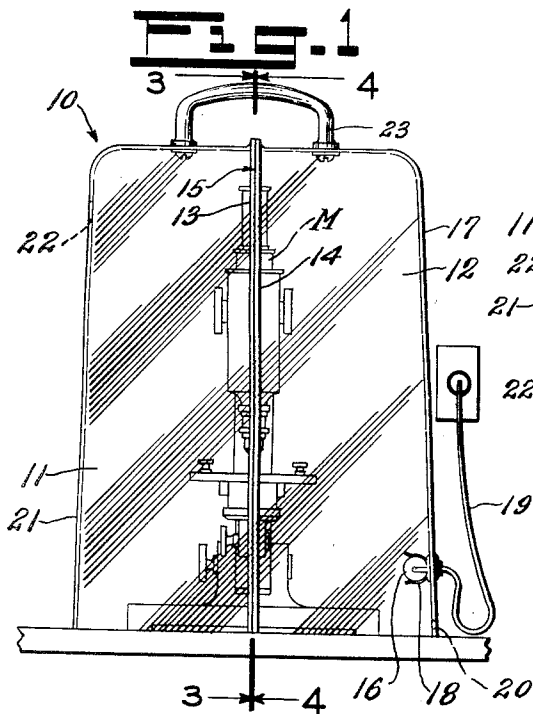
Aug. 2, 1960

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2,947,843

DEHUMIDIFYING COVERS

Filed Sept. 3, 1958



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1

2,947,843

DEHUMIDIFYING COVERS

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Filed Sept. 3, 1958, Ser. No. 758,836

1 Claim. (Cl. 219—19)

Our invention relates to protective covers and is directed particularly to a combination cover and dehumidifier for protecting delicate scientific instruments such as microscopes.

It is well known that dampness can irreparably damage microscopes and other delicate instruments by causing mildew fungus growth, corrosion and rust. In optical instruments such as microscopes, the condensation of moisture films on the lenses and prisms upon taking the cold instrument from its case into a relatively warm room obviously can interfere with the operation of the device. Heretofore such instruments have merely been provided with protective cases, usually of wood, in which they could be placed for storage when not in use. Such cases, while providing protection against dust and dirt, are not an effective protection against atmospheric moisture, and in fact will often accelerate fungus formation because of enclosing the instrument in a stagnant atmosphere of moist air.

Moreover, in medical laboratories, for example, where delicate instruments such as balances and spectrosopes, as well as microscopes are used intermittently many times during the day, it is common practice to leave the instruments uncovered or merely fit them with a dust cover, which accelerates the damaging effects of moisture by shutting off the flow of room air about the instrument.

It is accordingly the principal object of our invention to provide a cover for scientific instruments when not in use that not only protects against dust and dirt, but also encloses the instrument in circulating dehumidifying atmosphere to prevent mildew, corrosion, fungus growth and rusting.

It is a more particular object of our invention to provide a rigid dehumidifying cover of the character described which is adapted to be placed over the instrument while on a table or other flat surface at its position of use, and which includes means for continuously circulating warm dry air about the covered instrument as a protection against dampness and moisture condensation due to room temperature fluctuation.

Still another object is to provide a protective cover of the above nature which is simple in construction, inexpensive to manufacture, light in weight, and long-wearing in use.

Other objects, features and advantages of our invention will be apparent from the following description when read with reference to the accompanying drawings wherein:

Fig. 1 is an end elevational view of a dehumidifying cover embodying the invention, shown protecting a microscope while not in use,

Fig. 2 is a top view of the dehumidifying cover, shown separately,

Fig. 3 is a vertical cross-sectional view of the dehumidifying cover, taken along the line 3—3 of Fig. 1 in the direction of the arrows, and

Fig. 4 is a vertical cross-sectional view of Fig. 1 taken along the line 4—4 thereof, in the direction of the arrows.

2

Referring now in detail to the drawings, wherein like reference numerals denote corresponding parts throughout the several views, the dehumidifying cover, denoted generally by reference numeral 10, is box-like in structure, open at the bottom and is preferably comprised of a complementary pair of similar shell members 11, 12 molded of a transparent synthetic material, such as "Lucite" or "Plexiglas," the wall thickness of the shell members being of rather small dimension, such as $\frac{1}{16}$ inch, to keep the weight of the protective cover to a minimum. The shell members 11, 12 are conveniently fixed together by molding them with peripheral flange portions 13, 14, respectively, which can either be cemented together or welded together by the use of heat. The butt joint thus formed at the flanges of the shell members 11, 12 provides a central web 15 of increased thickness which serves to make the cover structure 10 more rigid.

Means is provided for circulating dry, heated air within the cover 10, comprising an elongated electrical heating element 16 secured horizontally against the inside of the side wall 17 of the shell member 12, as by end clamps 18. The energizing cord 19 of the heating element passes through a grommet 19a fitted in the side wall 17 for connection to a convenient electrical service outlet.

A plurality of spaced, semi-circular openings 20 are provided in the lower edge of the side wall 17 of the shell member 12 to allow the entrance of room air just below the heating element 16 (see Fig. 3). To allow escape of the heated air, and thus to provide continuous cross-circulation of warm air, the side wall 21 of the shell member 11 is provided near its upper end with a plurality of horizontally-aligned openings 22 (see Fig. 4). Preferably, the total area of the semi-circular openings 20 in the lower edge of the side wall 17 is substantially the same as the total area of the openings 22 in the opposite side wall 21, so that the circulated air will move into and out of the cover structure 10 with substantially the same velocity.

A handle 23 is centrally secured to the top 24 of the cover structure 10.

In use, the dehumidifying cover is placed over the microscope M or other instrument to be protected, as illustrated in Fig. 1, and the electrical cord 19 plugged into a convenient electrical service outlet. Electrical cords associated with the instrument, such as electric light cords in microscopes, can conveniently be passed out of the cover structure 10 through one of the semi-circular openings 20. Air entering through the lower openings 20 will be continually heated by the heating element 16 to bathe the instrument in circulating blanket of warmed air which discharges through the openings 22 near the upper end of the opposite side wall 21, thereby removing dampness and preventing moisture condensation due to variations in room temperature. Moreover, when the cover is removed for using the instrument again, it will be at a slightly higher temperature than that of the room air, thereby minimizing the possibility of moisture condensation due to high room humidity.

While there is disclosed in this specification one form in which the invention may conveniently be embodied in practice, it is to be understood that this form is given by way of illustration only, and that the invention is not to be limited to the specific disclosure, but may be modified and embodied in other equivalent forms without departing from its spirit. In short, the invention includes all the modifications and embodiments coming within the scope of the following claim.

Having thus fully described the invention, what is claimed as new and for which it is desired to secure Letters Patent is:

A dehumidifying protective cover for scientific and other delicate instruments comprising, in combination,

3

a box-like enclosure structure open at its lower end and adapted to be placed over an instrument to be protected, an aperture means at the lower end of said structure at one side thereof for the inflow of air, heating means within said structure and directly above said air inflow aperture means, and a second aperture means at the upper end of the opposite side of said structure for discharging air entering said air inflow aperture means and heated by said heating means, said box-like structure comprising a pair of similar shell members having peripheral flanges permanently secured together as by cementing to provide a stiffening rib of increased thickness, said air inflow aperture means and said air discharge aperture means each comprising a plurality of openings, said heating means comprising an elongated electrical heating unit.

5

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4

References Cited in the file of this patent

UNITED STATES PATENTS

1,544,218	Champion	June 30, 1925
1,929,139	Eisenhauer	Oct. 3, 1933
2,091,746	Wiley	Aug. 31, 1937
2,179,256	Gill	Nov. 7, 1939
2,548,363	Gray	Apr. 10, 1951
2,565,011	Womack	Aug. 21, 1951
2,846,557	Schulze et al.	Aug. 5, 1958

FOREIGN PATENTS

205,311	Great Britain	Oct. 18, 1923
742,607	Great Britain	Dec. 30, 1955
977,992	France	Nov. 22, 1950