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BIOSCOPE CABINET

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Fig. 2

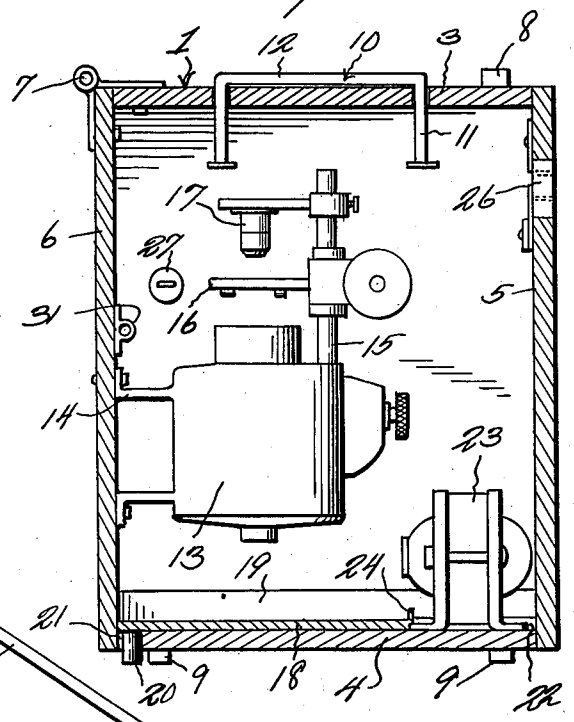


Fig. 1

Fig. 3

Inventors
J. B. Worthington
V. Bartley
By Watson E. Coleman
Attorney

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BIOSCOPE CABINET

James B. Worthington and Victor Bartley,
Oklahoma City, Okla.

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5 Claims. (Cl. 88—24)

This invention relates generally to the class of cabinets or housings for instruments and pertains particularly to a novel cabinet structure for microscopes of bioscopes.

The present invention has for its primary object to provide a novel housing or cabinet for an instrument of the type commonly employed in schools and colleges in the teaching of biology, whereby such instrument may be kept completely housed when not in use so that it will be well protected against damage or from becoming dirty, and whereby it may be easily and quickly arranged in working position for the projection of images vertically onto an underlying plate or screen or horizontally onto a wall screen, as may be desired.

Another object of the invention is to provide a novel cabinet structure for an instrument of the character stated in which an image receiving slide or screen is carried for use in association with the instrument when the latter is shifted from the cabinet to one of the two positions in which it may be placed for use.

Another object of the invention is to provide in a device of the character described, novel means for supporting an instrument whereby upon opening the cabinet the instrument will be automatically moved to either of its two operating positions.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not to be confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

Figure 1 is a view in side elevation of the structure embodying the present invention, showing the same opened and supporting a projection instrument in one working position.

Figure 2 is a vertical sectional view through the closed cabinet taken on a plane extending from the front to the rear of the cabinet.

Figure 3 is an electrical diagram of a circuit in which the instrument and control units therefor are connected.

Referring now more particularly to the drawing, the numeral 1 generally designates the cabinet structure which is preferably of greater height than width and depth and has the side walls 2 joined at their top and bottom ends by the top and bottom walls 3 and 4 respectively, and at their rear edges by a back wall 5.

The front wall of the cabinet constitutes a door 6 which is connected at its top edge by means of the hinges 7 with the forward edge of the top wall 3 so that it swings vertically when being opened and the hinges are of such character that the door may be swung completely over from its vertical position to a horizontal position where it will be parallel with the top wall 3. When swung to this horizontal position the door rests upon suitable stops or bumpers 8 which are carried upon the top of the top wall 3 and which cooperate with the hinges 7 to hold the door in horizontal position.

The bottom wall 4 is provided with suitable feet 9 for the support of the cabinet, such feet being of rubber or other suitable soft material which will permit the cabinet to be placed upon a finished surface, such as the top of a desk or the like, without marring it.

The top wall 3 has coupled therewith a carrying handle 10 which, as shown, has leg portions 11 which extend through the top wall so that the hand grip portion 12 of the handle may be located in a position where it will not interfere with the disposition of the door 6 over and in parallel relation with the wall 3.

The numeral 13 generally designates a light projector forming a part of the bioscope instrument which the cabinet houses. This projector is coupled by suitable brackets 14 with the inner side of the door 6 and when the door is closed and the cabinet is standing upright, the projector will be in inverted position, as shown. This projector and the parts associated therewith are of standard make and do not require any detailed description but in order to identify generally the parts thereof, it will be pointed out that the post 15, which is coupled with the projector 13, carries a stage 16 on which is placed a specimen glass (not shown) and the post also carries a lens 17 which is alined with a center opening in the stage so that light from the projector will pass through the stage and the specimen thereon and enter the lens unit to be projected thereby, suitably enlarged, upon an image receiving screen.

The lower part of the cabinet 1 has slidably supported therein an image screen 18 which is here disclosed as being in the form of a plate and which may be of suitable white material such as porcelain or the like, or which may be of any other suitable material but having a white top surface so that a projected image will show up

clearly thereon. This screen is slidably held upon the top side of the bottom wall 4 by guides 19 which are secured against the inner sides of the side walls 2 in spaced relation with the wall 4. At its forward edge the screen 18 carries a supporting foot 20 which is positioned in an edge recess 21 in the wall 4 when the screen is shifted to inoperative position in the cabinet.

The inner edge of the image receiving screen 18 is recessed or notched, as indicated at 22, and supported upon the bottom wall 4 in the cabinet is a transformer unit 23 which is received within the recess 22 when the image screen 18 is shifted into the cabinet. Adjacent its inner edge the screen 18 is provided with a lip 24 by means of which it may be shifted inwardly or outwardly.

Although no illuminating means has been shown for the projector 13, it will be understood that this projector carries an incandescent bulb to furnish the necessary light for projection through a specimen supported on the stage 16. Such bulb is shown diagrammatically in Figure 3 and indicated by the numeral 25. The back wall 5 carries a suitable receptacle 26 for the connection of an electric current carrying line with current conductors in the cabinet which transmit current to the light within the projector 13. Such current is first passed through the transformer 23 so that it may be suitably stepped down to the proper voltage for the light bulb 25. A switch 27 is located within the cabinet for turning on and off the current to the projector.

While the electrical connections between the electrical parts have not been shown in Figures 1 and 2, Figure 3 shows how these electrical parts may be coupled together. Such connections have been left out of Figures 1 and 2 in order to prevent confusion, it being understood that the electrical system per se forms no part of the present invention.

At one side of the cabinet from the outside thereof, there is located a brace bar 28, one end of which is pivotally attached at 29 to the top of the cabinet, while the other end is turned inwardly at 30 to form a means of attaching the free end of the brace bar with the door 6 in order to maintain the latter in the vertical position in which it is shown in Figure 1. The inner side of the door has attached thereto an eye 31 within which the turned end portion 30 of the brace bar may be engaged and when the cabinet is closed this end of the brace bar is located in a notch 32 formed in the front edge of the adjacent side wall 2.

When the door is closed, as shown in Figure 2, it is secured in this position by a hook 33 which engages an eye 34 upon the outer side of the cabinet at the bottom.

From the foregoing it will be readily apparent that there has been here disclosed a novel cabinet structure for an instrument of the type described or for a microscope which may be mounted upon the door in the same manner as the instrument here shown, wherein such instrument may be housed when not in use so that it will be safely protected against damage and against dust and dirt while, at the same time, the instrument may be easily and quickly put in working position merely by swinging the door of the cabinet to one of the two open positions in which it may be disposed. When the door is held in vertical position, as shown in Figure 1, the instrument will be arranged to project an image downwardly, in which case the image receiving screen 18 will be drawn out to the position in which it is shown in Figure 1 so that its top surface will receive the image of the specimen carried on the stage 16.

If it is desired to project the specimen image onto a wall screen, the door 6 may then be swung completely over to a position parallel with the top wall 3 where it will rest on the stops 8, thus locating the instrument for horizontal projection.

We claim:

1. A structure of the character described, comprising a cabinet having a vertically swingable side wall door pivotally joined at its top edge to the forward top part of the cabinet, means for mounting a projection machine upon the inner side of said door, means for supporting said door in vertically raised opened position whereby a projection machine carried thereby may project an image downwardly, an image receiving screen, and means for supporting the screen within the cabinet which is so constructed and arranged that the screen may be moved forwardly therefrom into a position to receive an image projected downwardly by a projection instrument supported on the vertically raised opened door.

2. In combination, a cabinet having a side wall door pivoted at its top edge to the forward edge of the top wall of the cabinet mounted to swing upwardly to a vertical opened position in which it extends above the cabinet, means for securing said door in said vertical opened position, a bioscope instrument supported in a position upon the inner side of the door to project an image downwardly when the door is in said vertical opened position, and said pivotal supporting means for the door being so constructed and arranged that said door may be swung to and supported in a horizontal position above the body of the cabinet to dispose said instrument for the horizontal projection of an image.

3. In combination, a cabinet having a side wall door mounted to swing on a horizontal axis in a vertical plane, means for securing said door vertically in opened position in which it extends above the cabinet, a bioscope instrument supported upon the inner side of the door in a position to project an image downwardly when the door is in said vertical opened position, said pivotal supporting means for the door being so constructed and arranged that said door may be swung to and supported in a horizontal position above the body of the cabinet to dispose said instrument for the horizontal projection of an image, an image receiving screen, and means for slidably supporting said screen in the lower part of the cabinet for movement to a forwardly extended position from the lower part of the cabinet when said door is in the vertical opened position to receive an image projected downwardly by said instrument.

4. A structure of the character described, comprising a cabinet having top, bottom, side and back walls, a front wall constituting a door, hinge means connecting the top edge of said front wall with the forward edge of said top wall, said hinge means being formed to facilitate the swinging of the door vertically into a horizontal position over said top wall, supporting stops for said door carried by the top wall adjacent the back wall, an image projector secured to the inner side of said door to be entirely supported thereby, said projector being positioned with respect to the door to project an image downwardly when the door is opened to an upwardly extending vertical position, means for coupling the door with the body of the cabinet to maintain it in said last position, an image receiving screen in the form of a plate

body slidably supported upon the bottom wall to be extended into or withdrawn from the cabinet, said plate when withdrawn from the cabinet being directly beneath said projector and perpendicular to a light beam projected therefrom.

5. A structure of the character described, comprising a cabinet having top, bottom, side and back walls, a front wall constituting a door, hinge means connecting the top edge of said front wall with the forward edge of said top wall, said hinge means being formed to facilitate the swinging of the door vertically into a horizontal position over said top wall, supporting stops for said door carried by the top wall adjacent the back wall, an image projector secured to the inner side of said door to be entirely supported thereby, said projector being positioned with respect to the door to project an image downwardly when the door is opened to an upwardly extending vertical position, means for coupling the door with the body of the cabinet to maintain it in said last position, an image receiving screen in the form of a plate body slidably supported upon the bottom wall to be extended into or withdrawn from the cabinet, said plate when withdrawn from the cabinet being directly beneath said projector and perpendicular to a light beam projected therefrom, the said door securing means consisting of a brace bar pivotally attached at one end to a side of the cabinet and means for detachably coupling the other end of the bar with the door when the latter is in the vertically extending opened position, the forward edge of one side wall of the cabinet receiving a portion of the free end of said bar when the latter is uncoupled from the door, and said door when closed retaining the said free end of the bar in the said portion of the wall in which it is received.

JAMES B. WORTHINGTON.
VICTOR BARTLEY.