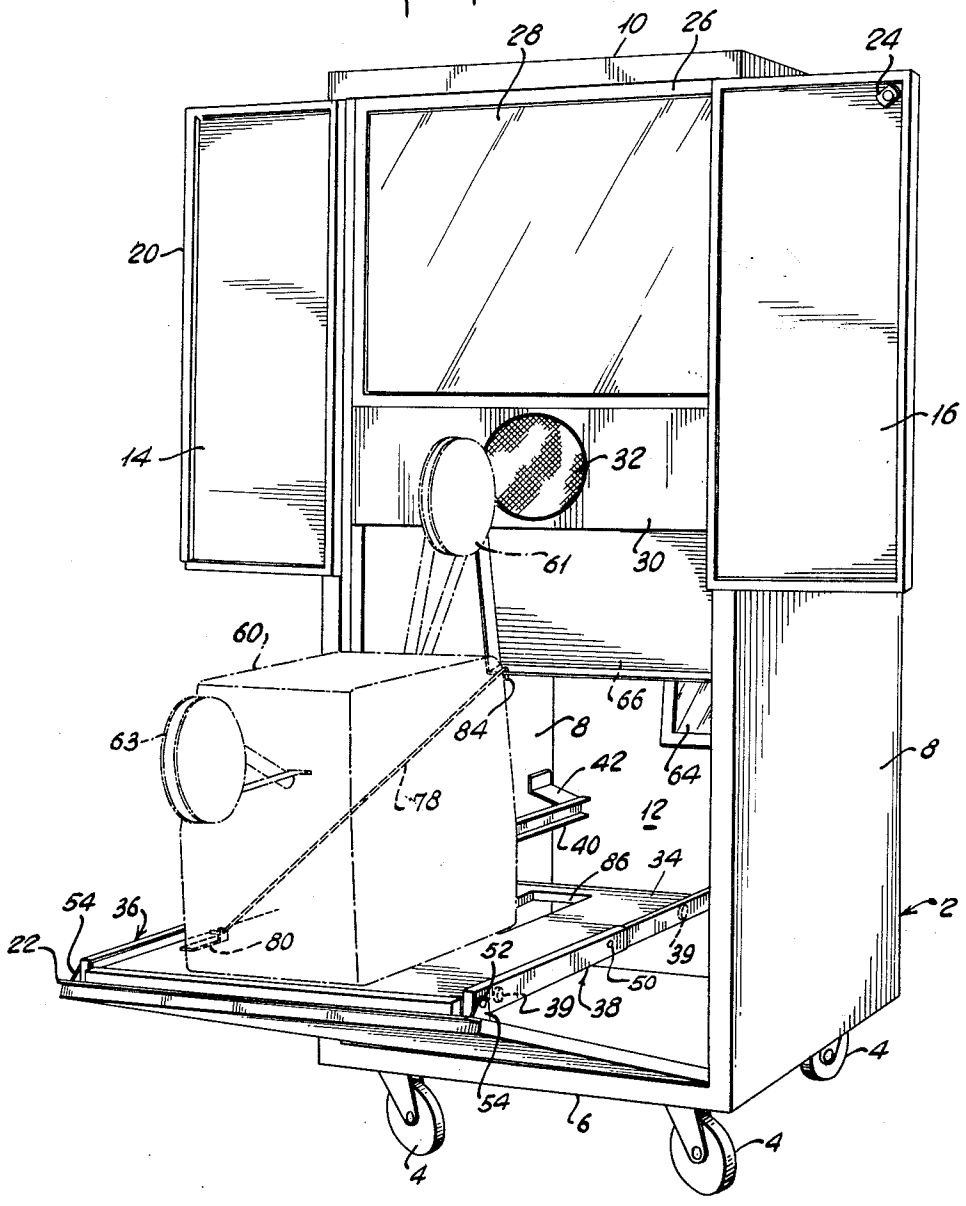
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PROJECTION CABINET

Filed April 3, 1959 2 Sheets-Sheet 1

Fig. 1.




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Fig. 1.

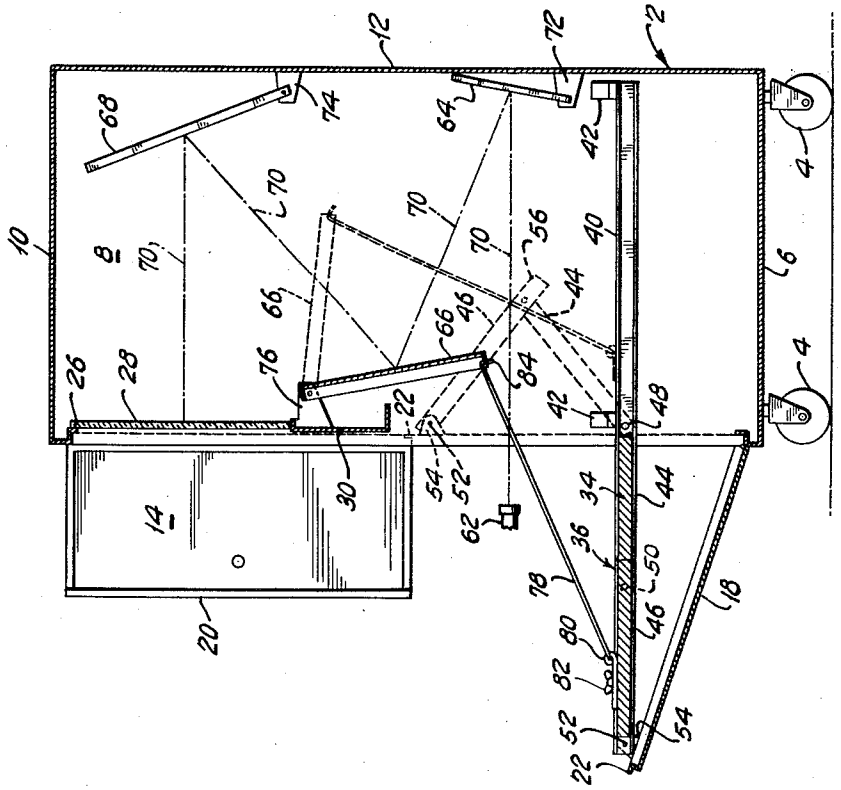
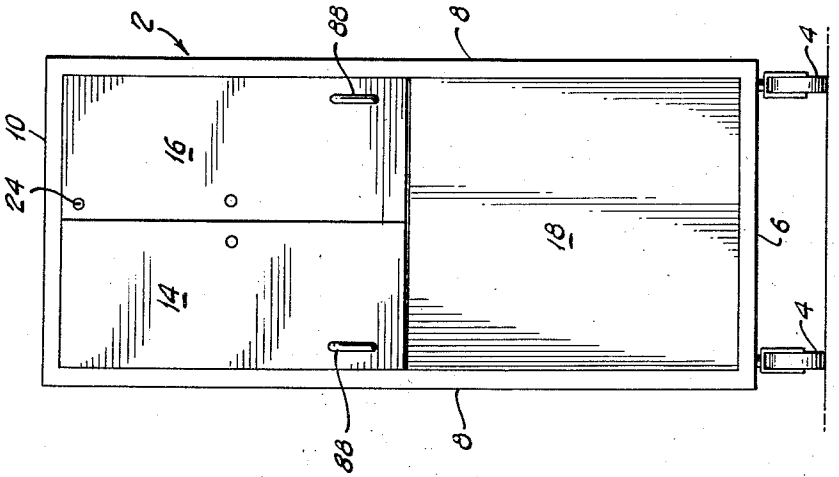


Fig. 2.



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# PROJECTION CABINET

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5 Claims. (Cl. 88—24)

This invention relates to projectors, and more in particular to projector cabinets having screens upon which moving pictures or slides are projected for viewing without the necessity for darkening the viewing area.

An object of this invention is to provide an improved projector cabinet. A further object is to provide a simple and compact projector cabinet which is adapted for use under a wide variety of conditions which are encountered in schools, clubs, churches and business organizations. A further object is to provide for a projector system which is simple, compact and readily movable. A further object is to provide a cabinet which may be used to store a slide or moving picture projector, and which may be quickly converted for projection in a lighted room or area. A further object is to provide for the above with structure which is practical in every respect, and which is free of difficulties which have been encountered with prior cabinets and arrangements. These and other objects will be in part obvious, and in part pointed out below.

In the drawings:

FIGURE 1 is a perspective view of a projector cabinet constituting one embodiment of the invention arranged for operation;

FIGURE 2 is a front elevation of the cabinet of FIGURE 1 in closed condition; and,

FIGURE 3 is a vertical section of the cabinet in operating position, but showing in broken lines the positions of the collapsed internal parts.

Referring to the drawings, a sheet metal cabinet **2** is supported by four casters **4** mounted upon the bottom cabinet wall **6**. The cabinet has side walls **8**, a top wall **10** and a rear wall **12**. The front wall of the cabinet is formed by three doors **14**, **16** and **18**. Doors **14** and **16** are hinged at the respective sides of the cabinet and, when closed, door **16** overlaps a flange **20** on door **14**. Door **18** is hinged at the bottom and has a flange **22** which (see FIGURE 3) is overlapped by doors **14** and **16** when the doors are closed. Door **16** has a lock **24** by which this door may be locked closed. The overlapping relationship between the doors prevents opening any of the doors when door **16** is locked.

Mounted across the front of the cabinet at the top in a frame **26** is a projection screen **28**, and directly beneath screen **28** is a fixed metal panel **30** in which a speaker or amplifier **32** is mounted. Speaker **32** is used to produce sound from movies or from a microphone pickup.

Slidably mounted in the lower portion of the cabinet is a projector platform **34** which is supported at its sides by a pair of channel track assemblies **36** and **38**. Platform **34** is slidable in the channels, but it is supported at each side in its channel assembly by a pair of rollers **39** resting upon the bottom flanges of the channels. Each of the channel track assemblies (see FIGURE 3) is formed by a fixed track channel **40** mounted to the adjacent cabinet side wall by a pair of brackets **42** and a pair of movable track channels **44** and **46**. Each of the channels **44** is hinged to its fixed channel **40** by a pivot bolt **48**, and to its adjacent channel **46** by a pivot bolt **50**. The opposite end of channel **46** is similarly attached by a pivot bolt **52** to a bracket **54** welded to the hinged door **18**. Hence, when door **18** is swung to its closed position, the channels **44** and **46** are moved to the broken line positions shown.

Channel **46** has a stop extension **56** which insures the



proper alignment of the channele when door **18** is in the full-line, open position of FIGURES 1 and 3. The flanges on the channels are cut away adjacent the pivots, where necessary, to permit the hinging or swinging movement indicated. Hence, with door **18** in its full-line, open position, the channel tracks extend from the rear of the cabinet to the front or upper edge of door **18**, and the platform may be moved to and from the external position shown in full lines. When the cabinet is to be closed, the platform is moved back so that it is supported solely by the fixed channels **40**. Platform **34** is shown supporting a moving picture projector **60** having film reels **61** and **63**. Reel **61** is swung down when the projector is to be slid into the cabinet.

The projection system is shown best in FIGURE 3, the lens **62** of the projector being represented in the position which it would occupy with the projector slid from the cabinet. Three mirrors **64**, **66** and **68** reflect the enlarging light beam from the lens **62** to the projection screen **28**. The broken line **70** represents the center of the light beam, and the mirrors are of progressively enlarged sizes to accommodate the enlarging light beam. Mirrors **64** and **68** are rigidly supported by brackets **72** and **74** welded to the rear cabinet wall **12**. Mirror **66** is hinged at its upper edge to a pair of brackets **76**, and it is attached at its lower edge through a rod **78** and an adjustable bracket **80** to platform **34**. A thumb nut **82** may be loosened to move the bracket as desired. A hinge connection is provided by the rod **78** and the lower edge of the mirror by a hook **84** on the end of the rod and a hole in the flange of the mirror frame. When platform **34** is moved into the cabinet, rod **78** swings mirror **66** to the broken line position, thus to move the mirror upwardly away from the projector. Platform **34** has a rectangular opening **86** into which a projector reel may be positioned.

Referring again to FIGURE 1, a pair of handles **88** are mounted upon doors **14** and **16** adjacent their hinges. These handles are grasped to push or pull the cabinet when the cabinet is to be moved.

With the projection cabinet of the present invention, the view on the screen from the front of the cabinet is proper in every respect. That is, the three mirrors provide the zigzag path for the beam of light and project the view on to the back of the screen. The view from the front of the screen is then larger, but otherwise the same as the view which is produced on mirror **64**. That is, the view from the front of the screen **28** is the same as it would be if the beam were projected directly onto the front of a screen. The distance between the lens **62** and the screen is proper to produce an image of the size of screen **28**. The projector may be moved on platform **34**, and lens adjustments may be made to give proper focus and proper size of the image.

With the projection cabinet as herein disclosed, the room need not be darkened, and the cabinet may be moved from room to room, or from one portion of the room to another. The projector and the screen are safely locked within the cabinet, and yet the cabinet may be opened and the projector pulled out for immediate use.

As many possible embodiments may be made of the above invention and as the art herein described might be varied in various parts, all without departing from the scope of the invention, it is to be understood that all matter hereinabove set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. A projection cabinet comprising, a casing construction, a viewing screen mounted at one side of said casing construction with its viewing surface exposed to view

from the side of the cabinet construction and with the other surface exposed for projecting a light beam thereon, a plurality of mirrors providing a reflecting and enlarging path for a light beam from a first mirror at the lower portion of said cabinet construction upwardly in zigzag fashion and onto said other surface of said screen, a sliding platform which is adapted to support a projector in a position to project a light beam onto said first mirror and thence along said path, a collapsible track assembly providing support for said platform and permitting a projector to be moved to and from said first mirror whereby said projector is moved in between a projecting position outside of said cabinet construction and a nested position adjacent said first mirror and within said cabinet construction, and a door hinged along its bottom edge to the lower portion of said cabinet construction and adapted to provide support for said track assembly and said platform when said door is in its open position, said door being effective to close the lower portion of the cabinet construction when said platform is moved into said cabinet construction.

2. A projection cabinet as described in claim 1, wherein said plurality of mirrors comprises, a first mirror rigidly mounted in alignment with a light beam from said projector, a second mirror in alignment with a light beam reflected from said first mirror and swingably supported beneath the level of said screen, and a third mirror rigidly supported at substantially the level of said screen and positioned to project a light beam from said second mirror onto said screen.

3. A projection cabinet as described in claim 1 which includes a second mirror and an operating arm connecting said second mirror to said platform to swing said second mirror upwardly when said platform is moved into the cabinet construction.

4. A projection cabinet comprising: a casing construction; a viewing screen mounted at one side of said casing construction with its viewing surface exposed to view from the side of the cabinet construction and with the other surface exposed for projecting a light beam thereon; a plurality of mirrors providing a reflecting and enlarging path for a light beam from a first mirror at the lower portion of said cabinet construction upwardly in zigzag fashion and onto said other surface of said screen, said plurality of mirrors including a first mirror rigidly mounted in alignment wtih a light beam from said projector, a second mirror in alignment with a light beam reflected from said first mirror and swingably supported beneath the level of said screen, and a third mirror rigidly supported at substantially the level of said screen and positioned to project a light beam from said second mirror onto said screen; a sliding platform which is adapted to support a projector in a position to project a light beam onto said first mirror and thence along said path; a collapsible track assembly providing support for said platform and permitting a projector to be moved to and from said first mirror whereby said projector is moved in between a projecting position outside of said cabinet construction and a nested position adjacent said



first mirror and within said cabinet construction; an operating arm connecting said second mirror to said platform to swing said second mirror upwardly when said platform is moved into the cabinet construction; and a door hinged along its bottom edge to the lower portion of said cabinet construction and adapted to provide support for said track assembly and said platform when said door is in its open position, said door being effective to close the lower portion of the cabinet construction when said platform is moved into said cabinet construction.

5. A projection cabinet comprising: a casing construction; a viewing screen mounted at one side of said casing construction with its viewing surface exposed to view from the side of the cabinet construction and with the other surface exposed for projecting a light beam thereon; a plurality of mirrors providing a reflecting and enlarging path for a light beam from a first mirror at the lower portion of said cabinet construction upwardly in zigzag fashion and onto said other surface of said screen, said plurality of mirrors including a first mirror rigidly mounted in alignment with a light beam from said projector and a second mirror in alignment with a light beam reffected from said first mirror and swingably supported beneath the level of said screen; a sliding projector assembly which is adapted to be positioned to project a light beam onto said first mirror and thence along said path; a collapsible track assembly providing support for said platform assembly and permitting the projector assembly to be moved to and from said first mirror whereby said projector is moved in between a projecting position outside of said cabinet construction and a nested position adjacent said first mirror and within said cabinet construction; an operating arm connecting said second mirror to said platform assembly to swing said second mirror upwardly when said platform assembly is moved into the cabinet construction; and a door hinged along its bottom edge to the lower portion of said cabinet construction and adapted to provide support for said track assembly and said platform assembly when said door is in its open position, said door being effective to close the lower portion of the cabinet construction when said platform assembly is moved into said cabinet construction.


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