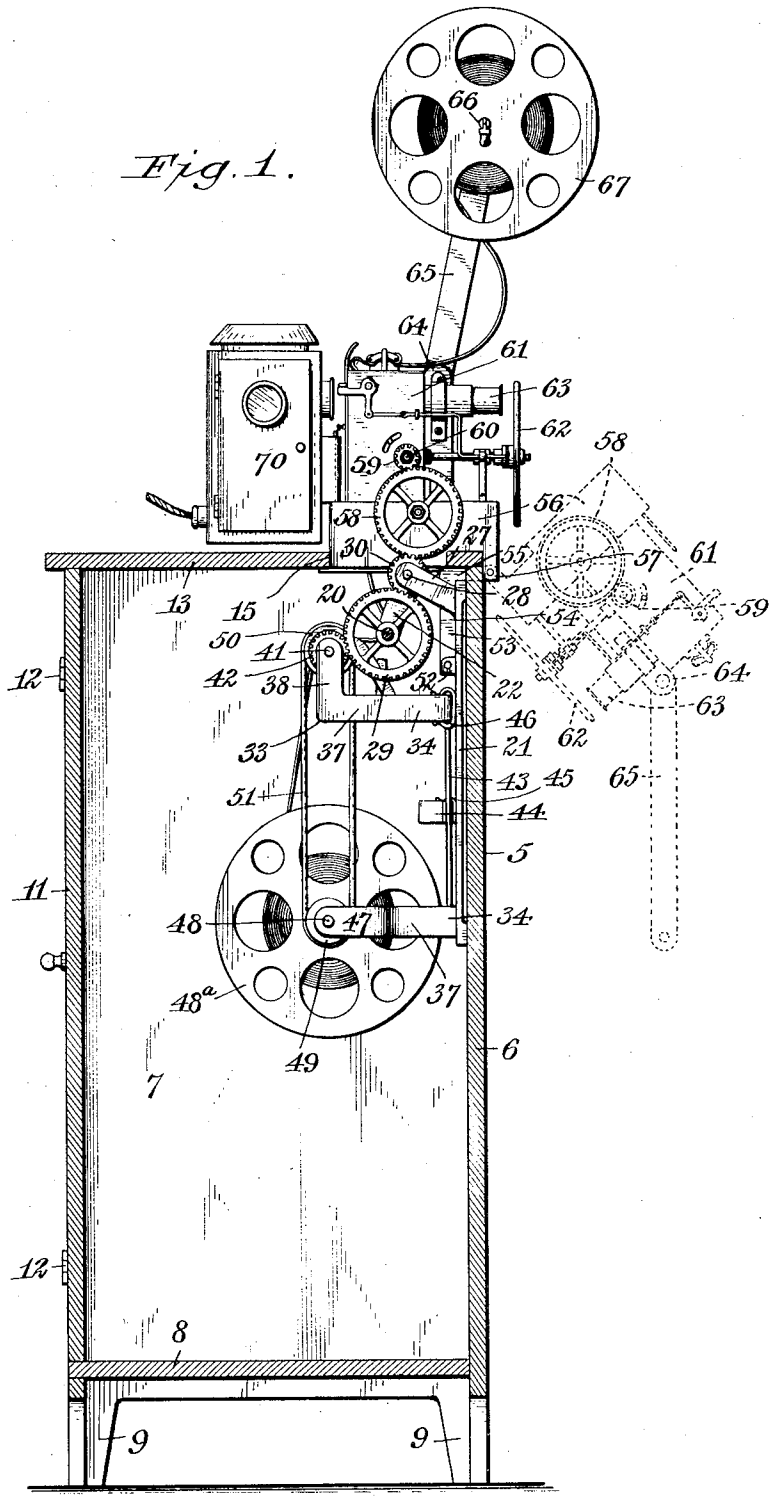
June 12, 1923. 1,458,911

W. J. BLANKENBERG

MOVING PICTURE MACHINE

Filed June 30, 1920 2 Sheets-Sheet 1

Fig. 1.



Witness:
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MOVING PICTURE MACHINE

Filed June 30, 1920 2 Sheets-Sheet 2

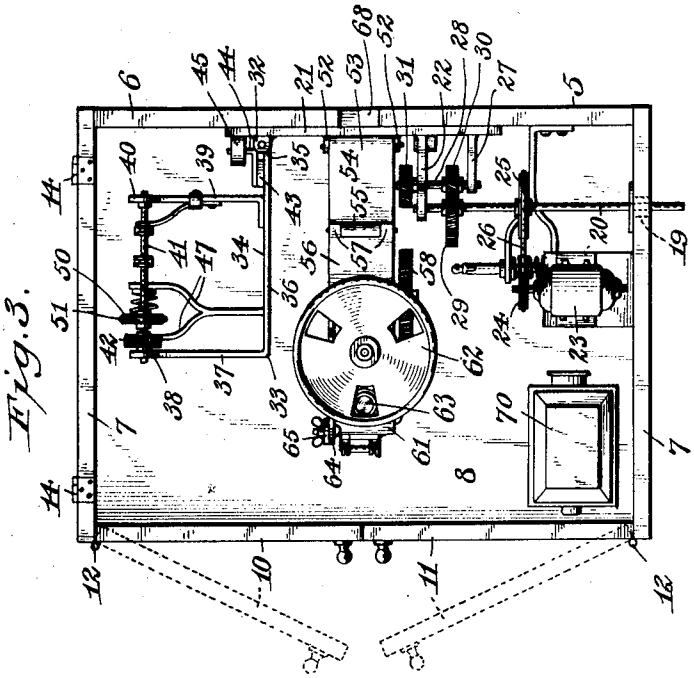


Fig. 3.

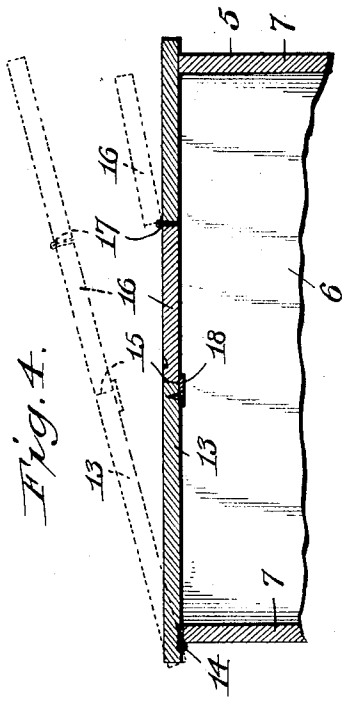


Fig. 4.

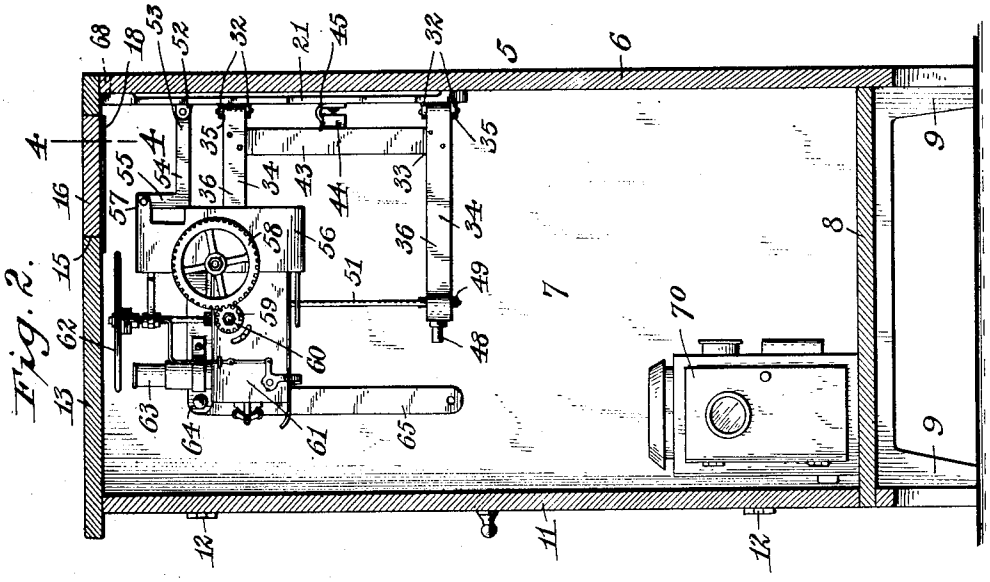


Fig. 2.

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Patented June 12, 1923. 1,458,911

UNITED STATES PATENT OFFICE.

WILLIAM J. BLANKENBERG, OF BUFFALO, NEW YORK.

MOVING-PICTURE MACHINE.

Application filed [illegible] 30, 1920. Serial No. 392,936.

To all whom it may concern:

Be it known that I, WILLIAM J. BLANKENBERG, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Moving-Picture Machines, of which the following is a specification.

My invention relates to moving picture machines, and more particularly to the novel mounting of the operating parts of the same.

The primary object of my invention is to provide a moving picture machine particularly adapted for home or house use and so constructed that when the machine is not in use, all operating parts thereof may be confined within a housing or cabinet which serves as a support for said parts and which may be ornamental so that it will serve as a desirable article of furniture when not in use as a moving picture machine.

Another object of my invention is to provide a moving picture machine of this type having fixedly located and movable or adjustable parts mounted on or in a cabinet so that at least a portion of said movable or adjustable parts may be positioned outside of the cabinet while the fixedly positioned parts may retain their position within the cabinet and be so arranged that the exposed adjustable part may be moved into the cabinet without interfering with the fixedly positioned part.

Other objects are to provide a moving picture machine of this type in which a train of gears are included and in which a portion of the train of gears are out of co-action with the other portion of the train when the machine is not in use, and wherein the parts of the train of gears are automatically brought into co-action when placing the machine in condition for operation.

With these and other objects to appear hereinafter, the invention consists in a cabinet having a portion of a moving picture machine comprising the several parts necessary to display pictures from a movable film fixedly positioned within a cabinet and a portion thereof adjustably arranged within the cabinet so that it may be moved outside of the cabinet to place the machine in condition for operation.

It further consists in a moving picture machine having the picture projecting portion thereof exposed and mounted upon a cabinet when the machine is in position for operation and having said picture projecting portion so supported that it may be swung into the cabinet when the machine is not in use, thus providing what may be termed "disappearing mechanism".

It further consists in the novel features of construction and in the arrangement and combination of parts to be hereinafter described nad more particularly pointed out in the subjoined claims.

In the drawings:—

Fig. 1 is a vertical section of my improved picture projecting machine, showing the mechanism in elevation with the projecting portion thereof shown in dotted lines in a position it is necessary to assume before mounting the same upon its cabinet.

Fig. 2 is a similar section showing the position of the parts within the cabinet when the machine is not in use, the film reels being removed from their brackets or supports, as these may be stored in any convenient manner within the cabinet.

Fig. 3 is a plan view of the device with the top of the cabinet removed.

Fig. 4 is a transverse section through the upper portion of the cabinet, taken on line 4—4, Fig. 2.

In a moving picture machine of this kind I provide a cabinet 5 of proper dimensions to receive the various operating parts of the mechanism when the machine is not in use, it being of a convenient height so that it may be used as an ornamental stand when fully closed and the parts of the mechanism are all confined therein.

The cabinet may be carved or otherwise embellished to give it an ornamental appearance and make it a desirable article of furniture suitable for use in any living room of a home. When in use this cabinet may be arranged at one end or side of a room and a suitable screen placed at the opposite end or side of the room, the mechanism being focused to display the pictures upon the screen according to the distance between the latter and the machine, as is common in moving picture machines.

The cabinet has a front wall 6, side walls

7, and a bottom wall 8, said walls being the fixed portions of the cabinet. The side and front walls may be continued downwardly below the bottom wall 8 to form suitable legs 9, or these legs may be separate from the body of the cabinet and in some instances omitted all together, as this relates merely to appearance or design, which may be varied to suit the desires of the manufacturer or user.

The rear of the cabinet has doors 10, 11, which meet at the center, and are hinged to the side walls 7, as at 12, thus the entire rear of the cabinet may be opened to gain access to the interior thereof. These doors may be latched or otherwise retained in closed position in any approved manner.

The top of the cabinet is closed by a cover 13 hinged at one side, as at 14, and this cover is provided with an opening 15 normally closed by a lid 16 hinged at one side of said opening, as at 17, and when closed having its marginal portion opposite the hinge resting upon a ledge 18 provided on the under side of the cover by fastening a strip of metal to said cover, as best shown in Fig. 4.

When the moving picture machine is not in use, the doors 10 and 11 at the rear of the cabinet are closed and the top 13 is also closed with the lid 16 closing the opening 15 in said top, thus giving the cabinet a finished appearance. With the cabinet thus closed and having the appearance of an article of furniture or utility, the mechanism is wholly confined within the cabinet, as shown in Figs. 2 and 3.

In one of the side walls 7 of the cabinet a bearing 19 is provided in which the main or drive shaft 20 of the mechanism is journaled, and to the front wall 6 of the cabinet a casting 21 is fastened which serves as a support for various parts. This support has a supporting arm 22 extending rearwardly therefrom in which the main or drive shaft 20 is also journaled. Said drive shaft extends through the bearing 19 and may have a suitable handle applied or removably attached thereto for rotating said shaft, but I preferably support on one of the side walls 7 an electric motor 23 and provide the shaft of this motor with a suitable pulley or sheave 24 around which and a pulley or sheave 25 applied to the main shaft a drive belt 26 passes. By connecting the motor with an ordinary incandescent lamp socket, such as commonly used for lighting purposes, the main or drive shaft 20 may be rotated. Extending rearwardly from said bracket 21 is a second supporting arm 27 and journaled in this arm and in the arm 22, hereinbefore referred to, is a counter-shaft 28.

Secured to the main or drive shaft is a gear wheel 29, which meshes with a gear wheel 30 keyed or otherwise fastened to the counter-shaft 28, and on said counter-shaft is a second gear wheel 31, the gear wheels 30 and 31 lying on opposite sides of the supporting arm 22.

The parts of the mechanism thus far described are fixedly located and may be termed the operating mechanism. This operating mechanism is adapted to be brought into co-action with movable or adjustable parts of the mechanism, which I will now describe.

Projecting rearwardly from the support 21 fastened to the front wall of the cabinet are two pairs of horizontally disposed lugs 32, which are spaced a suitable distance apart, and pivotally secured to these two pairs of lugs is a reel supporting frame 33. Said frame comprises two horizontal L-shaped members 34, one extremity of each of which is pivotally attached between each pair of lugs 32, as at 35. Each L-shaped horizontal member has two arms 36, 37, arranged at right angles to each other, the arm 37 of the upper member terminating in an upward extension 38. Fastened to the arm 36 of the upper member is an arm 39 which is spaced a distance from the arm 37 and is arranged parallel thereto and the outer or free end of this arm 39 is also provided with an upward extension 40 similar to the upward extension 38 at the outer end of the upper arm 37. The extensions 38, 40 are provided with alined openings in which opposite ends of a horizontal shaft 41 are journaled and fastened to the shaft 41 is a gear wheel 42. The upper and lower members 34 of the reel supporting frame are tied together by a vertical tie bar 43, and to this tie bar an L-shaped retainer frame 44 is fastened, which is adapted to engage a spring retainer 45 secured to the support 21. The reel supporting frame, by reason of its being pivoted or hinged to the support 21, is capable of being swung into either of two positions, viz. that shown in Fig. 3, in which position it is retained by the spring retainer 45 engaging the retainer arm 44, or into the position shown in Fig. 1 in which the frame is swung against the support 21 with all parts of the frame in positions at right angles to those which they assume when in the position shown in Fig. 3.

With the reel supporting frame swung into the position shown in Fig. 1, the arm 36 of the upper member 34 is engaged by a spring retainer 46 fastened to the support 21, and the gear wheel 42 thereof is brought into mesh with the gear wheel 29 on the drive-shaft 20.

The arm 37 of the lower member 34 of said reel supporting frame terminates in two spaced extensions 47 and may therefore be said to be forked, and in this forked portion

of said arm a reel supporting shaft 48 is journaled, said shaft having a sheave or pulley 49 secured thereto, preferably within the fork, around which sheave or pulley and a sheave or pulley 50 on the shaft 41 a belt 51 is passed. Thus when the reel supporting frame is swung into operative position, or that shown in Fig. 1, rotary motion is imparted from the gear wheel 29 on the drive-shaft 20 to the gear wheel 42 on the shaft 41, and from said shaft 41 this motion is imparted to the reel supporting shaft 48 through the medium of the pulleys 50 and 49 and belt 51.

The reel supporting shaft 48 extends a distance from the forked portion of the arm 37 at one side thereof, for the purpose of conveniently applying a film carrying reel 48ª thereto, as will be explained hereinafter. Since said reel is intended for use in winding up the film, the frame 33 may be termed a reel winder frame.

The support 21 fastened to the front wall 6 of the cabinet is provided with two spaced vertically-disposed lugs 52, between which is pivotally mounted a swinging bracket 53, said bracket being of L-shape, and with the parts of the machine in inoperative position the arm 54 of said bracket is in horizontal position, while the arm 55 thereof is in vertical position, as clearly shown in Figs. 2 and 3.

Pivotally mounted to the upper end of the arm 55 is what may be termed the picture projecting mechanism of the machine. This mechanism comprises a base 56 having a pair of spaced lugs 57 which straddle the arm 55 of the bracket 53 and are pivotally attached thereto, and rotatably mounted on this base is a gear wheel 58 which is in mesh with a pinion 59 secured to a shaft 60 forming part of the film advancing means, the details of which I do not consider necessary to illustrate or describe in this application, since this film advancing means may be constructed in any practicable manner without changing the mode of operation or detracting from any of the advantages of this invention. It is necessary, however, that the film advancing means and parts directly associated therewith to project the pictures be arranged within or carried by a casing or frame, such as shown at 61, which is mounted on the base 56 so that such parts will be movable into inoperative or into operative position with the operating mechanism through the gear wheel 58 and pinion 59. It may, however, be stated in a general way, for a clearer understanding of the invention, that the shutter designated by the numeral 62 is operated from the shaft 60 or timed therewith, and associated with this shutter is a telescoping lens holder 63.

Mounted on the casing or frame 61 carrying the film advancing means is a lug 64 to which a reel supporting arm 65 is pivotally and adjustably mounted, said arm being held in adjusted position in any desired manner and having a reel supporting shaft or spindle 66 at its upper end on which a reel 67 having a film thereon may be supported.

When swinging the reel-winder frame 33 to one side of the center, as shown in Fig. 3, room is provided between this frame and the fixedly positioned parts of the mechanism for the projecting mechanism and parts directly associated therewith. When, however, it is desired to place the machine in operative position, the cover 13 is swung upwardly on its hinges 14 so as to open the top of the cabinet. The projecting mechanism may then be swung upwardly, out through the top of the cabinet, which causes the bracket 53 to be swung from the position shown in Fig. 2 to that shown in Fig. 1, and when said bracket is swung into this position, the arm 54 thereof assumes a vertical position while the arm 55 assumes a horizontal position and is retained within a notch 68 formed in the front wall of the cabinet at its upper edge. The picture projecting portion of the mechanism including the reel supporting arm 65 is then swung to the position shown in dotted lines in Fig. 1. The reel-winder frame 33 may then be swung on its pivots to bring it into the position shown in Fig. 1, or in other words, to occupy the space previously occupied within the cabinet by the picture projecting mechanism, and when said reel-winder frame 33 is so positioned, the gear wheel 42 thereof is brought into mesh with the gear wheel 29 on the driving shaft 20, thus operatively associating the movable parts carried by the reel-winder frame 33 with the operating parts of the fixedly positioned portion of the mechanism. After the picture projecting mechanism is swung into the position shown in dotted lines in Fig. 1, the top of the cabinet may be swung into closed position, after which it is necessary to swing the lid 16 into open position, as indicated by dotted lines in Fig. 4, and when fully opened this lid will rest upon the adjacent portion of the top. This provides an opening in the top, and when swinging the projecting mechanism from the position shown in dotted lines in Fig. 1 to that shown in full lines in said figure, the lid opening is closed by reason of a portion of the base 56 being formed to enter the same. By thus fitting a portion of the base 56 into said lid opening, the parts are retained against movement laterally.

When the picture projecting mechanism is swung into operating position, as shown in Fig. 1, the gear wheel 58 thereof is brought into mesh with the gear wheel 31 on the counter-shaft 28; thus all rotatable parts of the projecting mechanism carried

within or by the frame or casing 61 and the base 56 are caused to operate when the main or drive shaft is rotated. With the parts in this position the reel 67 having a film wound thereon is placed upon the shaft or spindle 66 at the upper end of the film carrying arm 65, and the film is then unwound and passed through the frame or casing 61, over parts therein adapted to properly operate the same, around suitable guide or feeder elements on the shaft 41 of the reel-winder frame 33 and finally onto the empty reel 48ª provided therefor on the shaft 48 mounted in the lower member of said reel-winder frame.

The lantern or other lighting medium, indicated by the numeral 70, may be retained within the casing in any suitable manner, for example resting on the bottom of the cabinet, as shown in the drawings, and when the parts of the mechanism are in operative position, this lantern or other lighting medium may be positioned in rear of the projecting mechanism, either by securing the same to the base 56 or otherwise supporting the same so that the rays of the light will be projected against the film passing through the frame or casing 61 of said projecting mechanism. The reel 67 is of course loosely mounted on the spindle or shaft 66, and the film is uncoiled therefrom and advanced by reason of all rotating parts being in operative connection with the drive shaft 20 when the projecting mechanism is positioned without the machine. It may be stated that portion of the mechanism arranged outside of the cabinet, not including the reel 67, its support 65 and the lantern or lighting apparatus, is the projecting mechanism, and the fixedly positioned portion retained within the cabinet is the operating mechanism; but under the principle involved, viz. that in providing a moving picture machine in which all parts may be concealed or caused to disappear when not in use, it is not believed necessary to confine myself to the particular parts exposed when the machine is in operative position, as portions now retained within the cabinet may be exposed or portions exposed may be retained within the cabinet when the machine is in position for operation.

Having thus described my invention, what I claim is:—

1. A moving picture machine, comprising a cabinet having a hinged top, mechanism wholly confined within said cabinet and having a part thereof adjustable to project outwardly from said cabinet when said top is open and to rest upon said top when closed.

2. A moving picture machine, comprising a cabinet, mechanism within said cabinet having a fixedly-positioned portion and an adjustable portion adapted to be swung outside of said cabinet and be brought simultaneously into co-action with said fixedly-positioned portion.

3. A moving picture machine, comprising a cabinet, mechanism wholly confined within said cabinet and comprising a portion having a fixed position and a portion movable so as to be positioned outside of said cabinet, said portions having transmission mechanism operative only when said movable portion is moved outside of said cabinet.

4. A moving picture machine, comprising a cabinet, mechanism partly within and partly without said cabinet when positioned for projecting pictures, part of said mechanism without said cabinet being arranged to be swung into said cabinet so that the complete mechanism may be confined therein when not in operation.

5. A moving picture machine, comprising a cabinet mechanism within said cabinet, and mechanism outside of said cabinet including film advancing means, a lens and a shutter, said second named mechanism normally co-operating with said first named mechanism and being adapted to be moved into said cabinet when the machine is inoperative.

6. A moving picture machine, comprising a cabinet, mechanism wholly confined within said cabinet and comprising a fixedly-positioned portion and two adjustable portions, all normally out of co-action, one of said adjustable portions being adapted to be moved outside of said cabinet and the other being adapted to be moved into co-action with the exposed adjustable portion and with the fixedly-positioned portion of the mechanism.

7. A moving picture machine having a cabinet provided with an opening and means for closing said opening, and mechanism wholly confined within said cabinet and having a portion thereof adapted to be moved outwardly through said opening when placing the mechanism in operative position, the mechanism outside of the cabinet being in operative relation with the mechanism within the cabinet.

8. A moving picture machine, comprising a cabinet, mechanism wholly confined within said cabinet and having a fixedly-positioned portion including a part of a train of gears, a horizontally pivoted portion including a gear forming part of said train of gears, and a vertically swinging portion including film advancing means, a lens, a shutter, and gears also forming part of said train of gears, said vertically pivoted portion being adapted to be swung outside of said cabinet and said horizontally pivoted portion being adapted to swing underneath said vertically pivoted

portion to bring the gears thereof into co-action with the gears of the latter and with the gears of the fixedly supported portion.

9. A moving picture machine, comprising a cabinet, a support secured to one of the walls of said cabinet, a drive shaft journaled in another wall of said cabinet and in said support, a gear wheel on said shaft, a counter-shaft also journaled on said support and having a gear wheel thereon meshing with the gear wheel of said drive shaft, and a second gear wheel on said counter-shaft, a vertically movable bracket pivotally mounted on said support, a casing pivotally mounted to said vertically movable bracket and including film-advancing means, a lens, a shutter, and a gear wheel adapted to mesh with said second gear wheel on said counter-shaft, a reel-winder frame also pivotally mounted on said support and adapted for horizontal swinging movement, a shaft on said reel-winder frame having a gear wheel thereon adapted to mesh with the gear wheel on said drive shaft, a second shaft on said reel-winder frame, a reel on said second shaft, means for imparting rotary movement from the first-mentioned shaft of said reel-winder frame to the second shaft thereof, and means for supporting a film reel on said casing, said reel having the film thereof passed through said casing into the cabinet and around the reel carried by said reel-winder frame.

10. A moving picture machine comprising a cabinet, operating means within said cabinet, and film projecting means movable into the cabinet into in-operative relation with said operating mechanism and out of said cabinet into operative relation with said operating mechanism.

11. A moving picture machine, comprising a cabinet, having a cover, picture projecting mechanism movable into and out of said cabinet, independently of said cover, and operating mechanism within said cabinet including means for supporting a reel onto which a film is to be wound when projecting pictures.

12. A moving picture machine, comprising a cabinet having a cover, picture projecting means movable into or out of said cabinet, independently of said cover, operating mechanism having a fixed position, and film winding mechanism adapted to be moved into operative relation with said operating mechanism.

13. A moving picture machine, comprising a cabinet, mechanism including a fixedly-positioned portion within said cabinet, a pivoted portion also within said cabinet adapted to be brought into co-action with said fixedly-positioned portion, and a pivoted portion adapted to be moved into or out of said cabinet and when moved into said cabinet being out of co-action with said fixedly-positioned portion but being brought into co-action therewith when moved out of said cabinet.

14. A moving picture machine comprising a cabinet having a cover hinged to one wall thereof and provided with an opening, and mechanism wholly confined within the cabinet and comprising a plurality of parts retained out of operative relation, one of said parts being adapted to be moved out of the cabinet when said cover is open and to be moved into operative position outside of the cabinet when the cover is closed so as to occupy the opening within said cover and so as to bring the mechanism thereof into operative relation with the mechanism within the cabinet.

15. A moving picture machine comprising a cabinet having a cover hinged to one wall thereof and being provided with an opening closed by a lid, mechanism wholly confined within said cabinet when said cover is closed and the opening therein closed by said lid, part of said mechanism being adapted to be moved outside of said cabinet when said cover is open and to be swung onto said cover when said cover is again closed and said lid removed therefrom, the portion of said mechanism outside of the cabinet having a part fitting into the opening in said cover to close the same, said mechanism including a train of gears in broken relation when said mechanism is wholly within the cabinet but being brought into co-action when part of said mechanism is moved outside of the cabinet and supported by said cover.

16. A moving picture machine comprising a cabinet, mechanism wholly confined within said cabinet and comprising a portion having a fixed location supported on one of the walls of said cabinet, a portion adapted for horizontal swinging movement and supporting a reel onto which a film is to be wound when projecting pictures, and a vertically-swinging portion adapted to be swung upwardly outside of said cabinet and having means for supporting a reel from which a film is to be unwound to be wound onto said first-mentioned reel, said vertically-swinging portion including film-advancing means, a lens and a shutter, each of said portions including part of a train of gears, all of which are in mesh when said portions are in operative positions and are moved out of mesh when said portions are in inoperative position, and means for projecting a ray of light through the vertically-swinging portion of said mechanism when outside of the cabinet.

In testimony whereof I affix my signature.

WILLIAM J. BLANKENBERG.