

Oct. 25, 1932.

A. KINDELMANN ET AL

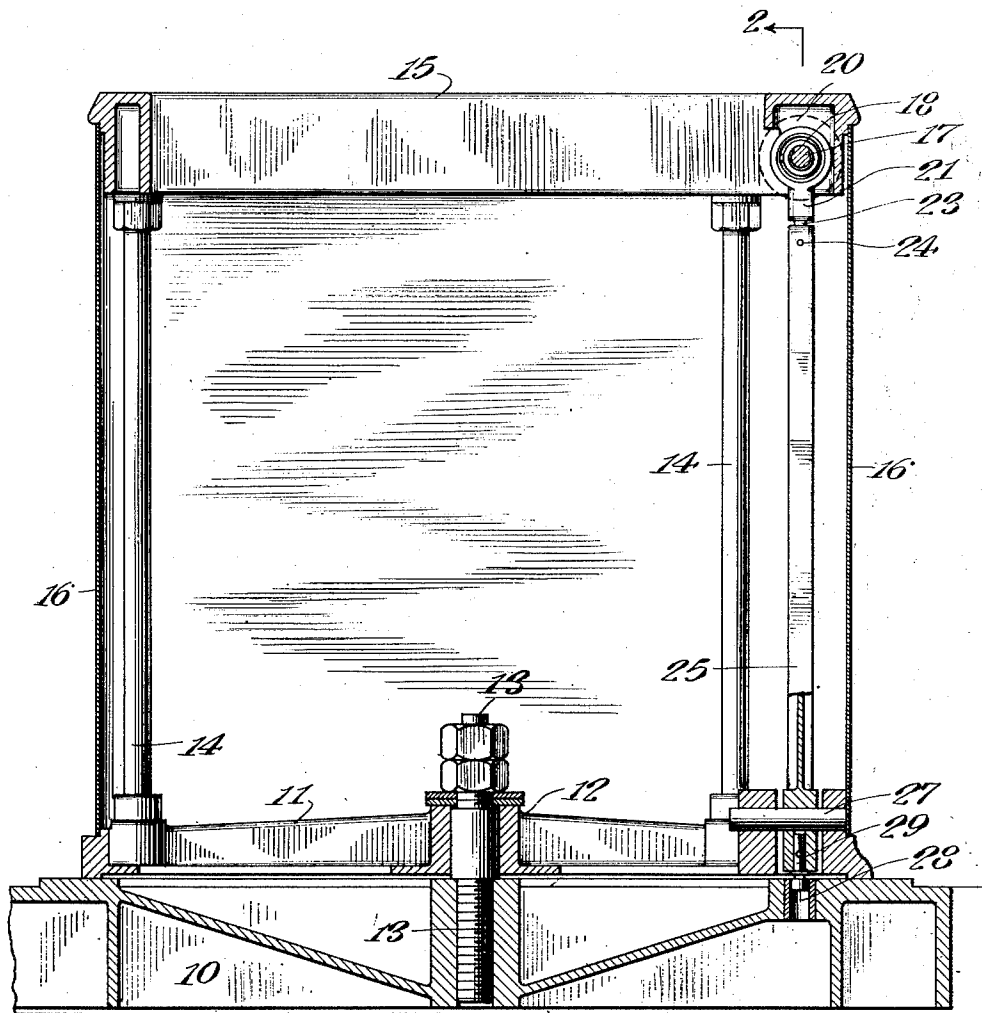
1,884,732

ADJUSTABLE BASE AND SUPPORT FOR MOVING PICTURE MACHINES

Filed Nov. 4, 1930

3 Sheets-Sheet 1

Fig. 1.



INVENTOR
Albert Kindelmann
Ewald Boecking
BY
Ames & Dix
ATTORNEYS

Oct. 25, 1932.

A. KINDELMANN ET AL

1,884,732

ADJUSTABLE BASE AND SUPPORT FOR MOVING PICTURE MACHINES

Filed Nov. 4, 1930

3 Sheets-Sheet 2

Fig. 3.

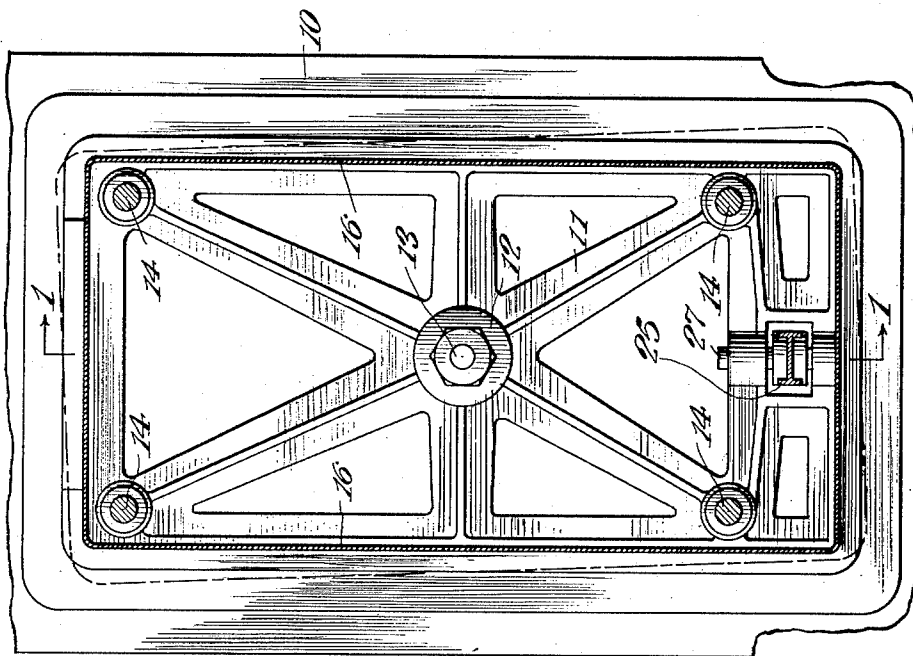
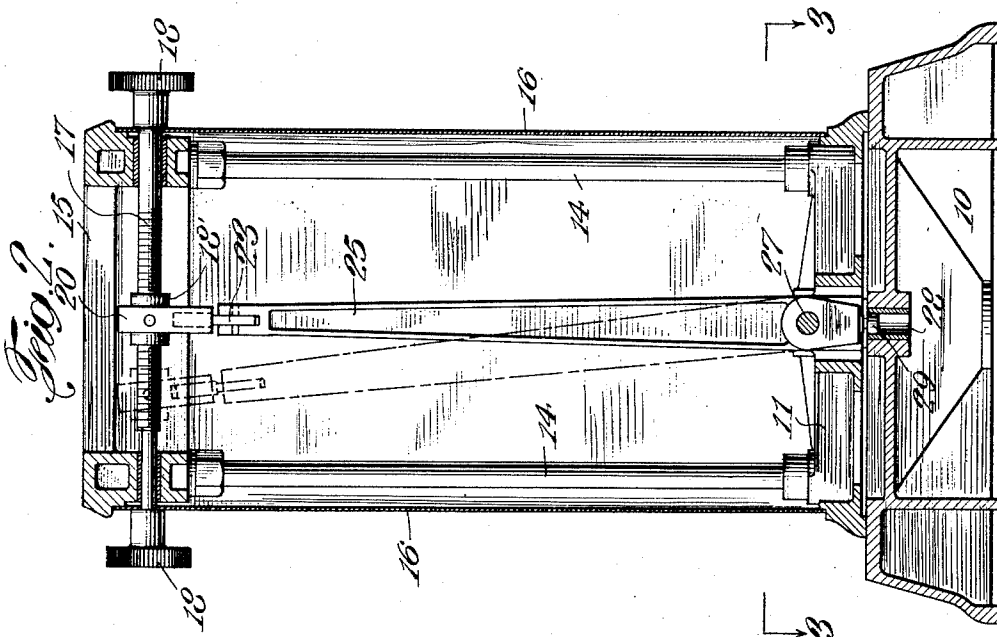


Fig. 2.

INVENTOR
Albert Kindelmann
BY Ewald Boecking
Austin & Dix
ATTORNEYS

Oct. 25, 1932.

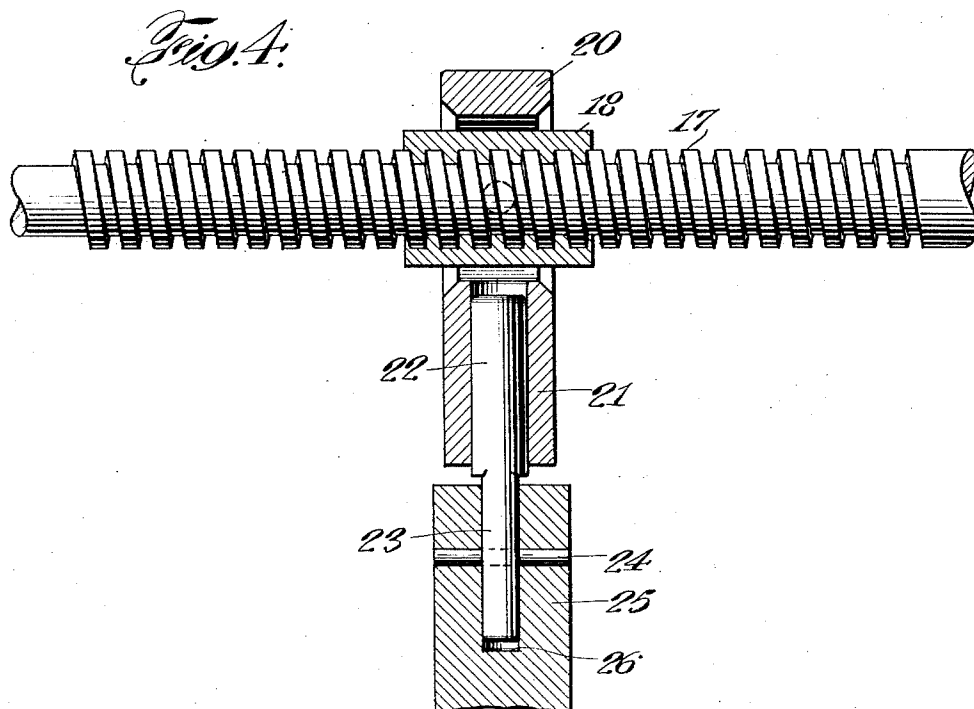
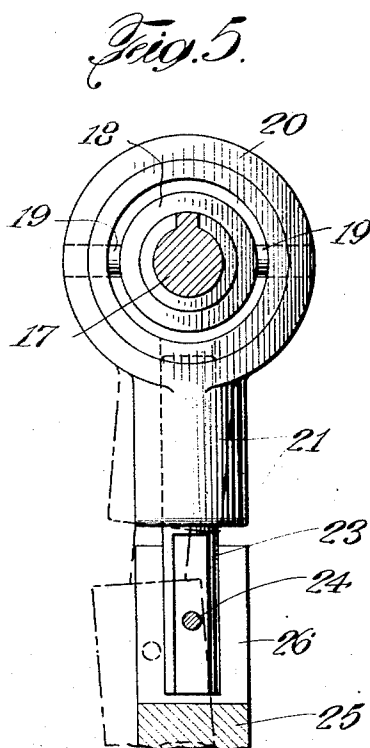
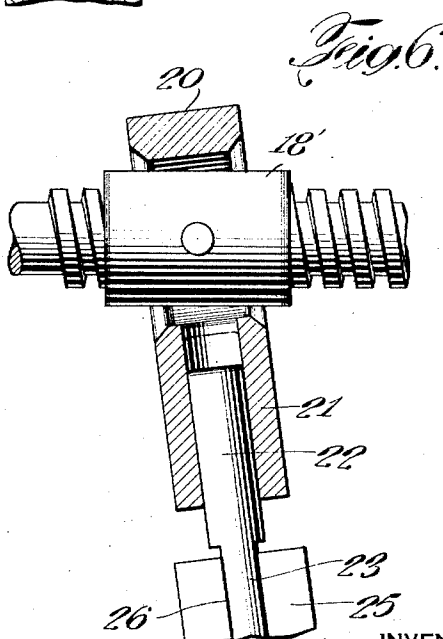
A. KINDELMANN ET AL

1,884,732

ADJUSTABLE BASE AND SUPPORT FOR MOVING PICTURE MACHINES

Filed Nov. 4, 1930

3 Sheets-Sheet 3



INVENTOR
Albert Kindelmann
Ewald Boecking
BY
Austin & Dix

ATTORNEYS

UNITED STATES PATENT OFFICE

ALBERT KINDELMANN, OF FLORAL PARK, AND EWALD BOECKING, OF BROOKLYN, NEW YORK, ASSIGNORS TO INTERNATIONAL PROJECTOR CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE

ADJUSTABLE BASE AND SUPPORT FOR MOVING PICTURE MACHINES

Application filed November 4, 1930. Serial No. 493,292.

This invention relates to a new and useful improvement in motion picture apparatus and has particular reference to a new and useful adjustable base and support especially for motion picture projectors.

A main object of the invention is to provide a simple and efficient structure of base and support whereby the support for the projection or other mechanisms may be easily and quickly and accurately adjusted on the base with a minimum of time and effort, and to accomplish such adjustment without sacrificing rigidity.

A further object is to provide an adjustment mechanism whereby the above mentioned adjustments may be effected with a degree of accuracy and fineness hitherto unobtainable in such machines.

Further and more specific objects, features, and advantages will more clearly appear from the detailed description given below when taken in connection with the accompanying drawings which form part of the specification and which illustrate one present preferred form of the invention.

Briefly considered the invention in the most general terms comprises a base which may be affixed to a floor or platform or may merely rest thereon and is sufficient weight to give the proper rigidity and stability to the entire machine thereby anchoring it firmly to the floor. On the base is disposed a support for the mechanism and this support may comprise a lower frame resting on the base with an ample area of contact thereon and an upper frame of similar general shape connected to the lower frame member by means of suitable connecting elements such as rods. The rods and the frame members are so connected and related as to move as one. These elements may be surrounded by an enclosing casing if desired. If an enclosing casing is used it rests at its lower edge on the lower frame member and fits beneath the upper frame member beneath the upper edge thereof and the rods tend to hold the casing firmly in position thus giving to the entire arrangement an added rigidity because of the curved casing clamped between the upper and lower frame members.

Preferably the lower frame member is pivoted to the base and is pivoted thereto preferably to slide on the base around a vertical axis so that the direction of the projection beam in a horizontal plane may be accurately adjusted. The adjustment is effected by means of an adjusting lever or element which is mounted pivotally on the frame member and is connected to the base member. Threaded means is preferably provided to manipulate the lever element so that it is swung around its fulcrum to swing or slide the frame members constituting the support around the pivot thereof to adjust the mechanism on the base. The contact between the frame (lower) and the base is a wide area one and preferably of rectangular formation which gives strength and rigidity all around the rectangular outline.

The present preferred form of the invention is shown in the drawings of which,

Fig. 1 is a vertical longitudinal section taken on the line 1—1 of Fig. 3;

Fig. 2 is a vertical transverse section taken on the line 2—2 of Fig. 1;

Fig. 3 is a horizontal cross section taken on the line 3—3 of Fig. 2;

Fig. 4 is an enlarged partial detail of the threaded adjusting means;

Fig. 5 is a cross section through the adjusting threaded shaft; and,

Fig. 6 is a partial longitudinal section through a portion of the adjusting device.

According to the form of the invention shown in the drawings there is a base member 10 which may rest on the floor or be fastened thereto in any desirable manner. On this base member 10 there is rotatably and slidably disposed a spider or frame member 11. This member 11 has a hub 12 bored to receive a bolt 13 by means of which it is slidably and rotatably adjustable on the base 10. The frame member 11 rests on the top of the base 10 but can be turned thereon around the bolt 13 as a pivot point.

In this preferred form of construction four rods or connecting members such as 14 are fastened at their lower ends to the frame member 11 and at their upper ends are similarly connected rigidly to an upper frame

member 15. This upper frame member 15 preferably supports the various mechanisms used on the projector or other motion picture apparatus. In some instances a casing such as 16 surrounds the rods and extends between the frame members 11 and 15 with its lower edge resting upon the upper surface of the lower frame member 11. The two frame members 11 and 15, the rods 14, and the casing 16 constitute a support which is unusually strong and rigid and which rests upon the top of the base 10 and which is pivoted thereto preferably at the approximate center of the base and the support member on the bolt 13 as stated.

In order to shift and adjust the support as desired, the upper frame member 15 is provided with a threaded shaft such as 17 which extends across through the frame member 15 in suitable bearings in a horizontal line at right angles to the length of the apparatus. This threaded shaft 17 is provided on its ends with suitable operating handles such as 18. Approximately in the middle of the shaft 17 there is disposed a threaded sleeve 18' surrounding the shaft 17. This sleeve has pins 19 extending from opposite sides thereof in a direction at right angles to the line of the shaft 17. The outer ends of these pins 19 are housed in opposite sides of an opening in a circular yoke member 20 which at its lower ends is provided with a hub or bored sleeve 21. Into the bore of hub 21 there projects the upper end 22 of a stub shaft 23 with a snug fit. The lower end of the stub shaft 23 is flattened in planes at right angles to the line of the shaft 17 and a pin 24 extends through the stub shaft 23 and is borne in the upper end of a lever 25. This lever at its upper end receives the stub shaft 23 and is slotted to so receive it by means of a slot 26. Thus as shown in Fig. 5, there can be and is a certain relative play between the hub 21 and the upper end of the lever 25 so that there will be no binding action as the lever 25 is swung by the movement of the sleeve 18' along the shaft 17.

The lever 25 near its lower end is pivoted upon a pin or stub shaft 27 which is fixed thereto and is journaled, as shown in Fig. 1, in portions of the lower frame member 11. The lowest ends of the lever 25 is loosely housed and received in a small opening such as 28 in the base 10. The lowermost end of the lever 25 takes the form of stud or pin 29 which can be pinned or otherwise fastened in the lower end of the lever 25 and can accordingly be adjusted therein to the proper projection point below the end of the lever 25. Since the distance between the top of the lever 25 and the pin 27 is very great compared to the distance between the pin 27 and the lower end of the lever 25 it will be observed that the moment arm ratio is very large. A power applied to the upper end of

the lever 25, by means of the movement of the sleeve 18, will accurately and to a fine degree adjust the position of the supporting unit with respect to the base portion and swing it around the pivot point such as the bolt 13. Thus the direction of the projection beam can be very nicely and accurately adjusted and likewise such adjustment will permit any other parts of the machine thus manipulated to also be very carefully adjusted.

Thus the invention contemplates the provision of a simple and very efficient means for adjustment of the support upon the base and yet the parts are otherwise, when at rest, held in perfect alinement and relatively very rigid. The large rectangular area of contact between the member 11 and the base 10 and the constant sliding contact therebetween contributes to this end. This end is further abetted by the rigid clamping of the casing 16 between the upper member 15 and the lower member 11 which thus forms a very strong rigid unit which rests upon and slide around on the base but is always in ample contact therewith. This firm and rigid supporting unit thus mounted provides for the practical elimination of vibration and affords a readily adjusted device.

While the invention has been described in detail and with respect to a present preferred form thereof, it is not to be limited to such details and forms since many changes and modifications may be made and the invention embodied in other forms and modifications without departing from the spirit and scope of the invention in its broadest aspects. Hence it is desired to cover any and all forms and modifications of the invention which may come within the language or scope of any one or more of the appended claims.

What is claimed, is:

1. In a motion picture machine, a base, a support mounted and resting upon said base, a pivotal substantially central connection between the base and the support, a lever pivoted to the support and connected at one end to the base for adjusting the support on the base, and threaded adjusting means on the support and connected to the outer end of the lever for adjusting the same.

2. In a motion picture machine, a base, a support mounted and resting upon said base, a pivotal substantially central connection between the base and the support, said connection having a vertical axis, a lever pivoted to the support and connected at one end to the base for adjusting the support on the base, and threaded adjusting means on the support and connected to the other end of the lever for adjusting the same.

3. In a motion picture machine, a base, a support mounted and resting upon said base, a central pivotal connection between the base and the support and having a vertical axis, a lever pivoted on the support near one of its

ends, the end of the lever nearer the pivot being loosely connected to the base, a threaded movable shaft on the support, the end of the lever farther from the pivot being connected to the threaded shaft, and means for turning the shaft to shift the end of the lever and turn the support around the central pivot.

4. In a motion picture machine, a base, a support mounted and resting upon said base, a central pivotal connection between the base and the support and having a vertical axis, a lever pivoted on the support near one of its ends, the end of the lever nearer the pivot being loosely connected to the base, a threaded movable shaft on the support, a sleeve embracing the shaft and movable therealong when the shaft is turned, the end of the lever farther from the pivot being connected to said sleeve.

5. In a motion picture machine, a base, a support mounted and resting upon said base, a central pivotal connection between the base and the support and having a vertical axis, a lever pivoted on the support near one of its ends, the end of the lever nearer the pivot being loosely connected to the base, a threaded movable shaft on the support, a sleeve embracing the shaft and movable therealong when the shaft is turned, the end of the lever farther from the pivot being connected to said sleeve, and a flexible joint in the lever between the sleeve and the pivot point.

6. In a motion picture machine, a base, a support mounted and resting upon said base, a pivotal substantially central connection between the base and the support, a lever pivoted to the support and connected at one end to the base for adjusting the support on the base, threaded adjusting means on the support and connected to the other end of the lever for adjusting the same, the distance between the lever pivot and the threaded means on the support being relatively great compared to the distance between the lever pivot and the base.

7. In a motion picture machine, a base, a support mounted and resting upon said base, a pivotal substantially central connection between the base and the support, a lever pivoted to the support and connected at one end to the base at a point removed from the pivot point between the base and the support, said lever adapted to adjust the support on the base, threaded adjusting means on the support and connected to the other end of the lever for adjusting the same, the distance between the lever pivot and the threaded means on the support being relatively great compared to the distance between the lever pivot and the base.

In testimony whereof we have hereunto set our hands.

ALBERT KINDELMANN.
EWALD BOECKING.