I. SERRURIER.

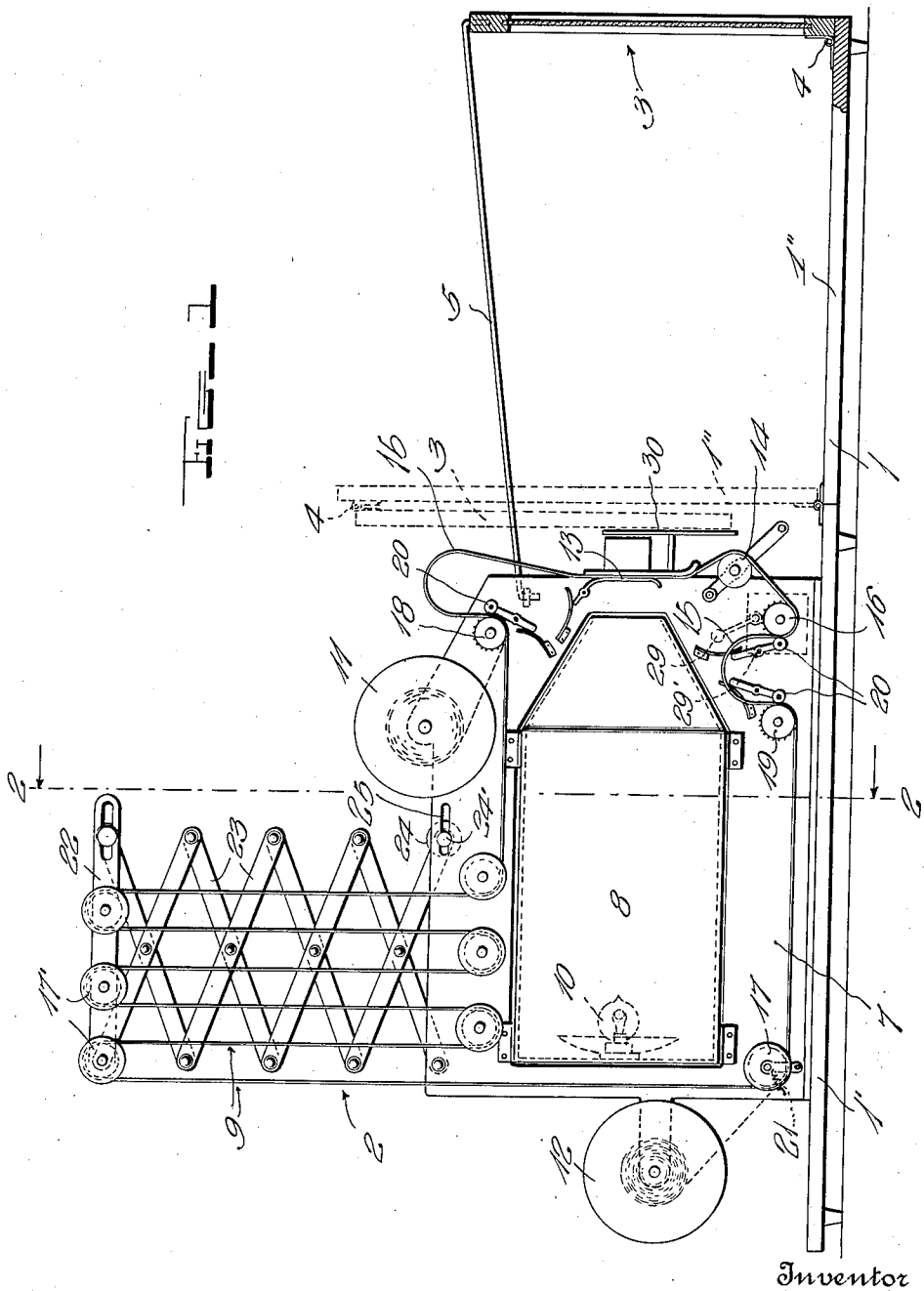
PICTURE PROJECTING APPARATUS.

APPLICATION FILED OCT. 25, 1917.

1,299,792.

Patented Apr. 8, 1919.

2 SHEETS—SHEET 1.



Witness

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2 SHEETS—SHEET 2.

FIG. 2

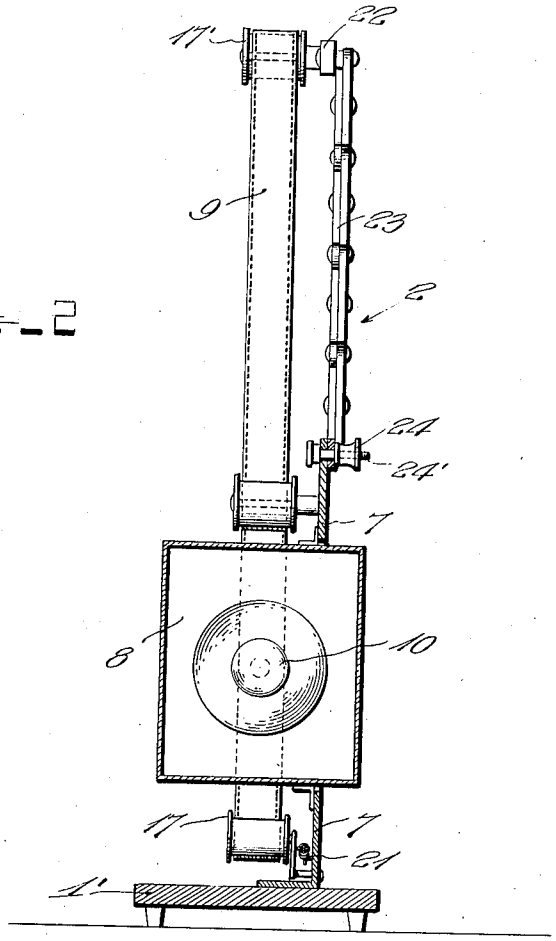
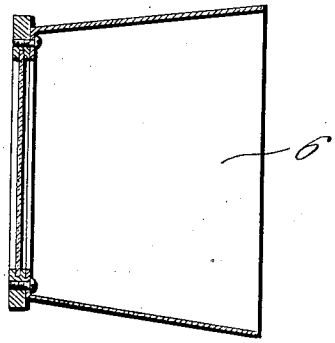



FIG. 3




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# UNITED STATES PATENT OFFICE.

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## PICTURE-PROJECTING APPARATUS.

1,299,792. Specification of Letters Patent. Patented Apr. 8, 1919.

Application filed October 25, 1917. Serial No. 198,449.

*To all whom it may concern:*

Be it known that I, IWAN SERRURIER, a citizen of the United States, residing at Altadena, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Picture-Projecting Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in projecting apparatus, the subject matter of the present embodiment of the invention, being intended for projecting motion pictures although it could well be employed for lantern slides and the like.

The principal object of the invention is to provide an apparatus which can be kept folded in a compact space when not in use but which is ready for immediate use with the focal area centered on the screen, when unfolded for use. With this general object in view, the invention resides in the novel features of construction and unique combinations of parts to be hereinafter fully described and claimed, the descriptive matter being supplemented by the accompanying drawings which form a part of this specification and in which:

Figure 1 is a side elevation of the improved apparatus showing the same in condition for use in full lines and in folded position in dotted lines;

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

Fig. 3 is a detail section of the light shield.

In the drawings above briefly described, the numeral 1 designates broadly the base of the improved machine, said base consisting of a main section 1′ and an auxiliary section 1″ hingedly connected so that the length of the base may be increased and decreased for respectively operating the machine and carrying or storing the same. An appropriate projecting machine 2 is mounted on the main section 1′ of the base 1, whereas a screen 3 is hinged at 4 to the free end of the auxiliary section 1″, said screen being held in upright position, when the apparatus is in use, by a suitable brace rod 5 or other suitable means which may be released to permit the screen to fold upon the section 1″ as will be clear from the dotted line position of Fig. 1, said section being foldable upwardly in advance of the machine 2. It may be pointed out that the projecting machine 2 is positioned in close proximity to one side of the screen 3 and that it will therefore be desirable in most cases to view the projected picture from the other side of the screen which must then be made of some material suitable for this purpose. In some cases, when the machine is employed in a room in which an excessive amount of light prevails, it will be found necessary to provide a light shield 6 around the screen 3 in order that the images thereon may be sharply defined, the shield in question being illustrated in Fig. 3.

On the main section 1′ of the base 1 is mounted a vertical supporting plate 7 which supports the lamp box 8 to one side of its center. This is considered an important feature of the construction as it makes it possible for the film 9 to pass under the center of the lamp box while its application or removal is in no way interfered with by the support of the lamp box.

The lamp box 8 is provided with any preferred source of light such as indicated at 10 and the film 9 passes across the path of the light rays projected from said source.

I wish it understood that the projecting mechanism of the machine constitutes no part of my invention but for the purpose of illustration I have shown a hand crank 29, mounted on one side of a suitable housing 29′ in which is contained the mechanism for intermittently rotating the feed roller 16 so that the film is properly advanced. Driven in any preferred manner in connection with the intermittently moving feed roller 16 is a shutter 30 which is diagrammatically shown in the drawing, said shutter performing its usual office. For the purpose of illustration I have also shown a tension plate 13 which should be arranged in the usual manner so that it can be turned

away for removing the film or applied with slight pressure against the film and I have also shown a roller 14 which may be adjusted in its location in any preferred manner and by means of which the picture may be adjusted to its proper height on the screen. This result however may be obtained in a different manner, for instance by moving the feed roller 16 vertically, in some types of the machine.

In addition to the intermittently moving feed roller 16, two continuously moving feed rollers 18 and 19 are provided and the film is shown to be applied in such manner that two loops 15 take up the variations between the continuous and intermittent movements, allowing also for the vertical adjustment of the picture on the screen above referred to. It should here be noted that small rollers 20 are diagrammatically indicated against the feed rollers to keep the film in engagement with the usual path thereof. These rollers 20 should be arranged in the usual manner so that they can be turned away for removing the film or applied with a slight pressure against the film.

If it is desired to use a reel film, the film is taken off the reel 11 by the feed roller 18 and wound upon reel 12, which should be driven in the usual manner to allow for variation in speed. The film may be guided by one or more guide rollers 17 and the feed roller 19 will prevent the lower film loop 15 from being drawn straight.

If it is desired to use a continuous film, the film is trained around a plurality of rollers 17′. Roller 17 is shown so mounted as to permit the coiled spring 21 to move it so as to maintain a certain tension on the film, but any other suitable means may be employed for maintaining a proper tension until removal thereof is required and for then allowing sufficient slack to lift it off one of the rollers, after which the film will be readily removable from all.

Any suitable number of the rollers 17′ may be mounted upon a vertically movable head 22, supported in such manner that the distance of the rollers supported by it to the other rollers 17′ on top of the machine, may be adjusted to any desired height within certain limits. The purpose of this is to permit the use of continuous films of different lengths and also to make the machine occupy a minimum amount of space when not in use. In the drawings is shown a lazy tong construction 23 for this purpose. When the movable head 22 is raised to the desired height, it can be locked in its place by tightening the thumb nut 24 of the clamping bolt 24′ which is arranged to slide in the slot 25 of the supporting plate 7.

I wish it understood that in place of the lazy tong construction shown in the drawings for illustrative purposes, any suitable means may be employed to support the head 22 at a fixed or changeable distance from the rollers on top of the machine.

From the foregoing, taken in connection with the accompanying drawings, it will be obvious that although the machine is of simple and inexpensive construction, it will be highly efficient and advantageous for numerous purposes. With the movable head 22 lowered and the screen folded to the position indicated by the dotted lines in Fig. 1, it will occupy a minimum space and when it is desired to use it, it will require minimum time and effort to have it ready for use with the picture centered and focused on the screen.

I wish to state that although the several features of construction shown and described, produce excellent results, these features are shown for illustrative purposes only, and it is to be understood that within the scope of the invention as claimed numerous minor changes may well be made.

I wish it understood that three distinct improvements are described in these specifications and the accompanying drawings, which improvements are entirely independent of each other and may be used separately as well as in combination, as occasion may demand, as follows:

1. The manner of connecting the screen to the projecting machine.

2. The manner of supporting the lamp box to one side of its center.

3. The film rack with movable head.

In conclusion I would state that it is not necessary that the machine should be arranged to use both reel film and continuous film as shown in the drawings, but that it may be built to use either one or both.

I claim:

1. In a portable picture projecting apparatus, the combination of a main base section, and a projecting machine mounted thereon, an auxiliary base section hinged to and forming an extension of said main section, said auxiliary section being foldable upwardly in advance of said projecting machine, a screen hingedly mounted on said auxiliary base section, and means for holding said screen in upright position.

2. In a portable picture projecting apparatus, the combination of a projecting machine, a screen operatively associated with said projecting machine, means connecting said projecting machine and screen for properly spacing the latter from the former when the apparatus is in use and for permitting moving of the screen into close relation with the projecting machine when not in use, and a projectable and retractable film rack operatively associated with said projecting machine and adapted to be projected when the apparatus is to be used.

3. In a portable picture projecting appa-

ratus, the combination of a projecting machine, a screen operatively associated with said projecting machine, and means connecting said projecting machine and screen for properly spacing the latter from the former when the apparatus is in use, and for permitting moving of the screen into close relation with the projecting machine when not in use.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

IWAN SERRURIER.

Witnesses:
J. R. RUTHERFORD,
S. W. BUGBEE.