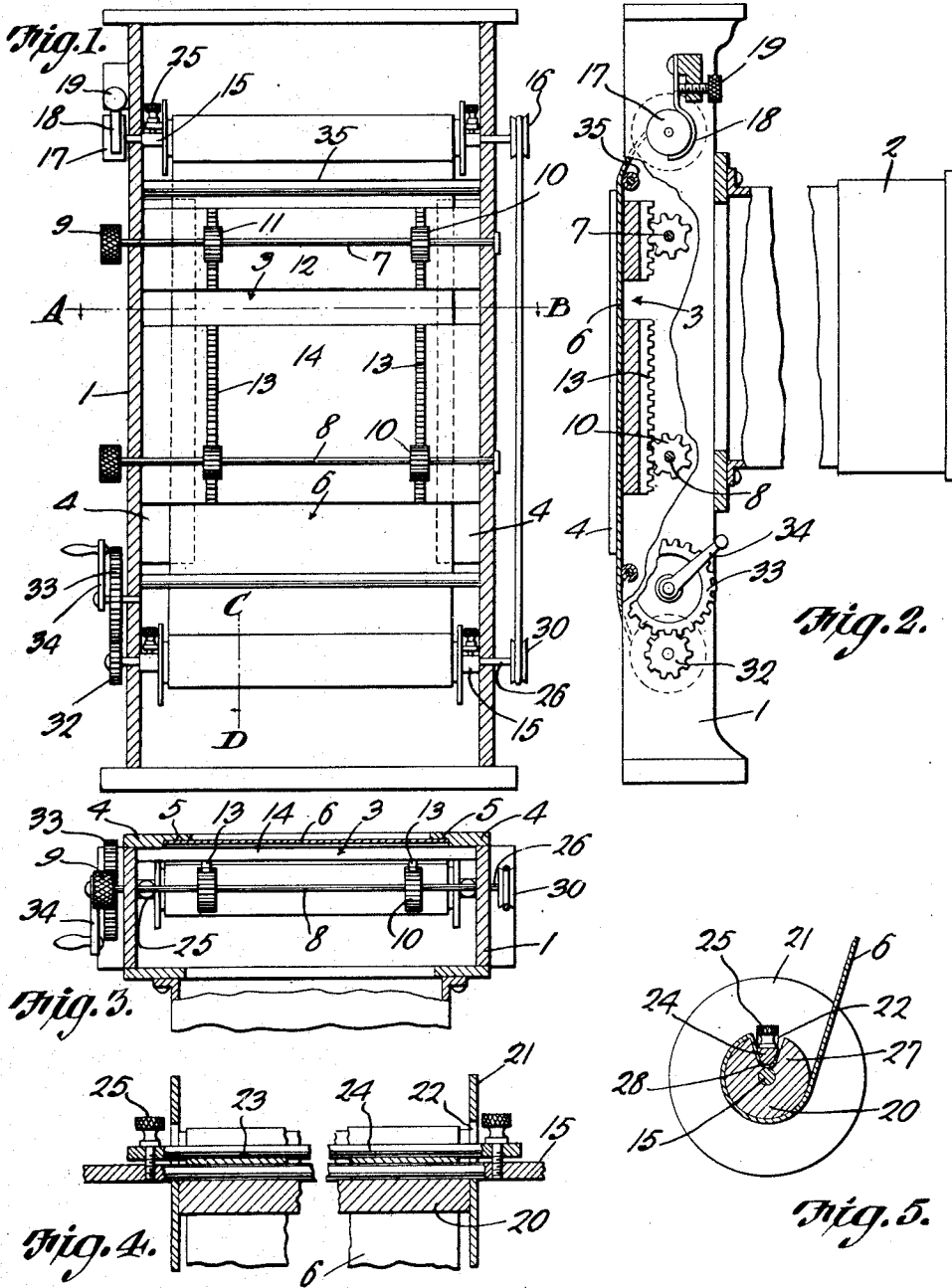


F. NORTE, H.
PROJECTION APPARATUS.
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1,204,585.

Patented Nov. 14, 1916.



Witnesses

J. P. Lamer
R. Z. Parker.

Francisco Norte, Jr., Inventor

by

C. A. Snow & Co.
Attorneys

UNITED STATES PATENT OFFICE.

FRANCISCO NORTE, H., OF EL PASO, TEXAS.

PROJECTION APPARATUS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANCISCO NORTE, H., a citizen of the United States, residing at El Paso, in the county of El Paso and State of Texas, have invented a new and useful Projection Apparatus, of which the following is a specification.

This invention relates to projection apparatus especially designed for use by operators of moving picture machines, the device being intended primarily for use in addition to the usual moving picture machines for the purpose of projecting onto the screen translations of the reading matter accompanying the pictures being projected.

The reading matter accompanying picture films is often displayed in localities where it cannot be understood and, consequently, the moving pictures are not enjoyed as they should be.

It is an object of the present invention to provide a means whereby translations of the reading matter can be printed or otherwise indicated on a film and projected in proper succession onto the screen so that it becomes possible for the audience to fully understand the picture even though the reading matter being projected from the same film with the pictures is not understood.

A further object is to provide a projecting machine of this character which is simple in construction, easy to operate, and which cannot only be used for the purpose of projecting translations as described, but can also be used for the purpose of projecting advertisements and the like during intermissions.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown. In said drawings:—Figure 1 is a vertical transverse section through the apparatus and looking toward the front thereof. Fig. 2 is a view partly in side elevation and partly in section of the apparatus. Fig. 3 is a section on line A—B Fig. 1. Fig. 4 is an enlarged longitudinal section through

one of the spools and showing the means employed for fastening one end of a transparent strip or film thereto. Fig. 5 is a section on line C—D Fig. 4.

Referring to the figures by characters of reference 1 designates a structure of any suitable proportions and which is adapted to be held in an upright position in any manner desired. An objective 2 extends therefrom and is adapted to project rays from an arc onto a screen. A window 3 is provided in the structure 1 for the passage of the light rays and at the sides of this window are located guide strips 4 along the inner faces of which are provided rabbets 5 for the reception of the side edges of a film 6. Arranged back of the window are upper and lower adjusting shafts 7 and 8 respectively, each adapted to be rotated in any suitable manner, as by means of a knob 9. On each shaft is journaled one or more gears 10 and the gears on the upper shaft mesh with racks 11 secured to the back of a shutter 12 which extends transversely within the frame 1 and bears against the guide strips 4, thus holding the film 6 within the rabbets 5. The gears upon the lower shaft 8 mesh with racks 13 upon the back face of a lower shutter 14 which also extends transversely within the frame and bears against the back faces of the guides 4. These shutters bear tightly against the guides and will be held by friction in any position to which they may be adjusted through the rotation of the shafts. Thus an orifice of any length from top to bottom can be provided within the front of the frame and in line with the objective 2.

Journaled within the upper portion of the frame is a shaft 15 provided at one end with a pulley 16 and at its other end with a disk 17, this disk constituting a brake wheel and being engaged by a spring arm 18 which can be pressed to any desired degree against the brake wheel 17 by an adjusting screw 19. Thus the rotation of shaft 15 can be retarded.

Shaft 15 carries a spool 20 the heads 21 of which have radial slots 22 the inner ends of which align with the ends of a channel 23 formed longitudinally within the spool. One end of the film 6 is adapted to extend into the channel 23 and to be held therein by a clamping bar 24 the ends of which extend through the slots 22 and are fastened to shaft 15 by screws 25. Thus it will be seen that the end of the film will be detachably

but securely fastened to the spool and can be wound readily thereon or unwound therefrom.

Another shaft 26 is journaled in the lower portion of the frame 1 and carries a spool 27 having a longitudinal channel 28 similar to the channel 23 in spool 20 and in this channel is arranged a clamping bar 29 similar to the bar 24. Thus the other end of the film can be detachably secured to the lower spool 27.

A pulley 30 is secured to one end of shaft 26 and a belt 31 serves to transmit motion from this pulley to the pulley 16. A gear 32 is secured to the other end of shaft 26 and meshes with a drive gear 33 which can be rotated in any suitable manner, as by means of a crank 34.

Guide rollers 35 are arranged within the frame 1 adjacent the upper and lower limits of movement of the upper and lower shutters respectively and serve to hold the film in proper position back of the objective.

When it is desired to use the device herein described a strip of transparent film is placed in a type-writer back of a sheet of carbon paper and the translations of the reading matter on the picture are printed through the carbon paper on this film and in proper succession. The film is then wound upon one of the spools and its free end is attached to the other spool, the side edges of the film containing the translations being placed in the rabbets 5 where they are held by the shutters 12 and 14. These shutters are then adjusted toward or from each other so as to expose the first item of translated matter which will be projected onto the screen. The same can then be cut off when desired by moving the shutters toward each other after which the next item can be brought to position and, at the proper time, the shutters can be adjusted apart so that this second item will be projected onto the screen. This course can be followed until all of the data upon the film has been projected. It will be apparent of course that longitudinal adjustment of the film is effected by rotating the gears 33 and 32 whereupon the spool 29 will take up the film while spool 20 will pay it out. The brake strip 18 will hold the film under proper tension. While the apparatus is especially useful in projecting translations onto a screen, it can, as hereinbefore stated, be used for the projection of advertisements, announcements, etc.

What is claimed is:—

1. Projection apparatus including an objective, shutter elements back of the objective, means cooperating with the shutter elements

for holding a film in position between the shutter elements and objective, and means for shifting the film.

2. Projection apparatus including an objective, separately adjustable superposed shutter elements back of the objective, means cooperating with the shutter elements for holding a film in position between the shutter elements and objective, and means for moving the film to bring a desired portion thereof across the opening between the shutter elements.

3. Projection apparatus including an objective, opposed slidable shutter elements, separate means for shifting the respective shutter elements toward or from each other, means cooperating with the shutter elements for guiding a film, film carrying spools, said shutter elements being interposed between the spools, means for detachably connecting the end portions of a film to the respective spools, and means for rotating one of the spools to wind the film thereon.

4. Projection apparatus including an objective, opposed slidable shutter elements, separate means for shifting the respective shutter elements toward or from each other, means cooperating with the shutter elements for guiding a film, film carrying spools, said shutter elements being interposed between the spools, means for detachably connecting the end portions of a film to the respective spools, means for rotating one of the spools to wind the film thereon, and means for retarding the rotation of the other spool.

5. In a projecting apparatus, the combination with an objective, separately adjustable shutter elements in rear thereof, and means cooperating with the shutter elements for guiding a film across the objective, of spaced spools mounted for rotation, each spool having a longitudinal channel, there being radial slots in the spool and communicating with the channel, each channel constituting means for receiving one end portion of a film, and a bar extending longitudinally within each channel for clamping a film upon the spool, and detachable and adjustable connections between the ends of the bar and the spool, said connections being located beyond the ends of the spool.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FRANCISCO NORTE, H.

Witnesses:

J. MENÑÓZ FERNANDEZ,
JESÚS H. CUARON.