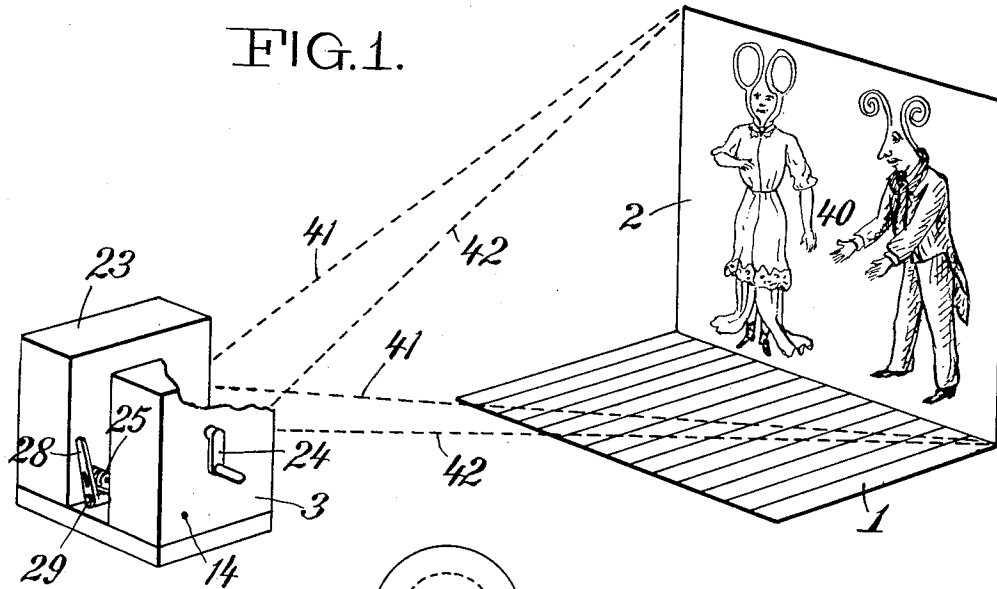
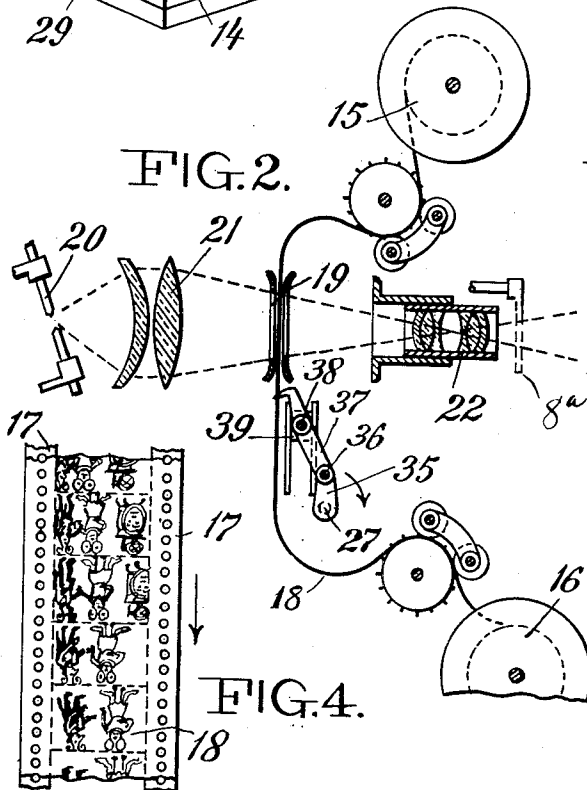
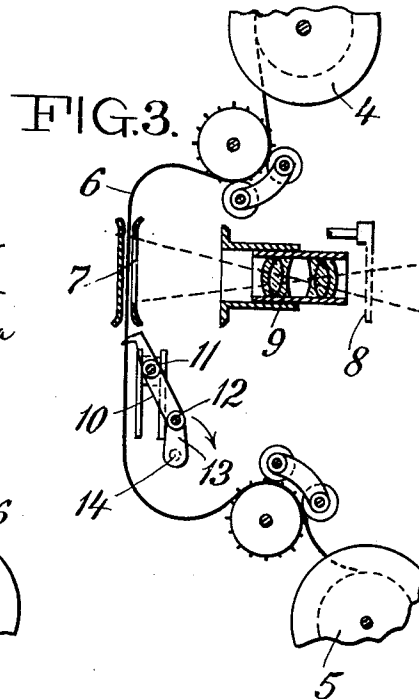


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 APPARATUS FOR MAKING MOTION PICTURES.
 APPLICATION FILED MAR. 3, 1915.

1,301,538.

Patented Apr. 22, 1919.
 2 SHEETS—SHEET 1.



Witnesses:

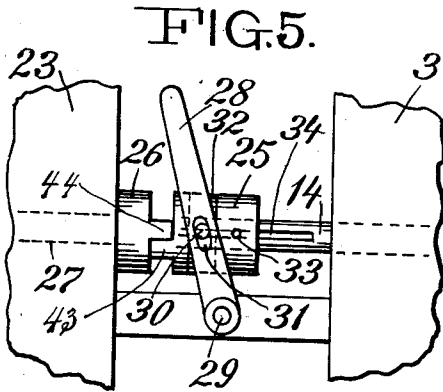
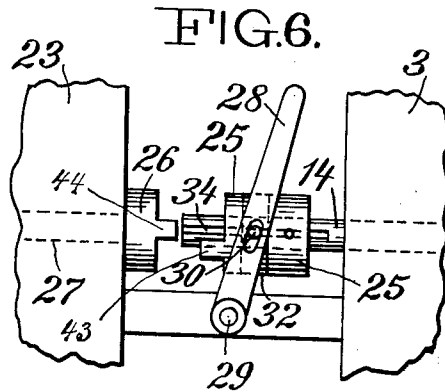
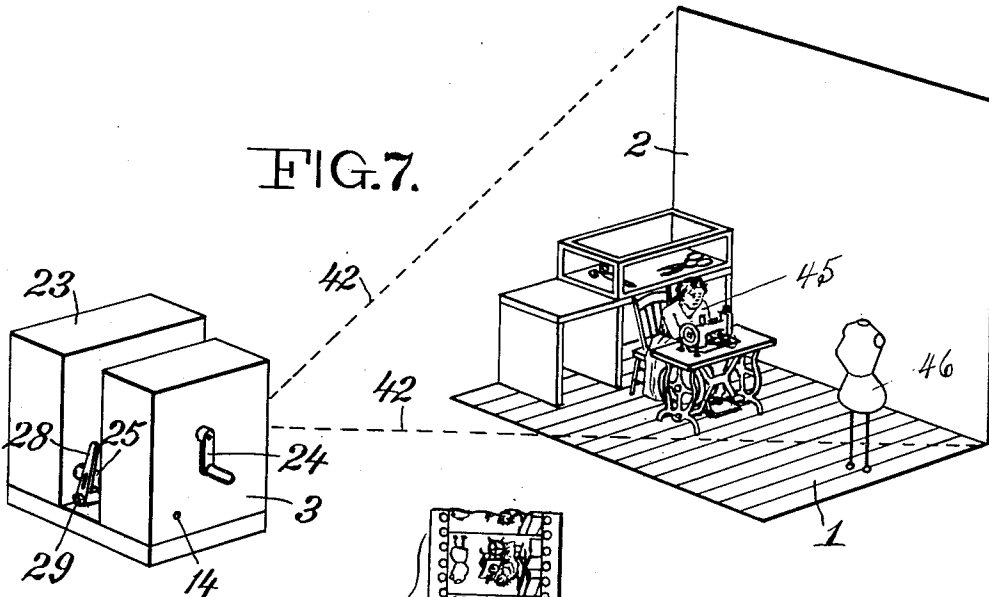
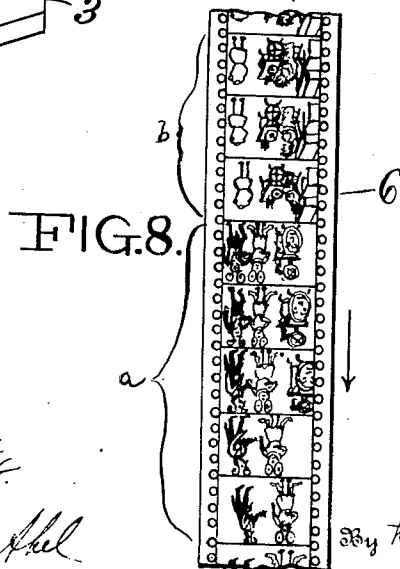
Alfred S. Fox
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UNITED STATES PATENT OFFICE.

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APPARATUS FOR MAKING MOTION-PICTURES.

1,301,538.

Specification of Letters Patent.

Patented Apr. 22, 1919.

Application filed March 3, 1915. Serial No. 11,682.

To all whom it may concern:

Be it known that I, LURA S. BRAINERD, a citizen of the United States of America, residing at Meriden, county of New Haven, State of Connecticut, have invented a new and useful Improvement in Apparatus for Making Motion-Pictures, of which the following is a specification.

My invention relates to an apparatus by means of which the scope of motion picture exhibitions may be extended, as said apparatus enables pictures to be readily taken in which the movement of inanimate objects, provided by means of a series of drawn pictures, may be merged with the regular movements of animate objects or vice-versa, to form parts of a dramatic or other story.

In carrying my invention into effect I take advantage of the dramatic or amusement value possible in producing caricatures by means of drawn pictures; a series or succession of which pictures can simulate progressive action and in such development the characters can be placed in unusual and extraordinary positions and undergo unusual contortions and provide melodramatic and comical incidents; also these caricatures can be drawn to resemble or partly resemble the actors which are taken by living performers in the same piece and can be so overdrawn as to accentuate their peculiarities or eccentricities.

The order of use or introduction can vary according to the particular story, drama or scenario to be depicted or displayed.

In some cases I will employ the cartoons or pictures first and then merge them into the other phase of activity; in other productions, I will place it last in order to provide a ludicrous or seemingly impossible finale; or the cartoons may be used to depict a climax or catastrophe, which would be difficult otherwise; but as stated the two phases may be used together in any suitable way.

In a previous application S. No. 2894, series of 1915, I have illustrated and described a method of carrying my novel art into effect, and in said application I have also shown one form of apparatus for effecting my purpose, such apparatus enabling means for reproducing the cartoons or pictures in series and upon the negative film by directly photographing same, but in my present case I have departed from this method, and by means of a suitable apparatus, project the cartoons or pictures successively upon a

screen, and as they are so projected of photographing them upon the negative film.

In some cases and instances I prefer this apparatus as it enables coöperation and coordination of the associated picture, stage and work, and provides means for working with greater precision and efficiency.

In order to explain my invention more specifically and for the purpose of illustrating the manner in which it can be carried into practical effect I will proceed to describe it in connection with the accompanying drawings in which Figure 1 represents a perspective view of the apparatus employed by me, which includes a stage and a screen.

Fig. 2 is a vertical section of the apparatus for feeding, advancing and winding up the cartoon carrier with the cartoons.

Fig. 3 is a vertical section of the camera apparatus showing the unwinding and winding up devices for the negative film.

Fig. 4 shows the cartoon carrier with the cartoon in position; showing also the direction of feed through the projecting instrument.

Fig. 5 is a detail view to a larger scale showing the clutch mechanism for connecting the photographic apparatus to the cartoon apparatus.

Fig. 6 is a similar view showing the same parts with the clutch disconnected.

Fig. 7 is a perspective view similar to Fig. 1. In Fig. 7 however the clutch of the cartoon apparatus has been disconnected and a photographic apparatus is engaged in taking pictures from living actors, and associated scenery and real objects.

Fig. 8 shows the completed negative film.

In these drawings 1 represents a stage or platform and 2 the screen or other suitable receiving surface at the back thereof. This screen is suitable for projecting pictures upon from which the camera may take photographs for the negative film of the moving picture scenario; it is so arranged as to form a background for the stage or platform and in such a position as that pictures reproduced therefrom will show the same perspective as those taken from the living models or physical objects on the stage. 3 is a camera or moving picture photographic apparatus.

It is shown in perspective view in Fig. 1 and in vertical section in Fig. 3. This camera is of the usual type and is provided

with film unwinding member 4, and winding-up member 5. The film is shown at 6, gate at 7, shutter at 8 and condenser at 9. The film feeding pawl is shown at 10. This pawl is swung in sliding block 11 and is pivoted at 12 to the arm 13 the latter turning on center 14; these arrangements are along the lines of the customary commercial apparatus.

In Fig. 2 is shown a complementary arrangement for feeding and supplying the cartoons or pictures. At 15 is an unwinding, and at 16 is a winding up apparatus; at 17 is a carrier on which are mounted the cartoons or pictures 18, see Fig. 4, which carrier may be fitted to receive a series of cartoon pictures in any desired manner, the arrangement shown consisting of a continuous film containing such cartoon pictures, which, it will be understood, originally consisted of a series of drawings of successive pictures, each of which is so depicted as to show an object or objects in a slightly different manner, whereby the changes or transformations take place in such objects as the pictures are rapidly and successively displayed. This carrier passes from the unwinding apparatus 15 to the winding apparatus 16, through the gate 19. As the picture passes the gate 19 the light from the lamp 20 passes through lenses 21, from thence through the translucent cartoon 18, thence through condenser 22 and is displayed on the screen 2, see Fig. 1.

From this point and place the cartoons so displayed upon the screen 2 are photographed by the camera 3 and the successive pictures are produced on the negative film 6.

Synchronism is secured between the operation of the camera and the cartoon projecting apparatus; the latter is shown in its entirety at 23 in Fig. 1.

The main center or shaft 14 is provided with a handle 24. At its other end it has a clutch member 25; this latter is adapted to interlock with member 26 on the shaft 27; the clutch is operated by a handle 28 pivoted at 29; a pin 30 working in a slot 31 is fixed to a ring 32 which latter as it is thrown to the right or left by the lever 28 shifts the member 25 to an operative or inoperative position, the clutch member 25 being splined to the shaft 14 by a pin 33 which enters and slides in slot 34 of said shaft.

It will be observed that as the shaft 27 rotates the arm 35 will turn in the direction of the arrow; this arm is pivoted at 36 to the lever 37, the latter turning on center 38 in sliding block 39; as the lever 37 moves up and down with the sliding block the upper end of the lever will enter the perforations of the carrier 17 by reason of its back and forth movement and in its descent will draw the carrier down and present another cartoon to be projected.

As will be seen the camera apparatus and the projecting apparatus work in unison when connected up. When the cartoon carrier is unwound from the drum 15 and wound up on the drum 16 the instrumentalities hereinbefore described will cause the cartoons to successively pass through the gate 19 and the camera acting in synchronism therewith will take the pictures successively upon the negative film 6.

To illustrate, the apparatus 23 is projecting picture 40 on the screen or displaying surface 2 along lines 41 and the camera 3 will receive the impression of same along lines 42 and so receiving them will transmit them to the film 6.

When the story has been carried along the desired distance by means of the cartoons and it is necessary to discontinue them and introduce the living moving picture actors, the handle 28 is moved from the position shown in Fig. 5 to the position shown in Fig. 6; this operation disconnects the clutch and the projecting apparatus 23 is thrown out of action.

In continuing the picture the moving picture actors at this point take the stage 1. I also place on the stage such movables as I need; the light from the projector being cut off I illuminate the scene with customary light employed in studio practice. This being a diffused light, I have not deemed it necessary to show it here, and the persons and accompanying scenery can be taken by the camera the lines 42 indicating the scope of the picture. It will thus be seen that the pictures thus taken will accord in their effect and perspective with the cartoon pictures.

It will be understood that with my improved apparatus these two phases of moving picture photography merge one into the other; that is to say, the cartoons or pictures resemble the objects in the regular moving picture scenery and are made to assume also more or less human form, by exposing a series in quick successive movements, and action is thereby simulated; also these cartoons or pictures can resemble to some extent the moving picture characters so that a merger or blending can be effected in that respect also; in fact various combinations and modifications can be employed.

It will be seen from the foregoing that I have provided a novel apparatus for procuring a two-phase display and have shown means for reducing same to a commercial basis. By employing the stage or platform as shown in connection with the picture receiving surface at the back of the stage I have shown means and instrumentalities for utilizing the same camera by a continuous and connected procedure. Means are thus provided for an artistic blending and merger—one into the other; one taking up the

thread of the story where the other leaves off, both being received upon the same negative film which is moving continuously.

In order to effect the requisite perfect synchronism between the operation of the camera and projector and whereby the associated instrumentalities and more especially the respective shutters 8 and 8^a, shall act in unison, only two teeth 43, 44 are provided one on each member; by this means the connected up position of the parts of the clutch is always the same.

Referring to Fig. 8 showing the final negative film, the set *a* shows the film occupied by reproductions of the actor; the set *b* shows the film depicting moving picture characters 45 and movables 46, but the two sets, one following the other, disclose a continuous story.

Having thus described my invention, the following is what I claim as new and useful therein and desire to secure by Letters Patent:

1. In an apparatus for making moving picture films, a cartoon carrier, a series of cartoon pictures mounted on the carrier, a projecting apparatus to display such pictures, a screen located in front of the projecting apparatus to receive said projected pictures, means including a rotatable member for imparting movement to said carrier, a camera focused on said screen to take the cartoon pictures as they are successively displayed on the screen by movement of said carrier, said camera apparatus including a rotatable member, an operative connection between said carrier and camera apparatus for simultaneously operating the same and including a clutch for connecting and disconnecting said apparatuses, and means for operating said connecting and disconnecting means.

2. In an apparatus for making moving picture films from cartoon pictures, means including a shaft rotatably mounted to successively display said cartoon pictures, a camera positioned to take such cartoon pictures as they are successively displayed and including a shaft in axial alinement with that for displaying said pictures, and means for connecting and disconnecting said shafts.

3. In an apparatus for making moving picture films, a case, means located within the case for successively displaying a series of cartoon pictures, and including a rotatable shaft, a camera positioned beside said case to take the cartoon pictures as they are successively displayed and including a rotatable shaft and located in axial alinement

with that in said case, and a clutch for connecting and disconnecting said shafts.

4. In an apparatus for making moving picture films, a series of cartoon pictures movably supported, means for moving said pictures to successively display them, a stage for living actors, a camera positioned to take both the cartoon pictures and the pictures of the living actors, and an operative connection between the camera and the movable support for said pictures.

5. In an apparatus for making moving picture films, a series of cartoon pictures movably supported, means for moving said pictures to successively display them, a projecting apparatus for said pictures, a screen to receive said pictures, a stage for living actors, a camera placed to take both the pictures displayed on said screen and the living actors on said stage, and an operative connection between the camera and the movable support for said pictures to produce simultaneous action of both.

6. In an apparatus for making moving picture films, a series of cartoon pictures movably supported, means for moving said pictures to successively display them, means for projecting said cartoon pictures, a screen to receive said projected pictures, a stage for living actors located in front of said screen, a camera positioned to take both the pictures thrown upon the screen and those of the living actors upon the stage, and an operative connection between the camera and the cartoon picture moving apparatus and including means for connecting and disconnecting said parts.

7. In an apparatus for making moving picture films, a projecting apparatus, a camera located beside the projecting apparatus, both the camera and projecting apparatus having shafts in axial alinement, means for connecting and disconnecting said shafts, a series of cartoon pictures movably supported in front of the projecting apparatus, means for moving said pictures, a screen positioned to receive the projected cartoon pictures, and a stage located in front of said screen, said camera being positioned to take both the cartoon pictures thrown on the screen and the pictures of the living actors.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this 20th day of February, 1915.

LURA S. BRAINERD.

Witnesses:

ALFRED S. FOX,
HERBERT KNIGHT.