W. F. AHBE.

METHOD AND APPARATUS FOR PRODUCING MOVING PICTURE CARTOONS.

APPLICATION FILED NOV. 28, 1919.

1,416,154. **Patented May 16, 1922.**

2 SHEETS—SHEET 1.

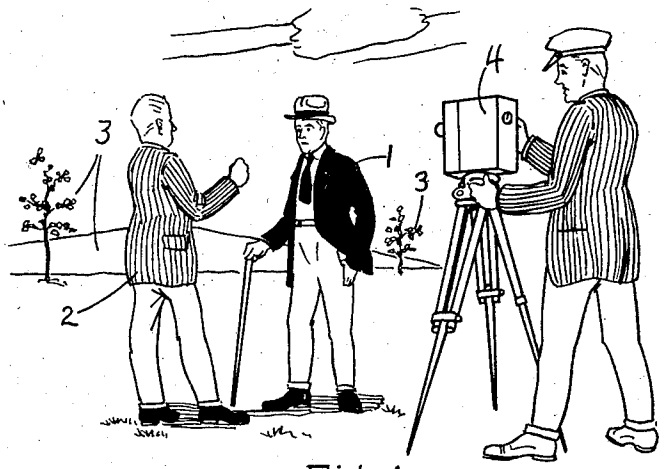


Fig. 1.

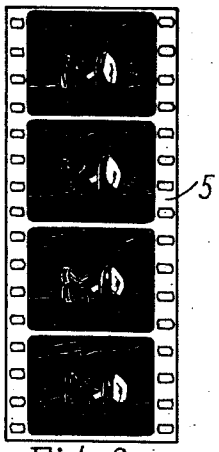


Fig. 2.



Fig. 3.

Fig. 4.

Witnesses
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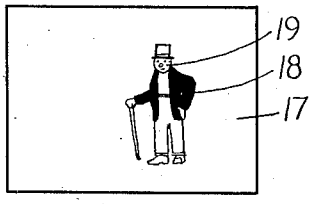


Fig. 5.

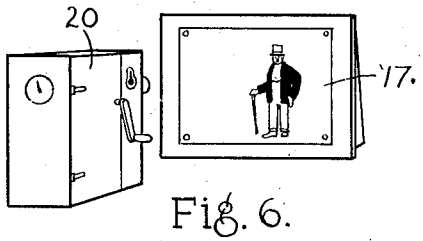


Fig. 6.

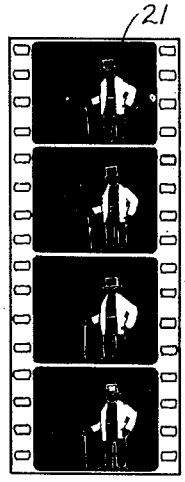


Fig. 7.

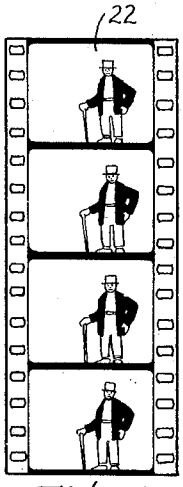


Fig. 8.

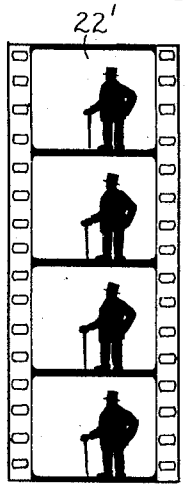


Fig. 9.

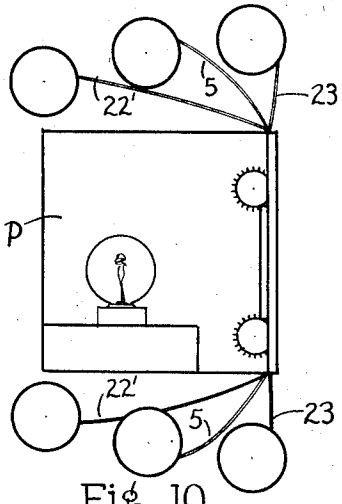


Fig. 10.

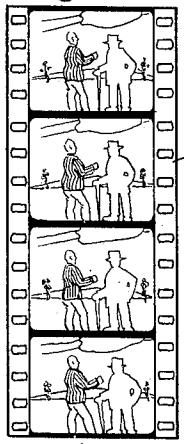


Fig. 11.

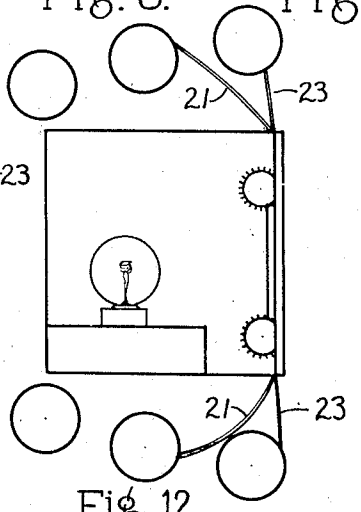


Fig 12.

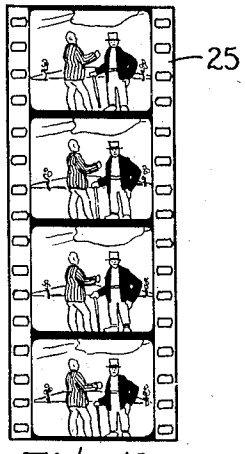


Fig. 13.

Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM F. AHBE, OF CHICAGO, ILLINOIS.

METHOD AND APPARATUS FOR PRODUCING MOVING-PICTURE CARTOONS.

1,416,154. Specification of Letters Patent. Patented May 16, 1922.

Application filed November 28, 1919. Serial No. 341,078.

To all whom it may concern:

Be it known that I, WILLIAM F. AHBE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Method and Apparatus for Producing Moving-Picture Cartoons, of which the following is a description.

My invention belongs to that general class of inventions relating to the production of pictures, particularly moving pictures, and especially relates to a method and apparatus for producing films in which there may be combined living characters in their particular surroundings together with animated cartoon characters or other features drawn with pen and ink according to the fancy of the cartoonist. By means of my method and apparatus the cartoon character or characters drawn with the pen in accordance with the fancy of the artist can be so animated to play any or all parts of a photoplay, or the like, and by "parts", I mean the character assigned to the actor in a play. The cartoon character or characters may appear in a scene without the aid of a living character or characters. The same is different in all respects from the present so-called animated cartoon pictures because the surroundings or settings would be shown, that is to say, if a street was a setting, the surroundings would be actually a moving picture of a street in all its details with its every day traffic moving about, or whatever the particular setting might be.

The present invention has among its objects, the production of novel, interesting and entertaining pictures and simple, convenient, efficient and satisfactory apparatus for carrying out the method and producing the pictures. The same has among its further objects the employment of a method and the production of an apparatus that will assist the cartoonist in getting natural movements on the part of his character or characters, as well as the living character or characters in the scene. Many other objects and advantages of the construction herein shown and described will be obvious to those skilled in the art, from the disclosure herein given.

To this end my invention consists of the novel construction, arrangement and combination of parts herein shown and described and more particularly pointed out in the claims.

In the drawings, wherein like reference characters indicate like or corresponding parts,

Figure 1 is a perspective view illustrating the first step in the method,

Figure 2 is a plan view of a portion of a film negative resulting from the first step,

Figure 3 is a plan view of a portion of a positive film or print of the negative shown in Figure 2,

Figure 4 is a perspective view of a cartoonist's stand and projector combined illustrating the apparatus and a further step in the method of producing the film,

Figure 5 is a plan view of the sketch resulting from the step in the method illustrated in Figure 4,

Figure 6 is a perspective view of the sketch shown in Figure 5 and a camera illustrating another step in the method,

Figure 7 is a portion of a negative film resulting from the photographing of successive sketches as in Figure 6,

Figure 8 is a plan view of a portion of a positive film or print of the negative shown in Figure 7,

Figure 9 is a similar view of the same film with the character opaqued or filled in.

Figure 10 is a diagrammatic view of a printing machine illustrating another step in the production of the completed film.

Figure 11 is a plan view of a portion of the same film as it would look if developed at this stage.

Figure 12 is a view similar to Figure 10 illustrating a further step in the method in producing the film, and

Figure 13 is a portion of a positive print ready to be projected as the result of the steps and the use of the apparatus illustrated.

Referring to the drawings 1 and 2 represent the characters playing their respective parts, and 3 the background, 4 being a moving picture machine. In this particular scene, 1 plays the part that is intended for the cartoon character, the same not being necessary or essential, but, nevertheless, very desirable as it helps the cartoonist in get-

ting natural movements on the part of his cartoon character or characters as well as the living character or characters which will appear in the scene, so that their actions correspond with those of the cartoon character or characters.

After the pictures are taken the film is developed, producing a negative, for example, similar to that indicated by 5 in Figure 2. After the production of the negative a positive print or film 6, shown in Figure 3, is produced by the usual methods. This positive film 6 is that used by the cartoonist to assist him in producing his characters or cartoons, and while the negative can be used for this purpose the positive is more convenient. As shown, the positive film is arranged in a projector 11 consisting of the usual film-carrying standard 7, having means 8 arranged to move the film in a step by step movement so that each picture on the film may be displayed to suit the artist. As shown, this is arranged to be actuated by the actuating rod 10, or the equivalent, the mechanism being so arranged that it simultaneously winds the film in the box 9. The projector consists of the usual light box 12 and lenses 13 and 14. The projector is arranged to project the picture on the under side of a top 15 of the stand onto a glass plate 16, over which is arranged paper 17. The picture is focused upon the drawing paper and the artist has before him all of the characters and the background shown in the film 6. He is enabled to produce his character on the drawing paper to suit his fancy, for example, as indicated in Figure 5, in which 18 represents the body and 19 the head of the character. He makes this to suit himself, varying it as he may desire. This can follow the outlines of Figure 1, but if he does not desire this assistance, he can modify it as he wishes. Obviously the character 1 shown in Figure 1 may, if desired, be clothed or made up in a particular manner, making it much easier for the cartoonist to draw in the figure. However, he is not confined to copying the projected figure.

After producing his drawings, which are in consecutive order and preferably numbered or filed so that he may have the same in sequence, the same are photographed. This step is illustrated in Figure 6, in which 20 represents the camera arranged to successively take a picture of the successive sketches. After the film has been developed, the result is a negative 21 similar to that shown in Figure 7, and from this negative a positive film or print 22 is produced, as indicated in Figure 8. The artist then takes the positive film or print and fills in the character or features with a suitable non-transparent color or opaque, so that in the succeeding steps in the method that particular portion or feature may be thereafter blocked out temporarily. The positive thereby becomes to all intents and purposes a negative, and be termed a secondary negative.

In the next step in the method the operator places the positive 22′, negative 5 and rawstock 23 in a printing machine P, preferably of the standard type but equipped to take care of and allow three thicknesses of film to pass through. The machine should be so constructed and adjusted that there is no slipping, sliding or relative play or movement between the films after once adjusted. The positive print 22′ is preferably placed on the inside or next to the light. The negative film 5 is then placed so as to bring it between the opaque positive 22′ and an unexposed positive film or raw stock 23. The three films must be properly threaded or assembled so that the action of both 22′ and 5 registers the starting point or first aperture of each of the three films marked. They are then run through the machine or, as termed in the art, the unexposed positive film is printed. Obviously, owing to the opaqued portions on film 22′, portions of film 23 corresponding to the cartoons will not be printed. After this, film 23 is rolled back to the starting point and the negative film 21 substituted for film 5, film 22′ being removed, the negative film 21 being arranged to register the same as positive film 22′ did. After both films are properly threaded or arranged in the machine, starting on the first aperture, they are run through or printed. This is called double printing, as the positive film indicated by film 23 has been twice printed. This completes the several steps in so far as the exposing and the printing is concerned, and film 23 is then developed, producing a negative from which a print 25 may be produced similar to that shown in Figure 13. Additional negatives may be made, termed secondary negatives, from the positive print or film 25. Wherever I specify "film" in the specification or claims, I wish to be understood as including any equivalent for the purpose.

From the preceding it will be obvious that when the film 25 is produced on the screen, there will be shown substantially what is shown at the time of the taking of the pictures, as illustrated in Figure 1, with the exception however, that the character 1 will be shown according to the artist's, or cartoonist's fancy, and he may have varied this or added additional features depending upon his skill and the subject that he has in mind. Thus it is to be seen that it is combined with a natural scene and an imaginary one, which when reproduced, or thrown on the screen from the finished film, will appear lifelike and natural. As before mentioned, it is not necessary to use the character

1, which in this case represents cartoon figures except as an aid to the artist. Various characters can be produced at the same time and introduced into the picture according to the artist's fancy.

Having thus described my invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, construction, arrangement and combination of parts herein shown and described or uses mentioned.

What I claim as new and desire to secure by Letters Patent is:—

1. The method of producing animated cartoon films, consisting in combining a negative and an opaqued positive, and printing a film print therefrom, thence re-printing said print with the negative from which said opaqued positive was produced.

2. The method of producing animated cartoon films, consisting in combining a negative film and an opaqued positive film in a predetermined manner, and printing a film print therefrom, thence re-printing said print with the negative from which said opaqued positive was produced, arranged to correspond with the prior arrangement of said opaqued positive.

3. A method of producing a print, consisting in first making a negative, thence making a second negative of a desired feature, and printing a positive therefrom, thence opaquing features printed on said positive, thence printing a positive from the first mentioned negative and said opaqued positive combined, thence using the second mentioned negative, and re-printing the positive in the unexposed portions covered by said opaqued positive features, whereby a positive is produced, combining the features of both of said negatives.

4. A method of making pictures consisting in producing a film feature negative from sketches, thence utilizing a print therefrom to produce substantially a secondary negative and combining the same with a desired negative and printing a positive therefrom, thence arranging the feature negative and re-printing the positive with the feature negative whereby the features are printed in the portions covered by the secondary negative during the first printing.

5. A method of producing moving picture films consisting in producing moving picture negatives, thence utilizing said negatives, to assist in producing a series of sketches, thence photographing the sketches in regular order to produce negatives thereof, thence making positive prints of the sketches from said last mentioned negatives, thence opaquing the said features on said positive prints, thence printing positive prints from the first mentioned negatives and said opaqued prints combined, thence before development reprinting said positive prints with the second mentioned negatives, whereby the sketches are reproduced in the portions covered by the opaqued prints in the first printing.

6. A method of producing moving picture films consisting in producing moving picture negatives, thence utilizing said negatives and making positive prints to assist in producing a series of sketches, thence photographing the sketches in regular order to produce negatives thereof, thence making positive prints of the sketches from said last mentioned negatives, thence opaquing the said features on said positive prints, thence printing positive prints from the first mentioned negatives and said opaqued prints, combined in a predetermined manner, thence before development reprinting said positive prints with the second mentioned negatives arranged to register with the exposures in the prints corresponding to the prior arrangement and registry of the prints and the opaqued prints, whereby the sketches are reproduced in the portions covered by the opaqued prints in the first printing.

7. A method of producing pictures consisting in producing two negatives of the desired features to be combined, thence producing a secondary negative from one of the first mentined negatives, thence printing a positive film from one negative and the secondary negative, thence reprinting with the negative from which said secondary negative was produced.

8. A method of producing picture films, consisting in projecting a picture from a positive film on a drawing sheet and with its aid producing a desired sketch, thence photographing the sketch and producing a negative therefrom, thence making a positive film print from said negative and opaquing out the sketch features from the positive, thence with a desired negative and the opaqued positive print as a negative printing a positive, thence with the sketch negative reprinting same to produce a positive containing the features of the desired negative and the character sketch combined.

9. The method of producing animated cartoon films, consisting in making a drawing of a portion of a scene to be produced, making a partially opaque positive corresponding with said drawing or any portion thereof, combining said positive with a negative of a scene and printing a film print therefrom, then reprinting said print with a detail negative of the drawing.

10. The method of producing pictures consisting in producing two negatives of the desired features to be combined, then producing a secondary negative comprising opaque features corresponding with the fea-

tures upon one of the first-mentioned negatives, then printing a positive from the other of the first-mentioned negatives combined with the said secondary negative, and then reprinting said positive with the detail feature negative corresponding with said secondary negative.

In testimony hereof, I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM F. AHBE.

Witnesses:
ROY W. HILL,
BERTHA HARTMANN.