

[54] **METHOD FOR PRODUCING A SEQUENCE OF MOVING PICTURES AND APPARATUS FOR THE PERFORMANCE OF THE AFORESAID METHOD**

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 352/53, 133; 40/130 L

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[57] **ABSTRACT**

A method of, and apparatus for, producing a sequence of moving pictures, especially advertisements, with respect to an observer moving past such pictures, wherein a sequence of individual partial pictures containing a moving subject are projected adjacent one another along a given path of travel of the observer upon at least one projection surface. Each individual partial picture is forwardly advanced in synchronism with the remaining individual partial pictures in the direction of travel of the observer and through a predetermined path as a function of the speed of travel of the observer. The projection of each individual partial picture at the end of this predetermined path is interrupted, and thereafter there is again initiated the projection of the partial pictures at a projection starting position in such a manner that the observer receives the impression that the subject located upon the successive individual partial pictures is moving.

11 Claims, 2 Drawing Figures

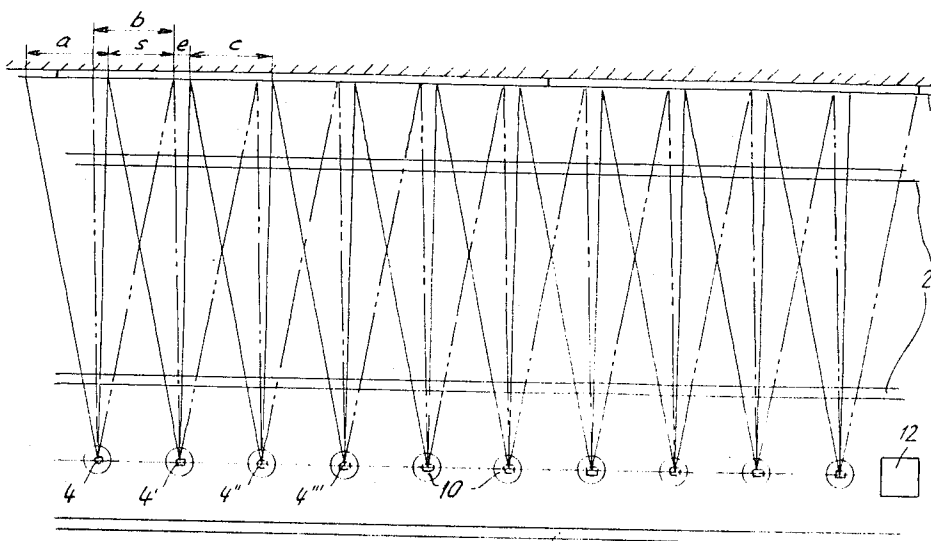
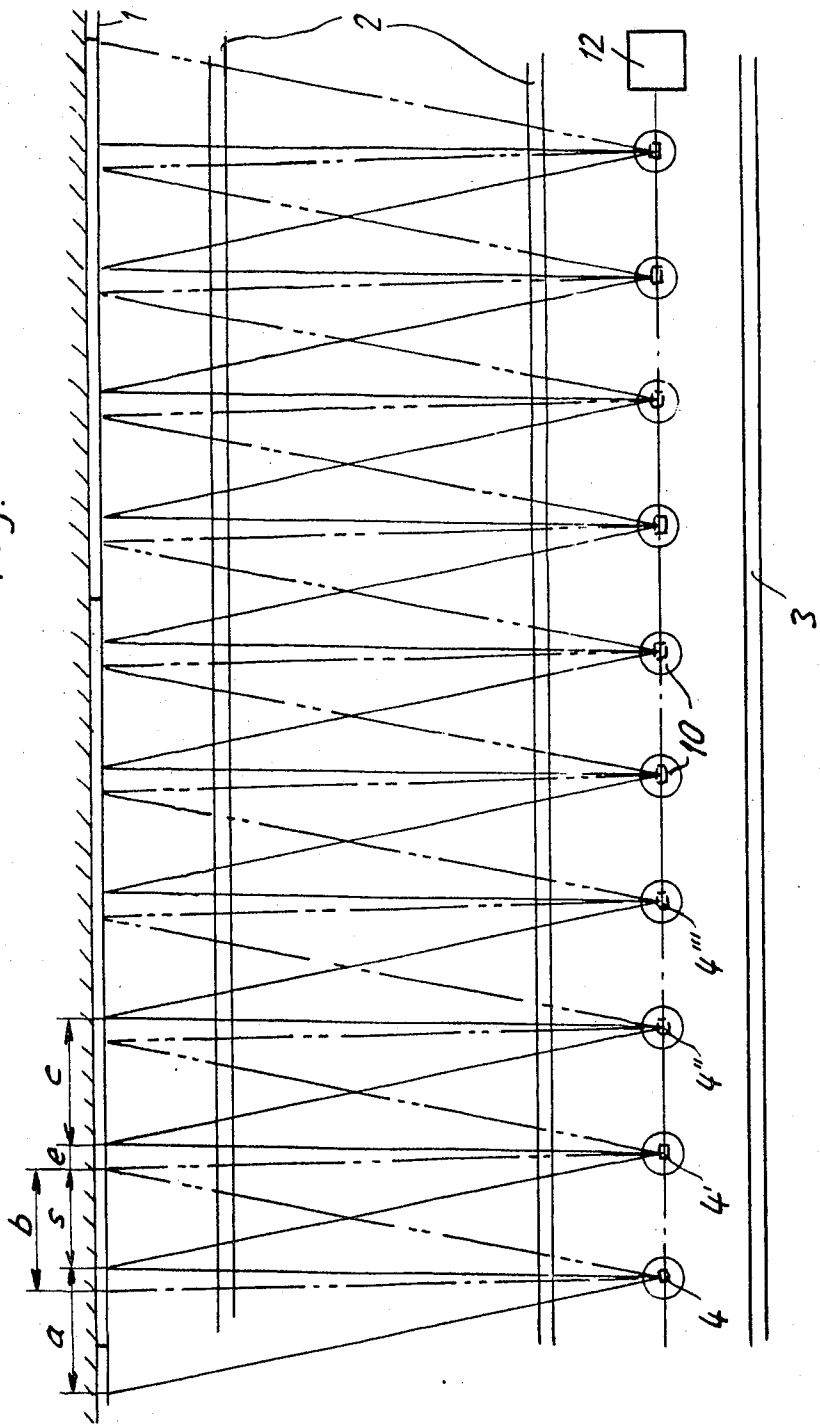


Fig. 1



METHOD FOR PRODUCING A SEQUENCE OF MOVING PICTURES AND APPARATUS FOR THE PERFORMANCE OF THE AFORESAID METHOD

BACKGROUND OF THE INVENTION

The present invention relates to a new and improved method for producing a sequence of moving pictures of images, especially advertising pictures or advertisements, with regard to an observer traveling past such pictures, and this invention also relates to an improved apparatus for the performance of the aforesaid inventive method.

The prior art is already familiar with the technique of producing in timewise succession a number of different pictures opposite an observer or viewer in that, in a complicated and expensive manner through the use of neon tubes a number of picture motifs or portions thereof are arranged behind one another and these are appropriately switched-in and switched-out. However, such type advertisements are only suitable for viewing by a person who is either not moving with regard to the pictures or only moving at a very slight observation speed with respect to these pictures. Additionally, with the prior art arrangements it is not possible to produce any continuous course of movement of the pictures.

SUMMARY OF THE INVENTION

Therefore, it will be seen from what has been expressed above that a real need still exists in the art for a method of, and apparatus for, generating a sequence of moving pictures in a manner not associated with the aforementioned drawbacks or limitations of the prior art techniques and apparatus constructions. Hence a primary objective of this invention is to devise just such improved method and apparatus for capably and reliably fulfilling the existing need in the art and overcoming the aforementioned drawbacks and limitations of the state-of-the-art.

Another and more specific object of the present invention relates to an improved method of producing a sequence of moving pictures by means of which it is possible, with very simple means, to transmit pictorial information, for instance an advertisement portraying a continuous subject, to a person traveling or moving past such pictures.

Another object of the present invention relates to an improved apparatus for carrying out the inventive method and for reliably, clearly and accurately transmitting a sequence of moving pictures in a manner enabling such to be seen by a viewer moving therepast at a relatively great speed.

Now in order to implement these and still further objects of the invention, which will become more readily apparent as the description proceeds, and considering first the inventive method aspects of this development, it is to be understood that such comprises projecting a sequence of individual partial pictures, representing a course of activity or movement of the picture subject, adjacent one another along a path of travel upon at least one projection surface, typically a projection wall or surface, then forwardly advancing each individual partial picture in synchronism with the remaining individual partial pictures in the direction of travel of the observer and along a predetermined path as a function of the speed of travel of the observer, at the end of this predetermined path interrupting the projection of each individual partial picture, and thereafter again begin-

ning the projection of the individual partial pictures from a starting location in such a manner that the observer receives the impression that the subject appearing at the successively portrayed individual partial pictures is moving.

It is advantageous if the length of the individual partial pictures is calculated such that at least 15 pictures per second, preferably at least 20 pictures per second, move past the observer.

Furthermore, it is also advantageous if the path of movement of the individual partial pictures is calculated such that between each two successive individual partial pictures, viewed in the direction of travel of the observer, there appears a non-illuminated intermediate gap or space.

Apart from the aforementioned method aspects of this development and as already alluded to above this invention is also concerned with an improved apparatus for the performance of the aforesaid inventive method which is manifested by the features that it embodies at least one projection surface, for instance a projection wall or screen, and a plurality of adjacently arranged projection devices for projecting a respective individual partial picture on the projection surface, said projection devices being constructed and/or arranged such that their projection axes are pivotable in the direction of movement of the individual partial pictures which are to be projected.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be better understood and objects other than those set forth above, will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

FIG. 1 schematically illustrates a preferred arrangement of apparatus for carrying out the inventive picture projection technique; and

FIG. 2 is an enlarged view of one of the projection devices used in the apparatus arrangement of FIG. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Describing now the drawings, it will be understood that along a given path of travel, for instance a tunnel wall, there is arranged a projection surface, here in the form of a projection screen or wall 1 and between the rail tracks 2 and 3 of the railroad track structure there are located a number of adjacent projection devices 4, 4', 4'' and so forth, each for the purpose of projecting a respective individual partial picture or image.

The projection devices 4, 4', 4'', 4''' etc., are constructed in such a manner that their projection axes can be synchronously pivoted or shifted with respect to one another, for instance by means of projection mirrors, in the direction of movement of the railroad train, as such will be discussed more fully hereinafter in conjunction with FIG. 2. In this manner it is possible to project along the tunnel wall upon the projection screen 1 a sequence of individual partial pictures or images which portray a desired sequence of movements or pictorial information. Further, each individual partial picture which has been projected by a single projection device 4, 4', 4'', 4''' etc., can be forwardly shifted in synchronism with the remaining individual partial pictures in the direction of travel of the railroad train, that is in the direction of travel of the observer, and measured as a

function of the speed of movement of the observer, from the starting position *a* through the path *s* into the terminal position *b*. At the end of this path *s* the projection of each individual partial picture is interrupted, then repeating once again at the starting position following pivoting of the projection direction. Accordingly, the observer traveling along the length of the projection screen 1 has transmitted thereto, in other words receives the impression that the subject appearing at the successively projected individual partial pictures is actually moving, even though each of the projection devices 4, 4', 4'', 4''' etc. only project a single information carrier, typically a photographic or picture slide.

The length of the individual partial pictures projected upon the projection screen 1 in the direction of travel is calculated such that at least preferably approximately 20 individual pictures per second move past the observer so that the observer receives the impression that the picture subject is carrying out a continuous movement.

The movement path *s* of the individual partial pictures is calculated such that between each two individual partial pictures *b* and *c* which follow one another from the standpoint of the observer there appears a non-illuminated intermediate space or region *e*.

The projection devices 4, 4', 4'', 4''' and so forth can be arranged in a manner that during through travel of a railroad train in the opposite direction they can be rotated through an angle of substantially 180° in order to be able to again project upon a further projection screen situated opposite the first projection screen 1.

Of course it is also possible to utilize a transparent projection screen, for instance a projection screen which is erected in the open along a railroad track and considered from the standpoint of the observer has the projection devices located behind this projection screen.

As best seen by referring to FIG. 2 it is possible to provide a multiplicity of projection mirrors 5, 5', 5'', 5''' and so forth at the outside of a turning drum 6 rotatable about a vertical axis, this drum 6 being for instance continuously rotated by any convenient drive which therefore has not been particularly illustrated. Owing to rotation of the drum 6 the speed of advance of the projection of the pictures is thereby established and by means of a light stop or diaphragm 7 and displacement or movement path *s*. In order to be able to project different series of pictures it is possible to arrange different picture slides or other information carriers in a disc or plate 8 which is rotatable about a horizontal axis, generally indicated by reference character 11. This rotatable disc 8 can then be set by a standard selector switch to the desired picture slide for the purpose of changing from one picture sequence to another when it is desired to change an advertisement or to change the projection direction. The disc 9 represents a rotating diaphragm or light stop portion which cooperates with the diaphragm 7. This disc-shaped diaphragm 9 is equipped along its periphery with recesses which determine the beginning and end of the projection of an individual partial picture upon the projection screen, similar to the operation of conventionally known projection devices. The entire projection apparatus is arranged upon a rotatable support 10 so that, for instance, within a train tunnel the complete projection apparatus can be rocked through 180° in accordance with the direction of travel of a railroad train

moving therepast. Also, in that case, then, there could be provided any suitable drive, as schematically indicated by reference character 12 in FIG. 1, for synchronously pivoting the projection devices in synchronism with respect to one another in the direction of movement of the individual partial pictures to be projected.

The inventive projection technique is also, for instance, useful in the tunnels of subways or underground trains and is especially advantageous for advertisement purposes since the traveler finds himself in an optically uninteresting and monotonous environment and almost automatically would tend to prefer to look at these surroundings if provided with an advertisement containing a moving subject.

Finally, it is here to be mentioned that the term "picture" or "partial picture" is used in the sense of any desired information which is to be portrayed and is not to be construed in a limiting sense in any way whatsoever.

While there is shown and described present preferred embodiments of the invention, it is to be distinctly understood that the invention is not limited thereto but may be otherwise variously embodied and practiced within the scope of the following claims. ACCORDINGLY,

What is claimed is:

1. A method of producing a sequence of moving pictures, especially advertisements, with respect to an observer moving past such pictures, comprising the steps of substantially simultaneously projecting a sequence of individual partial pictures containing a moving subject adjacent one another along a given path of travel of the observer upon at least one projection surface, forwardly advancing in synchronism with the remaining individual partial pictures each individual partial picture in the direction of travel of the observer and through a predetermined path as a function of the speed of travel of the observer, interrupting the projection of each individual partial picture at the end of this predetermined path, and thereafter again initiating the projection of the partial pictures at a projection starting position in such a manner that the observer receives the impression that the subject located upon the successive individual partial pictures is moving.

2. The method as defined in claim 1, including the step of projecting the individual partial pictures upon a projection screen.

3. The method as defined in claim 1, including the step of fixing the length of the individual partial pictures such that at least 15 pictures per second move past the observer.

4. The method as defined in claim 3, wherein the length of the individual partial pictures is fixed such that at least 20 pictures per second move past the observer.

5. The method as defined in claim 1, including the step of determining the path of movement of the individual partial pictures such that between each two successive individual partial pictures, viewed in the direction of travel of the observer, there appears a non-illuminated intermediate space.

6. An apparatus for producing a sequence of moving pictures with regard to an observer traveling past such pictures, comprising at least one projection surface means, a plurality of adjacently arranged projection devices, each of said projection devices substantially simultaneously projecting a respective individual partial picture upon the projection surface means, said projec-

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tion devices having means for pivoting their respective axis of projection in the direction of movement of the individual partial pictures which are to be projected.

7. The apparatus as defined in claim 6, wherein each of said individual projection devices incorporates an optical system which can be moved synchronously with regard to one another in the direction of movement of the individual partial pictures to be projected.

8. The apparatus as defined in claim 7, wherein said optical system of each individual projection device is equipped with at least one pivotably mounted projection mirror.

9. The apparatus as defined in claim 8, wherein said

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optical system comprises a rotatable drum, and a multiplicity of projection mirrors arranged about the periphery of said drum.

10. The apparatus as defined in claim 6, a further including means for synchronously pivoting said projection devices with regard to one another in the intended direction of movement of the individual partial pictures to be projected.

11. The apparatus as defined in claim 6, wherein said projection surface means comprises a projection screen.

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