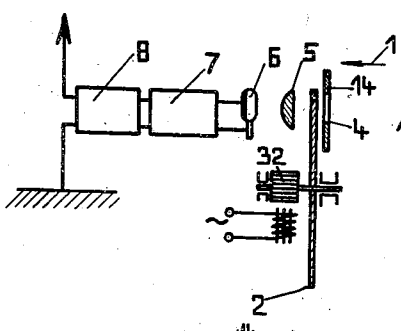
April 5, 1938. D. VON MIHÁLY 2,113,487

METHOD OF CINEMATOGRAPHIC TELEVISION

Filed March 3, 1930



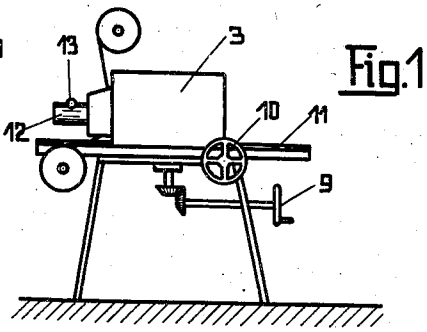


Fig.1

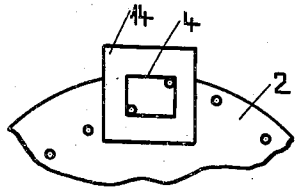


Fig.2

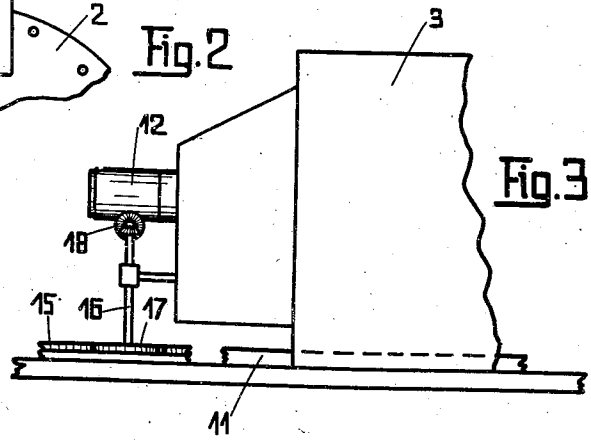


Fig.3

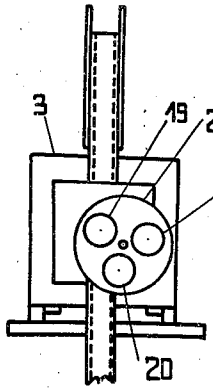


Fig.4

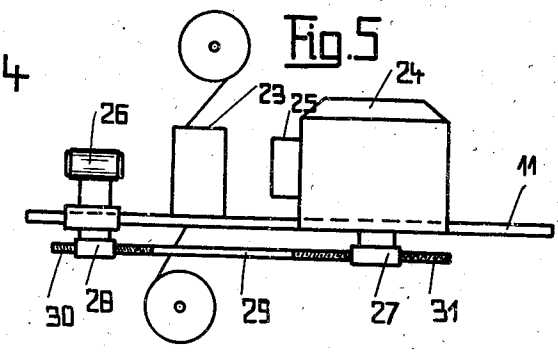


Fig.5

D. Von Mihaly
INVENTOR

By: Marks & Clerk
Attys.

Patented Apr. 5, 1938 2,113,487

UNITED STATES PATENT OFFICE

2,113,487

METHOD OF CINEMATOGRAPHIC TELEVISION

Dénes von Mihály, Berlin-Wilmersdorf, Germany, assignor to Telehor Aktien Gesellschaft, Berlin-Charlottenburg, Germany

Application March 3, 1930, Serial No. 432,991
In Germany March 5, 1929

2 Claims. (Cl. 178—7.1)

This invention relates to an apparatus for cinematographic television, the object of the invention being to render possible the transmission of the usual cinematographic pictures by means of television apparatus.

Television apparatus as hitherto proposed allow pictures to be transmitted which have a comparatively small number of details, for instance heads. It is, however, impossible to transmit groups of persons or landscapes or the like sufficiently clear and so that the reproduction should contain a sufficient number of details.

The present invention enables the transmission of the usual cinematographic film containing pictures which, owing to their great number of details could not hitherto be transmitted, to be effected thereby avoiding the necessity of selecting a particular strip of film, by this that only the essential parts of the picture are transmitted and for this purpose they are projected on an enlarged scale into the television apparatus, while the parts which are secondary as regards the scene in question are not transmitted.

The invention essentially consists in this that the cinematographic apparatus which projects the cinematographic picture on the picture opening of the picture scanning device is adjusted to different enlargements and the picture in the picture opening is displaceable laterally in an upward and in a downward direction.

The invention is illustrated diagrammatically and by way of example in the accompanying drawing, in which:

Figure 1 is a television cinematographic transmitter according to the invention.

Figure 2 is a view of a portion of the picture scanning device with the picture opening on an enlarged scale and seen in the direction of the arrow 1 in Figure 1.

Figure 3 is a side view of another form of construction.

Figure 4 is a front view of a modification, and

Figure 5 is a side view of another form of construction.

Referring to Figures 1 and 2, 2 is a picture scanning device in the form of a Nipkow disc which is driven in a known manner by a synchronous motor, for instance by a phonic wheel 32. 3 is a cinematographic projecting apparatus of any desired construction which projects the picture of the cinematographic film to be transmitted on the picture opening 4 of the picture scanning device.

A lens 5 and the photoelectric cell 6 are mounted behind the Nipkow disc. The photoelectric currents and their fluctuations which correspond to the fluctuations in the brightness of the picture elements are led to an amplifier 7 and therefrom to a wireless transmitter 8.

The cinematographic projector 3 can be adjusted by means of a hand wheel 9 in a vertical direction and by means of a hand wheel 10 in a lateral direction with respect to the picture opening 4; at the same time the projector can be displaced longitudinally on rails 11 in the direction of the optical axis. In this axial displacement the adjustment of the objective 12 of the projection apparatus is subsequently additionally regulated by means of the screw 13.

If, for instance, a scene is transmitted containing a number of persons present at the same time and which would contain too many picture details for the transmission, the cinematographic apparatus can be displaced in the direction of the optical axis, as well as vertically and laterally, the sharpness being subsequently regulated, in such a manner that only the essential parts of the picture, for instance two persons are projected on the picture opening 4 and are transmitted, which parts are transmitted and which parts are avoided can be easily determined by making the Nipkow disc 2 and the covering frame 14 which surrounds the picture opening 4 whitish.

In the form of construction illustrated in Figure 3 the adjustment of the objective 12 is effected automatically by this that a toothed bar 15 is provided between the rails 11 which supports the projector 3 and with a toothed wheel 17 secured to the shaft 16 engages with the said rack 15. When the projector 3 is axially displaced the toothed wheel 17 is rotated by the stationary rack 15 whereby the adjustment of the objective is effected automatically through the intermediary of the bevel wheels 18.

In the form of construction illustrated in Figure 4, objectives 19, 20, and 21 are mounted in a rotary head 22 being adjusted to different distances and three corresponding indices are provided on the guiding rails corresponding to the three different adjustments. The cinematographic apparatus is moved in the direction of the optical axis into the position corresponding to one of the said three indices and the objectives 19, 20, or 21 corresponding to the respective index is brought into the operative position.

In the example illustrated in Figure 5 a sharp adjustment is effected automatically by this that the mechanical part of the projector 23 is stationary whilst the lamp casing 24 with the con-

denser 25 and the objective 26 of the projector is displaced along the rails 11 in the direction of the optical axis. A stationary screw nut 27 is provided on the lamp casing 24, whilst a stationary screw nut 28 is secured to the objective 26 of the projector, which screw nuts are mounted on a common screw-threaded spindle 29, the end of the spindle on which the screw nut 28 is mounted being provided with a left hand screw thread 30 and the end provided with the screw nut 27 having a right hand screw thread 31. When the lamp is displaced in the direction of the optical axis an automatically sharp adjustment of the objective 26 of the projector is effected, which objective, owing to the coupling through the intermediary of the spindle 29 is displaced to a corresponding extent in a direction opposite to the movement of the lamp casing 24.

What I claim is:

1. In combination, a scanning device for analyzing the varying intensities of light and shadow upon cyclically recurring series of elemental areas of a subject of which the image is desired, an optical system associated with the scanning device, movable means for producing relative movement between the subject of transmission and the scanning device, and automatic means operable upon movement of the movable means for maintaining in focus the optical system used in the scanning operation.

2. In a television system, a scanning device for analyzing varying intensities of light and shadow on successive elemental areas of a subject of which an image is to be transmitted, an optical system associated with the scanning device, and means for moving the optical system to automatically maintain it in focus upon relative movement of the scanning device and the subject scanned.

DÉNES VON MIHÁLY.