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June 16, 1931. B. R. CUMMINGS 1,810,598

SCANNING DISK

Filed Feb. 26, 1929

Fig.1.

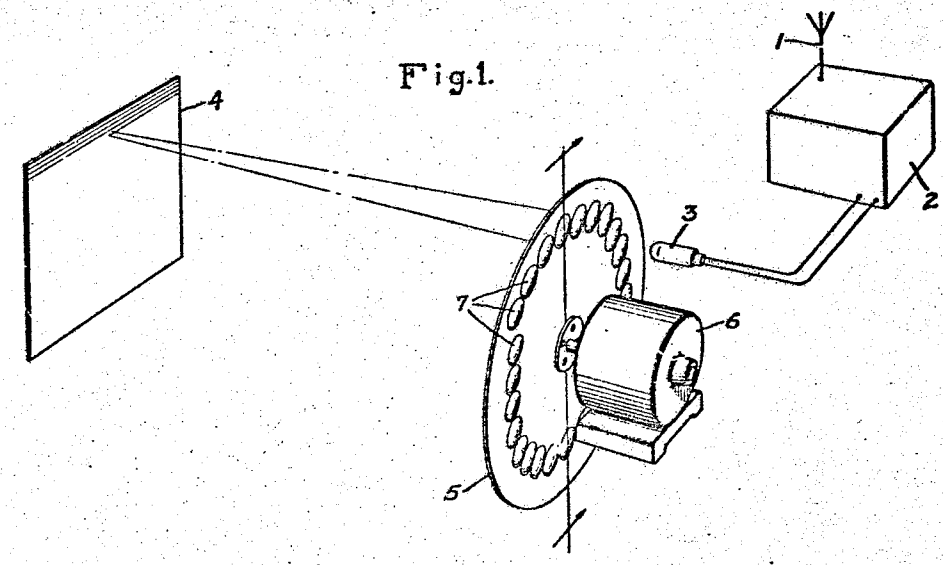


Fig.2.

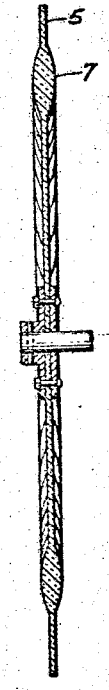


Fig.3.



Fig.4.

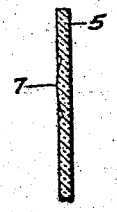
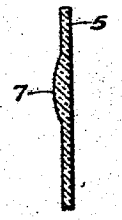


Fig.5.



Inventor:
Byron R. Cummings,
by Charles L. Tulla
His Attorney.

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Patented June 16, 1931 1,810,598

UNITED STATES PATENT OFFICE

BYRON R. CUMMINGS, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK

SCANNING DISK

Application filed February 26, 1929. Serial No. 342,727.

My invention relates to apparatus for transmitting pictures or images from one place to another, and has for its principal object the provision of an improved scanning disk which is suitabde for use in such apparatus.

Various types of picture transmitting and receiving apparatus have been provided in the past. Many of these apparatus include a rotatable perforated disk or screen through the perforations of which light from a suitable source is projected upon the successive elemental areas of the picture for the purpose of producing reflected light impulses having intensities dependent on the color value of these elemental areas. In the operation of such apparatus these light impulses are converted into electrical impulses at the transmitting apparatus and at the receiving apparatus are reconverted into light impulses which are applied to a picture receiving member through a perforated disk similar to and rotated in synchronism with the rotatable disk of the transmitting apparatus.

In order to intensify the light transmitted through the rotatable scanning disk utilized in the transmitting and receiving apparatus, it has been proposed to mount lens in each of the perforations of this disk. A scanning disk thus constructed is very expensive due both to the cost of the lenses and to the large amount of very careful work required to mount the lenses in the perforations of the disk. In accordance with my invention, these difficulties are avoided by making the scanning disk and lenses in a single integral structure such as molded glass, bakelite, quartz or the like.

My invention will be better understood from the following description when considered in connection with the accompanying drawings and its scope will be pointed out in the appended claims.

Referring to the drawings, Fig. 1 illustrates a picture receiving apparatus wherein my invention has been embodied, and Figs. 2 to 5 show various details of a scanning disk constructed in accordance with my invention.

In the operation of the receiving apparatus illustrated by Fig. 1, the electrical impulses received by an antenna 1 are transmitted through a radio receiver 2 to a lamp 3, and the light from this lamp is applied to a picture receiving member 4 through a disk 5 which is rotated by suitable means such as a motor 6. As is well understood by those skilled in the art, the light of the lamp 3 modulated in accordance with the light reflected from the elemental areas of the transmitted picture is applied through the lenses 7 of the disk 5 to the corresponding elemental areas of the receiving member 4.

The disk 5 and lenses 7 are formed integrally with each other, that is they are made of a single piece of suitable transparent material. The lenses 7 are preferably arranged in the form of a spiral and may be molded together with the disk thus avoiding the large amount of careful work heretofore involved in grinding and mounting the lenses.

As indicated by Figs. 2 to 5, different types of lenses 7 may be utilized in the disk.

It will be apparent that the lenses 7 may also be formed in the disk 5 by grinding or the like without losing the advantages made possible by applicant's invention.

The embodiment of the invention illustrated and described herein has been selected for the purpose of clearly setting forth the principles involved. It will be apparent, however, that the invention is susceptible of being modified to meet the different conditions encountered in its use and I therefore aim to cover by the appended claims all modifications within the true spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. A rotatable scanning member adapted

for use in picture transmitting apparatus comprising a disk having mounting means at its center and having a series of lenses forming therewith a one-piece structure and arranged in a row adjacent the periphery of the disk.

2. A scanning member adapted for use in picture transmitting apparatus comprising a disk having means at its center for rotatably mounting the same and having a series of lenses formed therewith and arranged in a spiral, said disk and lenses constituting a one-piece integral structure.

In witness whereof, I have hereunto set my hand this 25th day of February, 1929.

BYRON R. CUMMINGS.