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PROJECTOR

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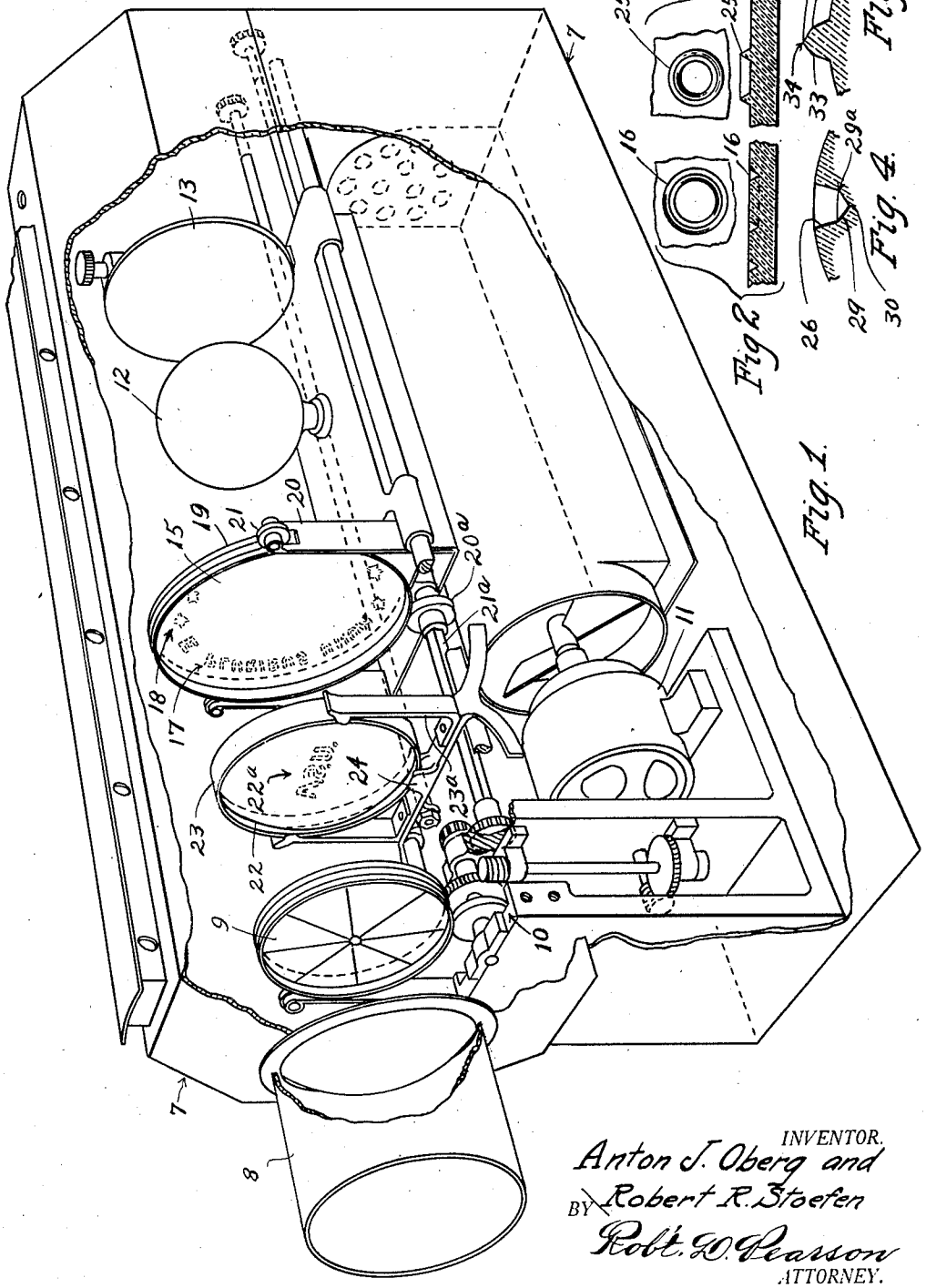


Fig. 1.

Fig 2

Fig. 3.

Fig. 4.

Fig. 5.

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PROJECTOR

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This invention relates to an optical machine for projecting upon a white or other neutral background an image of letters or other characters for the purpose of amusement, advertising, or for any other desired purpose.

The letters or other characters are reproduced upon the screen by making use of the principle of light diffraction, and the lens or plate of glass upon which the characters thus reproduced are inscribed may advantageously be combined with translucent colored plates through which the same ray of light is projected, and when said translucent plate is employed a more fantastic, weird effect is given to the appearance of the matter thrown upon the screen.

An object of this invention is to provide a more simple, efficient means for the purposes stated and one which will be well adapted for use in connection with color projecting machines now on the market.

Other objects and advantages may hereinafter appear.

Referring to the accompanying drawings, which illustrate preferred embodiments of the invention, Figure 1 is a perspective view of a color projecting machine showing the invention applied thereto, a portion of the wall of casing being broken away to show interior construction.

Figures 2 and 3 are detailed views illustrating in plan and section different forms of lettering engraved upon glass plates.

Figures 4 and 5 are sectional views of different forms of engraving of letters upon a lens.

Referring in detail to the drawings, our invention is shown applied to a color projecting machine having a casing 7 carrying at its front end a light projecting element 8 and having also a translucent color element 9, which may be rotated by the gearing 10 driven by motor 11. Said machine also has a source of light 12, behind which is located a reflector 13. The parts thus far enumerated, separately considered, form no part of our present invention, but have been briefly mentioned in order that the uses and advantages of the construction of the invention itself may be more clearly understood.

Referring now to the construction to which the invention directly pertains, the glass plate 15 is shown having cut thereinto V-shaped grooves 16 whereby are outlined upon said plate any desired inscriptions, the drawing showing on said plate the words "E pluribus unum," said inscription being designated 17 in Figure 1, and ornamental stars 18 being also shown at the beginning and end of said inscription.

Said glass plate 15 is shown supported by an annular carrier 19 held between the guides 20 provided with rollers 21, said annulus 19 together with glass plate 15 being rotated by the driving roller 20^a which is in frictional contact with its lower side. Said roller 20^a is driven in any suitable manner as by a shaft 21^a which is operatively related to the gearing 10 already referred to.

In front of the glass plate 15 is shown a lens 22 mounted within an annular carrier 23 between guides 23^a, said carrier resting upon a cross piece 24. Upon the central portion of this lens 22 are engraved characters 22^a as desired, the letters "U. S. A." being illustrated in the drawing. These characters are preferably located where they will occupy the open space within the circular path traveled by the inscription upon the glass plate 15 when the latter is rotated.

In Figure 3 is shown a circular rib 25 which could be used to designate the letter "O".

In Figures 4 and 5 are shown in section, a groove and a bead construction of a compound character. In Figure 4 the groove is provided with diverging side surfaces 26 each of which meets the adjoining lower surface 29 at an obtuse angle 29^a. The bottom surfaces meet at an angle 30, while in Figure 5 the bead is provided with lower surfaces 31 and upper surfaces 32. These upper and lower surfaces meet at each side in an outwardly projecting obtuse angle 33. The upper surfaces 32 meet each other in an acute angle 34. Hence the constructions of Figures 4 and 5 provide compound prisms.

It is to be understood that the raised or depressed lettering formed upon the lens or

upon the glass plate will produce bands or strips of distorted light or color upon the screen by which the desired letters or other characters will be outlined.

The bands or strips whereby the letters are outlined are of a prismatic character, hence the white light will contain color variations within the outlines of the letters or characters thus delineated. When these strips of somewhat colored light pass through the color plate 9, said color plate cooperates with the prismatic letter forms on plate 15 further to modify the coloring of the letters.

We claim:

1. The combination, with a light projecting mechanism; of a glass disk having near its periphery prismatic characters, means for rotating said disk, and a lens between said disk and the screen said lens having inscribed thereon another inscription which is thrown upon the screen within the path which is traversed by the inscription upon said glass disk when the latter is rotated, the latter inscription being projected through said lens.

2. In a projecting device, the combination, with a glass disk having inscribed thereon prismatic characters which are spaced radially away from its central portion, and means for rotating said disk; of a lens between said disk and the screen, said lens having inscribed upon its central portion another inscription in prismatic characters which is thrown upon the screen within the path which is traversed by the inscription upon said glass disk when the latter is rotated, the latter inscription being projected through said lens.

3. In a projecting device, the combination, with a glass disk having inscribed thereon prismatic characters which are spaced radially away from its central portion, and means for rotating said disk; of a translucent color element between said glass disk and the screen and in position to have projected therethrough the outlines of the aforementioned characters.

In testimony whereof we affix our signatures.

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