Feb. 8, 1927. 1,616,747

A. DE V. HARNETT

PICTURE PROJECTING DEVICE

Filed May 17, 1922

Fig. 1

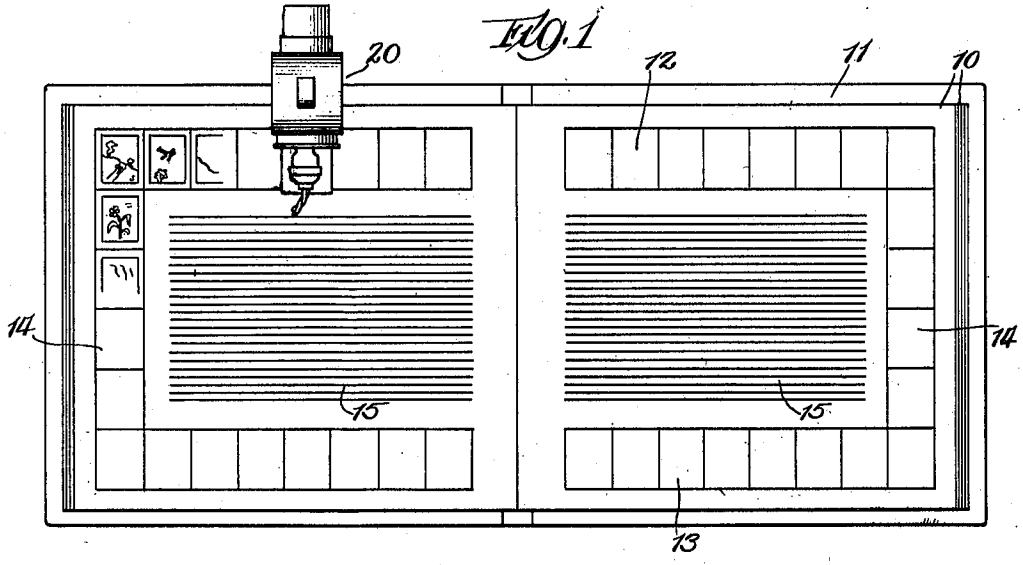


Fig. 2

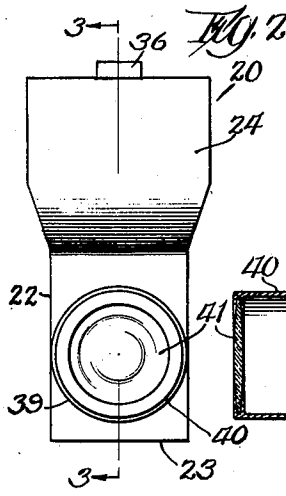


Fig. 3

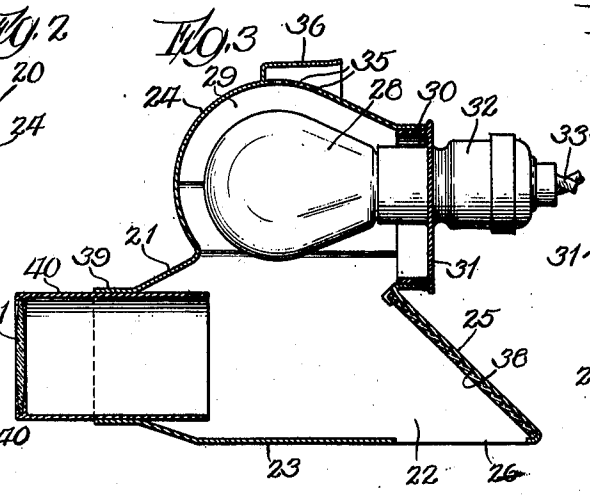


Fig. 4

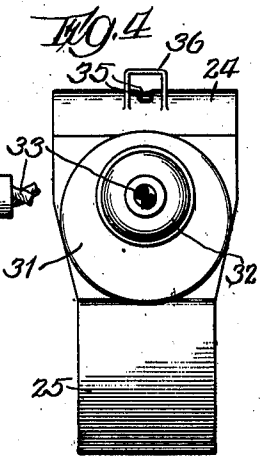
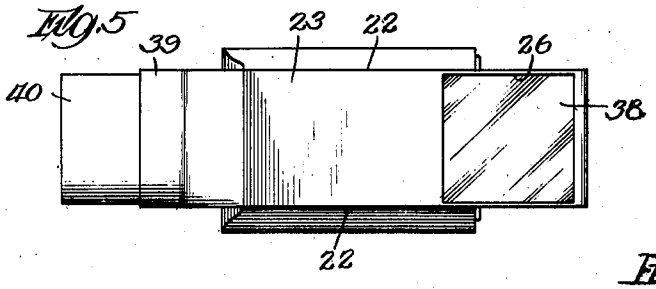


Fig. 5



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UNITED STATES PATENT OFFICE.

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PICTURE-PROJECTING DEVICE.

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This invention relates to improvements in picture projecting devices and its purpose is to provide an apparatus intended primarily for the entertainment and instruction of children. The principal object of the invention is to provide an improved arrangement of pictures and reading matter in combination with a device for projecting the pictures onto a wall or screen successively. A further object is to provide an improved arrangement of pictures and reading matter in a printed book adapted for projecting purposes. A further important object is to provide a projecting device which may be placed over a picture occupying a horizontal position to project the picture onto a vertical wall or screen. A further object is to provide a projecting device having improved means for adjusting the position of the source of light and for focusing the lens through which the pictures are projected.

These and other objects and advantages of the invention will be more clearly apparent from the following specification, taken with the accompanying drawings in which one embodiment is illustrated. In the drawings Fig. 1 shows a plan view of an open book embodying the features of the present invention with the picture projecting apparatus in position thereon: Fig. 2 shows a front end elevation of the picture projecting device; Fig. 3 shows a longitudinal projection on the line 3—3 of Fig. 2; Fig. 4 shows a rear end elevation of the device and Fig. 5 shows a bottom plan view of the device.

As illustrated in Fig. 1 the improved book comprises a plurality of pages 10 mounted in a binding 11 in the usual manner. Each page is provided with two horizontal rows 12 and 13 of pictures arranged along the upper and lower edges of the page, respectively, and another row of pictures 14 arranged between the horizontal rows at the outer end of the page. The intermediate part of the page is covered with printed matter 15 which may be descriptive of the pictures around the border of the page so that the book may be employed for the education and amusement of children. The pictures are all arranged in upright position as viewed in the drawing and the picture projecting device 20 is adapted to be passed over the pictures in succession as the printed composition is read, thereby projecting the pictures onto a wall or screen and illustrating the subject matter of the composition.

The projecting device 20 comprises a sheet metal case or housing 21 having side walls 22, a lower wall 23, a curved upper wall 24 and an inclined rear wall 25. An opening 26 is provided between the rear end of the lower wall 23 and the lower extremity of the wall 25 and this opening is adapted to register with any one of the pictures on the printed page. The picture which is framed by the opening 26 is illuminated by an electric lamp 28 which is mounted in the upper chamber 29 of the housing beneath the curved wall 24, which may conform substantially to the outer curvature of the lamp bulb. The walls of the casing form a circular opening 30 at the rear end of the chamber 29 and this opening is adapted to receive a cap member 31 in which the lamp socket 32 is mounted. The lamp socket is connected to electric wires 33 and is eccentrically located with respect to the axis of the cap 31 so that the cap may be rotated in order to adjust the vertical position of the lamp 28 with respect to the opening 26. For the purpose of ventilating the chamber occupied by the lamp, a series of apertures 35 are provided in the upper wall 24 and a hood 36, open at its rear end, is mounted over these apertures to prevent the entrance of dust and moisture.

The picture which occupies the opening 26 and is thus illuminated by the lamp 38 is reflected by a mirror 28 mounted on the rear wall 25, preferably at an angle of about 45° to the horizontal, and the reflected image is projected by this mirror through the cylindrical outlet 39 formed in the forward wall of the casing and having a cylindrical barrel 40 mounted therein and carrying a magnifying lens 41 at its forward end. The barrel 40 has a frictional engagement with the walls of the outlet 39 which is sufficiently tight to hold the lens in adjusted position while permitting longitudinal movement thereof for bringing about the proper focus of the lens with any selected picture and any appropriate spaced relation of the projecting device and the wall or screen on which the pictures are shown.

In order to obtain the best results with the picture projecting device the inner surface of the side walls 22 and of the bottom wall 23 are preferably covered with a dull black coating of paint or other suitable material, but the inner surface of the upper curved wall 24 should preferably be a pol-

ished bright surface in order to reflect the light, which passes upwardly from the lamp bulb.

Although I have shown and described one form of the invention for purposes of illustration it will be understood that it may be constructed in various other forms without departing from the scope of the appended claims.

I claim:

1. A picture projecting device comprising a casing having an opening in its bottom wall and a second opening in its rear wall, a circular cap member rotatively mounted in said second opening, a lamp carried by said cap member with its axis located eccentrically with the axis of said cap member and a mirror mounted in said casing over said first named opening, said casing having an outlet through which the image in said mirror is adapted to be projected.

2. A picture projecting device comprising a casing having an opening in its bottom wall and a second opening in its rear wall, a circular cap member rotatively mounted in said second opening, a lamp carried by said cap member with its axis located eccentrically with the axis of said cap member and a mirror mounted in said casing over said first named opening, said casing having an outlet through which the image in said mirror is adapted to be projected, and a lens adjustably mounted in said outlet.

3. A picture projecting device comprising a casing having a flat bottom wall provided with an opening therein adapted to be located over a picture, said casing having an inclined rear wall, a mirror mounted on said rear wall over said opening in an inclined position, a barrel adjustably mounted in the front side of said casing in front of said mirror, a lens carried in said barrel, said casing having a light chamber mounted in the upper part thereof, a lamp mounted in said chamber, and a cap rotatably mounted in the rear wall of said casing to support said lamp, said lamp having its axis eccentrically located with respect to the axis of rotation of said cap member.

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