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PROJECTING APPARATUS

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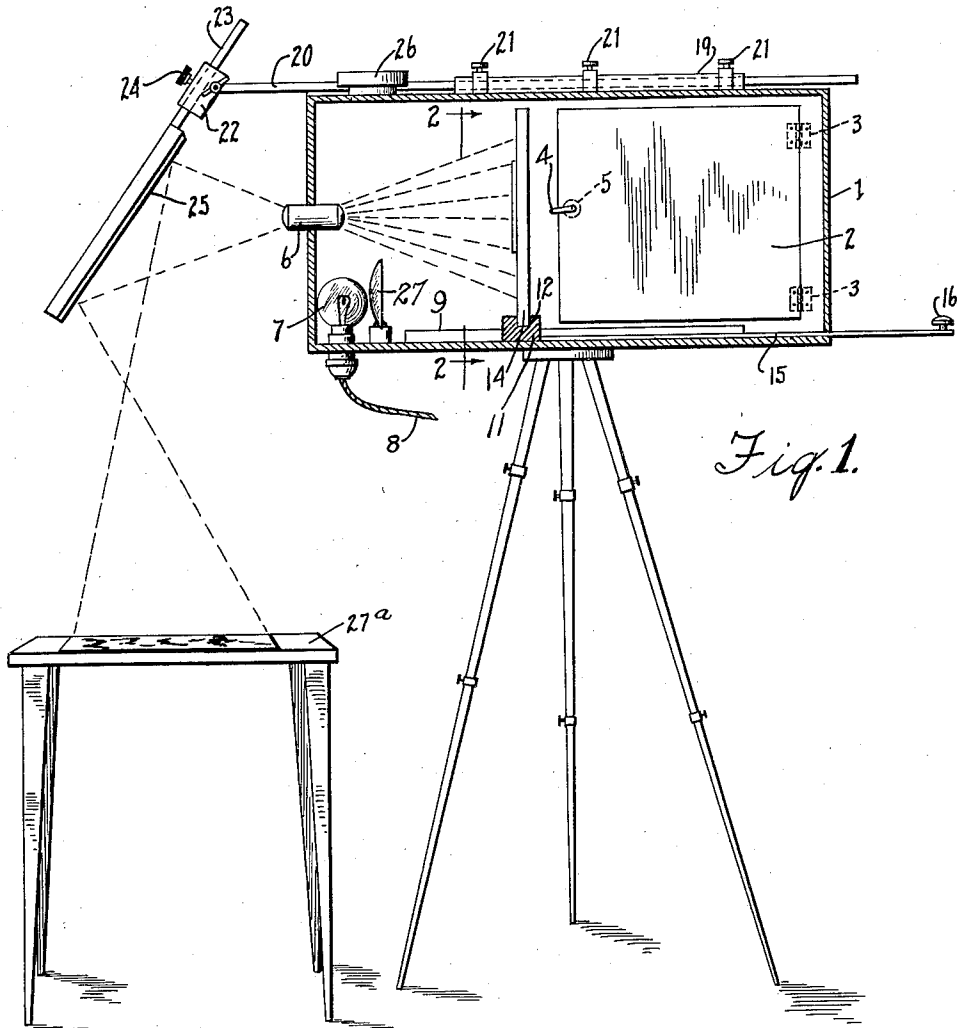


Fig. 1.

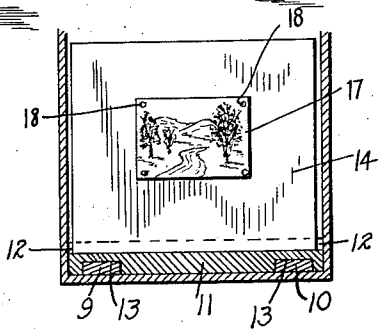


Fig. 2.

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PROJECTING APPARATUS.

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This invention relates to projection apparatus and the object of the invention is to provide an apparatus for projecting a picture onto a table on which drawing paper is laid to allow the artist to make enlarged or reduced copies thereof. Another object of the invention is to provide a projection apparatus by which the size of the image may be precisely adjusted on the table irrespective of the size of the original and by which the image may be projected at various distances from the projection apparatus. A further object of the invention is to provide an easel on which the object to be projected is mounted, means being provided exteriorly of the casing by which the easel may be adjusted longitudinally of the interior thereof. These objects and the several novel features of the invention are hereinafter more fully described and claimed and the preferred form of construction by which these objects are attained is shown in the accompanying drawings in which—

Fig. 1 is a section through a projection apparatus embodying my invention.

Fig. 2 is a section taken on line 2—2 of Fig. 1.

As shown in Fig. 1 a casing 1 is provided having a door 2 on one side thereof to allow access to the interior of the casing. The door 2 is hinged to the casing by the hinges 3 and a latch 4 is provided operable by a knob 5 on the exterior to lock or unlock the door. A pair of lenses are adjustably mounted in a barrel 6 and the barrel is mounted in the forward end of the casing as shown. One or more incandescent electric lights 7 are mounted in the forward end of the casing and are connected by means of a double wire cable 8 to a suitable source of electric current supply. Secured to the bottom of the casing and extending longitudinally thereof are two wooden strips 9 and 10 and a member 11 is provided with a longitudinal groove 12 for the easel 14 as shown in Fig. 1 and by moving the member 11 to position opposite the door 2 the easel may be removed from the groove 12 to mount a picture thereon. The member 11 is also provided with two notches 13 fitting over the strips 9 and 10 so that the easel and member 11 may be moved longitudinally of the casing. An arm 15, shown in Fig. 1 is secured to the member 11 and extends outwardly through an aperture provided therefor in the rear end of the cabinet 1. A knob 16

is mounted on the arm 15 by which the arm 15 may be moved longitudinally of the casing thus moving the member 13 and easel 14. The easel 14 is preferably made of soft wood so that a picture 17 or other article to be projected may be secured thereon by the thumb tacks 18. A condenser lens 27 is mounted in front of each electric lamp 7 so that the light is distributed evenly over the face of the easel 14. A tubular member 19 is mounted on top of the casing 1 and a rod 20 is slidable longitudinally there-through, the tubular member 19 being provided with set screws 21 by which the rod 20 may be bindingly secured at any adjustment. Pivottally mounted on the end of the rod 20 is a casing 22 in which a rod 23 is slidably mounted, the rod 23 being secured in position by the set screw 24. A mirror 25 is mounted on the rod 23 and by means of the rods 20 and 23 the mirror may be adjusted horizontally and may also be turned to any position desired on its pivot. A ventilator 26 is provided in the top of the casing so that any heat produced by the electric light may escape from the casing.

This device is most useful in making enlargements or reductions of drawings, pictures and the like and, to operate the device, the door 2 is opened and the easel 14 is removed from the groove 12 at which time the picture is mounted on the easel by the thumb tacks 18. The door is then closed and the electric lights are lighted at which time by grasping the knob 16 the easel and picture may be positioned at the desired point within the casing at which the picture is sharply focused in the lens. At this time the mirror may be adjusted in position so that the picture is thrown onto the mirror by means of the lens 6 and, by moving the mirror longitudinally of the casing, the image of the picture shown on the table 27* may be enlarged or reduced, a variation in size of the image being also produced by moving the easel 14 longitudinally of the casing. A sheet of material is secured to the table top on which the picture or drawing is to be reproduced and the artist with brushes or drawing implements fills in the image produced on the table. By this means a drawing or painting may be reproduced at any size and, as paintings are shown in full color on the table by the lens, it is very easy to match the color of the original.

From the foregoing description it becomes

evident that the device is very simple and efficient in operation, may be easily carried about, is composed of few parts and is of consequent low manufacturing cost, and provides a device which accomplishes the objects described.

Having thus fully described our invention, its utility and mode of operation, what we claim and desire to secure by Letters Patent of the United States is—

1. A projecting apparatus comprising a casing of elongated substantially rectangular form, a lens in the forward end thereof, a closable opening in the side wall thereof adjacent the rear end, a trackway in the bottom of the casing, a member grooved to ride on the trackway, said member having a transverse groove, an easel for mounting in the said transverse groove, the closable opening permitting introduction of the easel, a rod extending through the rear of the casing and attached to the said member whereby it may be moved to any position on the trackway to vary the distance of the face of the easel from the lens, a light in the forward end of the casing for illuminating the face of the easel, a condenser lens for diffusing the light over the face of the easel, a rod slidably mounted on the casing, a mirror carried at the forward end of the rod in pivotal relation therewith and normally extending at an angle to the axis of

the lens providing a reflector for the purpose described.

2. A projecting apparatus comprising a casing of elongated substantially rectangular form, a lens at the forward end thereof, a trackway in the bottom, a member riding on the trackway and having a groove extending in a direction transversely of the casing, said casing having a side opening, an easel insertible in the casing through the said opening and adapted to engage in the groove of the said member, a rod connected with the said member and extending to the exterior of the casing at the rear whereby the easel may be varied in its distance from the lens, a light at the lens end of the said casing positioned to illuminate the face of the easel, a rod slidable longitudinally of the said casing on the upper side, a bearing member pivotally supported at the forward end of the rod, a rod extending through the bearing member, a mirror carried by the last named rod, the pivotal mounting of the bearing enabling the mirror to be set at various angles in front of the lens to receive and reflect the light rays emanating therefrom.

In testimony whereof, we sign this specification.

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