

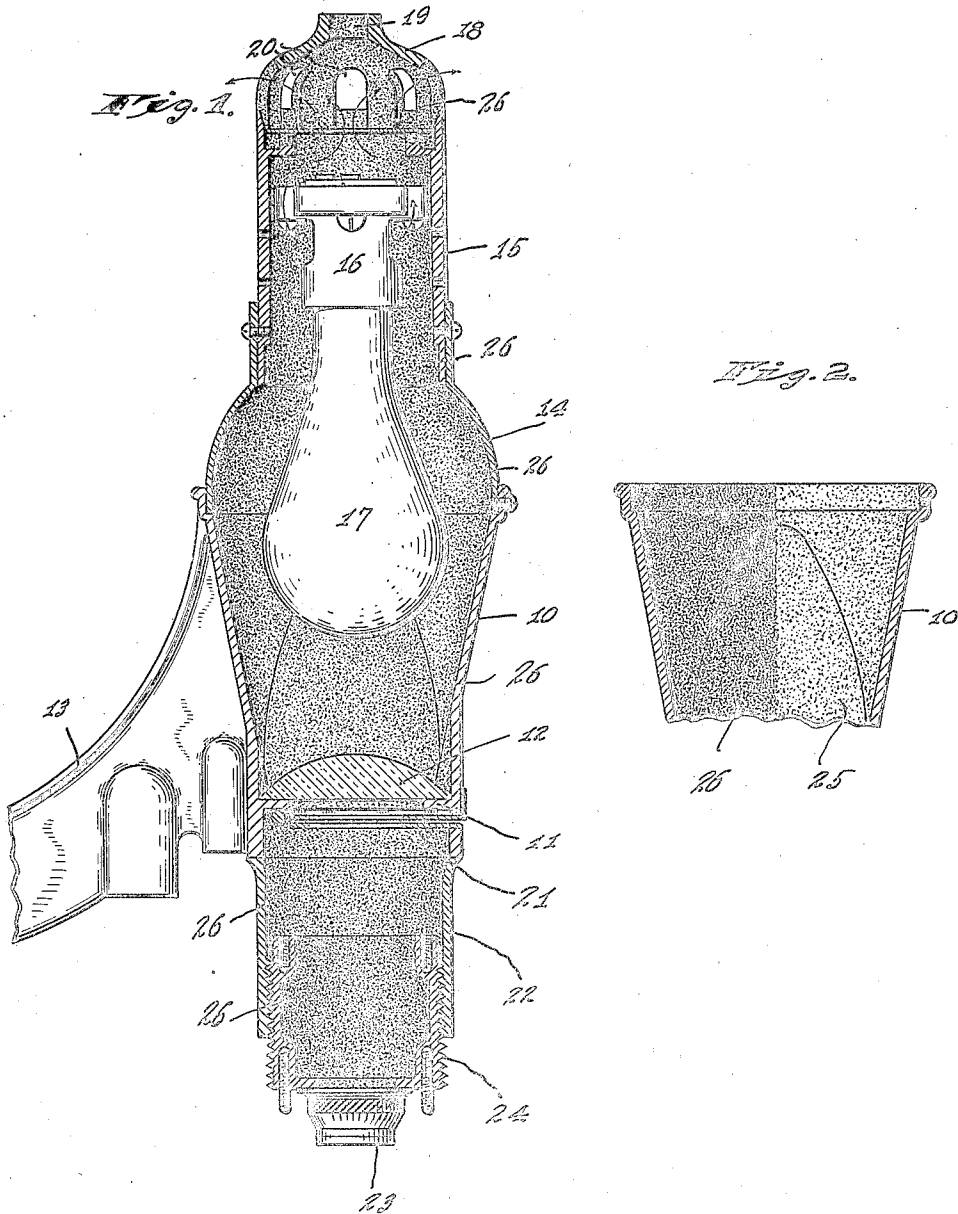
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ENLARGER

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BY

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ENLARGER

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My invention relates to photographic enlargers.

It is the object of my invention to eliminate reflections from the inner surfaces of the walls of the metallic enlarger-casing, so that the light rays coming from unwanted points and tending to fog the image may be eliminated; and at the same time to lessen the inflow of heat into those walls, so that the enlarger will be cooler to handle and there will be less heat conducted to the lenses and other heat-sensitive parts of the enlarger, and especially to the negative.

In carrying out my invention, I coat the inner surfaces of the enlarger-casing walls with an adherent black flocculent material, which serves to absorb light rays, so that substantially all reflections will be eliminated, and at the same time serves as an insulating layer that keeps heat away from those metal walls.

The accompanying drawing illustrates my invention, in connection with one well-known type of photographic enlarger. Fig. 1 is a vertical central section through such enlarger, in its complete form; and Fig. 2 is a fragmentary vertical section through the upper part of the main body of the casing, showing on the right-hand side the wall coated with an adherent coating before the insulating material is applied, and showing on the left-hand side the wall carrying the complete coating, with the flocculent material in place on top of and integrally united to the preliminary adherent coating.

The photographic enlarger shown has a main casing-body 10, tape ring downward and provided at its lower end with an intumed flange 11 on which rests a condensing lens 12. This main casing body is suitably supported as by an arm 13 of which only a fragment is shown. At the upper end of the main casing body 10 there is removably mounted, in a bell socket, a lamp housing 14, carrying an upwardly extending ventilator tube 15 in which is mounted in any suitable way (not shown) a lamp socket 16 carrying a lamp bulb 17. The upper end of the ventilator tube 15 is provided with a cover 18 having a central opening 19 through which a lamp cord (not shown) may extend and with various other openings 20 through which heated air may escape.

The lower end of the main casing body 10 may have a slot for receiving a negative carrier 21, and below that it carries a downward tubular extension 22 which in turn carries in any suitable manner an objective lens 23 here shown to be mounted at one end of the lens-carrying barrel 24 which is screw-mounted in the tubular exten-

sion 22 so that it may be turned end for end in such tubular extension if desired.

As so far described, the enlarger is one now-standard form of enlarger.

In such an enlarger, in the absence of my invention, there is a tendency for the light rays from the lamp 17 to be reflected from the inner surfaces of the walls of the housing in which the lamp is located, so that each point of reflection serves as a source of light, which in many instances tends to fog the picture. In addition, without my invention, the heat from the lamp 17 causes the enlarger to become excessively hot so that the negatives used in the negative carrier 21 curl and buckle and are often permanently damaged.

My present invention overcomes both of these difficulties. According to that invention, I apply to the entire inner walls of the enlarger, desirably of all the parts 10, 14, 15, 18, 22, and 24, a coating 25 of an adhesive heat-resisting material, conveniently a heat-resisting paint or varnish, desirably dark in color, as is indicated at the right-hand side of Fig. 2. While that coating 25 is still tacky, I apply to it a coating of substantial thickness of a black flock 26, which may be flocculent cotton or mineral wool or flocculent glass or some other flocculent insulating material. By reason of the tackiness of the preliminary adhesive coating 25 at the time this flock is applied, the flock adheres to the preliminary coating, and is held firmly in place as that coating dries. The flock is most conveniently applied with a spray gun. The layer of flock is not smooth internally, where it is exposed to the light and heat rays, but is fuzzy in character with a dull velvety texture; so that air is entrapped among the short individual inwardly projecting filaments of the flock.

By reason of the black character of the flock, and its dull velvety surface no substantial reflection occurs from the inner surfaces of the lamp housing, and the light rays which pass downward through the lenses 12 and 23 may be only the direct rays from the light bulb, instead of having mixed with them great numbers of chance rays. The presence of the flock lining, moreover, greatly reduces the heating of the enlarger walls, especially at the position of the negative carrier. It is believed that this is because of the insulating effect of the flock coating on the walls and of the fact that the flock coating prevents reflection of heat waves to the lower portions thereof near the negative position, so that less heat is transmitted along the walls to those portions and substantially no heat reaches the surfaces of

those portions by reflection from other portions of the walls.

It has been found that after one-half hour of continuous operation without the flock coating the lamp housing walls reach a temperature 131° F. above room temperature and the walls at the negative position reach a temperature 55° F. above room temperature. With the flock coating, however, under otherwise identical conditions, the lamp housing walls reach a temperature 122° F. above room temperature and the walls near the negative a temperature only 30° above room temperature. There is thus not only a smaller temperature rise over all, but the temperature rise at the negative position is reduced by almost half, and reduced much more than at the lamp housing. The effect is therefore especially valuable, since it is especially important to reduce the negative temperature to avoid damage to the negative.

I claim as my invention:

1. A photographic enlarger, having a housing in which a lamp may be mounted and which may carry one or more lenses, the walls of which housing are provided internally with a layer of heat-resistant adhesive material to which is attached a layer of heat-insulating flock.

2. A photographic enlarger, having a housing in which a lamp may be mounted and which may carry one or more lenses, the walls of which

housing are provided internally with a layer of heat-resistant adhesive material to which is attached a layer of non-reflecting and heat-insulating flock.

3. A photographic enlarger, having a housing in which a lamp may be mounted and which may carry one or more lenses, the walls of which housing are provided internally with a layer of heat-resistant adhesive material to which is attached a layer of non-reflecting flock.

4. A photographic enlarger, having a housing in which a lamp may be mounted and which may carry one or more lenses, the walls of which housing are provided internally with a coating of heat-insulating, non-reflecting flocculent material.

5. A photographic enlarger, having a housing in which a lamp may be mounted and which may carry one or more lenses, the walls of which housing are provided internally with a coating of heat-insulating, non-reflecting flocculent material of black color.

6. A photographic enlarger, having a housing, means carried by the housing for receiving a negative, and a support for a lamp in said housing at a point spaced from said negative receiver, said housing being provided internally with a layer of material which is non-reflecting to both heat and light.

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