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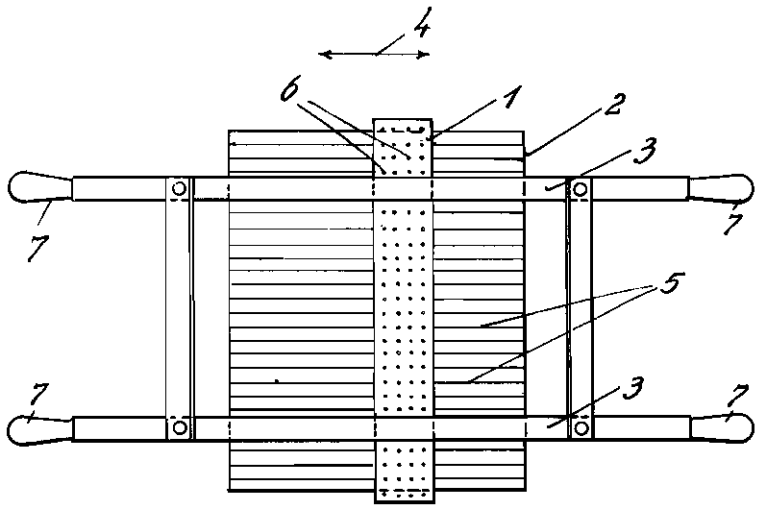


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# ALIEN PROPERTY CUSTODIAN

## SYSTEM OF TREATING SURFACES OF REFLECTORS AND SIMILAR ARTICLES

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This invention relates to a method of treating surfaces of metallic reflectors, screens, or the like, for instance, for cinematograph projection.

It has already been proposed to produce reflecting surfaces on articles of the kind described by brushing, and it has been found that the optical quality of such surfaces is determined by the method of treating them. In order that the surface should be perfect, it must possess a definite degree of fine-grainedness and uniformity. No method had as yet been found to produce these properties systematically, that is, in such a manner that they will be imparted to all work pieces treated.

It is desirable that the small flutes or grooves which are formed in the surface of the reflector by brushing should be in a vertical position, since the reflecting surfaces are also positioned vertically, and therefore it has been proposed to use narrow brushes producing narrow, juxtaposed brushed bands, because flutes or grooves extending all over the surface and forming single units, cause interference.

It was believed that overlapping of the individual narrow bands was favourable for effecting diffused distribution of rays in horizontal direction, because the overlapping produces strips which are alternately comparatively light and comparatively dark. Overlapping also eliminates interference to a considerable extent.

However, it has been found that overlapping of the bands produces corresponding bands in the projected picture, and therefore must be avoided.

It is an object of the present invention to provide a method of treating the surface, for instance, of a plate or disk of aluminium, so that overlapping of the bands is eliminated.

If it is desired to use narrow brushes for the purpose aforesaid, the bands are produced by slight pressure of the brushes or by brushes having soft bristles. In this manner, the bands are formed in juxtaposed and superimposed relation and only a slight action of the brushes is effected.

In a particular embodiment of the invention, the projection surface is treated with brushes whose length is at least equal to the largest dimension of the surface.

According to another embodiment of the invention, rotary brushes may be used which alternately rotate in opposite directions.

The treatment produces considerable quantities of dust which may interfere with the treatment of the surface. Such interference is prevented by removing the dust by any suitable means, for instance, by a blower, or a suction apparatus.

The reflectors or screens which may be of aluminium, zinc, tin, silver, iron, or of alloys of these and other metals, or of any other suitable substance, or are coated with such substance, are thoroughly cleaned and grease is removed, for instance, by washing with trichlor ethylen. The cleaned surface is then treated with brushes having fine bristles of steel wire, for instance, of 0,1 mm diameter.

When it is desired to treat large surfaces without overlapping, it is possible to use narrow brushes with soft bristles and to move these over the surface under slight pressure so as to place the strips side by side. Another possibility is that of using brushes whose length is at least equal to that of the largest dimension of the reflector or screen. In a rectangular reflector this is normally the horizontal side. The brush is positioned in parallel relation to this side and is moved over the entire surface in a direction at right angles to this side. Preferably, the brush is as long as, or somewhat longer than, the said longer side of the rectangle. For instance, for a screen which is 30 feet long, the length of the brush is substantially equal to 30 feet.

The drawing illustrates one mode of carrying out the invention, in a plan view upon the surface to be treated, with a brushing device operating on the said surface. As shown, a brush 1 including steel bristles 6 is placed on a surface 2 of a plate or sheet of aluminium or the like, parallel to the longer side of the said sheet and moved across the surface by means of a holder 3 having handles 7, in the directions of the arrow 4, thus forming small flutes or grooves which are indicated at 5 or an exaggerated scale. As shown the brush is somewhat longer than the longer side of the surface to be treated, so as to extend beyond the edges of the same.

With reflectors of the length aforesaid, that is, about 30 feet, it is also possible to employ rotary cylindrical brushes if it is desired to distribute the light principally in upward or in downward direction, as required, for instance, in a cinema with respect of the level the seats are arranged at. For uniform distribution in upward or downward direction, the brushes are rotated alternately in opposite directions, or the reflector is turned upside down while the brushes are rotated in the same direction. In the case of reflectors that are comparatively long, rotary brushes have the advantage that they remove the dust consid-

erable amounts of which are produced in long reflectors.

Care must be taken that depressions are not formed in the brushes which may occur if a brush is handled roughly, for this would produce bands in the surface. To obviate defects of this kind which are rather troublesome in larger surfaces, plane brushes of considerable length are used. For instance, a brush i as illustrated which is 3 ft. long, should be 3/8 to 13/16 in width.

In long and wide brushes, a considerable amount of dust collects below the brush. Part of the dust is removed as the brush reciprocates and the remainder is removed by a blower or suction apparatus.

There are brushes which may be considered as forms intermediate between rotary cylindrical and plane brushes but can be allotted to one or the other form. The operation, however, is the same, that is brushing without overlapping of the bands.

The surfaces to be treated may be smooth, or they may be subjected to any kind of preliminary treatment for roughening them, for instance by pickling, etching, sand blasting, etc., and they may be produced by spraying metal against a suitable bearer. Such bearer may also be a metal fabric.

Instead of being brushed, the surfaces may be ground by grinding stones or emery wheels, or even sand blasted, but under all conditions there must be no overlapping, and the flutes or grooves must be formed uninterruptedly. With the present state of the art, brushes are preferred because with them it is easiest to produce large surfaces of excellent optical properties.

Surfaces which had been treated with brushes in the manner as performed heretofore were not adapted in practice, as they had overlaps and the operating conditions were not known, especially for projection screens of large size and uninterrupted surface unit.

By the invention, a surface is produced which is optically perfect and in which the grain of the metal surface is exposed while at the same time the individual particles are fluted or grooved in the direction of brushing.

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