The present invention relates to a light-adjustment screen of two plates made up of sections of strips polarizing light vertically and sections of strips polarizing light horizontally, the two different types of sections being laid out alternatingly with a certain width or in other desired patterns on each plate, and the two plates set face to face, close to each other, so as to partially overlap each other, with a view to adjusting the amount of light shining in by means of adjusting the parts of each plate where the vertically polarizing and horizontally polarizing sections of each can overlap each other.
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A LIGHT-ADJUSTMENT SCREEN BY USE OF THE POLARIZING STRIPS

Technical Field

The present invention relates to a screen for adjusting, by the use of polarizing strips, the amount of light penetrating or shining in, and in more detail, to a light-adjustment screen comprising two light-polarizing plates of glass, which are each mounted with a number of narrow film strips polarizing light vertically and other film strips polarizing light horizontally, arranged alternatingly at a certain interval or in a predetermined pattern, said two plates being placed closely face to face with, and yet one movable in parallel to the other, so that it can be moved at will in certain desired relation with the other to adjust the amount of light to shine in.

Background of Art

In order to adjust the amount of light shining into the inner space of a room or of a car such devices as curtains, blinds, or screens are in use. But these are apt to fade or change color as time passes. They are not stout or strong enough; their durability is limited. Besides, they usually occupy much space. They are, by themselves, never adequate to admit patterns, characters, figures, or other pictorial features as much as is desired.

Summary of Invention

An objective of the present invention is to provide a light-adjustment screen which requires a smaller space, is easier to operate, shows various pictorial features, and has greater durability than most conventional devices.

The light-adjustment screen using the light-polarizing strips of the present invention is made to accomplish the above. This invention is characterized by its structure, in which two plates of glass are mounted with polarizing sections of strips for either vertical or horizontal polarization of light, each arranged alternatingly at a set interval or in a predetermined distribution, the two plates being set either in an overlapping fashion or closely face to face with each other in a way that the sections for vertical or horizontal polarization of both which overlap can be arranged in such
mutual relationships to each other that the amount of the light which shine in is adjusted at will.

**Brief Description of Drawings**

Fig. 1 is a perspective view of a light-adjustment screen of the present invention.

Figs. 2 a, b, c and Figs. 3 a, b, c show different shapes and patterns of the polarizing sections, laid out differently, of the screen of the present invention.

**Detailed Description of Embodiments of Present Invention**

Various embodiments of a light-adjustment screen according to the present invention will now be described with reference to the accompanying drawings.

As shown in Figs. 1 and 2, the light-polarizing plates A and B respectively, formed of sections of vertically polarizing strips 11 and of horizontally polarizing strips 12 arranged alternately with a certain width, or a designed pattern, and one plate of said plates is fixed in, or close to, a window (drawing omitted) face to face, while the other plate B of said plates (moveable) is set face to face with said fixed plate A, close to it and movable in parallel to said fixed plate A.

In the present invention, as shown above, when the movable plate B is moved so that the vertically polarizing sections 11 of said fixed plate overlap with the horizontally polarizing sections 12 of the movable plate B in their entirety no light can shine in through these two plates A, B, while all light can freely shine in through plates A, B if the movable plate B is so moved that the strips polarizing light in the same direction on both plates A, B overlap each other. Therefore, the amount of light shining in varies according as the size of the areas of the sections 11, on both plates, polarizing light in the same direction which overlap each other alters, and for this reason it becomes possible to adjust the amount of light which shines through by an appropriate operation of the movable plate B. Moreover, when the sections 11, polarizing light in the same direction, on the two plates A, B (e.g. the vertically polarizing sections 11 of the fixed plate A and the
vertically polarizing strips 11 of the movable plate B1 face each other, a
moving of the movable plate B only for the width of a section will bring the
sections polarizing light in different directions on both plates A, B to face
each other to allow no light to penetrate. It follows that a decrease in the
number of sections, and each with the width decreased, on each plate will
enable transmitting and shutting off of light by moving of the movable plate B
only for a very short distance to result in an easier adjustment of light than
otherwise.

Figs. 2 a, b and c show the fixed polarizing plates of various other
embodiments, while Figs. 3 a, b and c show the movable polarizing plates
corresponding each to the fixed polarizing plates of Figs. 2 a, b and c; in
both Fig. 2 a and the corresponding Fig. 3 a, the vertically polarizing
sections 11 and horizontally polarizing sections 12 are laid out alternatingly
in a fashion of slanting lines, while in both Fig. 2 b and the corresponding
Fig. 3 b said vertically polarizing sections 11 and the horizontally
polarizing sections 12 are laid out in a fashion of checkerboard; while Fig.
2 c and the corresponding Fig. 3 c show a layout of the vertically polarizing
sections 11, the horizontally polarizing sections 12 each of a certain width
in a fashion of belts with round figures 13, of sections polarizing in
different directions between the inner and of outer parts of same round
figures, all evenly distributed, overlapping some of the vertically polarizing
sections and the horizontally polarizing sections of each plate of the screen.

Accordingly, as has been said above, by different combinations of at
least two plates, two each, a screen with plates of slanting line sections,
sections, or of sections of interesting pictorial figures is obtained.

Aside from these, it is possible for the present invention to produce
screens carrying interesting figures, characters, numericals, etc., as is
desired. For example, by devising various layouts of the vertically
polarizing and horizontally polarizing sections alternating each other it is
possible to make up a screen where desired pictorial figures or numericals can
be made to appear or disappear at will by an operation of the movable plate.

As has been described above, the light-adjustment screen of the present
invention has great advantages in that it can be used as a wonderful curtain.
blinder, or a screen to shut out or admit light, whole or in part, because in
the screen of two plates made of the vertically polarizing sections, the
horizontally polarizing sections, and sections of pictorial figures, one of
which two plates fixed and the other left moveable, if the parts where the
sections polarizing light in the same direction overlap they will let light
penetrate and if the parts where the sections polarizing light in different
directions overlap they shut light out; that the durability of this screen is
semi-permanent because the polarizing sections are themselves of stout
construction; that it can be set in a window because it does not necessarily
occupy very much space; and that it can be used as part of an advertising
construction; that it can be set in a window because it does not necessarily
occupy very much space; and that it can be used as part of an advertising
device or interior decor because interesting pictorial figures, letters, or
other designs can appear or disappear according as the moveable plate is
operated differently.
CLAIM

What I claim is:

A light-adjustment screen comprising at least one fixed plate A and at least one moveable plate B, each made of sections 11 of vertically light-polarizing strips and sections 12 of horizontally light-polarizing strips arranged alternatingly with a certain width or in a desired pattern, said moveable plate B being set to overlap partially with said fixed plate A, or set otherwise, set so as to move in parallel with said fixed plate A to adjust the amount of light shining in at will by adjusting the parts where the vertically polarizing sections of a plate A and the horizontally polarizing sections of the other plate B overlap with each other.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
   IPC5: G 05 D 25/00; G 02 B 5/30
   According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
   Minimum documentation searched (classification system followed by classification symbols)
   IPC5: G 05 D 25/00; G 02 B 5/30, 27/28
   Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database consulted during the international search (name of database and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Further documents are listed in the continuation of Box C. See patent family annex.

- Special categories of cited documents:
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Date of the actual completion of the international search: 30 December 1993 (30.12.93)
Date of mailing of the international search report: 17 January 1994 (17.01.94)

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A-1014 Vienna
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