Oct. 4, 1932. M. COUADE 1,881,352

DOOR AND PASSAGE OF CINEMATOGRAPHIC APPARATUS

Filed Oct. 9, 1929

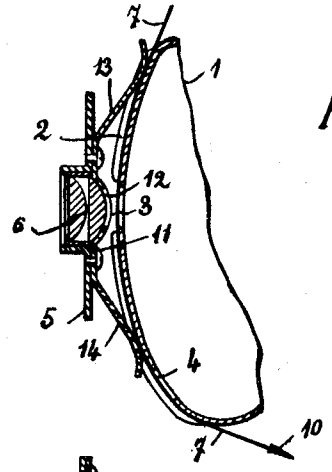


Fig. 2.

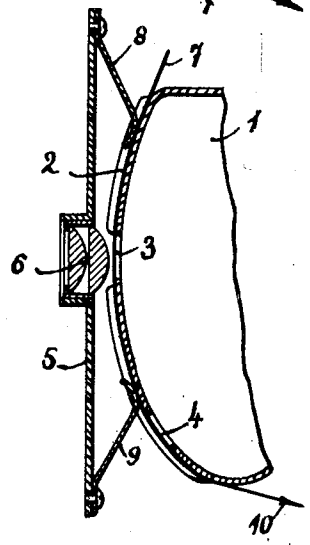


Fig. 1.

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UNITED STATES PATENT OFFICE

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DOOR AND PASSAGE OF CINEMATOGRAPHIC APPARATUS

Application filed October 9, 1929, Serial No. 393,484, and in France October 17, 1928.

Devices for doors and passages of cinematographic apparatus comprise generally; a rectilinear passage provided with a projecting window and one or several openings for the passage of claws or engaging teeth, a door provided with a rigid pressing frame and also provided with an opening for the passage of the luminous rays, and springs interposed between the door and the frame so as to ensure, in the closing position of the door, the application of the frame against the film and the pressing of the latter in the passage.

Such devices require a certain distance between the condenser and the film.

The device forming the subject matter of the present invention enables this distance to be reduced to the minimum, just sufficiently to permit the passage of the film in the duct. This reduction is very advantageous because the luminous efficiency of the lighting system is thereby increased and at the same time the employment of small and cheap condensers is rendered possible.

The device comprises the combination of three following means:

1. A passage or duct with a curved longitudinal section, the film being disposed upon its convex surface;

2. A pressing system applying the film in two points, one point being situated above the projecting opening and the other below, between this opening and the claw-opening;

3. A winding up system for the film, exerting a traction upon the latter on its leaving the duct.

This combination ensures the following effects:

1. During the masking period the film is perfectly applied toward the bottom of the duct or passage owing to the action of two forces one due to the traction of the claw pulling below, and the other being due to the retarding action of the presser, in the upper part. During the period of exposure the film is not pulled below by the claws and remains perfectly applied against the borders of the opening for the projection without risk of floating in the exposed surface, even though the rigidity of the film be imperfect. At the other part, the film remains immovable if the pull of the winding up roller is less than the stoppage exerted by the presser.

2. The film applied equally against the borders of the opening for the claws owing to the curvature of the duct and to the traction of the winding up roller, is easily caught by the claws which extend into the perforations.

3. The condenser carried by the door, can be approached so as to nearly touch the film, since there is nothing between them.

The pressing system comprises two spring blades fixed to the door and applying their rounded extremities against the film and hence pressing the film against the bottom of the duct. These extremities are provided with ribs in case of need.

In the accompanying drawing

Figure 1 is a vertical sectional view of a cinematographic apparatus constructed and arranged in accordance with this invention.

Figure 2 is a similar view of a modified construction of the same.

The gate 1 presents a convex face for the passage of a film thereover, is provided with a duct 2 on its convex face for the passage of the film 7 and is also provided with the projecting opening 3 and the claw opening 4. The door 5 has the condenser 6 and is also provided, on the inner side, with spring blades 8, 9 which extend in opposite directions and have curved outer ends which bear on the film at points spaced from opposite sides of the projection opening and serve to press the film against the convex face of the gate. The winding up mechanism is not here shown, as it is of the usual well known construction and forms no part of the present invention.

The arrow 10 indicates the traction exerted upon the film.

The pressing system can also consist of a single spring blade adapting itself in its central part provided with a window, to the shape of the front lens of the condenser and fixed to the door at both sides of the condenser and being provided with two branches inclined in the forward direction, the rounded off extremities of these branches applying elastically against the film. The said ex-

tremities are, as said, provided with ribs in case of emergency.

Figure 2 represents the device according to the said modification.

11 is the spring blade provided with a window 12; 13 and 14 are the two branches of this blade.

What I claim, is:

Apparatus of the class described, comprising a gate presenting a covex face for the passage of a film thereover and having a projection opening and also a claw opening, a closure having a condenser and a pair of spring blades attached to the inner side of the closure extending in opposite directions and having curved outer ends arranged, when the closure is in closed position, to bear on the film at points spaced from opposite sides of the projection opening and serving to press the film against said convex face of the gate.

In witness whereof I affix my signature.

MAURICE COUADE.