PROJECTING MOVING PICTURES IN THE LIGHT.

BY JACQUES BOYER.

The projection of moving pictures in the light is an accomplished fact. A method patented by Quentin is employed at the Cinérna Palace in Paris. The screen, measuring 8 feet by 10 feet, is a part of the rear wall of the hall which is painted white, very slightly tinted with rose, and is protected more or less from the glare of the footlights and the electric lamps by adjustable curtains (Fig. 1). The projection cabinet (Fig. 2) is supported by two iron columns, about 10 feet high, at the other end of the hall, which accommodates 350 spectators. The arc lamp used for projection is 66 feet from the screen, and normally takes a current of 30 amperes from the mains of a 110-volt circuit. Half the lamps of the theater are lighted, yet the projected pictures, both stationary and moving, are seen very well, and the eyes are less fatigued than if the hall were dark.

In Belgium, De Mare has invented a system of projecting fixed pictures in daylight which he calls by the English name "Without Darkness." The screen is arranged, like a scene of a theater, in the frame of a pair of folding doors, the projection apparatus being concealed from the spectators, who occupy a room lighted by two large windows. Excellent results were also obtained when the apparatus was set up in a shed, the spectators being in the open air. A current of from 7 to 9 amperes per square meter (about 11 square feet) is required, according to the inventor, and even 5 amperes suffice for a room having no window opposite the screen. This system has already been initiated in France and will probably soon reach Paris.

Meanwhile, other devices are being patented almost daily. In the method of Antoine and Prosper Poch, which may be used for fixed or moving pictures, in illuminated halls or in diffused daylight, the image is thrown on a translucent screen between the spectators and the lantern, and forming the front wall of the projection chamber. If the screen is of ground glass the ground face should be turned toward the spectators. The pictures are seen very distinctly (Fig. 3). In some cases it is advisable to diminish the quantity of light that enters the projection chamber through the screen by placing outside the latter a slightly smoked glass, which also softens the harshness of the white parts of the picture. The other walls of the chamber are opaque. In an apparatus devised for demonstration, these walls are made of black cloth sliding on rods (Fig. 4). An ordinary moving picture apparatus, with an arc lamp consuming 15 amperes at 110 volts, covered a screen measuring 32 by 24 inches with pictures clearly visible to spectators in the open air at two o'clock on a partly cloudy afternoon.

But the projection on translucent screens of images visible to spectators in lighted rooms is not new. It was accomplished in 1897 by the artist Lemot, with a screen of fine canvas saturated with gelatine and covered with copal varnish. Chamayon made what he called "rainbow screens" by a process which has long been public property and which consists in saturating white fabrics, thin or thick, with fish glue and lining them with thin tinted stuff.

Very good translucent screens can be made by the tracing cloth used by architects.

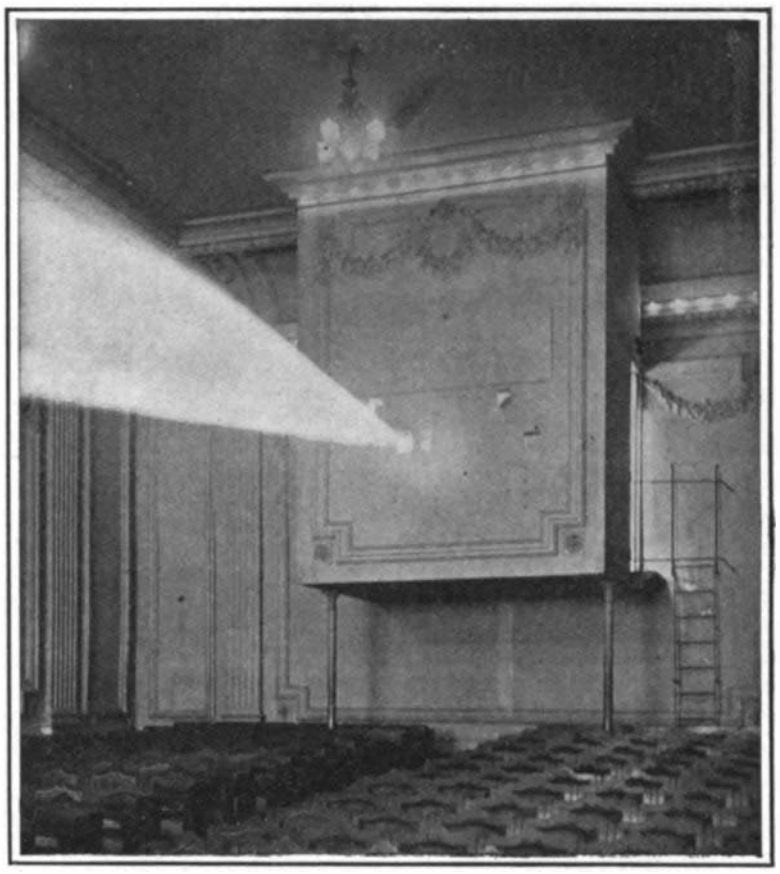

Fig. 2.—Projection cabinet, Cinérna Palace.

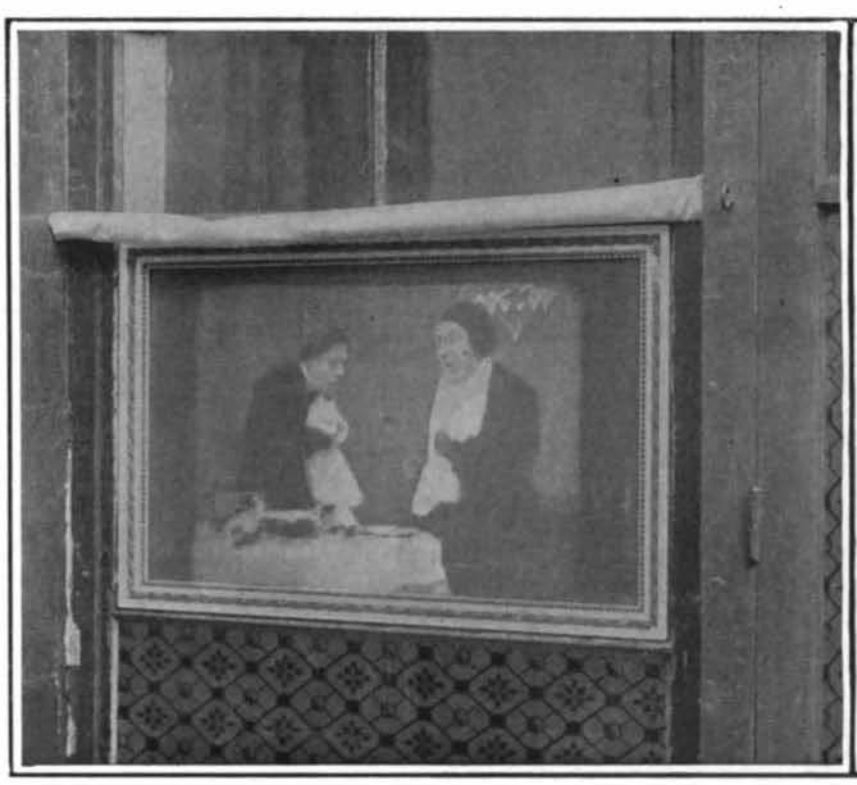

Fig. 3.—Moving pictures visible in daylight.

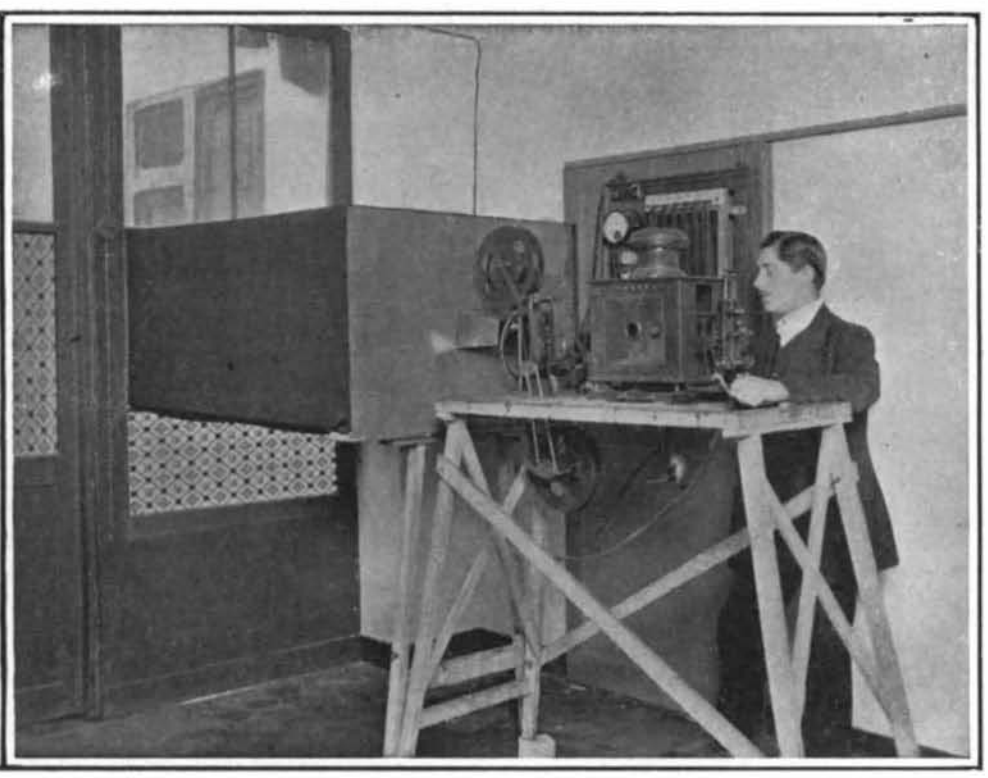

Fig 4.—Poch's apparatus for demonstration.

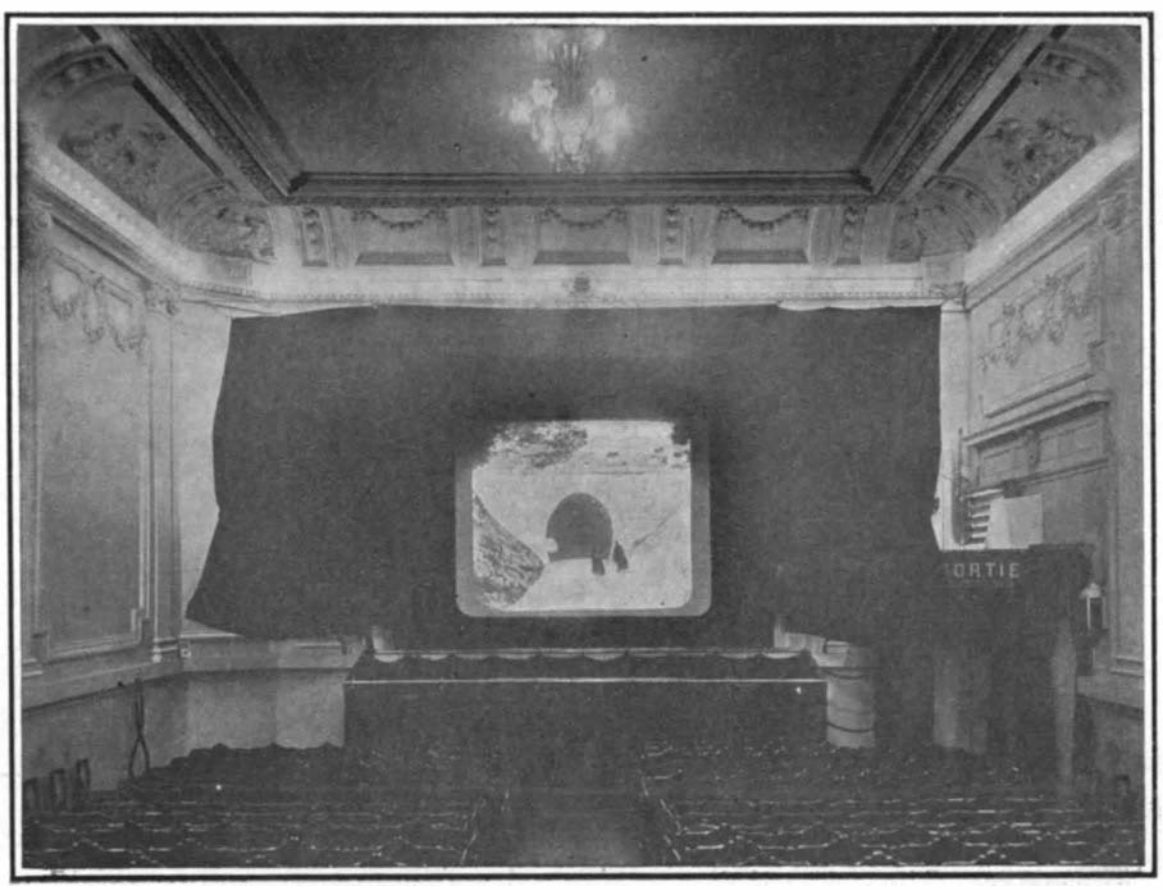

Fig. 1.—Moving pictures shown in the lighted auditorium of the Cinérna Palace in Paris.

PROJECTING MOVING PICTURES IN THE DAYLIGHT.

Waterproof Fabrics.

Fabrics are waterproofed by impregnating them with metallic salts, by coating them with oil, grease, and wax, by coating them with India rubber, or by treating them with ammoniacal solutions of copper. The first process is applied to sail cloth. The canvas is impregnated with alum or calcium acetate, and then immersed in a fixing bath containing soap, which forms insoluble lime or alumina soap in the cloth.

The second process is used for raincoats, imitation leather, etc. The fabric passes between hot rollers, and then over a cylinder of wax, etc.

In the third process a solution of India rubber in carbon disulphide, chloroform, or other solvent is applied. This process is used for mackintoshes and bathing caps and is also applied to thread.

In the fourth process, employed in the manufacture of book bindings and Willesden canvas, cotton cloth is run through a solution of oxide of copper in ammonia which dissolves the superficial layer and, on evaporation, leaves it in the form of a uniform coating of cellulose. The process is completed by passing the cloth between rollers. There are still other processes but these are the most important.