THE PHOTOGRAPHIC NEWS.

VOL. XXXV. No. 1696.—*March* 6, 1891.

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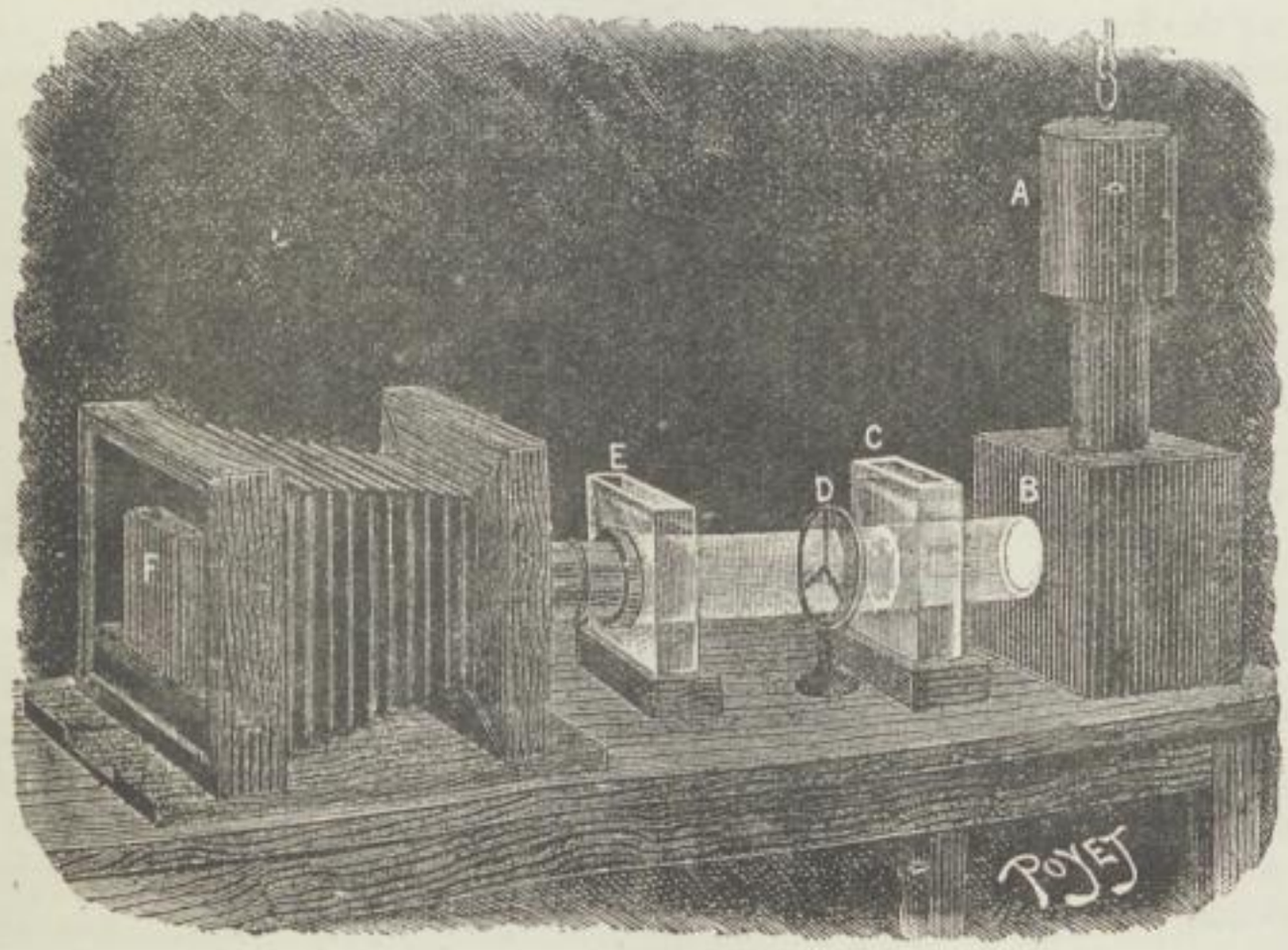
THE NEW DISCOVERIES IN HELIOCHROMY.

AMONG the chief points in which experienced practical photographers might attempt to help to adapt the recent great discovery of Professor Lippmann to utilitarian purposes are:—(1) The production of an absolutely colourless and transparent dry plate highly sensitive to light; (2) to find a developer for the said dry plate which will give a shining silvery-white image by reflected light, and a pure black or grey one by transmitted light; (3) the application of suitable orthochromatic methods of rendering the plates more sensitive to red and yellow light.

By the wet-plate process there was no difficulty in getting silvery whites, as in the collodion positive process, in which an iron developer was used in conjunction with a suitable proportion of glacial acetic or nitric acid; a trace of nitric acid had a strong influence in the yielding of a brilliant white deposit. The wet process is, however, in all probability, not applicable to these heliochromic pictures, because of the film being expanded with liquid at the time of making the exposure; consequently, any interference bands registered by means of the film will not be of the same distance apart when the film shrinks in drying.

The *Photo-Gazette*, of Paris, in its number of February 25th last, gives the accompanying engraving of the apparatus used by Professor Lippmann in photographing what the *Daily News* correspondent called his "stained glass window." This window is represented at D, and it consists of three pieces of coloured glass, mounted in a circular frame. A is a loose cap over the chimney of the electric lamp, to exclude stray light from the room; B is a parallel beam of light from the electric lamp; C is a vessel of water to cut off some of the heat rays; E is a vessel containing elianthine to cut off the blue rays while giving a longer exposure to the red; F is the trough carrying the sensitive plate and its mercurial backing.



A communication from Lord Rayleigh, in another column, shows that he long ago published the idea that the colours in Becquerel's photographs were those of thin plates. He speaks of Wiener's experiments; Wiener seems to have been the first to photograph interference bands in thin, transparent sensitive films, and he just missed discovering the value of the method in heliochromy. A week before M. Lippmann announced his discovery at the Academy of Sciences, M. Cornu drew the attention of that august body to a paper by Herr Weiner, contained in *Wiedemann's Annalen*, vol. xl., page 203, 1890, giving the experimental solution of the problem of determining the direction of vibration in polarised light. "The method consists in letting a wide beam of polarised light fall upon a reflecting surface at an angle of 45°. As the