

THE MIETHE COLOR PROJECTOR.

BY OUR BERLIN CORRESPONDENT.

Prof. Miethe, of Berlin, has for some years been engaged in developing a process of chromo-photography, by means of which photographs are produced in the colors of nature. Three sections of the same photographic plate are exposed successively through three color screens corresponding with the three primary colors, red, blue, and yellow respectively. The times of exposure for the three screens must be determined by photographing a white object by daylight and varying the respective times of exposure, so as to obtain identical conditions of light and shade on each of the three plates. Instead of the colors named, Prof. Miethe prefers using blue, red, and green. By superposing on a screen projections of the three separate transparencies and interposing before each of these a color screen corresponding with the one used in making its negative, an image quite true to nature is obtained.

Special care has been devoted to the constructive development of the photographic apparatus, to the improvement of the photographic plates used for the purpose, and finally to the technical design of the projection apparatus. The intervals of time between the three exposures required for making the views have been reduced to a fraction of a second.

The most important point was, however, the development of a most perfect projection apparatus for the synthesis of the three views.

This projection apparatus has been constructed by C. P. Georz, and is being exhibited at the St. Louis Fair in connection with the German educational exposition. The effects of which these color photographs are capable have been increased by the intensity of the projector, which is represented in the accompanying illustration. In this apparatus the original principle of leaving the three sectional images on a common plate, also in projecting them, has been abandoned, thus insuring the possibility of a preliminary adjustment.

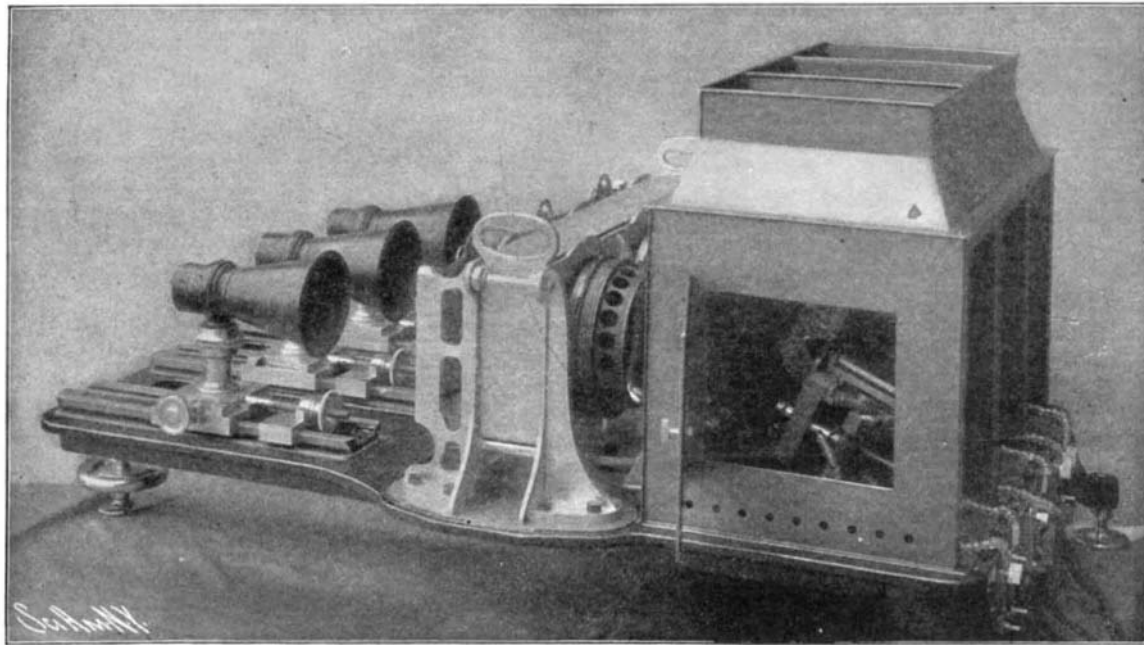
The projector consists of a triple lantern, inclosing three electrical arc lamps, to which the current is supplied, controlled from an ordinary switch-board. The current intensity can be varied between 10 and 35 amperes, thus flooding with an intense light screen surfaces of from 43 to 215 square feet. Each of the three condensing lens systems comprises three components, throwing the light pencils from the lamp with a convenient degree of

convergence on the lantern slide and the projection lens. In order to utilize as perfectly as possible the sources of light, these condensing systems have been given an aperture ratio as great as possible; they are connected with a cooling vessel, common to all three of them and by whose absorption any heat rays that might endanger the slides are absorbed.

The projection objectives have been especially constructed for the purpose. Their focal lengths range

transmitted to the two other partial images to the right and left, and after having been accurately adjusted, the diapositives are screwed fast in the adjusting frame. The adjustment of the images thus ensured is extremely accurate and remarkably stable. The partial images will be projected accurately on the same portions of the projection screen, thus insuring perfect coincidence.

The color screens located in front of the objective consist of plate glasses glued to each other, between which the colored layer has been inserted. As a shutter has been provided between the diapositives and the objective, the filters are exposed to the intense light from the lamp only for the time they are actually used, thus warranting a much greater durability.



A NEW STEREOPTICON FOR REPRODUCING PICTURES IN THE COLORS OF NATURE.

from 30 to 50 cm. On the very substantial bed plate of the apparatus have been fixed the three optical benches, on which the projection objectives are made to slide and which are cast in one piece with the foundation plate and milled to the latter. In addition to the coarse and fine movement parallel to the optical axis of the three objectives, the lateral objectives can be independently adjusted both horizontally and vertically. The adjustment to the center of the projection screen is effected by the foot screws of the apparatus.

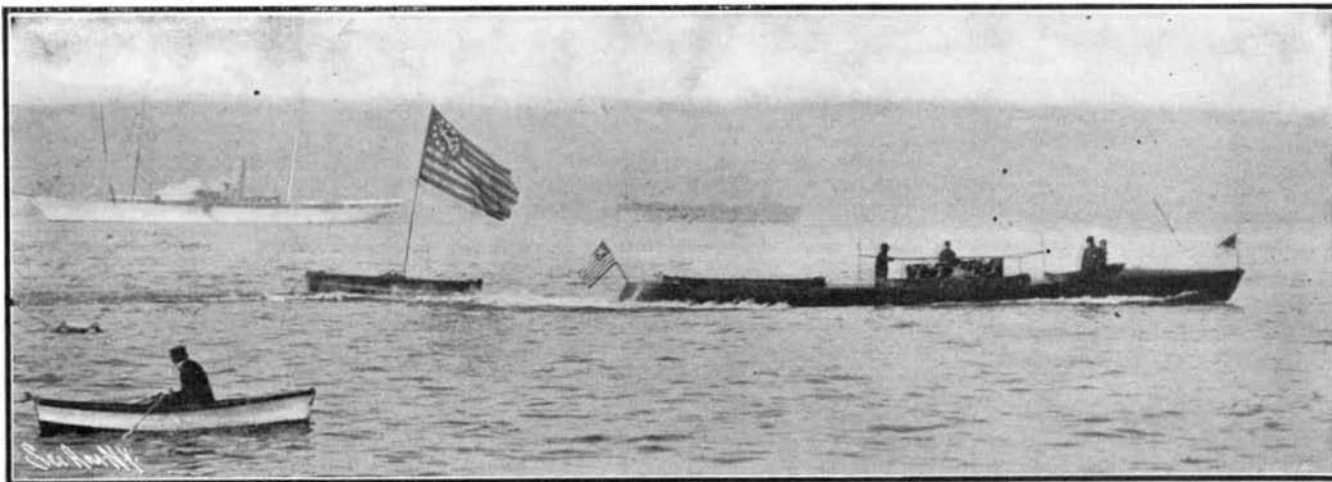
For adjusting the partial images, an aluminium frame is used into which three rectangular apertures have been cut at convenient distances one beside the other. Instead of effecting this adjustment in the apparatus itself, a special adjusting apparatus has been constructed, similar to a dividing engine, on the carriage of which two displaceable and rotating microscopes have been so arranged that the sections of their cross wires may be made to coincide with any point of the central sectional image. These points are next

Empire track October 29, Barney Oldfield, on the 60-horse-power Peerless racer, illustrated herewith, made a new set of figures for 10 miles in competition from a standing start, and completed the distance in the record time of 9 minutes, 12.35 seconds, or at an average speed of 65 miles an hour.

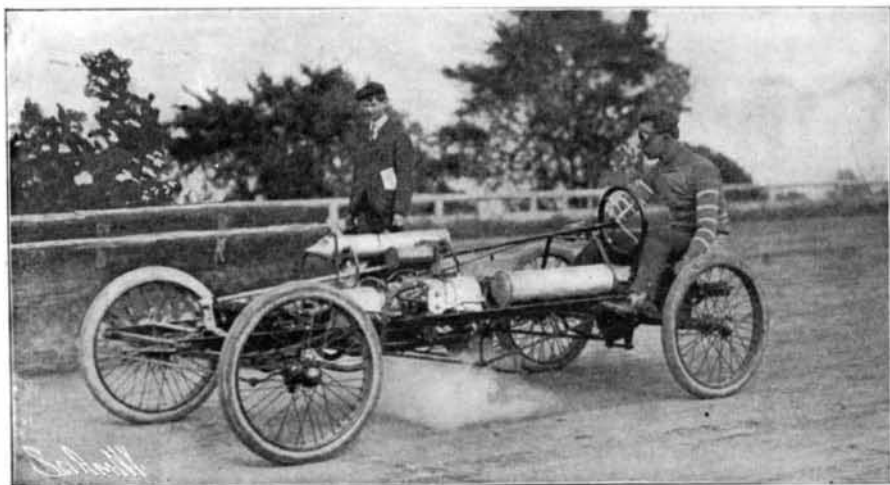
The first heat was between Thery, on the 80-horse-power Richard-Brazier racer with which he won the Bennett cup race last June, and Sartori on Mr. A. G. Vanderbilt's 90 horse-power Fiat racer. This heat was won by the latter car in 9:45.45, Thery taking exactly 10 minutes to cover the 10 miles, and Sartori making the first 5 in exactly 5 minutes also.

The second heat was between Mr. W. Gould Brokaw's 60 horse-power Renault racer and Oldfield on the Peerless, and was won by the latter by a margin of 24.45 seconds in 9 minutes, 20 seconds. Bernin, who drove the Renault, made the first 5 miles in 5 minutes, 2.5 second, and his time for the 10 miles was 9:44.45. Oldfield covered both the second and third miles in 53.15 seconds, and his time for the first 5 miles was 4:41.

Oldfield won the final from Sartori by 27.15 seconds in the record time of 9:12.35, which is 2.5 of a second faster than the best time for 10 miles with a flying start. He drove the car splendidly, and it ran with all the steadiness of the foreign cars, besides having much greater speed. Our

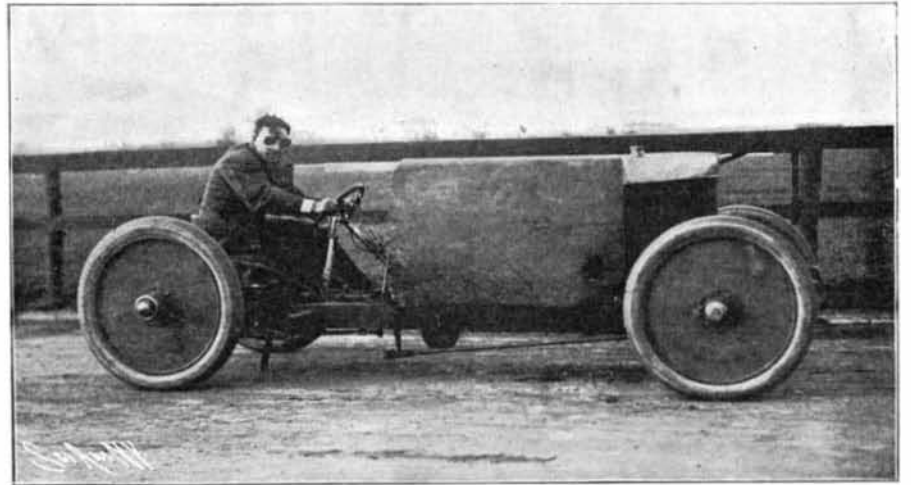


175-Horse-Power Motor Boat "Ontio" Making 28.42 Miles an Hour.



Frank Knick on the 20-Horse-Power Ford Racer.

Record: 1 mile in 55½; 5 miles in 4.43½, which is equal to 63.47 miles an hour.



Barney Oldfield on the 60-Horse-Power Peerless Racer.

Record: 1 mile in 52½; 10 miles in 9.12¾, which is equal to 65.14 miles an hour.

RECORD-HOLDING AUTOMOBILES AND MOTOR BOATS.