A NOVEL APPARATUS.

The C.P.R. has equipped the sleeping car Winchester, which runs between Toronto and Montreal, with a system of electric light generated from the axle. The C.P.R. has been experimenting with various systems of lighting for some time, with a view of determining the one best adapted for use in the car service. The results procured from the apparatus used on the Winchester are said to be very promising. Although the current is generated from the car axle, there is no flickering or irregularity in the light. This regularity is brought about by the use of a system of storage, which maintains a regular current, no matter what the speed of the car may be, and stoppages are also provided for in this way. One great advantage in this electrical system of lighting, lies in the fact that the lamps can be brought into immediate requisition. On the transcontinental line, for instance, where there are numbers of snowsheds and tunnels to pass through, the process of lighting oil lamps is too slow to meet the desideratum of having instant illumination. With the electric system, on the other hand, an employe need only press a button when the train is about to plunge into the darkness of a tunnel, to set all the lamps aglow. The Winchester is the first car in Canada to be honored with the new electric system.

THE NEW BRIDGE ACROSS THE GORGE AT NIAGARA FALLS.

Satisfactory progress is being made by the Pencoyd Iron Works of this city, in the construction of the new steel bridge across the gorge at Niagara Falls. This arch, which is being built to replace the suspension bridge erected in 1889, will be the largest of its kind in the world.

The distance between the cliffs at the point where the arch is to stand is no less than 1,268 feet. Of this space the main span of the new arch will occupy 868 feet, and will be connected to the cliffs by two approaching spans, the one on the New York State side to be 190 feet long, and that on the Canadian side 210 feet long. The width of the bridge will be a little over 49 feet, of which space 23 feet in the centre will be devoted to a double track for an electric road, and outside of the tracks on each side there will be a carriage way 8 feet wide, and beyond these, walks for pedestrians 3 feet wide and slightly raised above the level of the roadway.

The bridge will be a single deck structure and it will contain about 4,000,000 pounds of steel. The arch will be the fourth bridge erected on this site, the first having been a wooden suspension bridge, 10 feet wide, opened on January 2, 1869. This bridge was rebuilt in steel in 1887-88, but on the night of January 9-10, 1889, it was destroyed by a hurricane. It was immediately rebuilt and it is this suspension bridge that is now to give way to the arch. When the arch is completed the suspension bridge will be taken apart and removed to Lewiston, seven miles down stream, and there rebuilt to take the place of the old suspension bridge destroyed by wind, April 16, 1864.

The work of rebuilding the suspension bridge will of itself be a notable undertaking, and is expected to attract considerable attention from engineers. It is expected that the new arch will be completed during the early summer, before the heavy Niagara travel commences. As compared with the arch erected across the gorge last year for the Grand Trunk Railway's use, the new structure will be lighter and possibly more graceful, the length of the span and the lightness of the iron adding to the general beauty of the structure.

NEW DYESTUFFS.

Benzo Nitrol colors.—The demand for colors on cotton fast to washing, obtainable by as simple a method as possible, has led the Farbenfabriken Co., of Elberfield, to the discovery of the after-treatment with diazotized paranitraniline.

The colors suitable for this process have been named Benzo Nitrol colors. Since in many dye-houses the preparation of diazotized paranitraniline was too troublesome a process, an endeavor has been made to simplify same, resulting in the discovery of a developer called Benzo Nitrol Developer, in paste.

The above developer only requires to be stirred up in cold water with a little acid to bring it into solution. This process is exceedingly simple, and the Nitrol Developer will facilitate the introduction of the Nitrol colors, producing fast shades previously beyond the reach of direct dyeing colors.

Benzo Nitrol brown, 2 R.—As a direct dyeing color, this new addition to the Nitrol group is not of any great value, but developed with paranitraniline or Benzo Nitrol it gives a full reddish brown with all the advantages of Benzo Nitrol Brown G., viz., cheapness, fastness to washing, fullness of shade and fastness to light. In combination particularly this brown would prove very serviceable. It is equally as applicable as the old brands for dyeing loose cotton, hanks of piece goods, whilst for velveteen or mercerized piece goods, it can be employed for shades which, owing to the fulness of same overhand, were hitherto only obtainable with the assistance of basic colors.

Azo Fuschine G.N. extra.—This latest addition to the Azo group, resembles very closely in shade and properties, the well-known Azo Fuschine G., whilst in concentration and price it will be found considerably cheaper. To meet the demand for a cheap red level dyeing colors on wool, the Farbenfabriken of Elberfield put upon the market last year and year previous, Azo Crimson L. and S., and have now added to these colors a new homogenious product similar to the familiar Azo Fuschine, and which has been called Azo Fuschine GN. extra. In every respect, this color resembles Azo Fuschine G., particularly in its level dyeing properties and exceptional fastness to light, and combines a low price with about double