become magnetic. The temperature of my air-thermometer having become constant, I closed it by a small drop of alcohol in a glass tube of 1 mm. bore (.04 inch). When the magnetism was excited by a Grove's battery of 12 elements, the drop of alcohol was seen to be repelled outwards about 3 mm. (.12 in.) and to return even more rapidly to its former position upon the interruption of the current."

Comptes Rendus de l'Acad. des Sciences, Feb. 7th, 1848, p. 237.

Experiment with the Electric Telegraph.

Translated for the Journal of the Franklin Institute.

M. Dujardin of Lille, communicated to the Academy, the result of an experiment upon Electric telegraphing which he performed between Lille and Amiens, on the 25th January last. The telegraph was worked without a battery, by means of a magneto-electrical machine with vibrating armature, composed of three magnets. The experiment succeeded completely. During the course of the experiments, which lasted an hour and a half, but one of the magnets was employed, the whole power of the machine having been found much too great.

Ibid. 14th Feb., p. 239.

On the Colored Photographic Image of the Solar Spectrum. By
M. EDMOND BECQUEREL.

The author in the course of his researches upon the chemical action of light was led to this remarkable fact, that the solar spectrum could form its image with colors corresponding to its own, upon a plate of silver properly prepared. For this purpose the plate may be attacked by free chlorine with the precautions indicated in the note presented to the Academy: the sensitive coating which is formed upon the surface of the plate, is red in the prismatic red, yellow in the yellow, green in the green, blue in the blue, and violet in the violet. The reddish tint turns to purple in the extreme red, and extends even beyond Fraunhofer's line A; as to the violet it continues far beyond A, gradually becoming more feeble. When the action of the spectrum is permitted to last a long time, the tints become dark, and the image finally takes the metallic lustre; the colors have then disappeared.

According to the preparation of the plate and the thickness of the sensitive coating, any one of the tints of the spectrum may be made to predominate; thus a surface well prepared and previously in diffused light colored purple under a deep red glass, gives a beautiful colored photographic image of the spectrum, in which the orange, yellow, the green, and the blue, are marked with the greatest clearness. The substance formed upon the surface of the silver is not the white chloride but probably a sub-chloride, since it is not strongly colored beyond the visible violet, as the chemically precipitated chloride is, and the maximum of action is found in the yellow, where the maximum of luminous intensity is, or moves towards the red, according to the preparation to the plate. To get a tolerably rapid action, it is neces-

sary to use a strongly concentrated spectrum. These effects explain the red color of the chloride of silver, and of the sensitive paper formed with that compound, in the red rays, which has been already observed by MM. Seebeck and Herschel.

The author has succeeded in preparing by means of free chlorine, and also by using bichloride of copper, a sensitive coating of the chloride of silver so impressed that now only certain parts of the spectrum are represented with their colors, but besides, white light makes a white impression.

The compound formed upon the surface of the silver, by the action of chlorine, is the only one hitherto found which shows the properties here mentioned. Up to the present time, it appears necessary to keep the colored prismatic image in the dark, and the author has not found the means of fixing it under the influence of light. If the fixation could be accomplished, and if the sensitiveness of the material was greater, we could not only draw but also paint by light; nevertheless the results mentioned show that the solution of the problem is possible.

Ibid, 7th Feb., 1848, p. 181.

New Liquid for Lamps.

In a letter from M. Louyet, of Brussels, read to the Academy of Sciences of Paris, by M. Pelouze, he states that he has satisfied himself by experiment that the essential oil obtained by the distillation of common resin, when burned in the camphene lamp equals if it does not surpass the camphene itself. He does not say whether in light or in smoke. But the fact reminds us of similar experiments made in this city some years ago by one of our most distinguished chemists for the purpose of ascertaining whether certain products obtained by the distillation of gas tar could not be substituted for camphene. It was found that the substance burned beautifully, the only drawback being, that nobody could stay in the room with it owing to the smell. M. Louyet attributes the invention of the lamp for burning camphene to the English under the name of the Vesta Lamp. The Vesta Lamp was nothing more than the ordinary camphene lamp which had been used and patented in this country years before.

Description of an improved Wiring Machine for the manufacture of Tin, Sheet-Iron, and other Plate Ware, Patented by A. W. WHITNEY, Woodstock, Vermont, 1847.

The face plates or rolls H H, are made of cast-steel of an improved form having the journal boxes of their shafts in a cast-iron frame. This frame consists of two pieces, fitted together at A, and at the top of the upright piece under K. The journal box A has two projecting ears or bearings, (one of which is seen at A,) at right angles to the shaft B H, on which ears it is supported, forming a fulcrum to the shaft B H; thus preserving the bearing of the shaft A perfect, while the end H is raised and depressed in the process of working. B is a movable