

On the 8th of May, 1860, M. Dagron obtained a "certificate of addition" to this patent for the method now in use of placing the photographs at the end of a cylinder-lens; and he proposed to put this little microscope, with its photograph fixed to it, in brooches, lockets, rings, &c., as I had suggested to Signor Castellani in 1857. On the 4th of April 1861, M. Martinache took out a patent for another construction, in which the photograph was placed in the middle of a brass tube having a lens at each end, the lens furthest from the eye having no other purpose than to throw light on the photograph. M. Martinache obtained a "certificate of addition" to his patent on the 7th of June, 1861. This patent was supposed to be an invasion of that of M. Dagron; but after some law proceedings had taken place, M. Dagron purchased the patent right of M. Martinache for £1250.

Although M. Dagron's method of applying the photomicroscope to jewellery exhibited much ingenuity, and was doubtless his own independent idea, it was not deemed of sufficient originality to entitle him to the exclusive privilege of manufacturing and selling the instrument. The Parisian opticians were therefore induced to try the validity of his patent; and having learnt that I had exhibited the photographs in the same way, and suggested the application of the instrument to jewellery, they succeeded in reducing the patent. M. Dagron appealed against this decision, on the ground that the passage which we have quoted from the article "Microscope," in the *Encyclopædia Britannica*, was not sufficient publication; but the court, the Correctional Tribunal of Paris, rejected the appeal, and found him liable in the expenses of the process. On the ground that M. Dagron had acted in good faith, the court refused to give damages to the fifteen Parisian opticians whom he had interdicted from manufacturing the photomicroscope.\*

In the course of this process the cylinder lens which I had described and used nearly forty years ago is called a *Stanhope*; but I have learned on inquiry that Lord Stanhope never proposed a plano-convex lens of such thickness that its anterior focus coincided with its plane side.†

Since the manufacture of the *bijoux photomicroscopiques* has been open to all opticians of all countries, we have not seen or heard of any remarkable improvement upon them. We expect, however, to see the central, or any other precious stone in female ornaments, so constructed as a photomicroscope that the observer looks into its central facet in order to see the photograph on its inner side. If the ornament should consist of coloured precious stones, or of stones not sufficiently thick to form a cylinder lens, the lens might be made of diamond or New Holland topaz or quartz, or glass, and inserted in a cylindrical aperture formed in the central facet of any of the precious stones.

We have now before us one of Mr. Dagron's photomicroscopes, containing a photograph of Sir Walter Scott, and sold at Messrs. Knox, Samuel, and Dickson's for one shilling. The cylinder lens

is only *one third* of an inch long, and its diameter *one tenth* of an inch. It is placed within the eye-end of an ivory tube which screws into a larger piece, so as to resemble a minute opera-glass. The larger or object-end has an aperture of *one-twelfth* of an inch, and the smaller or eye-end an aperture of *one-twenty-fifth* of an inch, through which we see the portrait as large and distinct as if it were an oil picture on the wall!

In the pamphlet of M. Dagron, to which we have referred, he has described the very ingenious apparatus by which he executes his microscopic photographs, and the whole process of making the cylinder lens, and placing the photograph on its plane surface. The price of a complete apparatus is only £4 10s.; and as he supplies cylinder lenses for the small sum of 6s. 8d. per gross, any of our photographers may add to their profession this new and lucrative branch of it, as practised so generally in Paris. Considering the ingenuity and skill which M. Dagron has displayed in the construction and application of the photomicroscope, and in giving the benefit of it to photographers, and to the public, at such small expense, we cannot but regret that the jury of the Great Exhibition did not honour him with their medal.

Edinburgh College, Dec. 1863.

A number of photomicroscopes, in various styles of gold mounting, were exhibited by Mr. Bryson, Optician; they were very much admired for their distinctness and delicacy. Messrs. Knox, Samuel, and Dickson exhibited a collection by M. Dagron, in the usual ivory mounting.

#### PROCESS FOR MANUFACTURING KEROSENE.

The specification describes the process for obtaining oils, denominated Kerosene, from "bitumen wherever found." The kerosene consists of three distinct hydrocarbons, namely A Kerosene, B Kerosene, and C Kerosene. The C Kerosene, or that which is employed in lamps, may be formed by an admixture of the light with the heavier oils, until the specific gravity is raised up to about 0.800, water being 1000. The first part of the process consists in submitting the raw material to dry, or decomposing distillation, in large cast iron retorts at a temperature not exceeding 800°. The condensation of the vapors is effected in iron pipes, or chambers, surrounded by water.

"The liquid products of this distillation are heavy tar and water, or ammoniacal liquor, which lie at the bottom of the receiver, and a lighter fluid which floats above them." The heavy fluids and the light are separated by drawing off one from the other. "The heavy liquids may be utilized or disposed of advantageously; but they have no further connection with this process." The light liquid is submitted to re-distillation at the lowest possible heat, in a common still and a condenser. The products of this distillation are a light, volatile liquid, which accumulates in the receiver, and a heavy residuum left in the still, and which may be added to the heavy liquid impurities of the first distillation.

The light liquid is transferred from the receiver to a suitable vessel or vat, and mixed thoroughly with from five to ten per cent. of strong sulphuric, nitric, or muriatic acid, according to the quantity

\* An account of this trial will be found in the "*Moniteur de la Photographie*," April, 1862.

† M. Dagron calls the cylinder lens a *Stanhope* in his very interesting tract, just published, entitled *Photographie Microscopique* p. 86: Paris, 1864.