

Calendar of Patent Records.

April 14, 1720.—The 'stoving' process of seasoning timber for shipbuilding—in which the timber is heated in wet sand—was the invention of John Cumberland, whose patent is dated April 14, 1720. The process, which was reported by the Admiralty to be much superior to the old method of charring that it displaced, was used in the Royal dockyards for some years, an allowance of £200 a year being guaranteed to the inventor. An application for a prolongation of the grant was dismissed.

April 17, 1882.—The 'telpher' system of transportation—in which goods are carried by electrically operated and automatically controlled trolleys travelling on a mono-rail—was the invention of Prof. Fleeming Jenkin, his patent being dated April 17, 1882. The first commercial installation in England was opened in 1885 for carrying clay from the pits at Glynde in Sussex to the railway.

April 18, 1707.—On April 18, 1707, there was granted to the first Abraham Darby a patent for his invention of "casting iron bellied potts and other iron bellied ware in sand only without loam or clay," which greatly increased the use of iron for founding purposes. Previous to this invention, such articles were only made in the more costly brass, iron castings being confined to the production of simpler articles such as fire-backs and grave-slabs. Abraham Darby's name is an honoured one in the history of the iron industry, for it was he who, about 1710, first discovered and put into practice a satisfactory process for the smelting of iron with coke.

April 18, 1818.—The omnibus dates from the French patent granted to De Berekem of Paris on April 18, 1818, for what he called a 'Parisienne,' carrying eighteen persons. A previous attempt—with which Blaise Pascal was associated—had been made to run public vehicles of this kind in Paris, but it was not successful and was soon abandoned.

April 18, 1838.—William Barnett's patent, dated April 18, 1838, is an important milestone in the history of the gas engine, for it was in this that the advantages of compressing the combustible mixture before igniting it were first pointed out. In Barnett's engine the air and gas were compressed separately and were mixed in the cylinder at the beginning of each stroke. A special ignition cock, which remained long in use, was also a feature of the invention.

April 18, 1885.—One of the early suggestions for utilising the principle of the gyroscope to replace that of the magnetic needle in the mariner's compass was the invention of two Dutchmen, Gerardus van den Bos and Barend Janse, whose German patent was applied for on April 18, 1885.

April 19, 1758.—The achromatic telescope of John Dollond was patented on April 19, 1758. No action seems to have been taken by the Privy Council on a petition signed by most of the instrument-makers of London, alleging that object-glasses in accordance with Dollond's patent had been made and publicly sold before the date of the grant and praying for the revocation of the patent, and the patent was afterwards upheld in the Courts in an action for infringement. But there seems to be little doubt that Chester Moor Hall was the first inventor.

On the same day, April 19, 1758, there was granted to Jedediah Strutt a patent for the rib-stitch hosiery frame, which was the first important modification of Lee's stocking frame. Strutt invented the rib-stitch machine for his hosier brother-in-law, William Woollatt, and the two started what became very successful works at Derby and Nottingham.

No. 3102, VOL. 123]

Societies and Academies.

LONDON.

Mineralogical Society, Mar. 19.—A. W. Groves and A. E. Mourant: Inclusions in the apatites of some igneous rocks. Apatite crystals with dark cores of inclusions have been observed among the heavy minerals of some English sedimentary rocks, but there are few records of such apatites in igneous rocks. The authors record several such occurrences in granites and in volcanic rocks from Normandy, Jersey, and Brittany. Five different types are distinguished in the granite of northern Brittany alone. In one type with a definitely pleochroic core the inclusions appear to consist of biotite or chlorite, but in other types it has not been possible to determine their nature.—L. A. Narayana Iyer: Calc-gneisses and cordierite-sillimanite-gneisses of Coimbatore, Madras Pres., and similar occurrences in India. The paper dealt with a suite of crystalline gneisses in the ancient Archæan complex of India of Dharwar age (Huronian), consisting of the above two facies, which are in close association. Similar suites of rock occur in different parts of India, forming a definite stratigraphic horizon. The author considers their formation as due to thermal or 'infra-plutonic' metamorphism followed or accompanied by regional or dynamo-thermal metamorphism of pelitic schists and calcareous sediments.—F. A. Bannister: A relation between the density and refractive index of silicate glasses with application to the determination of imitation gem-stones. The study of simple glass families leads to a relation between the refractive index and density which can be applied in a modified form to the determination of imitation gem-stones. $(n - N)/(d - D)$, where N and D are the refractive index and density of silica glass, is plotted against n by a simple graphical method, whereupon the various imitations separate into groups; the members comprising any one group are chemically similar. Doubtful cases can be solved by measuring in addition the relative dispersion.—H. E. Buckley: The crystallisation of potash-alum. The author described the results of experiments on the differences of crystal habit obtained under varying conditions of cooling and evaporation, and in the presence of various substances in solution such as strong acids, $AlCl_3$, FCl_3 , amyl alcohol, Bismarck Brown, etc.

PARIS.

Academy of Sciences, Mar. 4.—A. Deslandres: Simple relations between the most intense and highest radiations of the chemical elements in the photosphere of the sun. In previous communications it was shown that the frequencies of the highest and most brilliant lines of the sun were multiples of a constant d_1 , 1062.5. Additional data showing the importance of this constant are given.—Charles Moureu, Charles Dufraisse, and Léon Enderlin: Recherches on rubrene. The action of acids. The liberation of iodine from hydriodic acid by rubrene, with decolorisation of the hydrocarbon, has been studied in detail. Except possibly in ether solution, there is no evidence of any hydrogenation: the colourless hydrocarbon produced appears to be isomeric with rubrene.—J. Favard: Problems of extremums relative to convex curves.—Maurice Janet: The ratio of the mean values of the squares of two differentials of consecutive order.—Mandelbrojt: How several theorems of Taylor's series can be transformed into Dirichlet's series.—J. Delsarte: Symmetroid nuclei.—L. Ahlfors: The number of asymptotic values for an integral function of finite order.—M. Lavrentieff: A problem of P. Montel.—Gr. C. Moisil: Functional groups.—D.