

RIO TINTO shares have rushed up to 530 francs, according to mail advices, in consequence of the discovery of a body of six per cent copper ore.

**THE POCAHONTAS COMMITTEE.**—An examination of this mine is now making by a committee of experts appointed by Mr. J. C. Bayles, President of the American Institute of Mining Engineers. This investigation originated in a request of the Southwest Virginia Improvement Company, of Philadelphia, which owns the mines. The committee of experts is made up of Messrs. Irving A. Stearns, of Wilkes-Barre, Pa., J. H. Bramwell, of Roanoke, Va., and Stuart Back, of Coalburg, Kanawha, West Va.

**ARTIFICIAL GRAPHITE.**—Dr. Aron exhibited in a recent meeting of the Electrochemical Society of Berlin various specimens of vegetable carbon made conductive and incombustible within limits by strong heating in *vacuo* or in a neutral atmosphere. Heat appears to render carbon first conductive, and then at the highest degrees practically incombustible. Dr. Aron showed incombustible wadding, paper, post-card, and other carbonized specimens. They resist the heat of a Bunsen burner, and even that of a glass blow-pipe, so that they might be used for lamp carbons. As high conductivity and incombustibility are characteristic of graphite, carbons prepared in this way may be called artificial graphites, although they do not, under this treatment, assume the crystalline structure of natural graphite. The electric current is of course very suitable for their preparation. Under very strong heat, soot becomes a better conductor than graphite, and might thus replace the latter in electro-metallurgical operations. It further results, from Dr. Aron's experiments, that, if the amount of hydrogen in a graphite really determines its combustibility, as is often asserted, the influence can only be due to the amount of combined hydrogen, as carbons do not become more inflammable by being rendered incandescent in a hydrogen atmosphere.

**GEORGES LESCHOT, INVENTOR OF THE DIAMOND DRILL.**—Georges Auguste Leschot, who died at Paris on the 4th of February, at the age of eighty-four years, was a very remarkable man. It is to him that we owe the plan of employing the black Brazilian diamonds, or "carbonados," for piercing rocks, an invention that has proved of immense value. Leschot was the son of a skillful mechanic, Jean Frédéric Leschot, whose automata, singing-birds, artificial limbs, and so forth, were the admiration of the celebrated Vaucanson. He also effected great improvements in the manufacture of watches by mechanical means, in connection with the Geneva house of Vacheron & Constantin, receiving in 1845 a prize from the French Academy of Sciences in recognition of his services. In 1861, the black, amorphous, but very hard diamonds of Brazil, known as "carbonados," came to Europe, and Leschot's son, being then engaged in Italian railroad work for the house of Vinali, Picard & Co., knowing the idea of his father that diamonds might be used instead of steel tools to cut rocks (an idea which had occurred to him in examining the fine striations cut in some specimens of ancient red porphyry), communicated with his father on the subject, and the result was, that Leschot devised the diamond drill, which has been in use ever since, especially in England, Germany, and America.

**THE ELECTRICAL QUALITIES OF ALUMINIUM WIRE.**—At a recent meeting of the Philosophical Society of Glasgow, Professor Jamieson said he had obtained some specimens of nearly pure aluminium wire from the Aluminium Crown Metal Company, the same being prepared by Webster's process. On analysis, the wire gave 99.39 per cent of aluminium, 1.24 per cent of iron, and 0.37 per cent of silicon, the specific gravity being 2.786. As the wire was only in short lengths, he had been compelled to determine the electrical resistance of the metal by the "fall of potential" method with chemically pure copper wire as well as with a standard B.A. unit; and he had found that the aluminium had 1.66 times the resistance of the copper wire of the same gauge and length, and but little more than half the resistance of pure copper for the same length and weight. The conclusion arrived at, therefore, was, that aluminium had by far the least resistance of any known metal for its weight. In the course of his investigations, he had elicited a very curious fact, namely, that the introduction of a very small percentage of aluminium into copper not only raised its tensile strength immensely (the specimens shown having a breaking stress of about 45 tons per square inch), but also enormously increased its resistance. So far as his tests had gone, the specimens shown had a resistance of 35 times that of pure copper. He pointed out the probable uses of such wire, as, for example, in the construction of high resistance coils. Other qualities might be found well adapted for telephone wires, and the purer kinds of aluminium, owing to the great lightness of the metal, could be used for military purposes, in which lightness of baggage was an important desideratum.

**"RACKAROCK" ABROAD.**—In one of his letters to the *Colliery Guardian*, Mr. George G. André, F.G.S., M.E., says: "I learn that a new explosive is about to be introduced into European mining works from the United States, where it is said to be competing very successfully with dynamite and the gun-cotton class of compounds. It has been designed mainly to escape from the difficulties of manufacture and transport that now attend the high explosives. It consists of two ingredients, each in itself non-explosive, and these two are mixed at the mine. In this way, it may be manufactured in any place without license or restriction of any sort, and sent by railroad as ordinary goods. These are obviously very great advantages such as are likely to give the new compound a good chance of success. There is nothing new in the notion of separate manufacture and mixing at the works where it is to be used. I remember seeing something of this kind several years ago, and attempts were then made to bring the explosive into common use. But there were practical difficulties in the way at that time that prevented its adoption, and nothing more was heard of the scheme. Since that time, however, considerable improvements have been made, and it is now said that complete success has been achieved. At any rate, it has stood the test of experience in the United States, where it has been largely used during the past year. It is said to be fully equal in strength to the best dynamite, and it is to be sold at half the price. In the matter of safety in handling after being mixed, it appears to rank high, for it can be fired only by means of a very powerful detonator. All of these qualities are testified to by many well-known American mining engineers and men of science, and there seems no reason to doubt the statements made by the

assignees of the patent rights in Europe. The invention is likely to be of great importance in mining, and if it accomplish all that is claimed for it, it will constitute another important step in the progress which mining has made in recent years."

#### FURNACE, MILL, AND FACTORY.

The Weimer Machine-Works Company, of Lebanon, Pa., which has acquired a national reputation for building vertical iron blast-furnace blowing-engines, has just issued a handsomely illustrated catalogue. The different styles of engines for anthracite, coke, and charcoal furnaces are shown, and detailed drawings are submitted of the Weimer water-cooled blast-furnace first introduced at Chester, New Jersey, with its housing and mantle; of the Weimer suspended pipes hot-blast stoves; the rack and pinion; and the gearless stock hoist; the Weimer friction winch charging apparatus; the Weimer water-cooled furnace top, metal trucks, scales, charging-barrow, tilting cinder trucks, and the Birkinbine fire-hydrant. A particularly interesting new departure is the regenerative hot-blast stove, recently patented, of which the catalogue modestly says: "As the stove has yet to be tested by trial, we prefer not to enter into any discussion of its merits." The Weimer Machine-Works Company also builds the well-known Taylor Langdon gas ore-roasting furnaces and the Grittinger kiln.

Cleveland and Pittsburg capitalists are negotiating for the purchase of the Nes Silesia Steel-Works, of Sandusky, Ohio, with the view of transferring the establishment into a mill for the manufacture of Mushet steel and Norway iron. Parties in Sandusky are also endeavoring to get hold of the works, and, if they succeed, will start a mill.

The Ohio Fire-Brick Works, of Ironton, Ohio, a co-operative company, whose works are at Petersburg, four miles above Ironton, are in full operation. This is a new work started during the past year. The production will be gradually increased.

The old Baxter stove-works, in Salem, Ohio, have been sold to Charles M. Carey and James Boyle, who will at once put them in operation.

The fire-brick works of the Portsmouth Fire-Brick Company, at Portsmouth, Ohio, are again in full operation.

William Harty, proprietor of the Harty Steel-Spring Works at Portsmouth, Ohio, has made an assignment. Assets, \$15,000; liabilities, \$18,000.

At Youngstown, Ohio, the Falcon furnace of Brown, Bunnell & Co. is again in blast, and the Girard Iron Company is having a satisfactory run at its furnace. The rolling-mills throughout the city are nearly all on full-time.

The Atlantic Dynamite Company has moved to its new quarters, No. 245 Broadway, New York City.

Mr. Henry B. Murray, representative in New York of the Pacific Iron-Works, Messrs. Rankin, Brayton & Co., of San Francisco, has changed his headquarters from No. 35 Broadway to 145 Broadway.

We note the removal from No. 57 Broadway to No. 239 Broadway, corner of Park Place, of the Hecla Powder Company.

The Rand Drill Company and the Redrock Powder Company, manufacturers of "Rackarock," have removed to 23 Park Place, New York City.

An adjourned meeting of the stockholders and creditors of the iron manufacturing firm of Brown, Bunnell & Co. was held at Youngstown, Ohio, April 29th. The attendance was large, about \$1,000,000 of the \$1,250,000 indebtedness being represented. An adjustment of all the difficulties under which the receiver was appointed in February, 1883, was consummated. It was agreed to organize a new company, called the Brown, Bunnell Iron Company, with a capital stock of \$1,200,000, for the purpose of purchasing and operating the rolling-mills, furnaces, and coal-banks of Brown, Bunnell & Co. The extensive rolling-mills, furnaces, and coal-banks of the company, under the management of Receiver Brown, of Cleveland, have only been operated part of the time, but have been profitable.

Abram S. Hewitt and Edward Cooper, of New York, have begun suit in the United States Circuit Court at Cleveland, against the Cleveland Rolling-Mill Company, for \$200,000 damages for alleged infringement of patents. The petition asserts that Emilio and Pierre Martin were the inventors of a process of converting cast-iron into steel. They were residents of France, but a patent was issued in this country in December, 1857. Owing to a technical error, a new issue was granted in August, 1868. In May, 1875, Hewitt & Cooper bought Pierre's interest. In July, 1871, Emilio died, and his heirs secured the appointment of Hewitt as administrator, and he appears in this suit in that capacity. The petition asserts that the Cleveland Rolling-Mill Company used the process, and repeatedly refused to pay royalty. The attorneys for the plaintiffs are Strawbridge & Taylor, of Philadelphia, and Lloyd & Taft, of Cincinnati.

The Rogers Locomotive-Works are building some locomotives for the Valls, Vallesnera & Barcelona Railroad, in Spain. These engines are for a narrow-gauge line. Three of them are eight-wheel passenger engines, and three are *moguls*.

The extensive additions made to the iron-works of Shickle, Harrison & Howard, of St. Louis, Mo., are about completed, and will require the employment of 400 additional workmen.

The Quinnston furnace, coke-works, and mines, at Quinnston, West Va., have been shut down. They may be started up again in September or October.

The Greenwood Rolling-Mill, at Tamaqua, Pa., has been abandoned and will be dismantled.

The West Lebanon Rolling-Mill Company (Limited) has purchased the Harrisburg Chain-Works, and will remove the entire establishment to Lebanon, Pa.

No. 4 blast-furnace of the Pennsylvania Steel-Works, Steelton, was lighted recently. Its capacity is 300 tons a day.

The bolt and nut manufacturers of the United States have formed a pool for the purpose of restricting production and establishing profitable selling rates. A meeting will be held at Pittsburg about May 1st, to revise the rates and discounts, and to limit the time fixed for the pool agreement.

Messrs. Benedict & Cole, mining engineers, have removed to No. 82 Liberty street, this city.

The office of the John Ashcroft Manufacturing Company is now located at No. 59 John street, this city. The manufacturing department will be removed to Brooklyn.

It has been decided by the Mount Hickory Iron Company to rebuild the rolling-mills burned at Erie, Pa., last winter. The company's blast-furnace at Sharpville will also be removed to Erie. Pierce Brothers, members of the company, opposed the rebuilding, and asked for an injunction, which the court refused.

#### LABOR AND WAGES.

A cable from London states that advices from Cape Town mention the occurrence of a strike and serious disorders in the diamond fields. The cause of the difficulty is stated to be the fact that the men are searched at the conclusion of their day's work.

The 2000 miners who struck ten days ago resumed work April 28th, the Westmoreland Coal Company yielding to their demand to remove the one-lach screen.

At Troy, New York, the Arbitration Committee of the Troy and Albany Stone Manufacturers' Association, April 29th, ordered a closing by May 3d of all the

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Mr. J. H. HAMMOND, mining engineer, has gone to California. During the first week of May, his address will be San Francisco.

THE strong evidence brought forward by Mr. A. CHAUTE, of Leadville, through the Herald of that city, points to the conclusion that the alleged Mount Pingah or West Four-Mile gold placers have been salted.

Our friends of the Mining Record, in their intervals of leisure in writing their weekly silver articles, devote some attention to giving correspondents good advice on the condition of the properties of different mining companies. Their comments are generally as solemn as the gravity of the situation demands.

SHEFFIELD, the home of steel "physics," has frightened off the Iron and Steel Institute; four leading firms, JOHN BROWN & CO., CHARLES CAMMELL & CO., THOMAS FIRTH & SON, and VICKERS, BONDS & CO., having declined to allow the members to visit their works.

THE programme for the Pittsburg meeting of the American Society of Mechanical Engineers has just been issued. It includes a joint session on the 30th of May with the Engineers' Society of Western Pennsylvania, the subject to be discussed being "Natural Gas for Industrial Purposes."

THE pressure of the outside stockholding interest appears to have had its effect upon the management of the Alice Gold and Silver Mining Company, and has led to the publication of a quarterly report by the secretary, showing receipts and expenditures, which, we presume, will be a feature in the future.

IN the case of the Kankakee Coal Company against the Illinois Central Railroad Company, which was recently decided by the Railroad Commissioners of Illinois, some points concerning alleged discrimination in freights were decided. It appears that the Kankakee Coal Company, operating mines at Clarke City, Illinois, 83 miles from Chicago, was assured that it should have as favorable a rate as any mine on that division of the Illinois Central Railroad, completed late in 1882.

THE Commissioners held that, since the complainant was not relying on an open or published rate, but was seeking special privileges, he was afforded complete protection from injury thereby. They are emphatic in their statements against any concessions made to volume of business, and they are equally decided against the granting of lower rates to competitive points than are charged for intermediate points on the same railroad.

THE annual report, published in the English mining papers, of the Tharsis Sulphur and Copper Company, is worthy the study of our mining community, and particularly of those interested in our growing pyrites industry, and in our copper mines, the most formidable competitors of which the Spanish pyrites companies undoubtedly are.