COMPRESSED LIGNITE AS FUEL.

An important, if not a vital, question in Texas, especially with respect to the industrial development of the State, is how to utilize the extensive beds of lignite which abound there. Indeed, in the lack of true coal, the State can hardly accomplish much in the manufacturing line without first solving this problem.

We are informed that Mr E. T. Dumble, of Houston, has devised a process of coking the lignite, which works well on a small scale and is likely to prove valuable in larger operations, particularly in smelting iron, there being an abundance of iron ore in the neighborhood of the lignite deposits. For other than smelting purposes, however, it is desirable to retain in the fuel the volatile fuel elements which are wasted in coking, and which amount to about two-fifths of the total weight of the lignite.

A sample of this fossil fuel, from a seam ten feet thick, in Robertson County, Texas, may be taken as a representative specimen. Analyzed by Prof. E. T. Cox, of the Indiana Geological Survey, it showed—fixed carbon, 45 per cent; gas, 39½ per cent; water, 11 per cent; white ash, 4½ per cent. It furnished nearly 50 per cent of lusterless coke, closely resembling wood charcoal. As taken from the bed the lignite is dull brown in color, and is apt to shrink, crack, and fall to pieces on exposure to the air, a property unfitting it for transportation.

Judging from the success achieved in New England in compressing peat, and in Pennsylvania in compacting coal dust by pressure, Mr. N. A. Taylor, of Palestine, Texas, is confident that by similar mechanical treatment the soft and watery lignite might be converted into a fuel that would rival cannel coal The solidity and high specific gravity of true coal being due to the pressure to which it has been subjected by overlying rocks, mechanical pressure, he argues, would do the same for lignite. Such pressure would expel the water, and by compacting the fuel would make it more durable in combustion and add greatly to its heating power. "Nature does it: why can't we?"

It is purely a question of economy of power. If the lignite can be squeezed into true coal, or something like it, for less than it will cost to bring coal from the coal fields of the north, the advantage to Texas will be obvious and great. As the lignite beds are easily accessible, and can probably be made to furnish the power required for converting the lignite into a more useful fuel, there would seem to be no theoretical obstacle to the accomplishment of the end at which Mr. Taylor aims. At any rate it is a good opening for invention, and one that Texan inventors will probably follow to profitable solution as soon as they discover its importance, And the value of a successful process of compacting lignite so as to fit it for transportation and the ordinary uses of soft coal would not be confined to Texas. There are in many parts of the West, and in other countries, extensive beds of lignite, the utility of which would be vastly increased by the invention called for by Mr. Taylor.

SMOKELESS FUEL FROM COAL.

Mr. W. D. Scott-Moncrieff, in a paper read before the Society of Arts, has recently brought to the attention of that body an important project for not only hereafter preventing, but also for rendering commercially available the dense stratum of smoke that has so long hung like a pall over the city of London, obscuring the light and rendering the atmosphere dangerous to the whole community. He proposes to substitute for the bituminous coal now in universal use for domestic and industrial purposes, a modified form of this coal from which the gas has been partially extracted. Experiments made by him as long as ten years ago showed that a semi-coke, resulting from a short distillation of coal, furnishes a fuel that is practically smokeless; and he has since discovered that, by treating this coke with water when hot, renders it still more smokeless and makes it the most perfect fuel imaginable, as it has all the cheerfulness and heat-giving properties of the unprepared coal with none of the disadvantages arising from its use. To produce this fuel in quantities suitable for public use he proposes to take advantage of the existing plant of the gas companies, finding that they are amply sufficient for the purpose. Instead of taking 10,000 cubic feet of gas per ton from the coal, he would take 3,333 cubic feet, or any other convenient proportion, and pass three times the quantity through the retorts. In this manner the gas would be coming away from the retorts all day long, just as formerly, with a slight loss of time to be allowed for the additional frequency of the charging. The supply at the end of the twenty-four hours would be in excess of that which is obtained from the long extraction, and in this way less and not more plant would be necessary to give the same quantity in a given time, while the gas itself would be of better quality. The author claims, from his investigations and experiments, that the results of the application of his scheme would prove startling. The gas companies would have double the quantity of by-products, in the shape of tar and ammoniacal products, that they have at present; the community would have 24-candle instead of 16-candle gas; the fuel resulting from the process would be of a nature to ignite readily, make a cheerful fire that gives out 20 per cent more heat than common coal; and London would become a smokeless city. The only extra expense to the companies would be that of the additional workmen employed in charging the retorts and interest upon the additional capital required for transit appliances; but, as an offset, the companies would receive an increased quantity of valuable by-products and a supply of fuel that would be in universal demand; and the profits from the sale of this at prices much below that of coal would be such that the companies would be actually getting their coal for nothing.

THE SILK INDUSTRY OF THE UNITED STATES.

The preliminary report of Mr. Wm. C. Wyckoff, Special Census Agent on Silk Manufacture, shows that this industry gives employment to something over 34,400 hands, and that the finished goods turned out are worth about $34,400,000, or a thousand dollars net to each worker.

The product of the census year ending June 30, 1880, is divided as follows:

Sewing silk	$776,120
Machine twist	6,000,265
Floss silk	219,250
Dress goods	4,115,205
Satins	1,101,875
Tie silks and scarfs	606,675
Millinery silks	891,955
Other broad goods	627,595
Handkerchiefs	3,862,550
Ribbons	5,955,005
Laces	437,000
Braids and bindings	999,685
Fringes and dress trimmings	4,950,275
Cords, tassels, passementeries, and millinery trimmings,	1,866,575
Upholstery and military trimmings	1,392,355
Coach laces and carriage trimmings	37,510
Undertakers', hatters', and fur trimmings	59,805
Mixed goods and silk values therein	510,763

Reports were received from 383 factories, with 8,467 looms, representing an investment of $18,899,500. Connecticut has 28 factories; Massachusetts, 22; Pennsylvania, 49; New Jersey, 108; and New York, 150. The Connecticut factories give employment to 3,766 hands; those of Massachusetts to 2,068; Pennsylvania, 3,360; New Jersey, 13,932; New York, 10,484. The chief centers of the silk industry are Hartford County, Conn., with 549 looms; Hudson County, N. J., with 1,060 looms; Passaic County, N. J., with 3,238 looms; New York city, 1,820 looms; Philadelphia, Pa., 769. Nearly half the silk operatives are women. The wages paid during the census year footed up $9,107,853, of which Paterson, N. J., had $3,335,045, and New York city, $2.190,660. The gross value of materials and supplies was $22,371,300, and the gross value of manufactured product was $40,975,285, which includes the returns from those who do not make finished goods—throwsters, makers of fringe silks, spoolers, winders, dyers, etc.

SUPPRESSION OF ONE CLASS OF INTERFERENCES.

An important modification of the practice of the Patent Office in the matter of trade mark interferences has been ordered by the Secretary of the Interior.

Since the decision of the Supreme Court affirming the unconstitutionality of the United States statutes relating to trade marks, the Office has continued to register the applications of such persons only as, with knowledge of the decision, voluntarily paid the fee previously required. The Office has also continued the practice of deciding between conflicting or interfering applications for certificates of registration.

This practice is now discontinued, the Secretary of the Interior having decided, in the case of Braun & Co. *vs.* Blackwell, that it is not within the province of the Commissioner to decide questions of priority of right between applicants or those who have already received certificates of registration. All interferences pending in trade mark cases have accordingly been dissolved. Hereafter, on receipt of an application for the registration of a trade mark, notice will be given the applicant of the decision of the Supreme Court, as heretofore, and if the applicant still desires registration, and the matter is proper therefor, the application will be considered without reference to any pending application or to any registered trade mark.

Thus the function of the Patent Office in relation to trade marks becomes purely one of registration and certification. The question as to the applicant's legal claim to the mark so registered is left for decision where it properly belongs, that is, with the courts, to which appeal must ultimately be made in case of dispute.

It may be seriously questioned whether the function of the Office with respect to patent rights should not be similarly limited. With its present force and the vast multitude of applications to be considered it is physically and morally impossible for the Office to give more than a few minutes, on the average, to the determination of the questions of originality, novelty, and the rest. For this reason not only are improper applications granted—the existing practice of the Office only being considered—but worse, really proper and deserving applications are denied. And yet, after all, the property right of the patentee must be passed upon by the courts before it has more than a presumptive value.

To the popular mind the possession of letters patent bearing the broad seal of the United States, is a guarantee that the owner's right to the invention claimed has been officially examined and decision rendered in his favor; and on this presumption not a little money has been paid for patents which could not stand legal investigation. The knowledge that the Patent Office simply registered and certified claims to property rights, leaving them, as in the case of trade marks, to be adjudicated by the courts, would in no wise lessen the legal value of letters patent, while it would greatly simplify and expedite the work of the Office, and at the same time put an end to a vast amount of expensive and vexatious litigation, which, even when successful, merely establishes a claim.

For when an inventor has been subjected to a costly trial to prove his freedom from interference, and has obtained the patent applied for, he has gained nothing which the Patent Office could not justly have given him at the outset, namely, a certificate that he claims the invention described. The decision of the Commissioner that there is no interference is worth nothing in the courts if the claim is contested there. The entire case must be retried on its merits.

The simple and efficient working of the law with respect to copyright should relieve any apprehension that may exist as to a possible injury to patent rights in case the suggested change in the practice of the Patent Office should be made.

The value of copyright property is very great; yet the litigation with respect to copyrights is relatively small, though the government entertains registers and certifies claims to copyright, as it hereafter will trade-mark claims, without pretending to determine their legitimacy. That is the business of the courts. And the courts would probably have fewer patent cases to try if it were generally understood that the decision of the Patent Office in granting letters patent gives only a presumptive title to the invention claimed, and that the proper function of the office is clerical rather than judicial.

Failure of Another Railway Viaduct.

Following the destruction of the Tay bridge now comes intelligence of the destruction, on Feb. 6, by ice, of a section of the Solway Viaduct, the most important part of the Solway Junction Railway, and until this week, a connecting link between England and Scotland. In former years the thaw has been accompanied by high winds, breaking up the ice and saving the Viaduct; but this season no wind has arisen, and the packs have been carried down in unbroken masses, hurling themselves against the piers, carrying everything before them. The accident has been unattended by any loss of life, owing to the vigilance of the railway authorities, who had watchmen stationed, who gave timely warning.

The structure is very similar to the Tay bridge in construction and size. The viaduct is about a mile and a quarter in length, and about 40 ft. in height; the spans are in groups of seventeen of 30 ft., each group being connected by a span of 5 ft.

Some idea of the force of the floating ice may be formed from the narrative of the fishermen, that for some days the channel was covered with fields of ice acres in extent from 6 ft. to 12 ft. in thickness. The crashing of the ice as it swept along, borne by the current at the rate of twelve knots an hour, was heard two or three miles off, they said, and even half a mile away from the viaduct the noise was audible, although the wind was blowing in the opposite direction.

A New Electrical Society.

A new organization styled the New York Electrical Society has lately been organized in this city, having for its object the advancement of the knowledge and uses of electricity.

The following officers were elected for the ensuing year: President, F. W. Jones; vice-presidents, George B. Scott, Professor Vander Weyde, Gerritt Smith, W. J. Dealey, George A. Hamilton, and G. G. Ward; secretary, John W. Moreland; treasurer, M. Brick. The membership is already quite large and comprises many of the foremost electricians residing in this vicinity.

A Meteoric Stone.

A meteoric stone fell at Wiener Neustadt, a few days ago, near the telegraph office, and penetrated deeply into the gravel-covered road. The phenomenon was witnessed by several persons, who all declare that the meteor showed a brilliant light. Upon inspection a triangular hole was discovered of five centimeters width; the ground was frozen at the time. The meteoric stone was excavated in the presence of Dr. Schober, director of the Wiener Neustadt High School. It weighs 375 grammes, is triangular in shape, its exterior is crystalline, with curious blackish, grayish, and yellow reddish patches. Here and there metallic parts give a brilliant luster. Its specific weight is very high, its hardness about 9. An analysis is now being made.

Fifteen Hundred Miles a Minute.

The cable message to Australia respecting the Hanlan-Trickett match was an extraordinary achievement in telegraphy—in fact, it has never been excelled. The total extent of lines—namely, 12,000 miles—was traveled in one hour and twenty minutes. The greater portion of this time was occupied in transmitting the message through India. From Singapore to Sydney, 5,070 miles, the message occupied only thirty-five seconds in transmission. This message was repeated fourteen times, from station to station, between London and Sydney.—*Sydney Mail.*

The American Institute of Mining Engineers.

The annual meeting of the American Institute of Mining Engineers was held in Philadelphia the third week in February. The attendance was unusually large, and many important papers were read and discussed. The following officers were elected:

President: William Metcalf, Pittsburg, Pa. Vice-Presidents: J. P. Kimball, Bethlehem, Pa.; W. H. Pettee, Ann Arbor, Mich.; C. O. Thompson, Worcester, Mass. Managers: J. S. Alexander, Philadelphia; H. S. Munroe, New York; J. C. F. Randolph, New York. Treasurer: Theodore D. Rand, Philadelphia. Secretary: Thomas M. Drown, Easton, Pa.

It is probable that the next meeting of the Institute will be held at Staunton, Va., in June next.