

## CHEAPER THAN COAL

Germany Uses Briquettes Made of Peat and Coal Dust.

Improved System of Supplying Heat is No Longer an Experiment—Hints from Consul General Mason.

[Special Industrial Letter.]

THE anthracite coal strike, although settled temporarily, is certain to give rise to the creation of an important new industry—the making of heat from agencies little employed in the United States, heretofore. Canada is already experimenting with the manufacture of peat briquettes; in California briquettes are made of coal dust and refuse, and in Pennsylvania investors and inventors are engaged in devising means for the production of condensed fuel which may be had at all times, whether coal mines are operated or not.

Users of fuel—and that means everybody—will be very deeply interested in a late report sent to the state department by Frank H. Mason, consul general to Berlin, which deals with the use of briquettes, made from brown coal, carbonized peat, coal dust and so forth, used as domestic and steam fuel in Berlin and other German cities, and the wholesome effect of such fuel, together with coke and fuel gas, in preserving towns and cities from the smoke nuisance and at the same time affording a fuel cheaper than the hard coal.

Mr. Mason says there are in operation in Germany 59 manufacturing plants of fuel briquettes and he goes on to say: "If Americans are really interested in the subject there is no need that they should risk any large sums of money in uncertain experiments. They have only to study the machinery and methods employed in European countries, compare their crude materials with those found and used here, and they can thus start at the point of technical knowledge which Europeans have reached after many years of experience. When, some ten years ago, the attention of American ironmakers was called to the German system of making blast furnace coke in rotative ovens, which saves the valuable volatile elements of the coal, it was thought

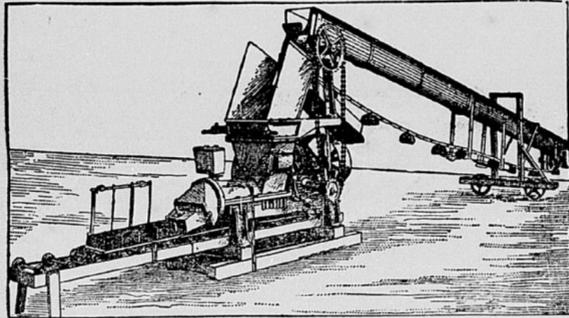
air out of the drying chamber and condenses it in the conduit pipes, thus greatly stimulating the process of evaporation by which the peat is dried. Peat in its raw state contains from 70 to 85 per cent. of water and in the humid climate of northern Europe is usually a very difficult material to dry. It is claimed for the Stauber method that it reduces the moisture to 18 or 20 per cent. quickly, effectively and, what is important, without changing the chemical composition of the peat or in any way adding to it. The drying machine is in the boiler form (cylindrical) and of a size to conveniently produce five tons of dried peat per day. In a large plant this unit would be simply repeated, as a number of machines can be worked with air currents generated by the same engine. The peat coal can be used for locomotive or other fuel raw, or it can be coked, and produces coke wholly free from sulphur and as valuable as charcoal for certain industrial purposes.

"Estimates furnished by the company give the cost of a plant capable of turning out 50 tons of peat briquettes per day as follows:

Buildings	\$14,500
Machinery	17,500
Steam engine and fixtures	2,500
Means of transporting material and product	3,500
Total	\$38,000

"A second process is that invented by F. Schulke of Bach strasse, Hamburg, the salient feature of which is that the turf or peat used is cleaned of roots, stones, etc., then liquefied by water and pumped through a pipe several miles to the works, where, as claimed by the inventor, it is leached and converted by heat and pressure into briquettes at a net cost of \$2 a ton, or into artificial coal having a thermal value of 6,250 calories at a cost of \$2.50 per ton. It is understood that a large plant is in process of erection on the northern coast of Germany for the utilization of this method, but as to the actual condition of the enterprise or the practical value of the process on an industrial scale, no exact information is at hand.

"The Schoening-Fritz process for making artificial coal and briquettes by carbonizing dried peat is an elaboration by a German engineer of the system invented by Schoening and used with more or less success at Stamsund, in Norway. The German patent is owned by a corporation known as the Deutsche Torfkohlen Gesellschaft, which has its office in



MACHINE FOR MAKING BRIQUETTES FROM PEAT.

worth while by certain of them to bring over two carloads of Connellsville coal to be coked as a test by the German process. The complete success of that experiment decided the introduction of the standard German type of coking oven into the United States.

"Something similar, it would seem, might profitably be done with the materials which Americans have not yet succeeded in converting into satisfactory briquettes. There are experienced engineers and a dozen manufacturers of briquette-making machinery who would gladly cooperate in these tests and would furnish machinery adapted to working the material thus technically defined. Upon a basis of such tests, plans and estimates could be obtained for the erection of plants in the United States with specified daily capacity. Among the builders of briquette-making machinery in Germany the following may be cited as of standard reputation, the first two named being more specially concerned with apparatus for making briquettes from coal dust and slack, while the latter build machinery for briquette-making from brown coal and peat: The Dusseldorfer Eisenwerke, A. G., 55 Bruch strasse, Dusseldorf; Schichtemann & Kraemer, Dortmund; Tigler, Maschinenbau Gesellschaft, Meiderich-on-Rhine; Rohrig & Koenig, Magdeburg-Ludenburg; Maschinenfabrik Buckau, 62 Schönebecker strasse, Magdeburg; Zeltzer Maschinenbau Gesellschaft, Zeitz, Saxony; and E. Fietseh & Co., Thurm strasse, Halle A. S.

"Robert Grimshaw, an American engineer of large experience on the subject, whose address is at 9 Warmbucker strasse, Hanover, may be consulted personally or by correspondence by those who may desire technical information as to machinery or methods, the cost of plants, etc.

"The Stauber process for drying most substances was first brought into prominent notice in connection with peat coal manufacture in 1901, when the imperial testing station at Charlottenburg announced as the result of experiments made with peat briquettes made by the Stauber system that they contained 45.14 per cent. of fixed carbon, 4.54 per cent. hydrogen, 29.34 per cent. oxygen and 9.09 per cent. ash and had a thermal value of 3,806 calories. The Stauber system as thus applied includes a process for rapidly drying the moist peat by means of heated and compressed air within a closed chamber or channel, communicating with conduit pipes in such manner that heated air can be forced through the drying channel and cold air through the outlet pipe, the effect being that the cold air quickly absorbs the hot, saturated

Berlin and a small plant at the suburban town of Halensee, where two machines of small capacity—one worked by hand, the other by power—have been set up for experimental purposes.

"Of the processes actually employed, the value of which has been fully established by experience, one of the most interesting is that invented by C. Schliekensen, of Rixdorf-Berlin, and practically operated there, at Munich and other places. The peculiar feature of this system is that by it black, dense briquettes of high calorific value are made from peat without the application of heat—simply through the action of kneading and drying. "Turf briquettes ordinarily contain about 66 per cent. of inflammable elements, the remainder being made up of inorganic ash and water. They are thus inferior as fuel to briquettes made from brown coal, which average 70 per cent. or more of inflammable matter. Both represent in their present form the utmost that science has been able to do in utilizing inferior and otherwise almost worthless materials to supplement and eke out the insufficient, coal supply of European countries."

**The Railway Beautiful.**

The work done by our railroads has been of great value because so widely extended. Those who travel are carried from one spot of beauty to another. In some cases the whole line of the road has been improved by planting choice trees and ornamental shrubs. One of our western roads is lined for several hundred miles on both sides with superb chestnuts and evergreens, says the New York Independent. The removal of the unsightly and the suggestion of cleanliness about the depots has been specially useful. Improvement becomes a passion. Near such depots cottages are sure to be neat and yards cleanly. This class of improvement necessarily involves the conventional, and that is not always a bad thing in a village. We can enjoy reading the name of a station in old maps. Color and contrast are perhaps the main thing. A group of handsome shrubbery, of lilacs, or weigelas, with plenty of roses, cheers the tired traveler and gives him something pleasant to think about.

**Water from Solomon's Well.**

Water from King Solomon's "Scaled Fountain," seven miles from Jerusalem, is now supplied to the city. It is conveyed through modern iron pipes, part of the way, but the remainder of the distance it comes by an ancient sluiceway known as Solomon's Aqueduct.

## SYMPATHY FOR THE NIMRODS.



The Deer—There certainly should be a law against this promiscuous shooting.  
The Chick—Your buckskin's whole, what you kicking about?  
The Deer—But just think of the poor hunters.

## OOM PAUL'S BIG DIAMOND.

Costly Gem Taken by the Boer President When He Went Into Exile in Europe.

One of the most valuable of precious stones, although less is heard of it than of the Kohinoor or the Hope diamond, is that which was in the possession of President Paul Kruger at the time of the outbreak of the Boer war, and is probably in some safe place subject to his order at the present time. Mr. Kruger took it with him when he left South Africa. It has a very curious history, says a London paper.

The diamond originally belonged to Meshesh, a Basuto chief, from whom it was extorted by T'Chaka, the Zulu king. T'Chaka's brother killed him and stole the stone. The brother came to grief and the gem passed into the possession of a Zulu chief, who soon afterward was assassinated. The natives say that no less than 16 of the successive possessors of the diamond either were killed or driven out of the country for the sake of the gem. The diamond then was seen by white men, who set out to possess it. A party of whites attacked the natives who had the stone in their possession and a fierce fight ensued, in which 300 lives, mostly natives, were lost.

Memela, a native chief, took the gem and concealed it in a wound which he had received in the battle. Afterward Memela was caught by the Boers and set to work as a slave. Kruger, hearing his story, released him and in gratitude Memela gave the stone to his liberator. Some years passed and then Kruger shared the fate which had overtaken all the former possessors of the diamond who had not been killed—he was driven from power and forced to leave his native country. Where the fatal diamond is now is not certain, though it is certain that the ex-president of the Transvaal has parted with it. Some say that it is in the coffers of the vatican and some that it was sold to the emperor of Austria and is now among the crown jewels of Vienna.

The stone is said to be 200 carats in weight, but is not perfect. Its history is one which would not recommend it as a talisman to any one of superstitious turn of mind, no matter if it was the largest and finest diamond in the world. It is almost as greivous a possession as that hideous little Indian idol which Mme. Carnot directed in her will to be destroyed. This idol was given to President Carnot by a friend, who laughingly told him a legend attached to it, which was to the effect that its possessor would attain supreme power and then die by the knife. The idol had belonged to the rajahs of Khadjuro, of whom five certainly—perhaps more—died by the knife of an assassin. Carnot laughed when his friend told him of the legend attaching to the idol, but after it came into his possession Carnot became president of France and died by an assassin's dagger.

## An Anti-Climax.

Little John is very fond of following the farmers about their work. He came in to dinner, flushed and excited, and the following resulted:  
"Where have you been John?"  
"I've been helping Dave Church thrash—didn't help much, though—didn't do anything but kill rats; didn't kill many rats, either; only killed one, and Traut (the dog) killed that, and that wasn't a rat, 'twas a mouse!"—N. Y. Times.

## Chinaman's Caustic Censure.

A Chinaman who acted as secretary to a former Chinese minister to England has published a book, in which he says: "There is nothing which an American won't say, there is nothing an Italian won't sing, there is no measure to which a Frenchman won't dance and nothing Russians won't covet."—London Mail.

## Outrageous.

Giant—The glass-eater has lost his job in this museum.  
Bearded Lady—What for?  
"Why, they caught him eating an-thracite."—Detroit Free Press.

## Charity.

The mantle of charity protects a multitude of amateur theatrical performers.—Chicago Daily News.

## PITH AND POINT.

You catch the bragging hunter just as you catch the little bird—by putting salt on his tale.—Baltimore News.

People seem determined to prove every thief an honest man, and every honest man a thief.—Aitchison Globe.

The employe who drops his tools at the first stroke of the clock will never become an employe.—Chicago Daily News.

A Slight Misunderstanding.—The musician was talking, and the real estate agent was buried in thought. "It's a symphony in A flat," explained the musician. "First or second floor?" asked the real estate agent.—Chicago Post.

Mr. J. Mitt—"I think she's gone on me." Miss Jenks—"Has she given you any encouragement?" Mr. J. Mitt—"Well, she told me the man she married would be handsome, brave and brainy."—Philadelphia Record.

A certain author says that he pelted the magazine with poems 15 years before they accepted one. In glancing over some of them we really think the magazines deserve censure for weakening in so short a space of time.—Atlanta Constitution.

"A Hoosier citizen hasn't spoken to a human being in 40 years, and all because a girl jilted him when he was a callow youth." "Well, perhaps that's a good deal better than taking the lecture platform to air his wrongs."—Cleveland Plain Dealer.

Mama's Angel—"Now, Willie," said the careful mother, "I don't want you to associate with those Smith boys—they are so rough and rude." "Not 't me, ther' ain't. Why, I picked a fight an' licked 'em as soon as I struck de neighborhood."—Baltimore Herald.

## HIS SWORD UMBRELLA.

Truthful Account Concerning a Wise Stranger, Who Went Forth Properly Equipped.

He attracted some attention as he passed along the street, relates the Brooklyn Eagle.

"An actor," commented some of the crowd, "and in costume."

"Absurd!" was the judgment of others. "A sword alone does not constitute a costume, and why should he wear one without the rest of the regalia?"

"And such a sword!" was the criticism of still others. "The scabbard shows that it's round and as fat as a bologna sausage."

"Sir," said one of the bolder ones, addressing the subject of the comment, "why do you go abroad thus strangely equipped?"

"Sir," was the reply, "I have sense."

"Which is one way of saying that we have not."

"I would infer as much. Have you noticed the weather lately?"

"Assuredly. Do you not see that we carry umbrellas, even to our great discomfort?"

"To your great discomfort, yes," returned the stranger. "So also did I until recently, for the rain cometh this season at unexpected moments, and he who strays a stone's throw from home is likely to get caught in it. Furthermore, it is the nature of the umbrella that it shall linger in forgotten places, so that when one would have it it is not at hand. Wise indeed, is he who does not unnecessarily tax his memory, but leaves both brain and hands free for the ordinary duties of the day."

As he paused the clouds opened and the rain came down.

"Gentlemen," he said, "a shower."

Reaching to his side he drew his umbrella from its scabbard and quickly raised it.

"Another summer like that of 1902," he commented, "will find all men wearing umbrellas even as I do mine."

And then he passed on, the envy of all.

## A Cutting Retort.

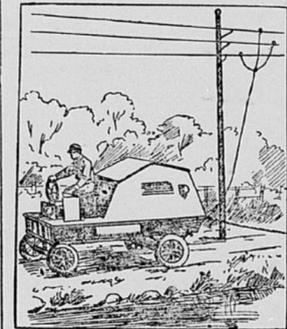
A richly deserved retort was that made by a Sioux girl at the Hampton institute not long since. A silly visitor to the school went up to the magnificent red-skinned belle and said: "Are you civilized?" The Sioux raised her head slowly from her work—she was fashioning a breadboard at the moment—and replied: "No; are you?"—Chicago Chronicle.

## INDUSTRY & MECHANICS

### MECHANICAL TOWAGE.

System Now in Use in Belgium Has Proved Effective as Well as Economical.

Electric haulage of canal boats has been in actual operation in Belgium for nearly two years, and the results financially are all that the investors anticipated. The extension of the system—which is now being made as fast as government concessions can be obtained—is the best indication



ELECTRIC CANAL BOAT MOTOR.

that the solution of the mechanical towage problem is solved. The boats are hauled singly—the government, which owns the canals and paths, will not permit the haulage of more than one boat—by an electric tractor, which runs along the bank, deriving its power from an overhead trolley system. No tracks are provided for these tractors. When the path is too narrow for two machines to pass each other they simply exchange barges and return, each upon its own road. In crowded cities and along docks piled with merchandise electric

launches are provided to haul the barges to the next point of operation of a tractor. No difficulty appears to be encountered in keeping the tractors on the narrow pathway, despite the absence of rails. A speed of about 2½ miles an hour is attained with a boat laden with 70 tons of freight. In addition to the towage business the company utilizes its electric system for the distribution of current for power and lighting purposes the latter constituting no inconsiderable portion of the income.

### Photographic Map of Sky.

The photographic chart of the sky will include all stars down to the fourteenth magnitude, the negatives being taken with exposures of 40 minutes; and the catalogue plates, whose stars are to be measured and numbered, will embrace all magnitudes down to the eleventh. The Greenwich observatory, to which was assigned the region between declination 64 degrees and the north pole, has finished its plates, the measurement and counting now being in progress. Assuming the star density of the heavens to be the same as that of the region already covered by the counting, the complete chart, as made by the 18 observatories at work upon it, will contain about 13,000,000 stars, and the combined catalogue more than 3,000,000.

### An Old Surgical Operation.

Trephining the skull is known as a probable treatment used by prehistoric surgeons. It appears that the ancient practice still survives in Melanesia, and Rev. J. A. Crump reports that natives of New Britain treat fractures from sling-stones by trephining with a piece of shell or a flake of obsidian. In 80 per cent. of the cases recovery follows in two or three weeks, the deaths being due mostly to the original injury. In New Ireland, trephining is also performed for epilepsy and certain forms of insanity, and the natives declare that the cures are numerous, while injurious results are rare.

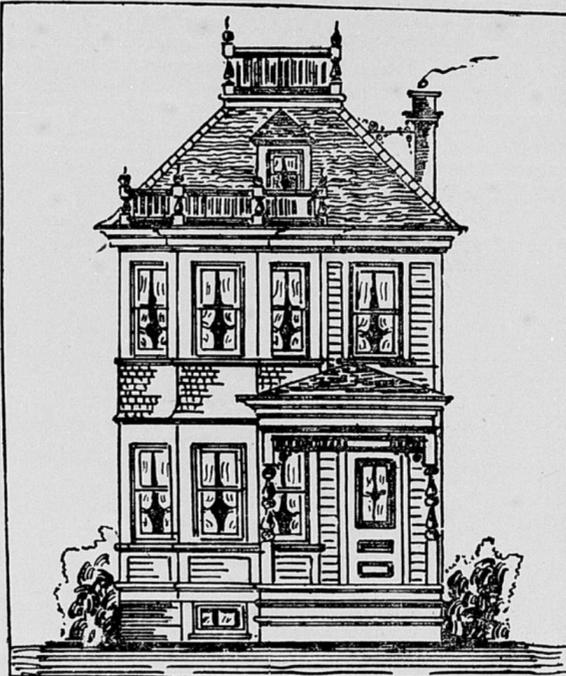
### England's Cook.

A wall 30 feet high and 13 feet broad could be built all around England with the coal annually raised in that country.

## A UNIQUE LITTLE COTTAGE

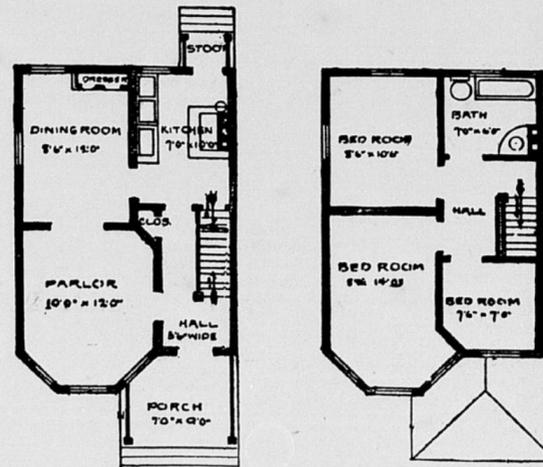
The front elevation and floor plans as here shown represent a very unique and inexpensive little cottage, suitable for most locations and for a lot as narrow as 20 feet. There is a cellar under the entire

complete. The floors throughout are of N. C. pine. The walls are all plastered with common lime and hard mortar complete, with a hard wood finish.



house with walls of brick, having cement floors, coal bins, cold room, and a hot-air furnace which heats the entire house. The exterior frame is built of hem-

All of the trimming throughout is of cypress finished in the natural wood, main stairs are built of ash complete. Bath-room and kitchen contain modern sanitary plumbing.



PLANS OF FIRST AND SECOND FLOORS.

lock lumber complete, and the walls are sheathed, papered and sided, the main roof is shingled, and all of the exterior is covered with two good coats of white lead and linseed oil paints

This cottage can be erected in most places as here described, for \$1,200. The design and plans were made by Stanley A. Dennis, architect, of 280 Broadway, New York city.