

**Curious Artificial Fuels.**

The Patent Office at Washington has at present a very curious assortment of contrivances patented for cheapening the cost of fuel. Some of the ideas are exceedingly interesting. One patent provides for using corn cobs soaked in petroleum, another would have people cut leaves and grass when green and press them into compact blocks. It is claimed for this particular patent that such blocks might be used for building and fencing without impairing their value as fuel. There are, besides, many devices for utilizing coal dust. One proposes to mix clay, molasses and water, coal dust and petroleum. Another mixture is that of saw dust, Irish moss, asbestos fiber and burnt limestone, these being boiled and made into bricks with coal dust. Then there is a patent for bricks without coal dust, to be composed of ashes and sawdust saturated with petroleum and coated with resin. Among the most curious ingredients for artificial fuels are clam shells, charred garbage, corn meal, wheat flour, sugar, sea weed, broken glass, lard, tar and leaves.

One of the most interesting of these contrivances is composed of powdered charcoal and finely cut cork. The fuel burns very slowly and gives off a great deal of heat, being particularly well adapted for the sick room. Exclusive rights have been taken out for the manufacture of a brick or cartridge of highly porous clay, which is to be soaked in kerosene and put in the kitchen stove when wanted. It is only necessary to touch a match to this and the fire is ready for cooking. None of these, however, are more ingenious or economical than a fuel which is reported to be in use at present in Egypt. In this case Egyptian mummies, chiefly those of cats, ibises and other animals held sacred by the ancients, are employed.

**Essentials in a Healthful Home.**

The site for a house should receive careful attention of the tenant, purchaser, or of one proposing to build. A good site may mean life and happiness, and a bad one disease, suffering and death.

First.—It should be dry. Avoid, as you would death, a damp location. In a town or city carefully ascertain whether or not it is on "made ground." Avoid it. Avoid ground underlaid with clay, for it will always be damp.

Second.—Elevated on a hillside or gentle knoll, never in a hollow. The hillside is warmer and drier than the hollow.

Third.—Not close to a swamp or slow river, milldam or land which is overflowed a portion of the year, nor in such a place that the prevailing winds will bring to the house pestilence from a milldam, etc.

Fourth.—In as good a neighborhood as possible, away from factories, saloons, etc., and near schools and churches.

Fifth.—In a village or town build on as large a lot as possible, thus securing air and sunlight. Build back from the street, thus avoiding the dust of the dry season and the curious gaze of every passer. Secure a yard in which trees and plants will furnish both exercise and health.

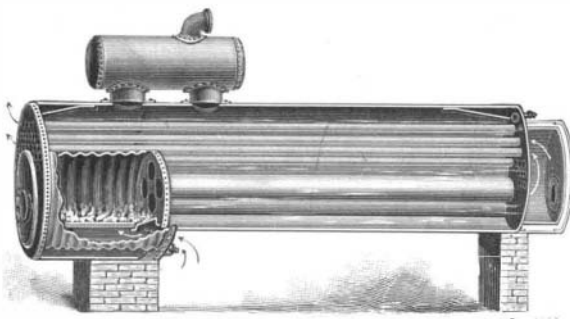
Sixth.—In the country build back from the highway, giving an abundance of room for trees and shrubbery about the house. Do not select a place where your family will be isolated from all social intercourse, so necessary to the health of mind and body.

For the aspect, let the house be so placed that it will receive the most sunlight and fresh air, especially from the summer winds. Avoid, even if offered rent free, a damp, dark house, with no chance of the free

all the rooms will be bathed in light and warmth. The living rooms should always be warmed by the morning sun. This hint is worth a great deal as a health matter. For when the sun cannot enter, the doctor must enter. If the cold winds from the north and west are severe in the winter, they may be broken by a cluster of evergreen trees planted on those sides. In country places a good aspect should be secured without reference to facing the house square with the street.—Pacific Health Journal.

**AN IMPROVED STEAM BOILER.**

In the boiler shown in the illustration the fire box as well as the entire body and barrel of the boiler are cylindrical, the improvement being designed to render the boiler more safe and less expensive in construction than the usual locomotive and marine boilers. For this invention a patent has been granted Messrs.



**WALTZ AND PATTON'S BOILER.**

George H. Waltz and Lucius E. Patton, Memphis, Tenn. (address in care of U. S. local inspectors). From the front cylindrical shell extends rearwardly a barrel of smaller diameter, the fire box in the front portion being circular, and either corrugated or having re-enforcing rings. In the front head is riveted a collar through which the shell of the furnace extends, its rear portion being located in an intermediate head, from which four or more large flues lead to a firebrick or tile-lined smoke box. The larger shell forming the front portion of the boiler and the main barrel are connected by means of a throat, the parts being preferably joined by hollow stay bolts, through which air is supplied below the grate and in front of the gases passing into the large direct flues. In the sides of the front shell are tubes of different diameters, capped to exclude cold air, these tubes taking up the surplus space and acting as stays from the front head to the throat. In both ends of the hollow standards connecting the steam drum with the boiler are sieves, to prevent moist steam entering the drum, and perforated pipes, below the furnace, close to the bottom of the shell, are connected with blow-off valves, to take up and remove sediment from the full length of the bottom. With this construction the furnace, fire tubes, and flues are entirely submerged beneath the water of the boiler.

**A SUSPENSION BRIDGE BREAKS DOWN.**

The great tempest which visited France on November 14 ruined the bridge known as "Pont-Lorois," situated on the River Etel, on the route from Port Louis to Auray, in the district of Lorient. At the northern end of the bridge part of the iron suspension ropes which secured the roadway to the cables were broken, and a large section of the roadway assumed the

**The Electric Welding Patent.**

In the United States Circuit Court for the Eastern District of Wisconsin, in the case of the Thomson Electric Welding Company against the Two Rivers Manufacturing Company and others, the action was a bill in equity by the Thomson Company against the Two Rivers Company and others for infringement of certain patents for electric welding. Complainant moved for a preliminary injunction. In his decision Judge Seaman said:

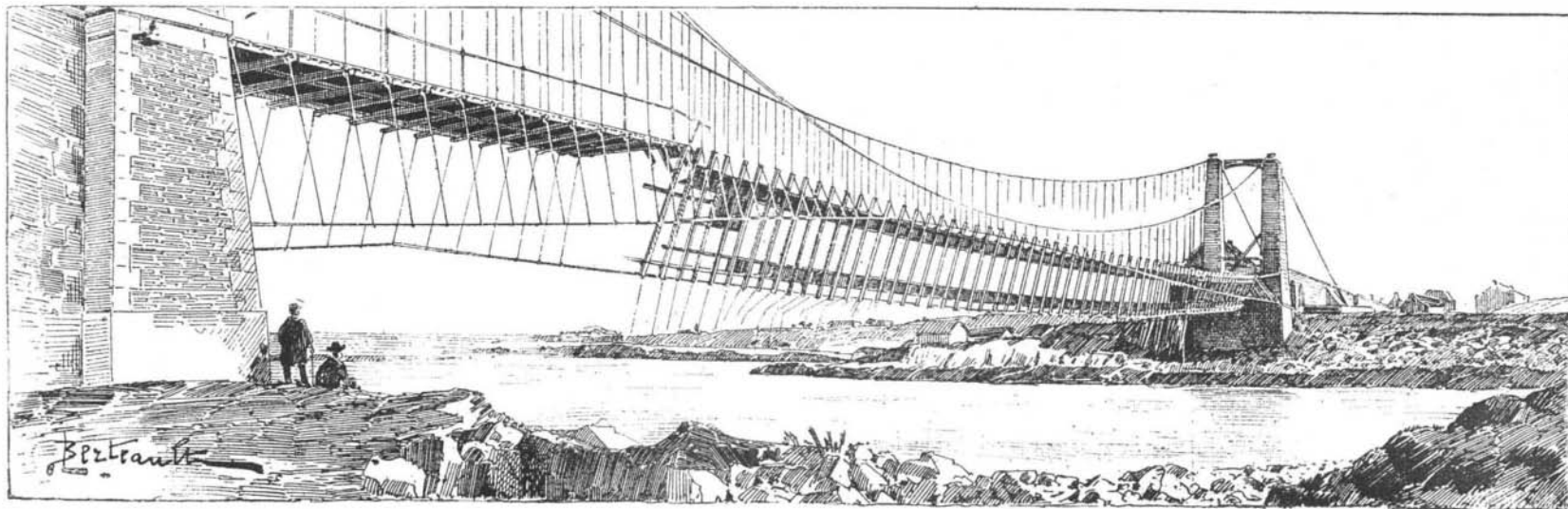
There has been no adjudication of the validity of these patents, and, so far as appears, no opportunity has arisen heretofore for testing their validity. Has there been public acquiescence in the claims here asserted of sufficient definiteness and duration to afford presumption of validity? This inquiry must depend in each case upon all the circumstances shown. Here was clearly an assertion of a new art and apparatus for welding.

Its discovery was widely published and accepted by the scientific world in Europe and America and by the public generally as novel and important. It was speedily put into operation by the complainant, and its machines and rights for their use were at once sought by manufacturers and metalworkers, and it is unquestioned that the process had extended to an important share of the welding of metals throughout the country when the defendants entered upon its use. With an asserted invention of this character and utility and operation under it firmly established since 1888, and to a considerable extent supplanting the older methods, I am satisfied that there is a sufficient showing of public acquiescence and that "there arises such presumption of the validity of the patent as to entitle them to a preliminary injunction to restrain its infringement, unless the party sought to be restrained can clearly show its invalidity." (Blount vs. Societe Anonyme, 3 C. C. A., 455; 53 Fed. Rep., 98; Sargent vs. Seagrave, 2 Curt., 553; Fed. Cas., No. 12,365; Sessions vs. Gould, 49 Fed. Rep., 855; 3 Rob. Pat., secs. 1185-1188.)

The remaining question is whether the defense have given a clear and convincing showing, first, that the invention was merely the double use or analogous use in the art of a process previously known; or, second, that it was fully disclosed in previous publications or patents and actually practiced as a welding operation prior to these patents, which should be held to overcome these presumptions and re-enforcing affidavits produced by complainants. Great research and ingenuity appear in this defense, but I am constrained to the opinion that neither proposition is maintained to the degree required for preventing an injunction, and that their determination must be postponed to final hearing.

They present the story frequently interposed against valuable patents of laboratory experiments, of announcements, and of patents which may have come to the verge of this discovery; but the demonstrations are not clear, and the important fact stands in their way that they do not appear to have accomplished the electric weld which is shown by Thomson.

The employment of heat and pressure for the operation of welding metals is old, and it was long known that heat could be obtained by the application of an electric current. These were not Thomson's discoveries, but he found a method for employing the electric current, localizing the heat at the joint to be welded, and applying simultaneously the requisite pressure, so that the separate pieces of metal could be properly united. I am not satisfied, for the purposes of this motion, that he was anticipated in this by Despritz, Joule,



**THE LOROIS BRIDGE OVER THE RIVER ETEL, INJURED BY A STORM.**

air of heaven to sweep through it. If the house is only one room deep, it does well to face it to the south or southwest; but if it is two rooms deep, those on the north side never receive any sunlight, and are apt to be damp. For a double house it is best to face it to the east. Then the morning sun will warm up the front and the afternoon sun the rear of the house, and thus

position shown in our engraving, the boards having been torn off. Fortunately this accident did not result in the loss of life, though it occurred at half past eleven in the morning. The bridge is 110 meters long (360 feet) and is 12 meters from the water at high tide and 17 meters at low tide. We are indebted to L'illustration for our engraving.

Plante, Cruto, or any of the patents shown, or by any experiments of Duff or Johnson. In this view the complainant is entitled to an injunction pendente lite against infringement of letters patent Nos. 347,140 and 347,141, and injunction will issue thereupon. With reference to letters patent No. 385,022, all determination will be postponed to final hearing.