

Architecture.

DESIGN FOR COTTAGE, COSTING \$1,200.

The cottage shown on the opposite page was built near the little village of Orangeburgh, S. C., for Dr. DuBois, of Hudson, N. Y. As will be seen by the plans, it is arranged for a small family only. The kitchen and apartments for servants are in another building, tastefully arranged and close at hand—a custom peculiar to the Southern States. As the house is occupied but about two months during the winter, it has not the completeness that characterizes the owner's house on the Hudson. The large fire-place in the parlor for burning wood, is a positive requirement in that latitude.

The piazza, 10 feet wide, which extends around the entire building, is not shown on the floor plans. The manner of earring it the full height of the main building in the gables gives a fine effect, while breaking the eaves takes away the monotony of what would otherwise be a disagreeable roof.

The house stands well up from the ground on posts, which are hidden by the open-work under the piazza. The frame is of thorough balloon construction, and is finished inside with Southern pine, except the trimmings. The roof is of shingles, and painted.

It is doubtful if a more commodious, comfortable or pretty cottage could be built, at the same cost, than this would be when handsomely painted in colors, heightened with occasional vermilion chamfers, etc., the roof also coming in for a reasonable amount of ornamentation. The cost was \$1,200. The arrangement of the interior can be readily modified to suit the wants of our latitude.

The design is by J. A. Wood, architect, of 240 Broadway, New York, who is now, among other work, completing at Poughkeepsie, for Mr. Allen, proprietor of the Astor House, the most ornamental and beautiful cottage on the banks of the Hudson. Some idea of the ornamentation may be arrived at from the number of colors and shades employed in decorating the exterior, which is upwards of a dozen and a half. The effect is perfect, and nothing like it has ever before been attempted.

Notes and Clippings.

Mr. E. Berliner, of Boston, Mass., says he finds that a Planté battery is rapidly "formed" when 5 per cent of alcohol is added to the ordinary acid solution. In practice he connects both lead-plates to the carbon-pole of several Fuller cells, and a carbon electrode to the zinc-pole, thereby developing both lead-plates simultaneously. The carbon electrode is subsequently removed and the lead-plates connected to different electrodes. One hour is sufficient to create a heavy oxide surface capable of taking a large charge.

A new lamp combining gas and electricity is said to have given good results. A small strip of platinum foil is so arranged in connection with the burner that when the gas is ignited the platinum becomes heated, and then offers so much resistance to a current of electricity that it becomes incandescent, and in turn heats the gas to a high temperature. It is stated that a light equal to 30 candles can be obtained from two cubic feet of gas per hour when a small current is used in aid.

In a paper recently read to the French Society of Civil Engineers, M. Cœne expresses surprise that the Seine is not better utilized for traffic between America and Europe. Rouen with its new quays, has had an increase in tonnage of merchandise from 400,000 to 1,500,000 in five years, and is the fourth port in France. But it should be made possible (M. Cœne holds) for the large ships of modern build (some of them 5,000 tons) to come to Rouen; and the first thing to be done is to form, in the bay of the Seine, an embankment of large size giving a better direction to the principal channel of the estuary. The estimated cost, 25 million francs, would be diminished by 15 millions for recovered land. An immense sheltered roadstead, 4,500 metres long by 2,200 broad, would be formed before the port of Havre capable of accommodating the largest fleets.

The smallest circular saw in use is a tiny disk about the size of a 5-cent piece nickel, which is employed for cutting the slits in gold pens. They are about as thick as ordinary paper, and revolve some 4,000 times per minute. Their high velocity keeps them rigid, notwithstanding their extreme thinness.

A SELF WINDING CLOCK.

Mr. Dardenne's self-winding clock may be considered to have had a fair trial. A specimen clock was fixed at the Gare du Nord terminus, Brussels, last September, due precaution being taken to avoid tampering with it by affixing the Government seal. After six months' trial it was found in perfect time with the Observatory clock. The clock is wound by a small anemometer or windmill, which is, by a reversed train of multiplying wheels, continually drawing over each wheel an endless chain, in one loop of which the clock-weight is supported. As the loop hangs between the clock and the winding machine, the weight is continually drawing through the clock the slack chain drawn up by the wind motor, and thus a constant motion is maintained. A ratchet-wheel prevents the motor from turning the wrong way, and whenever the weight is wound right up to the top the motion is checked by a friction brake automatically applied to the anemometer by the raised weight lifting a lever. When the weight is fully raised the clock has a sufficient store of energy to go for twenty-four hours.

ELECTRIC LIGHTING AND STEAM HEATING.

Two great improvements in the business and domestic economy of New York city are being pushed with vigor. These are the Edison electric light system and the steam-heating system. By the former it is proposed to introduce electric lights into private and business houses to take the place of gas—such a prolific source of fires; and by the second it is intended to substitute steam for the great variety of heating appliances now in use, this doing away with a fruitful source of danger. The electric light company has nearly completed its arrangements for lighting one district in the lower part of the city, and it is expected that the system will be in full operation in that section by the first of July. The steam-heating company is engaged in putting down their pipes, encased in wood to prevent condensation of steam, and the numerous streets that are rendered almost impassable by their operations, testify to the energy with which they are pushing their work. By fall they expect to have their pipes laid in all the lower part of the city, and to be ready to supply steam as required for heating or for motive power before "snow flies."

IMPROVED PORTABLE ENGINE.

In these engines the cylinder and steam chest are cast together, the cross head guide is separate, which enables the manufacturers to do away with the heavy and unnecessary cast iron bed plate; the bearings are large and wide, reducing the friction; the cylinder is jacketed and covered with Russia iron. The crank shaft is double and extends beyond the bearings far enough to receive a pulley on either side; it is made of the best American forged iron. The guides are of an improved kind, and have very large bearing surface. The pump is driven by an eccentric from the shaft, and is bolted to the side of the boiler and is accessible at all times. The heater is large and well constructed. The governor is of an improved kind, and is so arranged that the speed of the engine can be altered while running. The boiler is made of the best American boiler plate; every sheet is tested to a tensile strain of 50,000, and the boilers are all tested to 200 pounds, and are fired and the engine run before leaving the shop.

A large wrought iron dome is placed on every boiler; this is greatly superior to those made of cast iron, as experience shows that cast iron is liable to give way at any time under pressure. The stack of this engine is made of heavy iron, and is very durable and has a very efficient spark arrester.

The engine and boiler is mounted on a strong truck or wagon; the wheels have cast iron hubs, the axles are made of the best refined wrought iron, and extend under the boiler without the objectionable bends sometimes used.

The engine is also mounted on skids when it is unimportant to have it perfectly portable.

For further particulars in regard to this engine, address the manufacturers, Phoenix Foundry and Machine Company, Syracuse, New York.

THE report on the incandescent lamps exhibited at the Paris Electrical Exhibition has been published, and from that we find that the maximum efficiency cannot be assumed to exceed 300 candle-lights per horse-power of current. Edison's lamp takes the first place in these experiments; but since they were made considerable improvements have been effected in some of the other systems.