

The First Appropriation of Congress for the Telegraph.

From a sketch of "American Inventors of the Telegraph," with special reference to the services of Alfred Vail, in the April *Century*, profusely illustrated with portraits and diagrams, the *Railway Review* quotes as follows: This was a period of discouragement and depression for the proprietors of the telegraph, scarcely relieved by a ray of light from any source. At the time, there seemed little hope that Congress would even grant the desired appropriation. The session of 1839-40 was on the eve of the most exciting and disgraceful presidential campaign that the country had ever known, and, as in later days, the members were far too much interested in legislation which would give them some imaginary advantage over their political opponents to pay attention to measures affecting the real welfare of their constituents and of the country. In December, 1842, Morse was persuaded to make one more application to Congress. The committee on commerce again recommended an appropriation of \$30,000 in aid of the enterprise. The bill passed the House by a close vote, and only after a discussion which, as reported in the *Congressional Globe*, reflects scant credit upon the patriotism, to say nothing of the intelligence, of some of the participants. In the last hour of the session, March 3, 1843, the bill

in respect to the subsequent progress of the work. On April 13 he suggested to Morse the trial of two or more circuits from one battery. The experiment was successful, and the result proved to be one of the utmost importance when the telegraph system became more widely extended.

A SUBURBAN RESIDENCE.

We publish an admirably planned and picturesque design of a suburban residence, by Mr. Wm. H. Beers, architect, New York. The house has been designed to occupy a corner lot, with a frontage of one hundred feet on the main street and two hundred on the side street, giving ample room for a stable in the rear of the lot. The house has an extreme frontage of 55 feet by 65 feet in depth.

The exterior of the house on first story is finished with clapboards and trimmed with corner boards, belt courses, etc., as shown on the drawing, and over each window is placed a swinging transom glazed with stained glass. These transoms are very pretty in their interior effect, and also furnish an excellent means for ventilation, when opened, in connection with the open fireplaces in each room. The second story is carried out in the "Old English" half-timbered style, with the panels filled in with round cut shingles. On the front

the ends against a chill exactly $12\frac{1}{4}$ in. apart. Another bar is cast with this, and is run from the same gate. It is 1 in. wide and 1-10 in. thick and is run against chills in the same way as the square bar. When the bars have been trimmed and both bars and chills have attained the same temperature, the shrinkage is measured by inserting a graduated wedge between the end of each bar and its chill. A third bar is called the fluid strip. The pattern of this is 1 in. wide, 12 in. long, and 6-100 in. in thickness. This is run from the end and is poured first. The strip rarely runs full, and its length in inches is taken as a measure of the fluidity of the metal. The fourth bar is called the crook strip. It is 12 in. long, 1 in. wide, and 86-1000 in. in thickness. On the center of one side there is a rib 412-1000 in. high, 1-5 in. wide at the base, and 1-10 in. wide at the top. The unequal shrinkage of the thin flat strip and of the taper rib causes a slight curve in the test piece. This, when measured, affords valuable information as to the properties of the iron, and is called the "crook." The first and second bars are tested for transverse strength and resistance to impact. The first test is made by a gradually applied weight, the deflection being measured at the same time. The resistance test is made by subjecting the bar to a series of blows from a 25 lb. weight until it breaks, the fall being at first $\frac{1}{2}$ in., and increas-



A TWENTY THOUSAND DOLLAR COUNTRY HOUSE.

passed the Senate, and was signed by the President. Morse, writing to a friend in after years, says:

"This was the turning point in the history of the telegraph. My personal funds were reduced to the fraction of a dollar; and had the passage of the bill failed from any cause, there would have been little prospect of another attempt on my part to introduce to the world any new invention."

On March 4, Morse wrote to Vail the most hopeful letter he had penned in many years:

"You will be glad to learn, doubtless, that my bill has passed the Senate without a division and without opposition, so that now the telegraphic enterprise begins to look bright. I shall want to see you in New York after my return, which will probably be the latter part of next week. I have other letters to write, so excuse the shortness of this, which, if short, is sweet at least. My kind regards to your father, mother, brothers, sisters, and wife. The whole delegation of your State, without exception, deserve the highest gratitude of us all."

On March 31 Morse tendered Vail an appointment as assistant and superintendent of the machinery department of the telegraph to be constructed between Washington and Baltimore under the government appropriation, which was at once accepted, Vail immediately entering upon his duties with characteristic energy and industry. From this time forward the condition of the work is minutely detailed in his diary, and from this we gather much information of interest

there is a gable extending half the width of the house, with a very effective group of windows in same. The panels in this gable are filled with shingles, carved woodwork, rope twisted in artistic designs, secured to the wood, and finished in bronze, producing an excellent effect.*

Keep's Tests for Foundry Iron.

A paper has recently been communicated to the South Staffordshire Institute of Iron and Steel Works Managers by Prof. T. Turner, of Mason College, Birmingham, giving a full account of the methods of testing cast iron devised by W. J. Keep, of the Michigan Stove Company, Detroit, an abstract of which is given in *Engineering*. These tests have been adopted by a number of important American firms who have to do with the buying and selling of foundry iron, and it is sought to introduce them into this country, for the purpose of providing a uniform standard, which has already been approved by a lengthened experience in America. When the tests are carried out in their entirety, 15 lb. of metal are melted in a plumbago crucible in a fire-brick furnace, driven by a blast at a pressure of $2\frac{1}{4}$ oz. per square inch. Three sets of test bars are run from each melting. One bar is $\frac{1}{2}$ in. square and is cast with

* A description of the house, with a number of other views showing the bracketed gable, oriel bay window, and other ornamental features of the house, appeared in the June, 1887, number of the ARCHITECTS AND BUILDERS EDITION OF THE SCIENTIFIC AMERICAN, copies of which may be had at this office and of news agents. Price, 25 cents.

ing $\frac{1}{8}$ in. at a time. An arbitrary scale has been constructed giving a value in pounds avoirdupois on an assumed value for a foot pound. After these tests have been made the depth of chill is determined, and the grain of the fracture is observed by means of a pair of lenses. The hardness of the metal is finally tested by means of Turner's machine, in which a polished surface is set under a diamond of a standard cut, and the diamond is weighted until it produces a scratch similar to a standard scratch. They are made by the Dunkirk Manufacturing Company, of Dunkirk, N. Y., and the price of the complete set is about \$350. These tests have been in regular use for upward of two years at the Michigan Stove Company's works, where about 70 tons of iron are daily cast into thin stove plates.

AN American manufacturer of sugar coated pills added to the attractions of an exhibit of his product in London an ingenious piece of mechanism, which might have been intended to represent the pharmacist of the future. It was in the form of a cabinet provided with a series of knobs or buttons, each inscribed with the name of some malady for which a remedy might be asked. The customer puts a coin into a slit and presses the button calling for the remedy he requires, when immediately a drawer flies out containing the article sought. This automatic dispenser of course makes no mistakes. If the customer accidentally presses the wrong button, he alone is responsible for the error. Is this really what we are coming to?