



From a Photo. by]

A PILLAR BEFORE TURNING—WEIGHT 310 TONS.

[W. H. Merrithew.

### XXI.—GIANT LATHE FOR TURNING CATHEDRAL COLUMNS.

Look at the large block of granite seen in our photograph, and then think of the immense amount of work required to convert it into a perfectly round, highly-polished column! True, the work would be colossal were it not possible to accomplish it by machinery. And the machine which works this transformation may be described as the latest triumph in the industrial world. It is by far the largest lathe of its kind in existence.

But what makes this Wonder of the West so interesting is the fact that this piece of machinery was specially designed to turn and polish thirty-two large granite columns for a cathedral which is being erected in New York.

The accepted plans of the cathedral called for thirty-two huge columns, 54ft. high and 6ft. in diameter. Now, it was not considered an extraordinary feat to quarry columns of this length, though it was an order which quarry-owners were not in the habit of receiving every day. But after they were quarried how were they to be turned and polished? To have accomplished the work by hand would have been a very long and tedious operation, and also a very

costly one. It was suggested, therefore, that a lathe should be built for the purpose. When the engineers gave serious attention to the matter they soon discovered that a lathe to turn such an enormous mass of granite would require to be of very vast proportions. At last one was designed and patented by Messrs. E. R. Cheney and H. A. Spiller, of Boston, and built by the Philadelphia Roll and Machine Company, of Philadelphia, Pa. This lathe, by far the largest in the world, is 86ft. in length, and, when in working order, weighs 135 tons. It has swings 6ft. 6in. by 60ft. long, and eight cutters. Each tool, or cutter, takes out a cut 3in. deep, the entire eight cutters reducing the column 24in. in diameter at one pass over the stone. The block of granite seen in our first illustration weighs 310 tons; it is 67ft. long, 8½ft. high, and 7ft. wide. It was quarried by the Bodwell Granite Company, of Vinalhaven. After the blanks are quarried they are rough-hewn at the corners by hand in order that they may be placed in the lathe. Once in the lathe it requires about six weeks to turn out the finished column, dressed and polished.



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THE SAME PILLAR IN THE LATHE

[W. H. Merrithew.