

# “Steam Stone Works”

*Scientific American*

New York, Vol. LXVI, No. 6, February 6, 1892, pp. 87

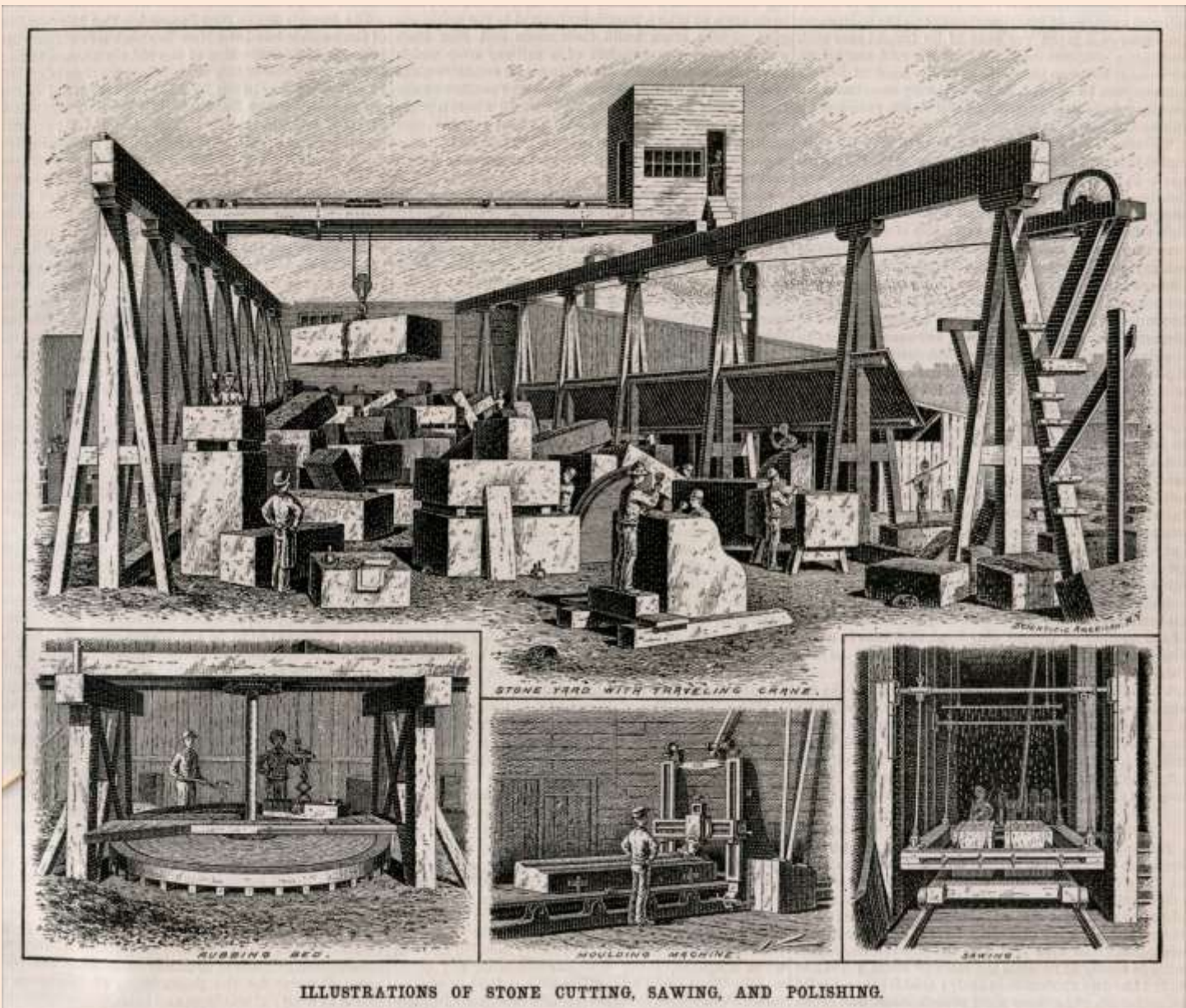
The article begins:

“The illustrations of this subject are taken from the plant of Barr, Thaw & Fraser, Hoboken, New Jersey....”

This article, which begins on the next page,  
is presented on the Stone Quarries and Beyond web site.

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Peggy B. Perazzo  
Email: [pbperazzo@comcast.net](mailto:pbperazzo@comcast.net)  
May 2017



(engraving captions) (top) "Stone yard with traveling crane." (left) "Rubbing bed." (middle) "Moulding machine." (right) "Sawing."

### STEAM STONE WORKS.

The illustrations of this subject are taken from the plant of Barr, Thaw & Fraser, Hoboken, N. J. The elevated track is about 20 feet in height and 150 feet in length, and made mostly of 12 by 12 timber. The traveling crane is also made of 12 by 12 timber, and braced with heavy circular rods. It is 52 feet across from side to side and 12 feet in width. Connected to the end of crane are two 3 foot car wheels, which, when set in motion, run back and forth on steel rails. The crane is set in motion by means of an endless wire cable. The  $\frac{3}{4}$  inch cable passes around a 6 foot sheave wheel, which is connected to the main shafting. The upper wire of cable runs up through the bottom of the building on the end of crane and around another 6 foot wheel, and down and out again to the 3 foot sheave wheel at the end of elevated track, where it passes back again to large wheel on the main shafting. The large sheave wheel in the crane building is connected to a piece of shafting, which, by means of belting, connects

with the car wheels. By drawing a lever back and forth, and the wire being continually in motion, the shifting of the belting caused by the moving of the lever causes the crane to move backward or forward. The carriage and fall blocks run on 3 foot tracks across the center of crane, and are moved back and forth by wire cables also. These wires are attached to two drums in the crane building. One of the drums is used for drawing the carriage block back and forth by means of a 3 foot sheave wheel on the end of crane. The other drum is used for hoisting the stone. The crane is made to run evenly by means of gearing wheels, one being attached to one of the forward car wheels, and the other to a piece of shafting which runs across the crane and connects with the machinery in the building. The crane is capable of carrying from 15 to 20 tons.

The rubbing bed is a circular sheet of cast iron about  $3\frac{1}{2}$  inches in thickness and about 13 feet in diameter. It revolves around inside of a circular wooden frame called a curve. The rubbing bed when put together is in two pieces. Cast to the bottom of the upright shaft are a number of flanged arms, which project out  $7\frac{1}{2}$  feet each way. The rubbing bed is laid on and bolted on the under side to these arms. The lower end

of the upright shaft revolves around in a ball socket. The upper end is geared to the main shafting. The blocks of stone are placed on the bed by hand, or by a small derrick, until the surface of the stone is smooth. Water and sand is used for the rubbing. Hot water is used when the weather is cold. The tools for moulding and grooving are of various shapes, generally chisel shaped, and are made of steel. They run from 8 to 12 inches in length.

The rough stone is first placed on the perforated iron table of the moulding machine and made perfectly fast by means of wooden wedges. The machinery is then started and the table and stone move forward, and the chisels begin to cut out their work. As they cut, the stone crumbles up into powder and small chips. After the chisels have gone over the stone the table is run back, the chisels shifted, and the stone started again. The chisels can be regulated to cut shallow or deep. The face of the stone becomes perfectly smooth after the chisels have gone over it. The stone blocks to be

sawed are first placed on a car and run under the sawing shed. The cars are about  $1\frac{1}{2}$  foot in height, about 5 feet in width, and about 8 feet in length. They are put into position and then blocked fast. An 8 by 13 foot saw frame is then lowered so that the saws rest on the stone. The saws are made of  $\frac{1}{4}$  inch steel, and are 13 feet in length and about 6 inches in width. They have no teeth, being flat both top and bottom. Connected to the center of one end of the saw frame is a wooden connecting rod, with crank and fly wheels. This connects with the main shafting by means of belting. When the wheels revolve, the connecting rod draws the saw frame back and forth, and the weight of the frame causes the saws to cut. A little sand and shot or crushed steel keeps the saw biting until the stones are sawed through. Water is kept constantly running on the stone by means of a perforated iron pipe placed about 4 feet above and across the stone. This pipe has the same motion as the saw frame when running, keeping the whole surface of the stone wet. When the stone is sawed through, the frame is raised by means of a belt chain. The stone is then washed clean, and the car drawn out to be replaced by another. The works are run by a 45 horse power engine, with 80 pounds steam. The plant cost about \$30,000.