"Anderson's Stone Dresser"

In *Scientific American*, Vol. XXV, No. 15
New York, October 7, 1871, pp. 223

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January 2013

“Anderson’s Stone Dresser” – Mastodon Stone Dresser

(Patented July 12, 1870, by Mr. A. G. Anderson; patent owned by Rice & Anderson of Quincy, Illinois.)

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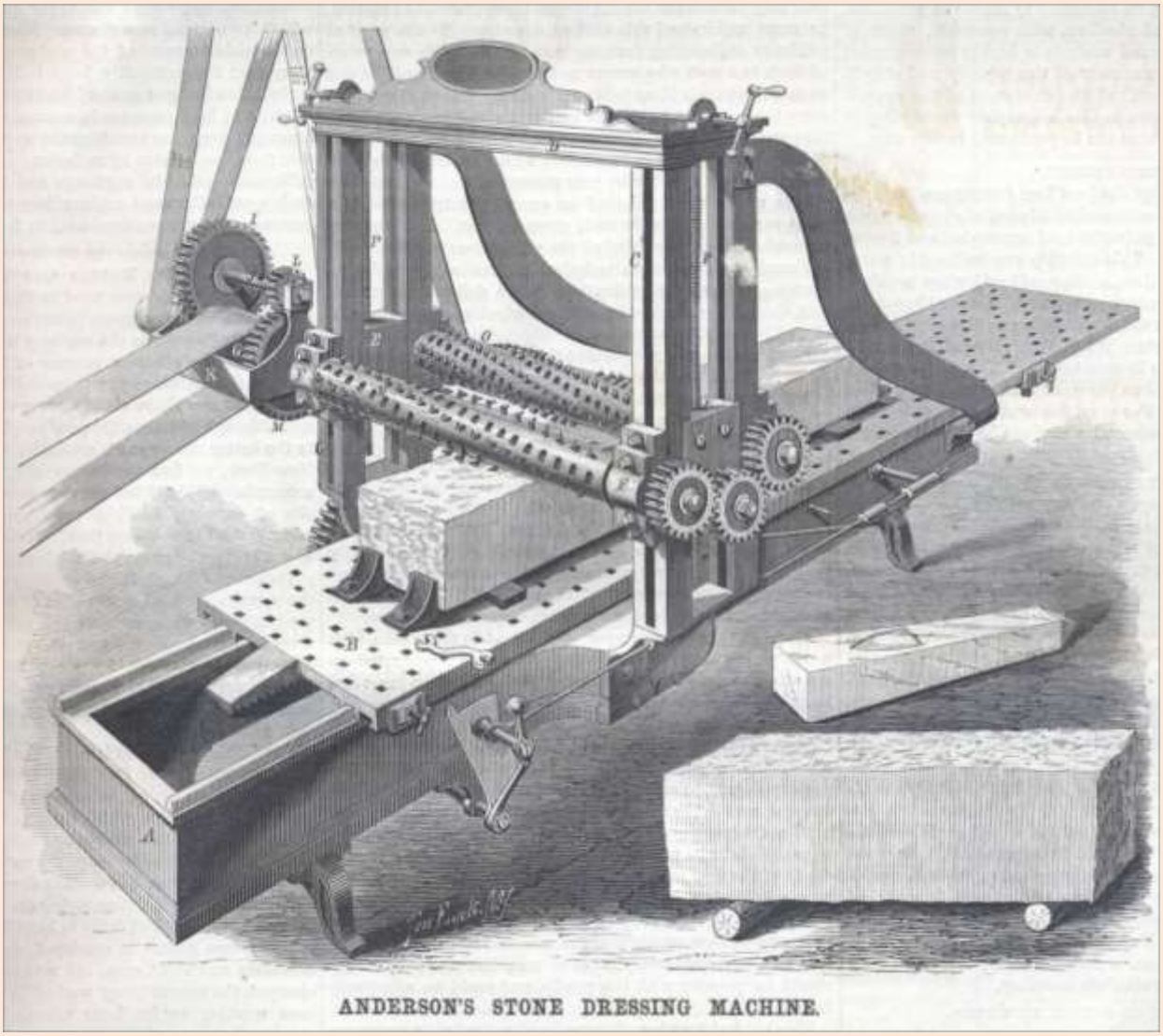


ANDERSON'S STONE DRESSING MACHINE.

“To substitute, for the slow and laborious operation of dressing stone by hand labor, a method of doing the same work by machinery, has been a problem, the solution of which has been earnestly sought, we are sorry to say, for the most part, unsuccessfully. It is true that, for cutting some of the soft varieties of stone, machines have been devised which do their work very satisfactorily, but we think we are warranted in the assertion that for working all kinds of hard stones used in building and mill work, no machine, meeting all the requirements of the case, has, up to the present time, been produced.

"However, if we may credit the statements made in regard to the machine which forms the subject of the present article, it has proved itself equal to dressing the hard varieties of stone, with great facility, and in a very perfect manner.

"The machine was publicly tested on July 11th, of the present year, at Quincy, Ill., with, it is said, entire success, eliciting the warm encomiums of many engineering experts, who were present on the occasion.

"Of this test the *Daily Whig* (Quincy, Ill.), speaks as follows:

> "'The machine is, in construction, very similar to that of an iron planer, except that the tools are fixed in revolving cylinders, under which the stone passes, the width of stone cut at one passage being limited only by the length of the cylinder, which, in a large machine may be at least six feet long, thus cutting a perfectly uniform level and handsomely marked surface (of either smooth or rustic finish, if desired) of six feet in width, and at the rate of three inches per minute, while taking off a depth of three inches or more of 'rough.' This will be doing the work of from thirty to fifty stone cutters. The unanimous opinion expressed by all who witnessed the operation of the machine in cutting different blocks of stone of various qualities, including several which had been selected on account of extra hardness – one having been brought from the Lock work at Keokuk, by Major Burnham, for that reason – was of unqualified approval, both in regard to the surface left on the stone, the amount of work accomplished, and the perfect condition retained by the machinery and tools after doing a large amount of cutting.
>
> "'It is generally conceded that this trial and its favorable results constitute an event of importance in the business history of our city, as well as of general interest, in consideration of the great change which must be brought about in the stone business as regards price, quality, styles, etc.'

The *Herald* of the same place, speaking of the quality of the stone dressed, says:

> "'The first test was made upon a Joliet stone two feet wide, four feet long, and a foot thick. The machine operated like a charm, and although the stone was one of the hardest that could be obtained, the points walked right through the rough edge, and the chisels left a surface perfectly smooth and beautiful in appearance. Next a stone, brought from Keokuk, one of the same kind used by the Government in the canal works around the rapids, was tried. This stone, though not so hard as the one from Joliet, is said to be much more durable and more difficult to dress, on account of the quartz seams which it contains. About two and a half inches were taken off the edge, and the dressing was, in every respect, equal to that obtained in the first instance. Several other tests were made upon the same stone with similar results.'

"Photographs of the surfaces of stones dressed by this machine have been sent us, from which we are enabled to say that the character of the work performed is all that could be desired; and should no obstacles to its future progress arise, the advent of this machine will exert an extraordinary effect upon all the trades connected in any way with stone cutting.

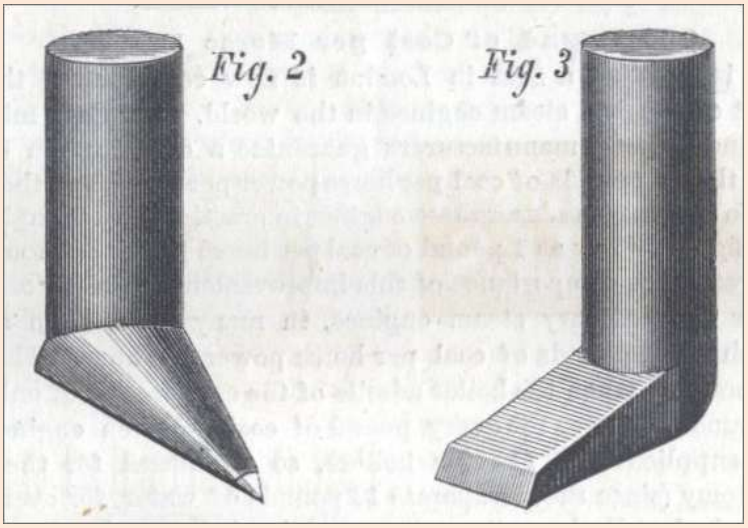
"A is the frame of the machine, upon which are formed the ways upon which the bed, B, is moved back and forth to feed the stone to the cutters, and in which a number of holes are placed to enable the operator to secure the two side frames, C, the upper ends of the four uprights of each of which are connected to each other, and secured in their proper relative positions by the

top frame, D. Blocks, E, are placed in the space between the four uprights of the two side frames, C, and move up and down upon the uprights. F represents the boxes in which the journals of the cutter shafts or cylinders revolve, and which are secured to the opposite sides of blocks, E, by bolts, so that by tightening up the nuts of the bolts, the block, E, and boxes, F, when adjusted to the proper position may be securely clamped to the frame, C. G is a pulley, around which passes the driving belt, and with which is securely rigidly connected a small gear wheel, H. The pulley, G, and gear wheel, H, work loosely upon the projecting journal of one of the cutter shafts. The teeth of the small gear wheel, H, mesh into the teeth of the large gear wheel, I, attached to the short shaft, J, which revolves in bearings in the frame, K, attached to the block E, and to which is also rigidly attached the small gear wheel, L, the teeth of which mesh into the teeth of the large gear wheel, M, rigidly attached to the journal of one of the cutter shafts.

"By this arrangement of gearing, the rapidity of motion will be lessened, and the power increased in the same proportion, causing the cutter shafts to revolve at a slow rate of speed, and with great power. N is the forward, and O is the rear cutter shaft, to which are respectively attached the cutter, Figs. 2 and 3. The cutter, Fig. 2, which first operates upon the tone, is made pointed, and similar to the tool used by the workman for roughing by hand. Fig. 3 represents the form of the rear cutters, the edges of which are broad and flat, and which are so arranged that the path cut by each following cutter will overlap that of the preceding one. The shanks of the cutters enter the shafts, N O, and are secured in place by set screws. The cutters are made of steel or chilled iron, or may have diamond carbon faces, and are arranged in spiral rows upon the shafts, N O, so that in cuts not more than four inches deep, not more than four cutters on each cutter shaft will be cutting at the same time. P are long screws passing through and swiveled to the top plate or frame, D, and which pass through the center of the block, E, through screw holds formed in or through nuts secured to said block, E, so that by turning the said screws in one or the other direction, the blocks, E, and with them the cutter shafts, N O, may be raised and lowered to adjust them at any desired distance above the bed plate, B. To the upper end of the screws is rigidly attached a small gear wheel, in the teeth of which will mesh a screw pinion for the purpose of rotating the screws in either direction, for raising or lowering the cutter shafts.

"It is claimed that for dressing limestone, sandstone, and marble, the steel cutters, shown in Figs. 2 and 3, will do their work perfectly, but that for granite or French burr, the carbon or 'black diamond' points will be requisite.

"Fig. 2 shows the form of steel cutters used on the forward, and Fig. 3 the form used on the rear, shafts for smoothing.



“These cutters strike no violent blows, to fracture the stone or make breaks or holes in its surface. Their motion is so slow as not to heat the tools, but so forcible as to enter the hardest limestone, or marble. When cutting granite, by the use of tools armed with carbon points, the speed is increased one hundred times, cutting down a ‘rough’ of three inches, and throwing it off in the form of impalpable powder.

“The machine has been styled the Mastodon Stone Dresser. It was patented through the Scientific American Patent Agency, July 12, 1870, by Mr. A. G. Anderson, of Quincy, Ill., and the patent is now owned by Rice & Anderson, of that city, from whom further information may be obtained. P. O. Box 601.”