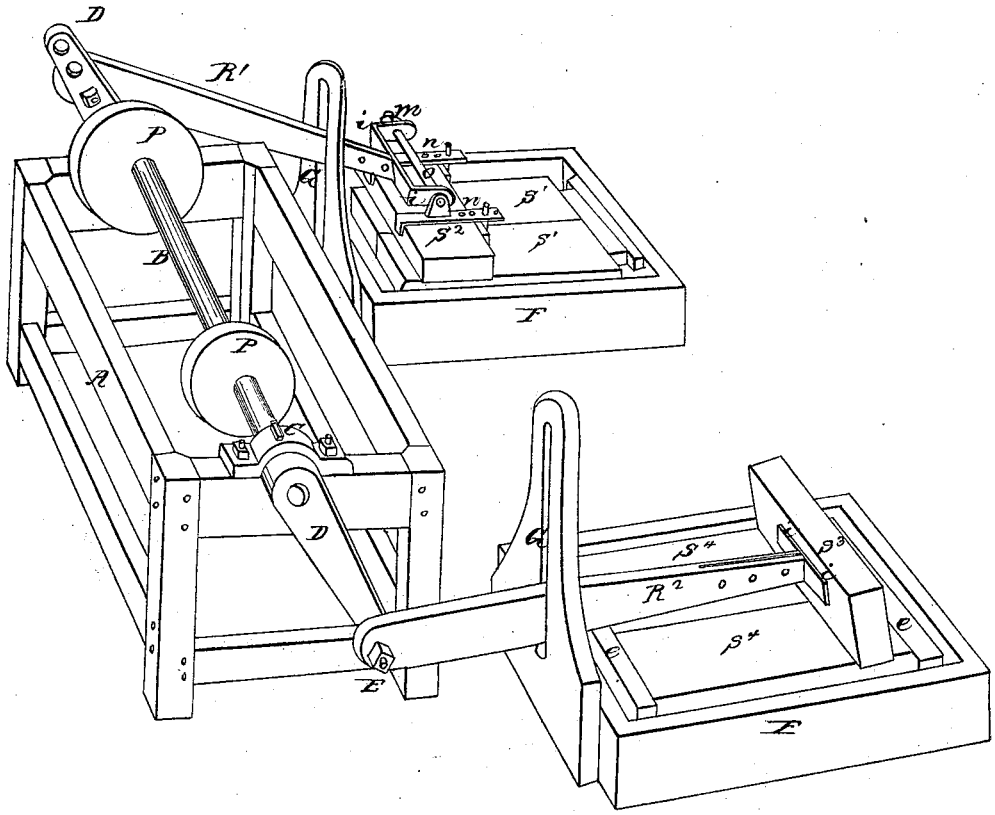
H. W. Kent,

Polishing Marble.

No. 50,829. Patented Nov. 7, 1865.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY W. KENT, OF BATTLE CREEK, MICHIGAN.

IMPROVED MARBLE-FINISHING MACHINE.

Specification forming part of Letters Patent No. **50,829**, dated November 7, 1865.

To all whom it may concern:

Be it known that I, HENRY W. KENT, of the city of Battle Creek, in the county of Calhoun and State of Michigan, have invented a new and useful Improvement in Machines for Grinding, Gritting, and Polishing Marble; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, in which the machine is represented in perspective.

The nature of my invention consists in operating the various sand-rubbers, grits, &c., by adjustable cranks, which impart reciprocating rectilinear movement, said cranks being so connected that a rocking action may be communicated to the grits, &c., or otherwise, as may be best adapted to the varied nature of the material operated, or to the varied processes necessary in working up the surface of the stone to a proper finish; and the better to enable others skilled in the art to construct and use my invention, I will now proceed more minutely to describe the same.

A represents a long, stout wooden frame (as I usually construct it) carrying a longitudinal shaft, B, which revolves in bearings C, bolted to the end girts. A long-stroked crank, D, is keyed on the overhang at each end of this shaft, provided with a series of holes for changing the crank-pin E to vary the length of the stroke, or in place thereof the crank may have a slot formed in which the crank-pin can be adjusted.

F F represent two low bed-frames to support the slabs to be worked. They have usually tight bottoms, (not seen,) between which and the slabs blocks are interposed to form an intervening space.

S′ S′ are two marble slabs (rough from the saw) resting side by side under the first process of sand-rubbing by the "sand-rubber" S^2, which consists of a similar slab placed flatwise across their faces, and connected to the forked end of the pitman R′ by a pivot-bolt, *o*, which passes through the forks of the rod and through lugs *m* on the adjustable draw-bars *n*, which are keyed to the rubber, as shown, or are temporarily attached to it in any other convenient way. The other end of the pitman is connected with the crank-pin E as usual. In this part of the process the sand-rubber slab S^2 is steadily driven back and forth over the faces of the slabs below, water and sand being freely interposed until a true but rough plane surface is produced. When brought to this condition the slabs are now subjected to the action of the grit-rubber S^3, which is generally a slab of stone possessing a fine, sharp grit, which is seen attached to the end of pitman R^2 as operating on a pair of stones, S^4, supposed to have been previously sand-rubbed.

In this process of gritting, as ordinarily performed by rubbing two plane surfaces together with water interposed, great difficulty is experienced from the tendency to "stick," as it is termed, for as the surfaces are being ground finer and true, a more perfect vacuum is being formed between the stones, which continually impedes the operation. In order to remedy this and enable the marble-finisher to use simple mechanism, to be operated by water, steam, or wind, I give the grit-stone S^3 a reciprocating motion by attaching it to the pitman R^2; but instead of connecting it by a vibrating joint, as with the sand-rubber, I fasten it rigidly by passing the prongs of the angle-irons *i i* through holes in the grit and secure them by nuts or keys, (not shown,) or secure said grit to the free end of the pitman in any other convenient way that shall form a strong and rigid connection. As the crank-shaft revolves a combined reciprocating and rocking motion is communicated to the grit, the rubbing-face of which assumes, in section, the form of a flat oval, and as comparatively but a small rubbing-surface is ever in contact at once it works freely and efficiently.

I usually construct the pitmen of tough, hard wood and bolt the connecting-fork irons *i i* to them, and secure the rectilinear motion of the grits and rubbers by working the pitman in slotted guides G; and I find it best to key in a narrow piece of stone, *e*, at each end of the slabs, to receive the overlap of the grit-stone at each end of the stroke.

Motion may be given by a belt over one of the pulleys P to the crank-shaft B, which may be made to act as a counter-shaft for driving a saw, lathe, or other machine used in the working of marble.

I do not deem it necessary to further explain the mode of operation by my arrangement, ex-

cepting to say that in the various processes of sand-rubbing, gritting, and polishing marble I employ the jointed and rigid connection with the rubbers alternately, as circumstances may dictate, and keep a few extra pitmen of each kind on hand to change with occasionally, in stead of moving the slabs from their bed.

I do not claim finishing marble by machinery which imparts simply a reciprocating motion to the rubbers; but

What I claim as new, and desire to secure by Letters Patent, is—

1. Communicating a combined rocking and reciprocating motion to the grit S^3 or other rubber by attaching the same rigidly to the free end of the pitman R^2 by means of the connecting-forks *i i* or other equivalent device, substantially as and for the purpose herein specified.

2. The use of the single and double jointed pitmen $R' R^2$, in combination with the frame A and crank arrangement, substantially as herein described and set forth.

HENRY W. KENT.

Witnesses:
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