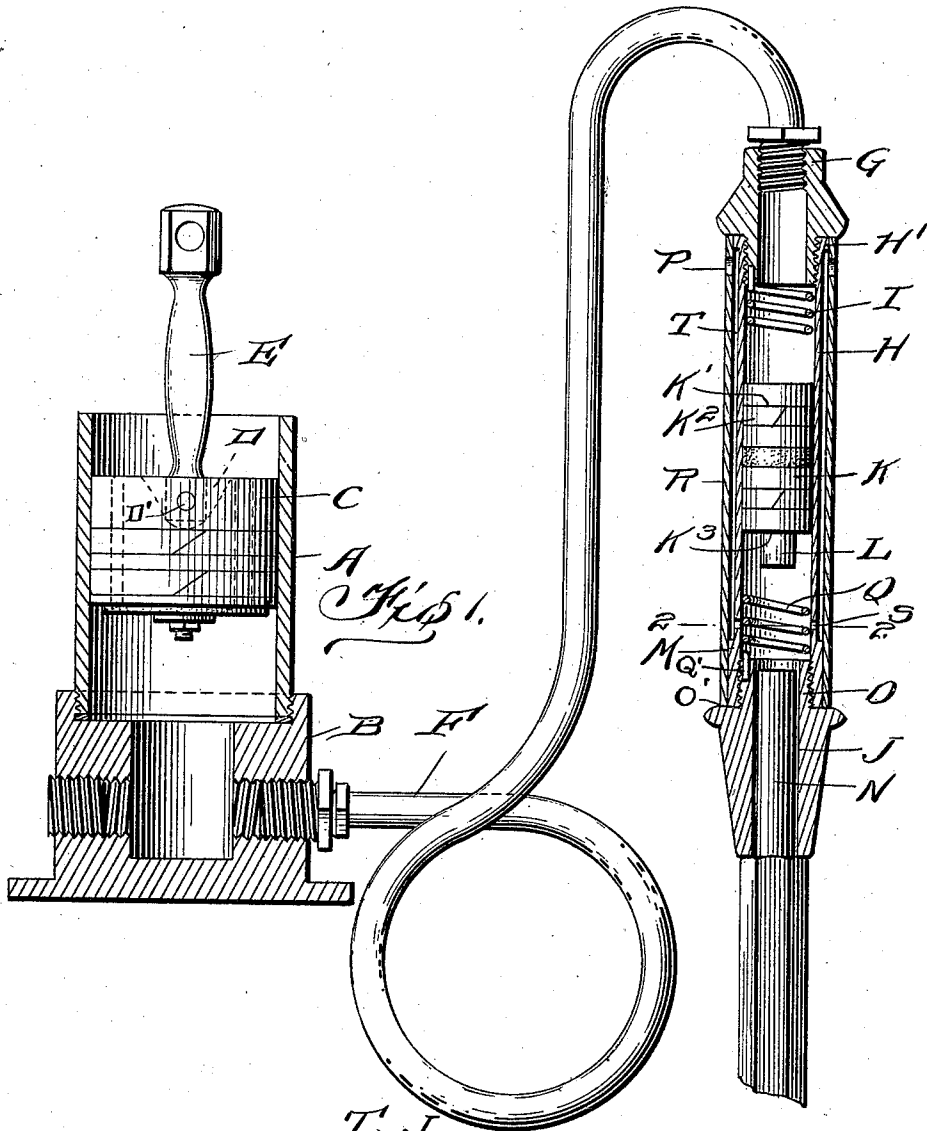


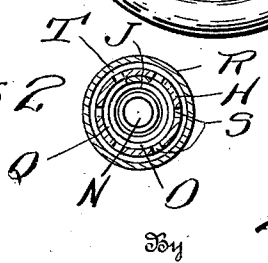
C. S. FELUMLEE.
 PNEUMATIC STONE MARKING TOOL.
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Patented Sept. 6, 1910.



Witnesses
Geo. L. Thom
A. L. Stough



Inventor
C. S. Felumlee
Franklin H. Hough
 Attorney

UNITED STATES PATENT OFFICE.

CORNELIUS S. FELUMLEE, OF NEWARK, OHIO, ASSIGNOR OF ONE-HALF TO CURTIS V. PRIEST, OF NEWARK, OHIO.

PNEUMATIC STONE-MARKING TOOL.

969,354.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CORNELIUS S. FELUMLEE, a citizen of the United States, residing at Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Pneumatic Stone-Marking Tools; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of referenced marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in pneumatically operated tools for carving or cutting stone, etc., and comprises various details of construction and combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claim.

I illustrate my invention in the accompanying drawings, in which:—

Figure 1 is a vertical sectional view through the pneumatic pump and handle of the tool showing the piston in solid lines in a neutral position, and Fig. 2 is a cross sectional view on line 2—2 of Fig. 1.

Reference now being had to the details of the drawings by letter, A designates a cylinder of a pump mounted upon a base B, and C is a plunger mounted within said cylinder which has its upper end D cup-shaped with a transversely disposed pin D' journaled in the walls thereof. A pitman E is pivotally connected to said pin D' and to which power from any source may be applied for the purpose of reciprocating the piston. An air pipe F is connected at one end with an aperture in the lower end of said pump cylinder and its other end is connected to the head G of the handle which is adapted to contain the reciprocating mechanism for imparting a vibratory movement to a chisel or other tool. Fastened to a threaded portion of said head is a cylinder H which has an annular shoulder H' at one end. The threaded end of said head has fastened thereto a coiled spring I and movable within the cylinder is a reciprocating piston K provided with annular grooves K² in which the packing rings K² are mounted. Said spring I is adapted to form a

buffer for the purpose of gradually stopping the piston K when it approaches its limit in one direction. The other end of said cylinder is interiorly threaded for the reception of the socket member O which has a shoulder O' against which the end of the cylinder is adapted to bear in the manner shown clearly in the drawings and is centrally apertured, as at J, for the reception of the end of the shank of a chisel N or other tool. It will be noted that the end of said chisel extends nearly through the socket member, a slight space intervening between its end and the inner end of said member, sufficient to receive the contracted end L of the piston K. A coiled spring Q is fastened with one end in the groove Q' in said socket member and serves as a buffer for the shouldered portion K² of said piston when said piston approaches its limit toward the socket member. It will be noted that the end of the cylinder which is in contact with said socket member has a shouldered portion M, the diameter of which is equal to the diameter of the shoulder H', and R designates a shell which is adapted to telescope over the shell H and bear against the circumferences of the shoulders H' and M, leaving an air cooling space T intermediate said shoulder and between the cylinder H and the shell R. The end of the shell adjacent to said socket member is provided with a circumferential series of apertures S through which air passes in one direction or the other accordingly as the piston K is driven toward one end or the other of the cylinder H. Said apertures S open into the space T and exit openings P are provided adjacent to the annular shoulder H' and opening into the space T, thus affording means whereby atmospheric air may be drawn back and forth through the air chamber T for the purpose of cooling the cylinder as the piston K is reciprocated rapidly therein.

The operation of my invention will be readily understood and is as follows:—The chisel N is inserted within the socket member in the manner shown in the drawings and is held by the operator therein and guided by the person using the tool against the marble or other work being operated upon. Each time the contracted end L of the piston K comes in contact with the end of the chisel, it will impart a light blow thereto, the force of the blow being moder-

ated by the coiled spring Q which takes up part of the vibration. Each time the piston in the pump is driven toward its farthest inner limit, the air in advance of the piston and in the pipe F will be compressed, thus forcing the piston K against the chisel or other tool. Upon the outer throw of the piston C, the pressure will be relieved and a suction in the opposite direction created which will return the piston K to the position shown in solid lines in Fig. 1 of the drawings. As the piston K is driven forward under the compression of the air, the air in advance of the piston will escape through the perforations S in the space T and, upon the return movement of the piston K, a reverse current of air will be drawn through the opening P and from the space T to the apertures S into the interior of the cylinder in which the piston K is mounted. The reciprocating movements of the pistons K and C will be in unison and the speed of the blows against the chisel or other tool regulated by the speed of the pitman which is connected to the plunger in the pump.

What I claim to be new is:—

A pneumatically-operated stone working chisel comprising a pneumatic pump with reciprocating piston, a cylinder, an aper-

30 tured head communicating with the interior
of the latter, pipe connections between said
cylinder and the pump, a tool-receiving
socket member fastened to said cylinder and
provided with a central opening extending
entirely through said member, a suitably
35 packed piston mounted within the cylinder
and provided with a contracted projection
at one end designed to telescope in the inner
end of the aperture of said socket member
and contact with the end of the tool con-
40 tained therein, an air space about said cyl-
inder, the latter being provided with cir-
cumferential perforations communicating
with the air chamber, an air opening ad-
45 jacent to the other end of the cylinder and
formed in the wall of said shell, coiled
springs having ends fastened in grooves in
said head and socket member and positioned
in the path of said piston and against which
50 the latter is adapted to contact as it ap-
proaches its limits in opposite directions.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

CORNELIUS S. FELUMLEE.

Witnesses:

A. L. HOUGH,
A. R. FOWLER.