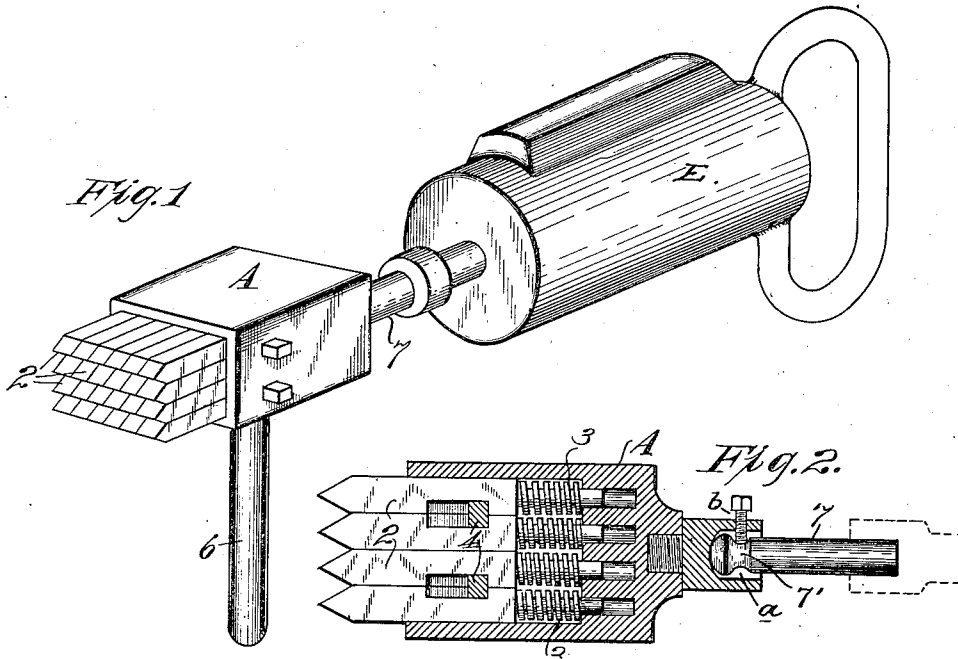


No. 848,459.

PATENTED MAR. 26, 1907.

C. E. GRANT.
CHIPPING MACHINE.
APPLICATION FILED AUG. 20, 1906.



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CHIPPING-MACHINE.

No. 848,459.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed August 20, 1906. Serial No. 331,297.

To all whom it may concern:

Be it known that I, CHARLES E. GRANT, a citizen of the United States, residing at Alledale, in the county of Alameda and State of California, have invented new and useful Improvements in Chipping-Machines, of which the following is a specification.

My invention relates to devices for chipping rust and hard scale from the sides of vessels, bridges, iron girders, columns, and the like. Its object is to provide a simple practical pneumatic tool of this character by which the work can be done more satisfactorily and quickly than heretofore. This object is accomplished by the use of a tool having a plurality of independently-cushioned teeth or chippers, each having a limited movement independent of the others, whereby the tool is adapted to fit the unevenness of the surface worked on, being adapted to work equally well in holes, crevices in the corners of angle-irons, and over and around rivets and bolt-heads as over plain surfaces.

The invention consists of the parts and the construction and combination of parts, as hereinafter more fully explained, having reference to the accompanying drawings, in which—

Figure 1 is a perspective view of the tool; Fig. 2, a vertical longitudinal section through the holder.

Referring to Fig. 1, E represents an engine, herein shown as of the usual hand-tool pneumatic type, and A is a head or holder for the chippers 2. These chippers are of case-hardened steel, about half an inch square in cross-section, and are pointed or wedge-shaped at their outer ends, as shown. The chippers are arranged to lie close together and are suitably cushioned at their inner ends in such fashion that each chipper may have a limited movement independent of all the other chippers in order to adapt the tool to the various unevennesses of the surface to be worked over.

As here shown, the inside of the holder has a series of sockets to receive the corresponding inner ends of the chippers, and each chipper has a turned-down portion to accommodate a helical spring 3, which has one end bearing against a shoulder on the chipper and the other end against the bottom of the holder.

The chippers are held in place by means of the keys 4, one key being passed transversely

between two adjacent rows of chippers, the chippers in the two rows being channeled on their adjacent sides to receive a key and to permit of the necessary independent reciprocation of the chippers.

In actual practice I usually make the head about two and one-half by three and one-half inches outside measurement and employ, say, four rows of chippers with six chippers in a row, all the chippers normally standing with their outer cutting edges in the same plane.

A handhold 6 of some appropriate form is attached to one side of the holder, while the back of the holder is swivelly connected to a rod or stem 7, which fits in the pneumatic calker or other engine employed to impart a rapid reciprocating motion to the holder. As shown, the holder has a socket *a* in its back, and the front end of the stem 7 fits this socket and has an annular groove 7' to receive the inner end of a screw *b* to retain the parts swivelly in contact.

The operator usually grasps the handle 6 by one hand and the engine by the other and directs the tool over the surface or article to be chipped. The swivel mounting of the holder on the stem allows the tool to be easily directed in any way desired. The independent cushioning of each chipper on its spring 3 and the allowance for independent reciprocation of each chipper permits the tool to work over a bolt-head or rivet or into any angles or holes and to reach into all crevices and thoroughly clean the article in a much better manner and in a much shorter time than the same could be done by hand or by the use of a single chipping member.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a chipping-machine, the combination with a unitary head of a series of chippers having rear portions incased in the head, said chippers being in contiguous relation and having reduced inner ends, said head having sockets for the reduced ends of the chippers, springs on the reduced ends of the chippers and operating to maintain the cutting edges of the chippers in substantially the same plane, said chippers having channels through them and keys passing through the channels and allowing the chippers independent reciprocation, and means for operating the chippers in unison in the same direction.

2. In a chipping-machine, the combina-

tion with a unitary head of a plurality of
spring-pressed chippers slidably mounted
therein, said chippers having channels in
their adjacent sides, keys passing through
5 said head and channels whereby the chippers
are allowed an independent reciprocation,
and means for operating the chippers.

3. The combination with a pneumatic
hand-tool, of a head connected therewith,
10 a plurality of spring-pressed chippers slidably
mounted in the head, and means whereby
each of said chippers is capable of a limited
independent movement.

4: The combination with a pneumatic

hand-tool, of a head and means whereby it is 15
swivelly connected therewith and provided
with spring-pressed chippers, means where-
by said chippers are allowed a limited inde-
pendent movement in the head, and a hand-
hold by which the chippers are directed over 20
the surface to be cleaned.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

CHARLES E. GRANT.

Witnesses:

S. H. NOURSE,

C. B. CRAWFORD.