

No. 715,277.

Patented Dec. 9, 1902.

F. M. LEAVITT.
PORTABLE AUTOMATIC HAMMERING TOOL.

(Application filed July 2, 1901.)

(No Model.)

FIG. 1.

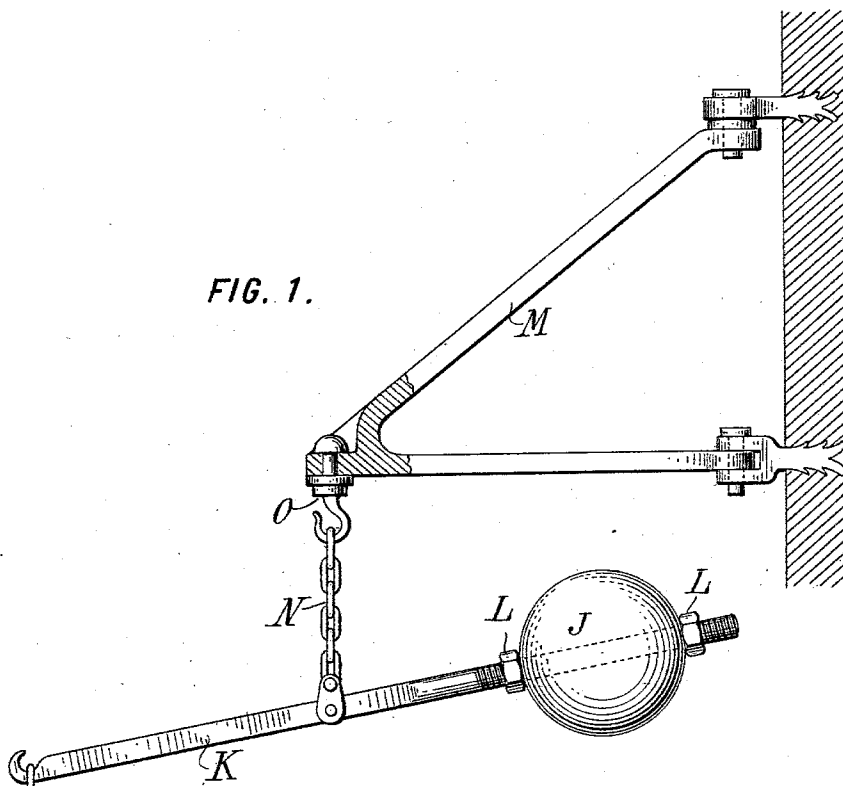
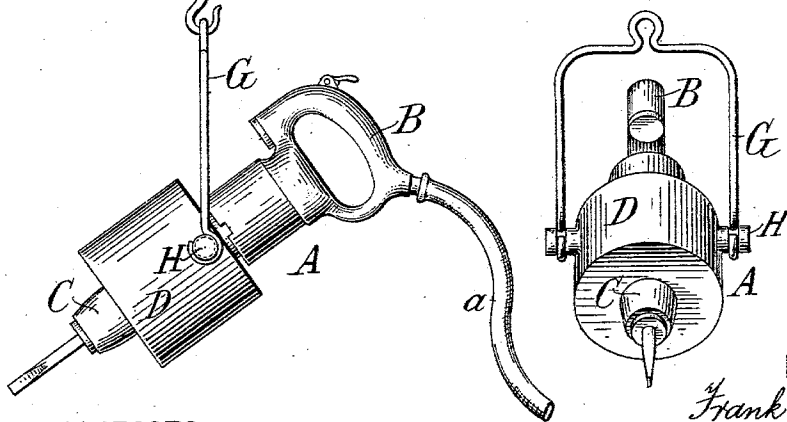


FIG. 2.



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PORTABLE AUTOMATIC HAMMERING-TOOL.

SPECIFICATION forming part of Letters Patent No. 715,277, dated December 9, 1902.

Application filed July 2, 1901. Serial No. 66,894. (No model.)

To all whom it may concern:

Be it known that I, FRANK M. LEAVITT, a citizen of the United States, residing in the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Portable Automatic Hammering-Tools, of which the following is a specification.

In automatic tools arranged to be carried in the hands and to give a hammer-blow, such as the pneumatic tools in use for chipping cast-iron or steel or for similar operations, the hand of the workman suffers considerably from the jarring which it receives. My invention aims to substantially avoid this jarring action on the hand by a construction which is extremely simple, yet entirely efficient.

My invention aims also to provide other improvements, which are set forth in detail hereinafter.

Referring to the drawings herewith, illustrating an embodiment of my invention, Figure 1 is a side elevation of the apparatus and accessory parts. Fig. 2 is an end view of a portion of Fig. 1.

In my improved tool the jarring effect which occurs during its operation is not transmitted beyond the casing of the tool, but is substantially taken up by a considerable mass of material provided as a part of the tool or an attachment fixed thereto, as by the addition of a suitable weight to the body of the tool. By weighting the casing of the tool I insure that the jarring effect is taken up, no matter in what direction the tool is operated. The effect of the added weight is to distribute the shock throughout a larger mass of material than is the case with unweighted tools at present in use, and thus transmit little or no jar to the workman's hand. In tools at present in use the weight of the tool is kept as low as possible, especially in the heavier classes of work, so as to make it easy for the workman to hold it and manipulate it.

In using the improved weighted tool of my invention I preferably suspend it from any suitable point, so as to make it convenient to handle, and I preferably provide also some means for sustaining the weight to be lifted in handling the tool, such means being a

counterweight or any equivalent therefor. For greater convenience in handling I may also support the tool or the entire tool and counterweight from a crane, which permits movement over a desirable floor-space.

Referring to the drawings, A indicates any usual or suitable hammering or vibrating tool driven by power through a flexible connection and adapted to be held or carried to the work by the operator. I have shown it as a pneumatic hammer, of which B is the handle, and C the casing, a being the flexible tube through which compressed air is fed to it. The tool is usually held against the work in somewhat the position shown, the hand of the operator grasping the portion B and holding the tool up against the work. As each hammer-blow occurs in the type of tools now in use the jarring effect is transmitted to the handle B, which occurring repeatedly for a considerable time seriously injures the hand and affects the nerves of the workman. In order to substantially prevent the transmission of the jarring effect to the handle, I provide that it shall act on a considerable mass of material, more than is usually provided or necessary for the operation of the tool. A convenient means for supplying the necessary amount of mass consists of a weight D, of any suitable shape, fixed directly and rigidly to the casing C of the tool. The mode of attaching the weight D to the tool is immaterial. It may be considered to be integral therewith, for example.

In order that the extra weight necessary for the proper operation of my improved tool shall not be too great a burden to the workman in handling the tool, I prefer to support it, as, for example, by means of a chain E, connecting with any point overhead, and to which the tool is connected, for example, by means of a swivel-hook F and a bail G, the ends of the latter being connected to the tool as by means of pins H, situated at about the center of the weight of the tool, so as to make it easier to tilt the same up or down about the pins H. Preferably, also, I lighten the tool, as far as the lifting of the same to transfer from one point to another is concerned, by any suitable means. As shown, I may provide for this purpose a counterweight J on the end of the beam K, which is pivoted at

an intermediate point and at its other end is hooked into the chain E. The counterweight K may be made adjustable by means of nuts L for use with tools of different weight. In order that the operation of the tool shall not be greatly limited as to the area in which it can operate, I preferably support it also from a crane. For example, I may provide a crane M of any usual or suitable design supposed in this case to be mounted in the wall of the building and which is preferably arranged to support both the tool and its counterweight by attaching the beam K by means of a chain N to swivel-hook O at the outer end of the crane.

It will be seen that my invention provides improvements which while they do not to any appreciable extent restrict the usefulness of automatic hammering-tools yet deprive them by a very simple device of their injurious effects on the workman and which at the same time make the handling of the tool a very easy matter and permit its use within a considerable area of the building or other place where the work is going on. The extra weight of my tool insures also a better operation of the hammer and, as long as my improved counterweighting system is used, no added inconvenience in moving the tool.

By making it convenient to handle the tool regardless of its weight I have also increased the weight of tools which it is practicable to use, so that much larger and more powerful tools can be used as hand-tools with my invention than formerly.

Though I have described in great detail an apparatus embodying my invention, it will

be understood that I do not limit myself to the specific features and arrangements shown and described. Various modifications of the same are possible to those skilled in the art without departure from the spirit of my invention.

What I claim is—

1. In an automatic hammering-tool, the combination with the casing, of a weight fixed directly and rigidly to said casing.

2. The combination with an automatic hammering-tool having a casing, of a weight fixed directly and rigidly to said casing, and a means for suspending said tool.

3. The combination with an automatic hammering-tool having a casing, of a weight fixed directly and rigidly to said casing, a means for suspending said tool, and a counterweight for said tool.

4. The combination with an automatic hammering-tool having a casing, of a weight fixed directly and rigidly to said casing, a counterweight for said tool, and a crane carrying said tool.

5. The combination with an automatic hammering-tool having a casing, of a weight fixed directly and rigidly to said casing, a counterweight for said tool, and a crane carrying said tool and said counterweight.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FRANK M. LEAVITT.

Witnesses:

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