

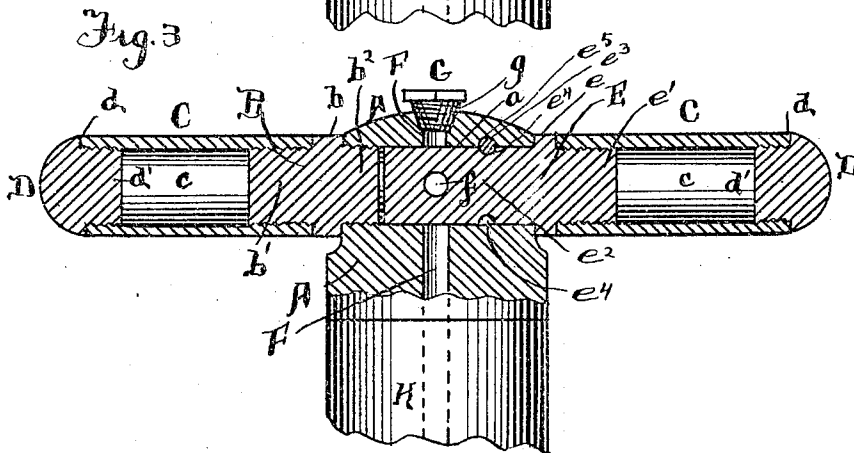
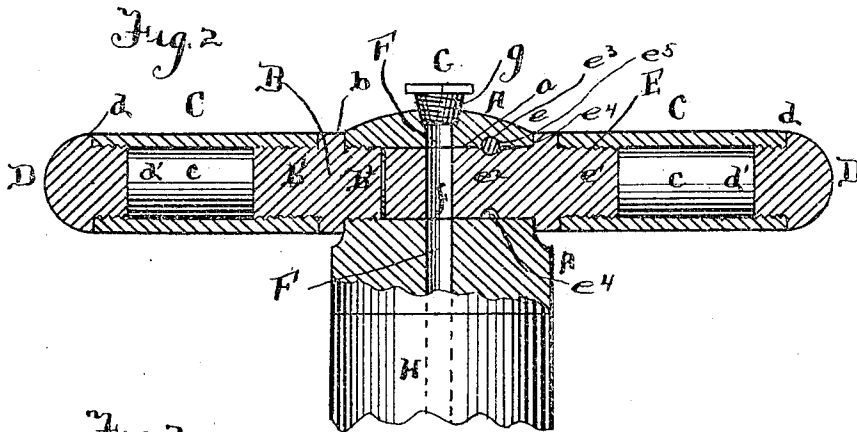
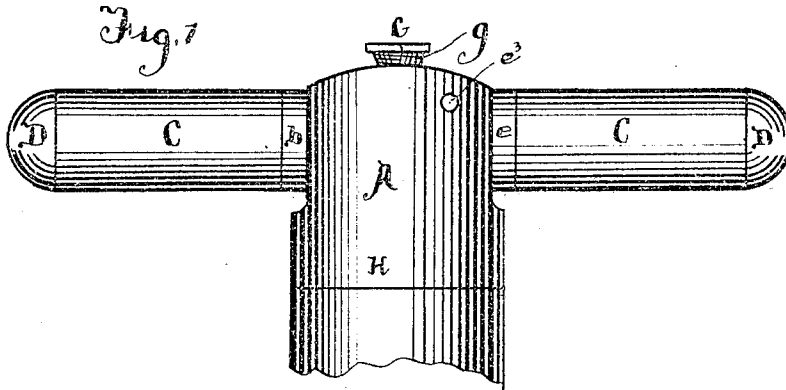
No. 787,916.

PATENTED APR. 25, 1905.

M. HARDSOCK,

HANDLE AND CONNECTING PLUG FOR PNEUMATIC HAMMERS.

APPLIOATION FILED JULY 28, 1904.



Witnesses:
William P. Bond
Pauline Beckman

Inventor
Martin Hardsoy
By Banning & Banning
Attys.

UNITED STATES PATENT OFFICE.

MARTIN HARDSOCC, OF OTTUMWA, IOWA.

HANDLE AND CONNECTING-PLUG FOR PNEUMATIC HAMMERS.

SPECIFICATION forming part of Letters Patent No. 787,916, dated April 25, 1905.

Application filed July 28, 1904. Serial No. 218,547.

To all whom it may concern:

Be it known that I, MARTIN HARDSOCC, a citizen of the United States, residing at Ottumwa, in the county of Wapello and State of Iowa, have invented certain new and useful Improvements in Handles and Connecting-Plugs for Pneumatic Hammers, of which the following is a specification.

The objects of the present invention are to construct a handle by which the hand of the operator will be relieved to a great extent from the jar and concussion of the hammer in use; to attach the handle to a closing-plug in such manner that the handle, either one side or both sides, can be readily and quickly detached and attached, so that the handle can have a grab on two sides oppositely projecting or a grab on one side only; to utilize one section or grab of the handle as a valve for controlling the admission of pressure to the interior of the main frame or cylinder of the hammer; to construct a closing-plug having therein a passage for the admission of pressure, which passage is controlled by a valve on one grab or section of the handle, and to improve generally the construction and arrangements of the several parts entering into the formation of the handle and the plug.

The invention consists in the features of construction and combinations of parts hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of the handle and plug of the invention; Fig. 2, a sectional plan view of the handle and plug of the invention, with the end of the main frame or cylinder of the hammer in elevation and showing the valve controlling the admission of pressure turned to admit pressure; and Fig. 3, a similar view to Fig. 2, with the valve controlling the valve turned to shut off the admission of pressure.

The closing-plug A for the end of the main frame or cylinder of the hammer can be made of metal and of the proper diameter in cross-section for the size of hammer, and this plug at its entering end can have a screw-thread to engage with a thread on the interior of the main frame or cylinder for attaching the plug to the main frame or cylinder, or such attach-

ment can be made by any suitable means. 50
The plug A has in its body a cross-hole *a*, one end of which is screw-threaded and the balance of which is left with a smooth face, as shown in Figs. 2 and 3. The threaded end of the hole *a* receives a coupling-plug B, which, as shown, has a circumferential flange *b*, which flange abuts against the face of the body of the main plug A when the coupling-plug is in position. The body on one side of the flange *b* has a threaded nipple and on the opposite side a threaded nipple *b'*, the threaded nipple *b'* entering the screw-threaded section of the cross-hole *a* of the main plug. The nipple *b'* of the coupling-plug B is entered into the end of a tube C, which tube may be of india-rubber or other suitable material having a resiliency that will tend to lessen the shock on the hand of the operator in use; but, if desired, the tube C could be of metal, wood, or other material. The outer end of the tube C has entered therein a cap D, having a shoulder *d* to abut against the end face of the tube and having a threaded nipple *d'* to enter the end of the tube, leaving a chamber *c* between the end faces of the nipples *b'* and B, which chamber acts to lessen the effects of jars and concussions on the hand and arm of the operator of the hammer in use.

The cross-hole *a* of the main frame A has entered into that portion thereof not screw-threaded a coupling-plug E, having a circumferential flange *e*, which when the coupling-plug E is in position abuts against the face of the main plug. The coupling-plug on one side of the flange *e* has a threaded nipple *e'*, which enters a tube C, closed at its end by a cap D, as in the construction just described.

It will be understood that the coupling-plug B, tube C, and closing-cap D form one grab or section of the handle and that the coupling-plug E, with its tube C and closing-cap D, forms the other or companion grab or section of the handle, and with the construction shown the grab formed by the coupling B, tube C, and closing-cap D is detachable from the main plug, so that the companion grab or section only furnishes the means for holding the hammer in use. It will be seen that a

two-grab or two-section handle is furnished or a single grab or section handle is obtainable, as may be desired for use of the hammer.

The inner end of the coupling-plug E is extended and forms a valve e^2 , which valve is free to turn in the hole a of the main plug and is held against endwise play and in its position in the hole by a pin e^3 , one half of which is in a circumferential groove e^4 in the body of the valve and the other half of which is in a half-hole e^5 in the body of the main plug, so that when the pin e^3 is in place the plug is free to turn axially, but is held against endwise movement. The main plug A has a central passage or hole F, and the valve e^2 has in line with the passage or hole F a passage f , so that when the valve e^2 is properly turned, as shown in Fig. 2, the passage f in the valve lies with the passage F, forming a continuous passage through the main plug and the valve, through which pressure is free to flow; but when the valve e^2 is turned to bring the passage f out of communication with the passage F, as shown in Fig. 3, the flow of pressure through the main plug is shut off. The valve e^2 is turned to open or close communication with the passage F by turning the grab or section of the handle having the coupling-plug E, with the result that the operator has control of the pressure under direct command and by means of the handle by which the hammer is held in position for use. The outer end of the passage F has entered therein a coupling G, for which purpose, as shown, the body g of the coupling has an exterior screw-thread to enter the screw-threaded end of the passage F in the main plug. The main plug is to be threaded or otherwise entered into the end of the main frame or cylinder H of the hammer, the end only of the main frame or cylinder being shown, as it is not deemed necessary to show an entire main frame or cylinder and the hammer operating therein, as the handle can be applied to and used with any well-known form of main frame or cylinder and hammer.

In use the main plug A is threaded or otherwise entered into the end of the frame and a hose is connected with the coupling G, the hose leading to a suitable source of pressure-supply—such, for instance, as compressed air. The operator by grasping the grabs or sections of the handle holds and directs the hammer in use, and for supplying pressure to operate the hammer the operator twists or revolves the grab or section of the handle having the coupling-plug E, so as to bring the passage f of the valve e^2 in line with the passage F, when pressure is free to flow through the passage F into the interior of the main frame or cylinder for operating the hammer therein, and by revolving the valve e^2 into the position shown in Fig. 3 the operator closes

communication through the passage F and shuts off the supply of pressure to the interior of the main frame or cylinder. It will thus be seen that the handle furnishes the means through its grabs or sections for holding and guiding the hammer in use, and at the same time one grab or section of the hammer furnishes through the valve e^2 the means for controlling the inflow of pressure to the interior of the main frame or cylinder, placing the holding and guiding of the hammer and the control of the pressure under and by the grabs or sections of the handle. The handle consists of two grabs or sections, one of which carries a controlling-valve, can be readily attached to the main plug, (one grab or section by means of the coupling-plug B and the other grab or section by the coupling-plug E,) and when attached a handle is furnished having two grabs or sections on opposite sides of the main plug. The removal or detachment of the grab or section of the handle having the plug B can be readily attained, it only being necessary to unscrew the coupling-plug B from the main plug, and when this grab or section of the handle is removed the hammer still retains a grab or section by which it can be held and guided and the control of the pressure maintained. The handle made in two grabs or sections, one of which has a controlling-valve for the pressure, enables the hammer to be held and guided and the pressure controlled in an efficient and reliable manner and places the control of the pressure at the same point and under the same means by which the hammer is held and guided, thus giving the operator or user a more efficient and reliable control than with a valve operated outside of the grab or handle.

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

1. In a pneumatic hammer, a plug for closing the end of the main frame or cylinder and having therein a cross-hole and a central passage for pressure, and a handle formed of two grabs secured in the plug on opposite sides thereof, one of the grabs having connected therewith a movable valve member entering into the cross-hole of the plug and having a cross-passage adapted to register with the pressure-passage for controlling said passage, substantially as described.

2. In a pneumatic hammer, a plug for closing the end of the main frame or cylinder and having therein a cross-hole, a coupling-plug entered into one end of the cross-hole, a tube into one end of which the coupling-plug enters, and a closing-cap for the outer end of the tube, substantially as described.

3. In a pneumatic hammer, a plug for closing the end of the main frame or cylinder and having therein a cross-hole and a central passage for pressure, a coupling-plug entered into one end of the cross-hole, a tube into one end

of which the coupling-plug enters, a closing-cap for the outer end of the tube, and a revoluble valve member on the coupling-plug and entered into the cross-hole of the plug and
5 having a cross-passage adapted to be revolved to coact with the pressure-passage in the plug, substantially as described.

4. In a pneumatic hammer, a closure for the end of the main frame or cylinder and having
10 therein a cross-hole and a passage for pressure leading to the cross-hole and from the cross-hole to the cylinder, a revoluble valve member entered into the cross-hole and having a cross-passage for opening and closing communication to the cylinder through the pressure-passage, said valve member terminating
15 in an outwardly-projecting handle adapted to

revolve the valve member, substantially as described.

5. In a pneumatic hammer, a plug for closing the end of the main frame or cylinder and having therein a cross-hole and a longitudinal passage for pressure, a plug screw-threaded into one end of the cross-hole, a plug revolv-
20 bly mounted in the other end of the cross-hole and provided with a cross-passage adapted to register with the longitudinal passage for pressure, and two handles secured to and outwardly projecting from the plugs, substantially as described.

MARTIN HARDSOCC.

Witnesses:

EMMET A. WORK,
BEN. M. WORK.