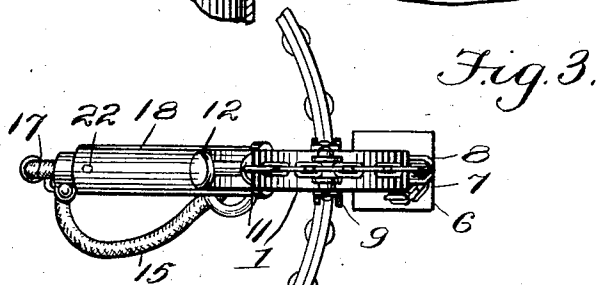
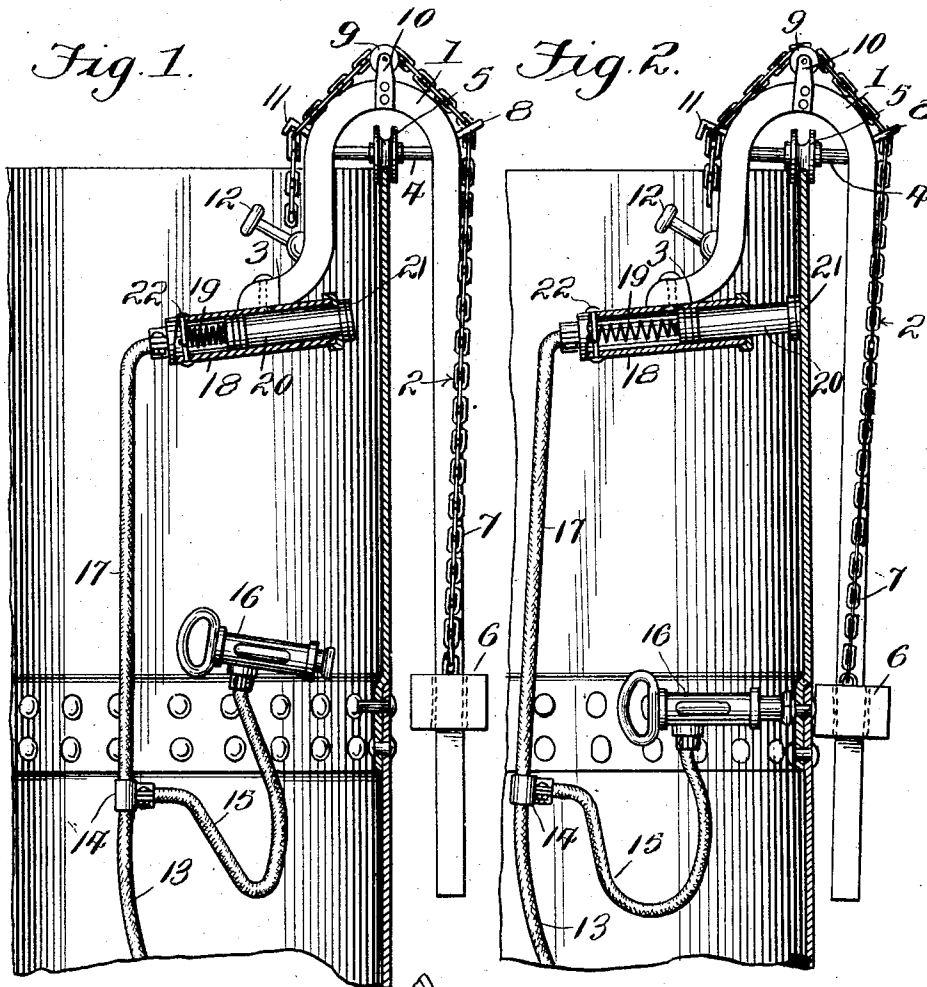


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RIVET HOLDING APPARATUS.
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RIVET-HOLDING APPARATUS.

966,257.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM T. SMITH, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented new and useful Improvements in Rivet-Holding Apparatus, of which the following is a specification.

My invention relates to certain new and useful improvements in rivet holding apparatus, and it consists in the novel combination and arrangement of parts as will be more specifically described and pointed out in the claims.

Referring to the drawing,—Figure 1 is a side elevation of my complete invention showing a part, however, in longitudinal section and as applied to an upper section of stack and in position to be brought in action by the operator. Fig. 2 is a similar view, showing however, the apparatus in an operative position, and Fig. 3 is a top elevation of my complete invention also showing it as applied to the upper edge of a section of pipe or tubing.

The object of my invention is to provide a novel and practical rivet holding apparatus, and is to be used more particularly in connection with the usual pneumatic riveting hammer, the air from the ordinary air compressor and supplied by hose or piping cooperating with said hammer also automatically operating the apparatus in such a manner as to bring the holding block or anvil rigidly against the head of the rivet to be operated upon by the hammer, whereby the hammer can be conveniently brought against the projecting end of the rivet so held in position for securing the several parts of a smoke stack or other sections of metal together.

Referring to the drawing, 1 represents a hook-shaped bar the long end 2 of which is adapted to be located on the outside of the piping or other parts to be connected, said hook-shaped bar having a short arm 3 with an inwardly projecting curved end, which short arm is adapted to be normally located within the pipe when the apparatus or device is placed in operative position.

Rigidly fixed to the hook-shaped bar 1 and between the long and short arms thereof is a shaft 4 upon which is movably mounted a grooved roller 5 which rests upon and rides over the upper edge of the upper section of the stack whereby the said device

can be moved around the stack in any desired position in order that the anvil or block 6 may be brought opposite to the rivet to be operated upon by the pneumatic hammer. The block or anvil 6 is movably carried upon the long arm 2 of the hook-shaped bar 1 and is adapted to be adjusted upon said bar in any position in respect to the length thereof by a chain 7 the lower end of which is secured to said block suspending the latter upon the said arm 2 the chain passing through a guide 8 fixed to said arm 2 and passing over a roller 9 mounted between a fork support 10 rigidly secured or forming a part of the curved upper end of the bar 1, for guiding said chain when the anvil or block 6 is desired to be elevated or lowered. Rigidly fixed to the short arm 3 of the bar 1 is a hook 11 which is adapted to cooperate with any one of the links of the chain 7 as clearly shown in the drawing thus holding the block or anvil 6 in any desired adjusted position along the arm 2 of the said bar.

Rigidly forming a part of or attached to the short arm 3 of the bar 1 and adjacent to the inwardly curved end of the latter is a handle 12 which is adapted to be grasped by the hand of the operator for moving the entire apparatus in any position along or around the stack and brought in position opposite the head of the bolt to be operated upon for securing the several sections of the stack.

Leading from any suitable air compressor such as is commonly employed in connection with pneumatic hammers is the usual hose or tubing 13 having located within its length a coupling 14 from which a branch hose 15 leads and is connected to the usual pneumatic hammer 16 for operating the latter when air is admitted through the pipe or hose 13, and also leading from said coupling 14 is a branch hose or piping 17 leading to and adapted to supply air to a contacting or holding device 18 to be hereinafter described.

The contacting or holding device 18 is composed of a suitable elongated cylinder 19 to one end of which is attached the branch hose 17 of the hose 13 and slidingly located within said cylinder is a piston 20 having an enlarged contacting end 21 which is adapted to be brought in contact with the inner surface of the stack when air is admitted into the cylinder 19 the air coming

in contact with the inner end of the piston causing the said piston to be operated outwardly. When the air is cut off or released from the cylinder 19 the coil spring 22 located within the cylinder one end of which is attached to the piston and the other to the rear inner end of the cylinder operates to withdraw the piston 20 within the cylinder and cause it to assume its normal position as clearly shown in Fig. 1, but when air is allowed to enter the cylinder the said piston is moved forwardly or outwardly in the position as clearly shown in Fig. 2 of the drawing.

From the foregoing description it will be seen that when compressed air is admitted through the hose or pipe 13 air is simultaneously admitted through both of the branch pipes or hose 15 and 17 the branch 15 causing the air passing through the same to operate the pneumatic hammer 16 and the air admitted through the pipe or hose 17 leading to the holding device 18 automatically operating the same in which action the hook-shaped bar 1 or long arm thereof is tilted or inclined toward the outside of the pipe or head of the bolt to be operated upon causing the block or anvil 6 to be rigidly brought against the head of the bolt as previously described.

By the use of my invention one man can easily operate the entire device on the inside of the stack in the usual manner while heretofore it has been necessary to employ an extra man suspended by a cage or other carrying device from the outside of the stack in order to hold the rivet in place while the latter is being operated upon from the inside of the stack. It can also be readily seen that one man is not only in position to operate the pneumatic hammer but also adjusts the apparatus along any position around the circumference of the stack in order to bring the block or anvil in a position opposite the rivet desired to be operated upon.

Having thus described the invention what I claim is:—

1. A rivet holding apparatus comprising a bar curved at a point adjacent to one end to provide a long arm and a short arm, a block or anvil adjustably secured along the length of the long arm of said apparatus, a pneumatic contacting or holding device adapted to be brought against the work to be operated upon, and a suitable hose or piping leading from any source of air tank or reservoir for supplying air to said holding device whereby the said anvil is brought in contact with the rivet to be operated upon when air is admitted to said pipe or hose, substantially as described.

2. A rivet holding apparatus comprising a bar curved at a point adjacent to one end to provide a long arm and a short arm, an

anvil carried by the same and adapted to be brought against the head of the rivet to be operated upon, and a pneumatic holding device also carried by the short arm and adapted to be operated in the reverse position to the movement of the block or anvil whereby the latter is rigidly forced against the head of the said bolt, substantially as described.

3. A rivet holding apparatus comprising a support having sides of unequal length, an anvil slidably fitted on the longer of said sides, a pneumatic holding device also carried by the shorter of said sides, a compressed air supply pipe having two branches, and a pneumatic hammer adapted to be supplied with air by one of said branches and the other leading to and in connection with the holding device whereby air is simultaneously supplied to both pneumatic hammer and holding device, the said holding device adapted to be operated in a reverse direction to the movement of the block or anvil, as, and for the purpose described.

4. A rivet holding device comprising a hook-shaped bar, a roller carried by the upper hooked end of the same and adapted to rest upon the upper section of the stack to be operated upon, a block or anvil, a chain, the lower end of which is attached to the said anvil, means carried by said hook-shaped bar for holding the opposite end of said chain whereby the anvil is adjusted to any position along the bar, and a holding device carried by and secured to the short hammer arm of the said hook-shaped bar for bringing the anvil in contact with the rivet to be operated upon when said holding device is operated, substantially as described.

5. A rivet holding apparatus comprising a hook-shaped bar adapted to be movably adjusted upon the work to be operated upon and having a long and short arm, a block or anvil adjustably held in any position along the length of the long arm of the bar, a chain, the lower end of which is attached to said anvil, a guide carried by the bar through which the said chain loosely passes, a roller or pulley mounted upon the upper end of the said hook-shaped bar over which the said chain passes, means for holding the free or opposite end of said chain, and a holding device carried by the short arm of the bar and adapted to be brought in contact with the work to be operated upon, whereby the anvil or block may be brought in contact with the rivet.

6. A rivet holding apparatus comprising a hook-shaped bar having a long and short arm, a block or anvil adjustably held in position upon and along the long arm of said bar, a chain, one end of which is attached to the said anvil, a guide carried by the ap-

paratus through which the said chain loosely passes, a roller or pulley loosely mounted upon the upper curved end of the bar over which the chain passes for guiding
5 the same, a hook also fixed to the bar adjacent to the short arm thereof for coöperating with any one of the links of the chain whereby the anvil may be suspended in any
10 position along the long arm of the bar, a handle secured to the said short arm of the bar and adapted to be grasped by the hand of the operator, a roller loosely journaled between the short and long arm of the bar

and adapted to ride upon the upper edge of the stack or work to be operated upon, and 15 a suitable holding device carried by the lower end of the short arm of the bar and adapted to be operated in a direction to force the anvil against the rivet to be operated upon, as, and for the purpose described. 20

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

WILLIAM T. SMITH.

Witnesses:

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