Dec. 4, 1923. 1,476,177

H. M. PLAISTED

ROTARY PIVOTED HAMMER

Original Filed Nov. 25, 1922

Fig. 2.

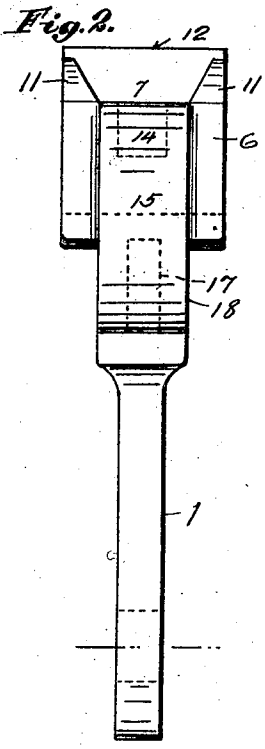


Fig. 1.

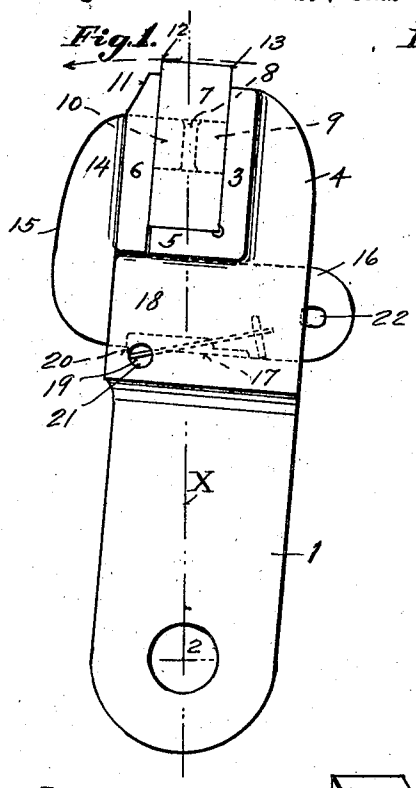


Fig. 3.

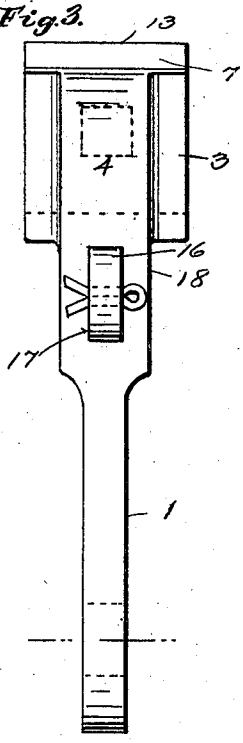


Fig. 4.

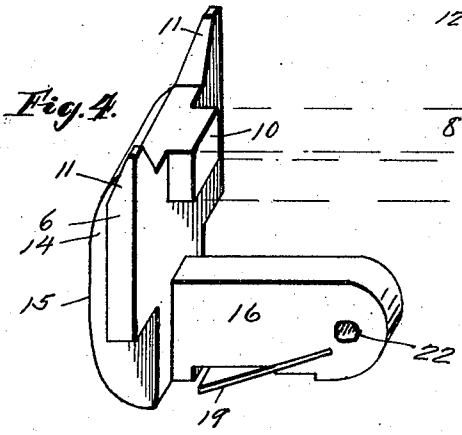
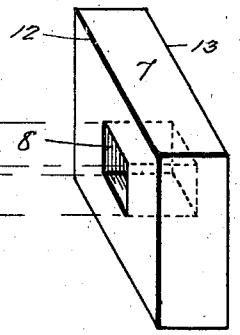


Fig. 5.



Inventor

Harold M. Plaisted

Patented Dec. 4, 1923. 1,476,177

UNITED STATES PATENT OFFICE.

HAROLD M. PLAISTED, OF ST. LOUIS, MISSOURI, ASSIGNOR TO WILLIAMS PATENT CRUSHER AND PULVERIZER COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

ROTARY PIVOTED HAMMER.

Application filed November 25, 1922, Serial No. 603,316. Renewed September 19, 1923.

To all whom it may concern:

Be it known that I, HAROLD M. PLAISTED, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Rotary Pivoted Hammers, of which the following is a specification.

This invention relates to certain new and useful improvements in rotary pivoted hammers, the peculiarities of which will be hereinafter fully described and claimed.

The main object of this invention is the provision of a suitable reversible block with multiple edges, preferably eight, so clamped adjustably and inserted in the head end of a suitable shank that only one cutting edge at a time is presented in its front operative position; secondly, to provide means for securing said block in each adjusted position; thirdly, to provide a hammer face in front of the operative edge of the block adapted to break up the larger lumps of the material being reduced, prior to its finer reduction by the operative edge of the block; and fourthly, to provide means to expose successively to the material but one operative edge of the block by each adjustment, and thereby protect the other edges from unnecessary wear.

In the accompanying drawing on which like reference numerals indicate corresponding parts, Fig. 1 represents a side view of a hammer exemplifying my invention; Fig. 2, a front view of the same; Fig. 3, a back view; Fig. 4, a detail view in cabinet perspective of one member of my jaw clamp for the block; and Fig. 5, a similar view of the preferred form of the block itself.

The numeral 1 designates the shank of a suitable rotary pivoted hammer provided at one end with an eye 2 for pivotal mounting, and provided at the head end with a two-part clamp operatively connected. One member of this clamp consists of a head plate 3, strengthened in the rear by a web 4, and having a bottom 5 forming a right angle, all forming part of the outer end of the shank. The other member consists of an opposing jaw plate 6, substantially parallel to the plate 3, forming a recess open at the outer end to receive and clamp between the jaw faces of said plates a block 7, preferably of flat rectangular form with a square face in front having four edges and a square rear face having four edges, adapted to constitute eight operative edges successively when adjustably mounted between the jaw faces 3 and 6.

In the center of the block 7 the front and rear faces are provided with a square or other angular opening 8, preferably extending through the block as shown in Fig. 5. The jaw faces 3 and 6, preferably both of them, are provided with square or angular dowels 9 and 10 respectively, that register with the central opening 8 of the block when in clamping position, and not only hold the block from leaving the recess between the jaw faces, but prevent turning the block rotatably when the clamp is closed. The bottom plate 5 likewise prevents rotation of the block until the block is so worn away under successive adjustments, that the square dowels are depended on to prevent such rotation.

The jaw plate 6 is cut away between the side edges so as to expose a portion of the front face of the block 7, but has upwardly projecting horns 11 at the sides that extend nearly to the outer operative edge 12 of the block, and thus protect the side edges of the block from unnecessary wear by the material being reduced. The plate 6 and opposing plate 3 are inclined to the radial neutral axis X through the pivot of the hammer and the center of gravity of the hammer as shown in Fig. 1, so that the operative edge 12 is a further radial distance from the pivot than the rear edge 13, giving clearance to the end of the block when the hammer is operated in the usual arcuate cage of a crusher. The plate 6 has a forward projection 14 extending downward and presenting a hammer face 15 that serves to break up the larger lumps of the material being reduced, and then the inclined surface shown deflects it outward into the path of the operative edge 12, reducing it finer. The plate 6 is provided with an arm 16 that fits in a slot 17 in the thickened portion 18 of the head end of the shank below the plate 5. The arm 16 is slidingly mounted in said slot which is at right angles to the jaws of the clamp, so that the jaw faces are brought into contact with the front and rear faces of the block 7 and are held there by any suitable fastening means—preferably by means of a spring catch consisting of a flat spring 19 hidden within the slot and engaged by one end to one member, such as the arm 16, while the

other end of the spring inclines across the meeting faces into engagement with a notch 20 in the other member, which in this case is the slotted member. A hole 21 transversely through the slotted member and opposite the end of the spring, allows of inserting a tapered pin to lift the spring out of the notch in order to withdraw the arm from the slot and open the clamp, which will allow of changing the block to bring another operative face into operative position. Another method of fastening the arm is by a taper pin, or cotter, through a hole 22 at the rear end of the arm. This method may be used alone, or in addition to the spring catch to afford extra security in fastening the jaws together.

I claim:

1. A rotary pivoted hammer comprising a shank adapted for pivotal mounting at one end, and having a head plate forming one part of a jaw clamp, a movable plate piece operatively connected to said head and forming the opposing part of the jaw clamp, a block having a plurality of operative edges at front and back face and adjustably mounted in said jaw clamp, and means to fasten the jaws together.

2. A rotary pivoted hammer comprising a shank adapted for pivotal mounting at one end, and having a plate at the head end forming one part of the jaw clamp,—said head having a slot below said plate,—an opposing jaw forming the other part of the jaw clamp and having an arm slidably mounted in said slot, a block having a plurality of operative edges at front and back and adjustably mounted in the jaw clamp, and means to fasten the clamp together in any adjusted position of said block.

3. A rotary pivoted hammer comprising a head having a jaw face-plate and a transverse slot below said face plate, an opposing jaw face-plate having an arm slidably mounted in said slot, a block adjustably mounted between said jaw plates, and a spring catch detachably holding said arm in said slot.

4. A rotary pivoted hammer comprising a head provided with a jaw clamp having parallel jaw faces, an adjustable block mounted between said jaw faces, and means to secure said clamp,—said block being retained in said clamp by dowel and recess engagement between the adjacent faces of block and clamp.

5. A rotary pivoted hammer comprising a clamping head and a flat adjustable block with multiple operative edges,—the front member of said head being cut away to expose the outer edge of said block and a portion of the front face and having horns at the side protecting the side edges of the block beyond the intermediate cut away portion, substantially as described.

6. A rotary pivoted hammer comprising a clamping head of two members,—one member being slidably mounted in a slot in the other member,—a flat spring mounted on one member and hidden in said slot and adapted to engage a notch in the other member,—the slotted member having a hole opposite the said spring whereby the spring can be disengaged.

7. A rotary pivoted hammer comprising a two-part jaw clamp head consisting of two jaw face-plates slidably adjustable to and from each other and provided with square dowels in opposing faces, and a flat adjustable block having a square central hole registering with said dowels in each adjusted position of the block.

8. A rotary pivoted hammer comprising a shank adapted for pivotal mounting at one end and having a two-part jaw clamp head with opposing jaw faces, and a block adjustably mounted between said faces,—the said jaw faces being located in planes inclined to the radial neutral axis of said hammer to bring the operative edge of the block a further radial distance from the pivot than the adjacent rear edge of said block.

9. A rotary pivoted hammer comprising a shank adapted for pivotal mounting at one end and having a two-part jaw clamp head, and a block adjustably mounted in said head,—one jaw member having a forward projection forming a hammer face in front of and at a lesser radial distance from the pivot than the operative edge of said block, substantially as and for the purpose described.

In testimony whereof I have affixed my signature.

HAROLD M. PLAISTED.