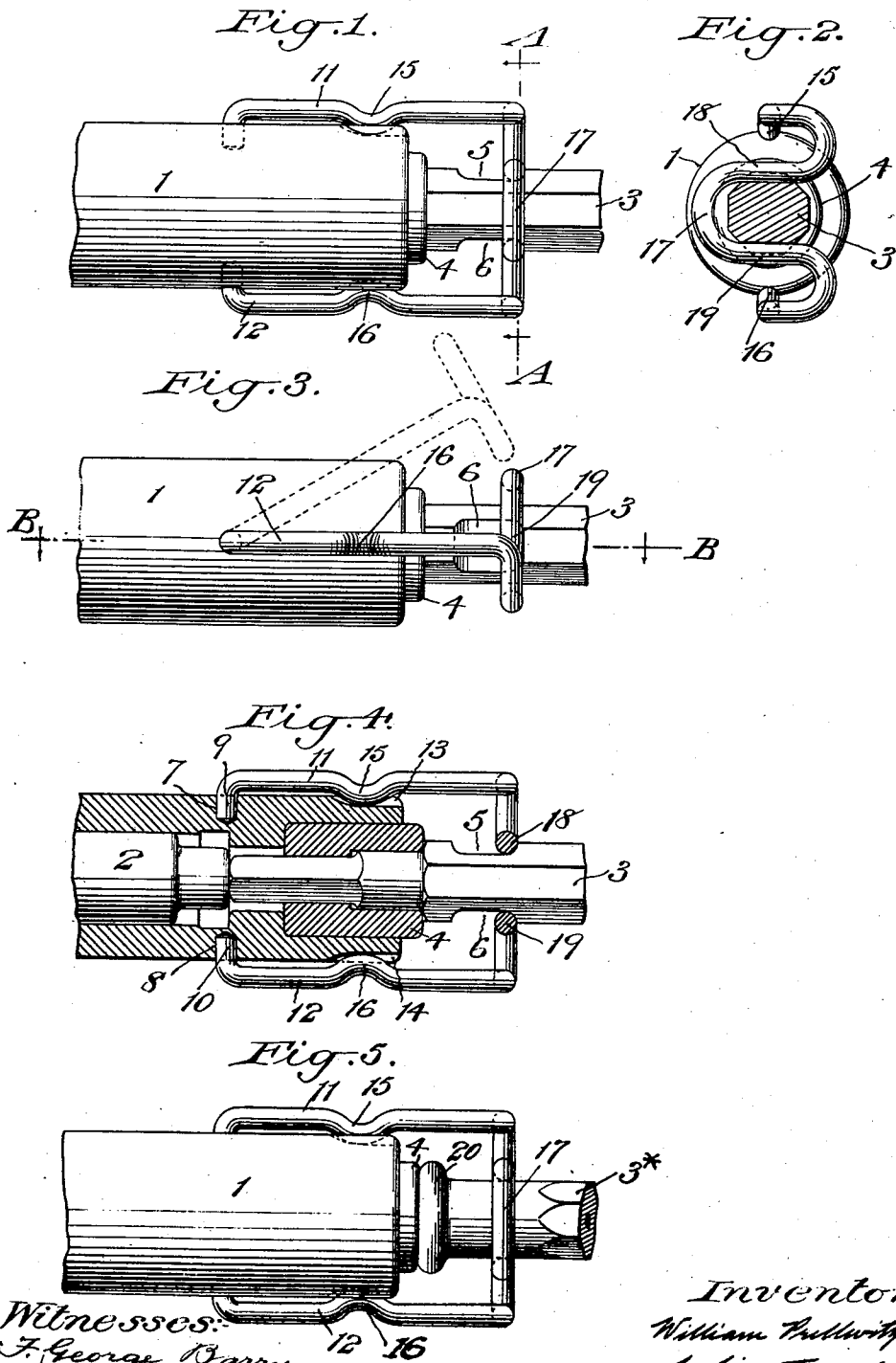


W. PRELLWITZ.  
HAMMER DRILL.  
APPLICATION FILED AUG. 19, 1909.

988,029.

Patented Mar. 28, 1911.



Witnesses:  
J. George Barry.  
Henry T. Rime.

Inventor:  
William Prellwitz  
by his attorney  
Munn & Ward

# UNITED STATES PATENT OFFICE.

WILLIAM PRELLWITZ, OF EASTON, PENNSYLVANIA, ASSIGNOR TO INGERSOLL-RAND COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

## HAMMER-DRILL.

988,029.

Specification of Letters Patent. Patented Mar. 28, 1911.

Application filed August 19, 1909. Serial No. 513,684.

*To all whom it may concern:*

Be it known that I, WILLIAM PRELLWITZ, a citizen of the United States, and resident of Easton, in the county of Northampton and State of Pennsylvania, have invented a new and useful Improvement in Hammer-Drills, of which the following is a specification.

This invention relates to hammer drills and has for its principal object to provide a very simple and inexpensive attachment for the drill, which may be readily brought into and out of position for use as a retainer for limiting the outward movement of the drill steel when it is not striking its work.

In the accompanying drawings, Figure 1 represents the front portion of a hammer drill in top plan with my tool retainer applied thereto in its operative position, the type of drill shown being that in which the steel does not rotate with respect to the drill, Fig. 2 is a cross section taken in the plane of the line A—A of Fig. 1, looking in the direction of the arrows, Fig. 3 represents the front portion of the hammer drill shown in Fig. 1, in side elevation with my tool retainer applied thereto in its operative position, the inoperative position of the retainer being shown in dotted lines, Fig. 4 is a longitudinal central section taken in the plane of the line B—B of Fig. 3, looking in the direction of the arrows, and Fig. 5 represents the front portion of a hammer drill in top plan with my tool retainer applied thereto in its operative position, the drill shown in this figure being of the type in which the drill steel rotates.

In the form shown in Figs. 1 to 4 inclusive, the drill cylinder is denoted by 1, its hammer piston by 2, its drill steel by 3 and the drill steel chuck by 4. The drill steel is provided with two oppositely arranged elongated transverse recesses 5, 6, located adjacent to the chuck 4. The cylinder 1 is provided with two diametrically opposed holes 7, 8, for receiving the inwardly turned ends 9, 10, of the side arms 11, 12, of the retainer, for pivoting the retainer to the cylinder. The cylinder 1 is further provided with diametrically opposed recesses 13, 14, in front of and in alinement with the holes 7, 8, for receiving offset portions 15, 16, in the side arms 11, 12, of the retainer. The laterally arranged connecting portion at the outer

ends of the side arms 11, 12, is bent to form a yoke 17, the sides 18, 19, of which, when the device is in its operative position, are fitted to embrace the drill steel 3 within the elongated transverse recesses 5, 6, at the outer ends of said recesses so as not to interfere with the operation of the steel under the impact of the hammer piston 2.

In the form shown in Fig. 5, where the drill steel 3\* is rotatable with respect to the drill cylinder 1, the steel is provided with a circumferential shoulder 20 adjacent to the chuck 4 and the yoke 17 is brought into engagement with the steel at a point spaced from the shoulder 20 when the retainer is in its operative position. This retainer is formed from a single strip of spring wire, the tension on the side arms 11 and 12 being such as to tend to force them together so that when the retainer is swung into its operative position, the offset portions 15, 16, of the side arms 11 and 12 will snap into the recesses 13, 14, for yieldingly holding the retainer in its operative position. This spring tension also serves to hold the inwardly turned ends 9 and 10 within their holes 7 and 8.

In operation, when the drill is in use, the retainer may be swung out of its operative position. When the operator wishes to withdraw the drill steel partially or wholly from the hole, as, for instance, for the purpose of permitting the material to be blown out of the steel, where a hollow steel is used, the retainer is swung into its inoperative position. The drill may then be withdrawn without danger of the drill steel dropping out of its chuck. Furthermore, by providing a retainer which may be swung readily into and out of operative position, the ready insertion and removal of the drill steel is provided for.

While I have shown and described this retainer in connection with a hammer drill, it is to be understood that it could be used equally well in connection with tools of various other types without departing from the spirit and scope of my invention, the gist of which is to provide a novel, simple and inexpensive retainer for retaining a tool in position with respect to its holder when the tool is not in use.

What I claim is:—

1. A tool steel, its holder and a tool steel

retainer comprising a wire bent to form a yoke for embracing the steel and side arms pivoted to the holder.

2. A tool cylinder, a tool steel and a tool  
5 steel retainer comprising a wire bent to form  
a yoke for embracing the steel and spring  
side arms pivoted to the cylinder, the cylinder and retainer being constructed to yielding-  
ingly hold the retainer in its operative position.  
10 tion.

3. A tool cylinder having diametrically  
opposed holes and recesses, a tool steel and a  
tool steel retainer comprising a wire bent to  
form a yoke for embracing the steel and side  
15 arms having inwardly turned ends located  
in said holes and offset portions for entering  
said recesses to yieldingly hold the retainer in its operative position.

4. As an article of manufacture, a tool  
20 steel retainer comprising a wire bent to form  
side arms and a laterally arranged tool steel  
embracing yoke connecting the outer ends of  
the side arms.

5. As an article of manufacture, a tool  
25 steel retainer comprising a wire bent to form

side arms and a laterally arranged tool steel  
embracing yoke connecting the outer ends  
of the side arms, the inner ends of the side  
arms being turned inwardly to form pivots.

6. As an article of manufacture, a tool  
30 steel retainer comprising a wire bent to form  
side arms and a laterally arranged tool steel  
embracing yoke connecting the outer ends of  
the side arms, the inner ends of the side  
arms being turned inwardly to form pivots,  
35 the said side arms having offset portions  
thereon to form yielding stops.

7. A tool cylinder, a tool steel having a  
recessed portion, and a tool steel retainer  
comprising a yoke for embracing the steel at  
40 the recessed portion, and side arms pivoted  
to the cylinder.

In testimony, that I claim the foregoing  
as my invention, I have signed my name in  
presence of two witnesses, this sixteenth day  
45 of August 1909.

WILLIAM PRELLWITZ.

Witnesses:

F. GEORGE BARRY,  
HENRY THIEME.