

No. 836,845.

PATENTED NOV. 27, 1906.

W. C. WHITCOMB.
DRILLING TOOL.
APPLICATION FILED NOV. 2, 1905.

Fig. 1.

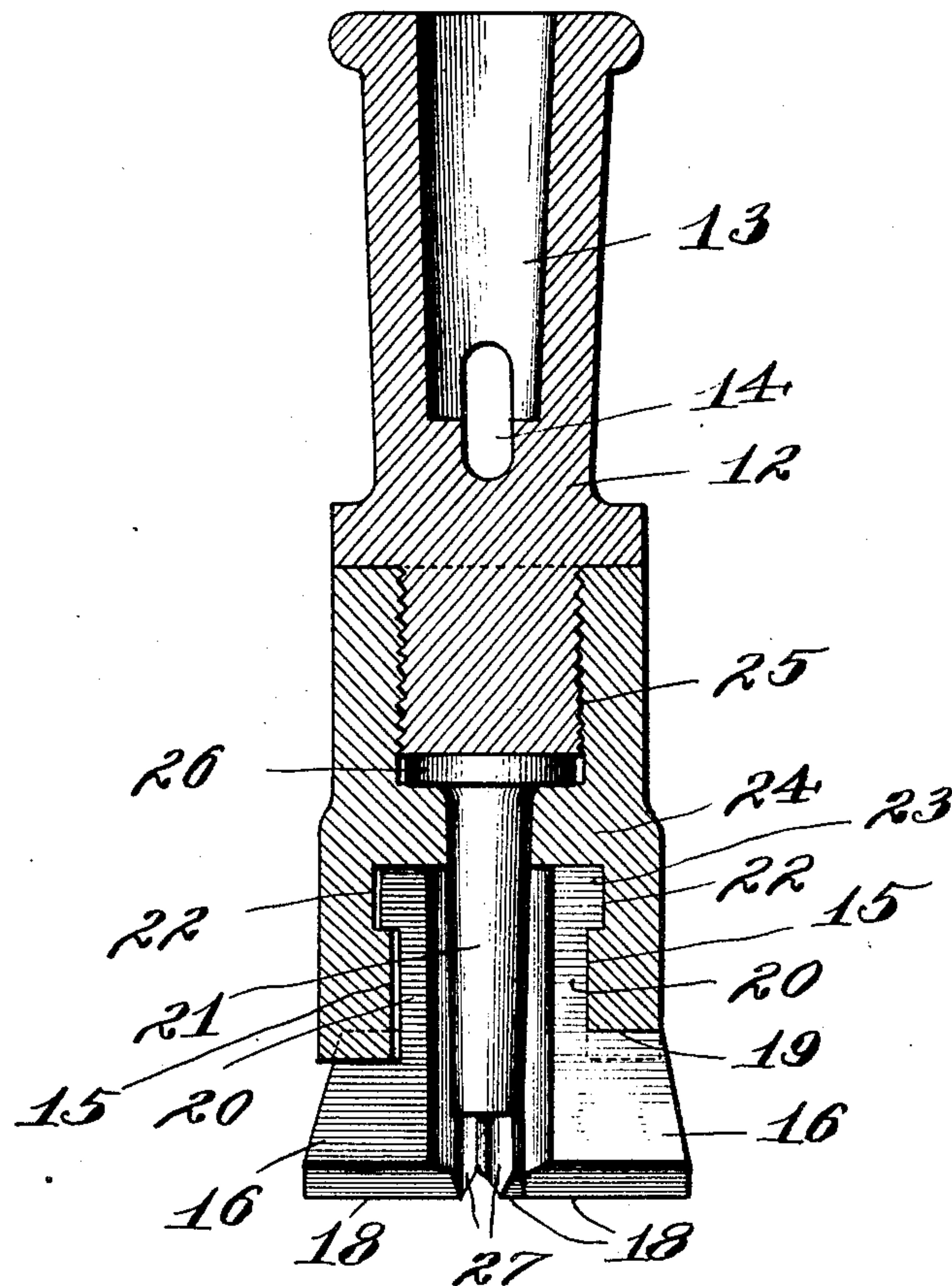


Fig. 2.

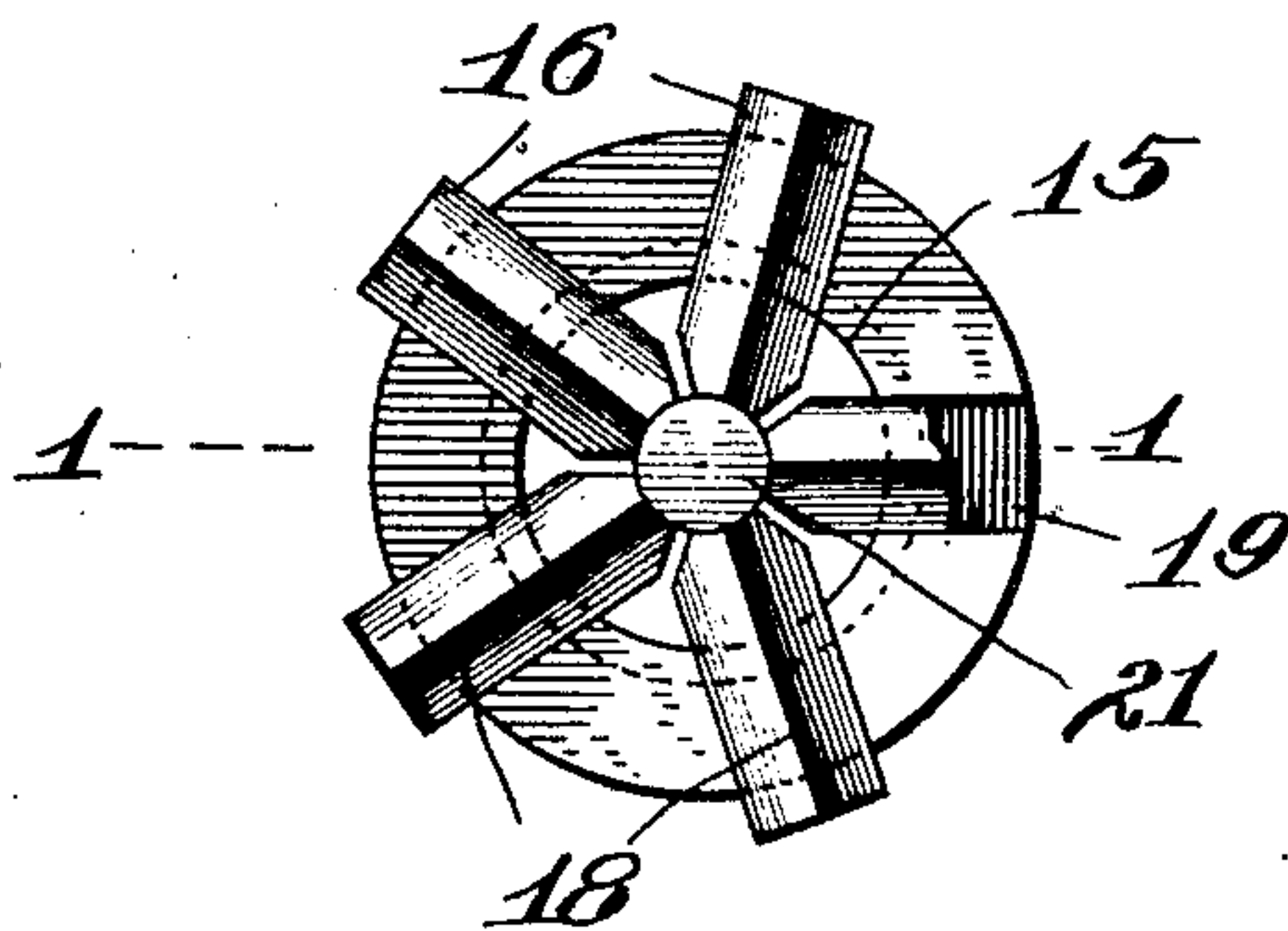
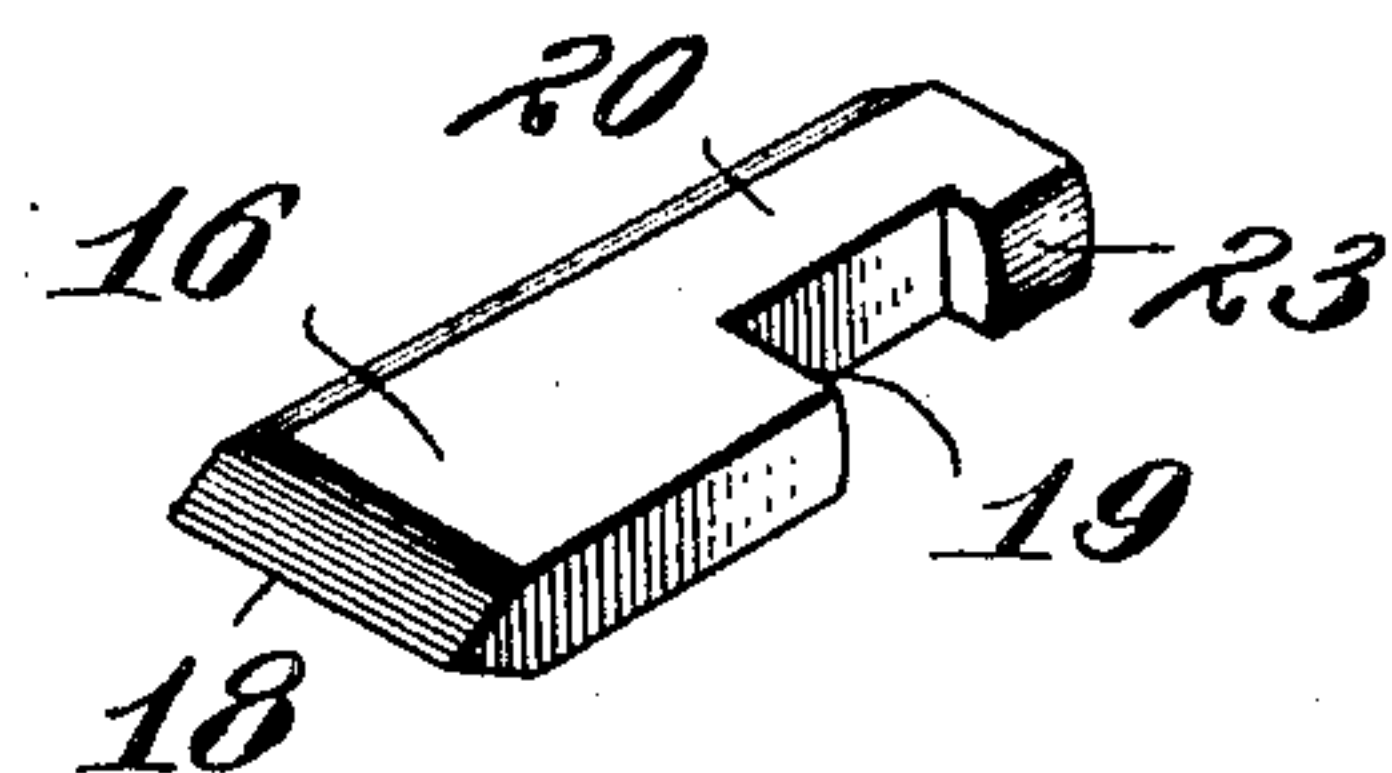


Fig. 3.



Witnesses:

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DRILLING-TOOL.

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Application filed November 2, 1905. Serial No. 285,616.

To all whom it may concern:

Be it known that I, WILLIAM C. WHITCOMB, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Drilling-Tools, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to a drilling-tool intended to be applied to the working end of a reciprocatory plunger—as, for example, the drill-shaft of a rock-drilling machine.

The object of the invention is to provide a drilling-tool in which the parts or cutters having the cutting edges are of such a size and shape that they may be uniformly and evenly hardened and in which any one of such parts may be easily removed and replaced when it becomes dulled or broken by use.

The invention consists in a tool comprising a plurality of cutters removably attached to a head and in certain details of construction, all as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a central longitudinal section of a drilling-tool involving the invention. Fig. 2 is an end view of the same, partly broken away; and Fig. 3 is a perspective view showing a detail of the construction separated from other parts.

As is customary in devices of this kind, the drilling-tool is shown as comprising a head 12, having a socket 13, adapted to fit snugly upon the tapered end of a drill-plunger. The head of the drilling-tool is also provided with the usual transverse opening 14 for the insertion of a wedge to be used in removing the tool from the plunger of the machine.

At the forward end of the tool-head 12 there is a chamber or socket 15 and there are employed in connection with the tool-head a plurality of independent cutters or blades 16, (shown as five in number,) each having a cutting edge 18 and so disposed upon the end of the tool-head that its cutting edge is radial to the axis thereof and to that of the plunger 10. Preferably each cutter or blade 16 is formed with a shoulder 19 for bearing upon the rim of the socket 15, and an arm 20, which reaches into the socket, and a bolt is employed for securing all of the cutters to the tool-head.

In the particular form of device illustrated in the drawings this bolt is of tapered form

21 and is adapted to bear upon the inner edge of each of the cutters by a wedging action, so that each of the arms 20 is firmly gripped between the wall of the socket 15 and the bolt, and to more securely hold the cutter to its seat a circumferential groove or pocket 22 is formed in the wall of the socket, and upon each of the cutters there is provided a foot-piece or lug 23, extending into this groove. Preferably, also, in this form of the device the outer end of the tool-head 12, including the wall of the socket 15, takes the form of a nut or collar 24, having a threaded engagement with the body of the tool-head, as indicated at 25, and the bolt 21 is inserted from the inner end of this collar when the latter is removed and is provided with a flattened head 26, which bears upon the end of the tool-head as the collar is turned to its seat to advance the bolt and secure the cutters in place.

As shown, the inner edge of each of the cutters 16 is slightly inclined, Fig. 3, to correspond with the pitch of the bolt 21 and is also formed concave, as indicated at 27, to fit over the bolt. In using this form of the device the tool-head 12 will be applied to the outer end of a reciprocatory drill-plunger 10 and employed for boring or cutting in the ordinary way. When it is desired to replace any of the cutters 16 by new ones or to sharpen them, the collar 24 will be unscrewed from its seat, after which the bolt 21 may be driven out and the cutters easily removed from the socket 15.

I claim as my invention—

1. In a drilling-tool, in combination, a two-part head, the parts of the head having an end-to-end threaded connection and the forward end of the head having a socket coaxial with its body, a plurality of cutters radially disposed upon the end of the head and each having an arm extending into its socket, and a wedging-bolt entering the socket from the inner end of the forward part of the head and bearing outwardly upon the arms of the cutters.

2. In a drilling-tool, in combination, a head having a socketed end and a groove in the wall of the socket, a cutter at the end of the head extending into the socket adjacent a wall thereof and having a foot-piece entering the groove, and a wedging-bolt entering the socket of the head between the cutter and the opposite wall of the socket.

3. In a drilling-tool, in combination, a

head having a socketed end and a circumferential groove in the wall of the socket, a plurality of cutters radially disposed upon the end of the head, each having an arm extending into the socket and a foot-piece entering the groove, and a wedging-bolt bearing on the arms and secured to the head.

4. In a drilling-tool, in combination, a two-part head, the parts of the head having an end-to-end threaded connection, the forward end of the head having a socket coaxial with its body and a circumferential groove in the wall of the socket, a plurality of cutters radially disposed upon the end of the head, each having an arm extending into its socket and a foot-piece entering the groove, and a wedging-bolt entering the socket from the inner end of the forward part of the head and bearing outwardly upon the arms of the cutters.

5. In a drilling-tool, in combination, a two-part head, the parts of the head having an end-to-end threaded connection and the forward end of the head having a socket co-

axial with its body and a plurality of radially-disposed slots in the wall of the socket, a plurality of cutters each fitting into the socket and entering one of the slots, and a wedging-bolt entering the socket from the inner end of the forward part of the head and bearing outwardly on the cutters.

6. In a drilling-tool, in combination, a two-part head, the parts of the head having an end-to-end threaded connection and the forward end of the head having a socket coaxial with its body, a plurality of radially-disposed slots and a circumferential groove in the wall of the socket, a plurality of cutters each fitting into the socket and entering one of the slots and having a foot-piece entering the groove, and a wedging-bolt entering the socket from the inner end of the forward part of the head and bearing outwardly on the cutters.

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