Aug. 8, 1933. A. E. BUNDSEN 1,921,341

ATTACHMENT FOR ROCK DRILL TOOLS

Filed Dec. 22, 1930

Fig. 1.

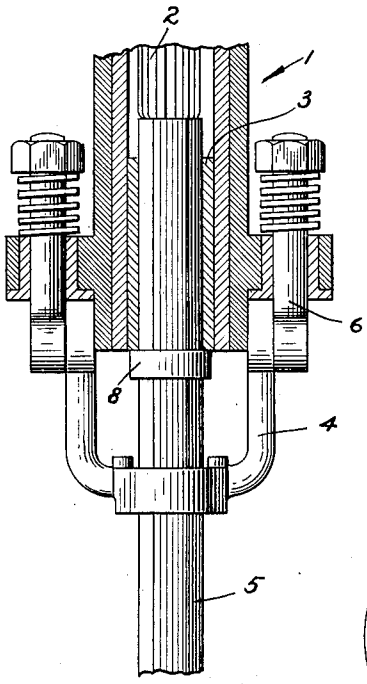


Fig. 3.

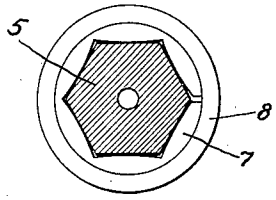
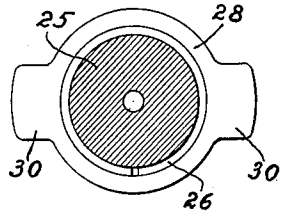


Fig. 6.



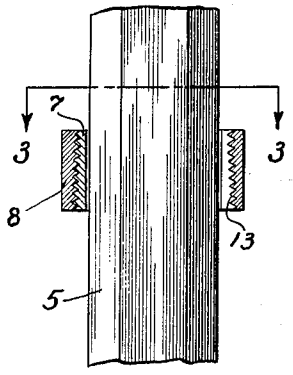
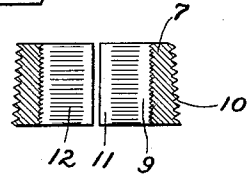


Fig. 2.

Fig. 4.



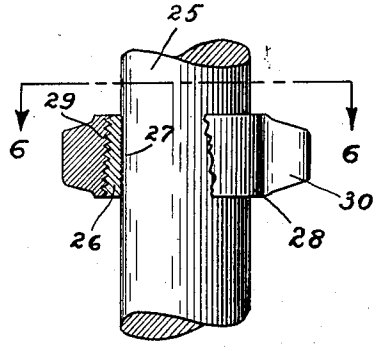


Fig. 5.

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ATTACHMENT FOR ROCK DRILL TOOLS

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Application December 22, 1930. Serial No. 504,151

1 Claim. (Cl. 121—32)

My invention relates to improvements in attachments for rock drill tools, and it consists in the combinations, constructions and arrangements hereinafter described and claimed.

In rock drill tools an enlarged portion is formed by heating the tool at the desired place and then compressing the heated portion for causing it to bulge into an annular rib. The tool is hollow, and this causes the bore at the portion enlarged to expand radially. After the portion has cooled, it is forged down to the proper size, and this often weakens the tool at the enlarged portion because the forging will come close to the enlarged bore. The tool will also be weakened at this point due to the extreme heating which the enlarged portion has been subjected to.

The principal object of my present invention is to provide a tool attachment which may be applied to any place on the tool and which may be clamped in position and function in the same manner as if the tool were enlarged by the method above described. The tool is not weakened by this arrangement, and the life of it is therefore materially increased.

A further object of my invention is to provide a device of the type described which is extremely simple in construction and which is durable and efficient for the purpose intended.

My invention is illustrated in the accompanying drawing in which:

Figure 1 shows the lower portion of a rock drill and the upper part of a tool showing my invention operatively applied thereto,

Figure 2 is a side elevation of a part of the tool showing the invention in section,

Figure 3 is a section along the line 3—3 of Figure 2,

Figure 4 is a section through a part of the device,

Figure 5 is a side elevation partly broken away of a modified form of the invention, and

Figure 6 is a section along the line 6—6 of Figure 5.

In carrying out my invention I make use of a rock drill indicated generally at 1, this drill having a piston 2, a tool-turning sleeve 3, and a yoke 4 adapted to retain the upper end of the tool within the barrel of the drill. The yoke 4 is pivotally carried by spring-supported rods 6.

It is necessary to provide an enlarged portion on the tool 5 so that this portion can be engaged by the yoke 4 and thus prevent the disengaging of the tool from the drill barrel. The invention consists of two parts 7 and 8 which may be adjustably secured to the tool 5 at any desired position, and will take the place of the enlarging of the tool in the manner set forth in the first part of the specification. The part 7 is clearly shown in Figures 2 and 4, and is in reality a split sleeve having a non-circular inner surface 9 and a conical-shaped threaded outer surface 10. The inner faces 11 of the non-circular inner surface 9 are formed slightly arcuate in shape so that when the split sleeve is constricted about the tool 5 the faces 11 will firmly press against the non-circular outer surface of the tool and will securely grip the tool. In order to aid in the gripping, the faces 11 are serrated as at 12 (see Fig. 4).

The other part 8 of the invention is a collar which is threaded internally as at 13. In assembling the device to the tool, the split sleeve 7 is first moved into the desired position and then the threaded collar 8 is screwed upon the threaded portion 10. Due to the fact that the threaded portion 10 is conical in shape, the collar will cause the split sleeve to securely grip the tool. The serrations 12 aid in this gripping. The result is a projection which takes the place of the one made under the old method and which does not weaken the structure of the tool.

In Figures 5 and 6 I show a modified form of the invention in which a tool 25 has a cylindrical outer surface. A split sleeve 26 therefore has a cylindrical inner surface 27 conforming to the outer surface of the tool, and the surface 27 is serrated for gripping the tool. A collar 28 is threaded on the outer conical threaded portion 29 of the sleeve 26 and secures the sleeve 26 to the tool. The collar 28 has lugs 30 which are adapted to rock drills making use of tools having integral lugs formed thereon similar to the lugs 30. This form of the device is secured to the tool in the same manner as the form shown in Figures 1 to 4 inclusive.

The attachment may also be used as a coupling for holding two parts of a broken drill together, in which instance the split sleeve and collar would be made of a sufficient length as to firmly grasp the abutting ends of the broken drill.

Although I have shown and described only two embodiments of my invention, it is to be understood that the same is susceptible to various changes as may come within the scope of the claims hereto annexed without departing from the spirit of the invention.

I claim:

An attachment for a drill tool comprising an annular unit sleeve split lengthwise on one side thereof and having serrations on its inner surface and a conical-shaped outer surface, and a threaded collar mounted on the sleeve adapted for constricting the latter, the inner surface of the sleeve being non-circular and defined by a plurality of surfaces arcuate in plan and flaring outwardly toward the junction of the surfaces, the serrations being formed in the several surfaces.

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