Dec. 8, 1931. D. J. HAFFORD 1,834,945

STEEL RETAINER FOR PERCUSSIVE DRILLS

Filed March 5, 1928

Fig. 1.

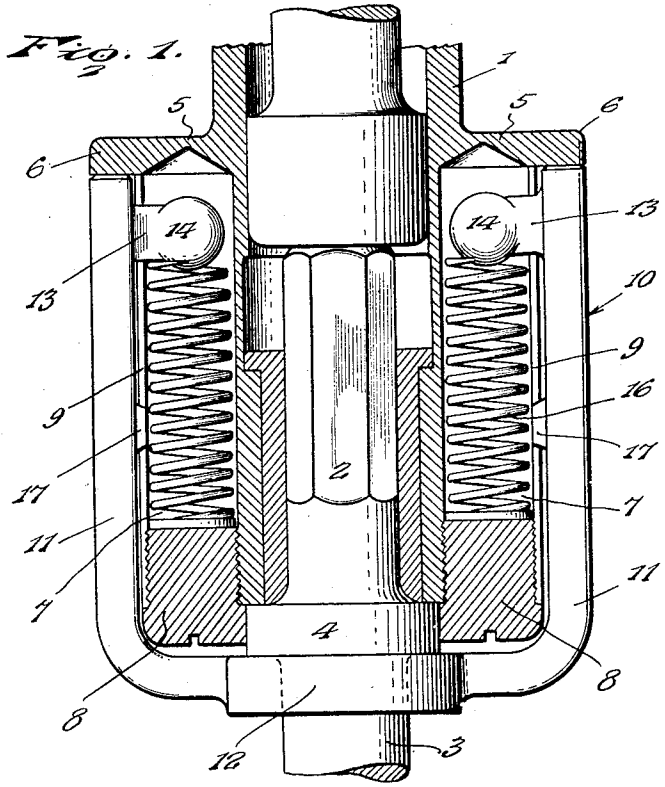


Fig. 2.

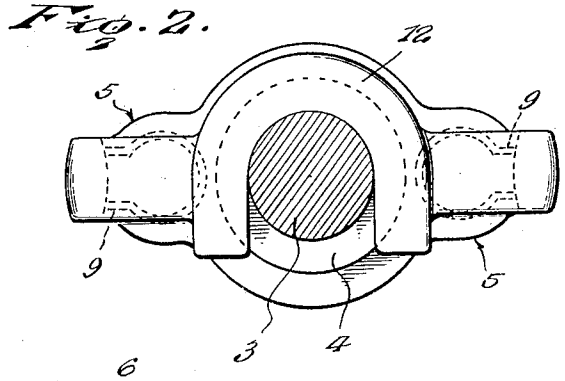
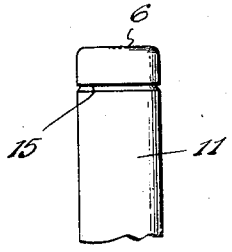


Fig. 3.



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UNITED STATES PATENT OFFICE

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STEEL RETAINER FOR PERCUSSIVE DRILLS

Application filed March 5, 1928. Serial No. 259,319.

The present invention is directed to improvements in steel retainers for percussive drills.

The primary object of the invention is to provide a device of this character constructed in such manner that the shock incident to the drill steel collar striking the retainer will be effectively absorbed, thus prolonging the life of the retainer.

Another object of the invention is to provide a device of this character so constructed that it is not necessary to employ bolts for securing the retainer to the front head of the drill, and further to provide means whereby the shock absorbing springs will be enclosed and protected against injury.

While the drawings illustrate a preferred embodiment of the invention, it is to be understood that in adapting the means to meet specific needs and requirements, the design may be varied and such other changes in the minor details of construction may be resorted to within the scope of the invention as claimed, without departing from the spirit thereof.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and the drawings hereto attached, in which,—

Figure 1 is a side view partly in section.

Figure 2 is an end view.

Figure 3 is a fragmentary side view.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawings by like reference characters.

Referring to the drawings, 1 designates the front head of a percussive drill in which is operatively engaged in the customary manner, the shank 2 of the drill steel 3, said steel being provided with the usual collar 4.

Formed integral with the front head and diametrically opposite each other are longitudinally extending enlargements 5 which have overhanging shoulders 6 projecting outwardly from their upper ends. These enlargements are cored from their lower ends to provide longitudinal pockets 7, the lower ends of which are threaded for the reception of the screw closure plugs 8.

The outer sides of the pockets are provided with longitudinal slots 9 which extend from points near the shoulders 6 through the lower ends of said enlargements, said slots opening into the pockets.

The steel retainer 10 consists of side arms 11 and an intermediate drill steel collar engaging yoke 12, said side arms having their upper ends formed with inwardly directed shanks 13 which terminate in rounded heads 14. The extreme upper ends of the side arms are flattened, as at 15, for intimate engagement with the shoulders 6.

The heads 14 are received in the pockets 7, at which time the shanks 13 are engaged in the slots 9, and in order to resiliently hold the retainer connected with the front head, coil springs 16 are placed in the pockets and have their upper ends engaged by the heads 14, the lower ends of which rest upon the plugs 8 which obviously maintain the parts in assembled relation. Intermediate the ends of the side arms 11 of the retainer are formed lugs 17, which, owing to the inherent resiliency of the retainer, are yieldably held in the slots 9 in order to hold the retainer in its operative position and with the yoke 12 in advance of the collar 4 of the drill steel.

Since the heads 14 rest upon the upper ends of the spring 16, it will be apparent that when the collar 4 of the drill strikes the yoke 12 the shock will be absorbed, thus preventing breakage of the parts. When it is desired to remove the drill steel the retainer is grasped and pulled laterally in order that the lugs 17 will disengage the slots 9, thus permitting the yoke to be moved a sufficient distance to permit the collar 4 to pass thereby without interference.

The springs 16 not only serve to yieldably resist the vertical downward movement of the retainer, but also maintains the upper flattened ends of the side arms 11 yieldably engaged with the shoulders 6, thus aiding the lugs to positively hold the retainer in enclosed position.

It will be further noted that the slots 9 not only serve as guides for the shanks 13, but also as securing means for the lugs 17.

Having thus described the invention, I claim:

The combination with the front head of a drill, of enlargements upon the opposite sides thereof, said enlargements having pockets therein, the walls of the enlargements having slots therein which open into the pockets, a drill steel retainer including side arms having shanks upon their upper ends, heads carried by the shanks for engagement in the pockets when the shanks engage said slots, plugs closing the lower ends of the pockets, coil springs mounted in the pockets and maintained therein by the plugs, said springs having their upper ends engaged with said heads, and lugs carried by the side arms of the retainer and maintained normally engaged in the slots by the inherent resiliency of the retainer, said lugs being adapted to slide longitudinally in the slots when the retainer is moved longitudinally.

In testimony whereof I affix my signature.

DANIEL J. HAFFORD.