

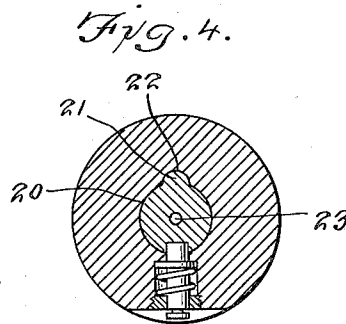
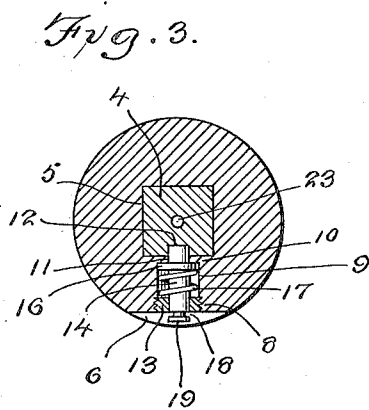
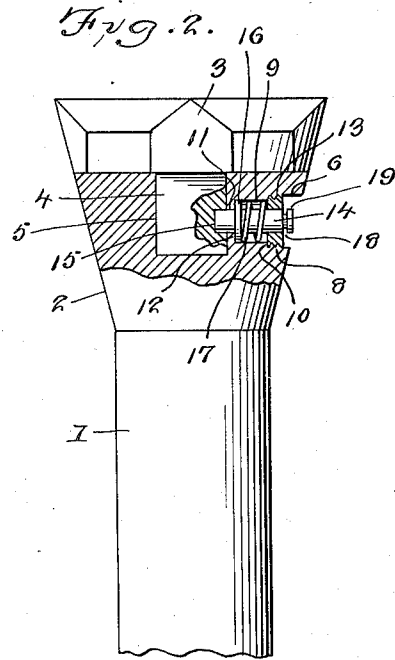
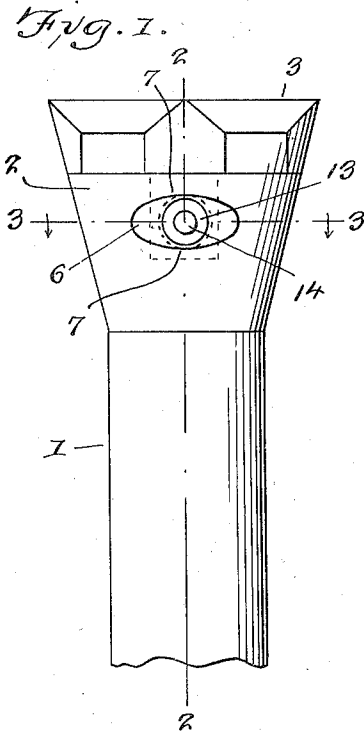
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J. BOOTH

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DRILL

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James Booth

INVENTOR

BY *Victor G. Evans & Co.*

ATTORNEY

UNITED STATES PATENT OFFICE

2,095,852

DRILL

James Booth, Virginia City, Mont.

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1 Claim. (Cl. 255—64)

My invention relates to drills and more particularly to improvements in bit locks for the same.

The primary object of my invention is to equip a drill with a simply constructed locking device for removably securing a bit in the end of the drill stock and which is set into the stock so that no part thereof projects beyond the stock while at the same time it is readily accessible for unlocking the bit.

Other and subordinate objects are also comprehended by my invention all of which together with the nature of my improvements will be readily understood when the following description and claim are read with reference to the accompanying drawing.

In said drawing:

Figure 1 is a view in side elevation of a drill equipped with my invention.

Figure 2 is a view partly in side elevation and partly in vertical section taken on the line 2—2 of Figure 1.

Figure 3 is a view in horizontal section taken on the line 3—3 of Figure 1, and

Figure 4 is a view similar to Figure 3 of a modification of the invention.

Referring by numeral to the illustrated embodiment of my invention, 1 designates the stock of a drill of usual construction including an outwardly flaring transversely round cutter head 2. The head 2 is equipped on its face with a bit 3 which is removably mounted in said head 2 by means of a preferably square shank 4 fitting into a similar socket 5 formed in said head 2 axially thereof. The head 2 has formed in its side wall midway of the shank socket 5 a radially disposed flat bottom recess 6 substantially elliptical transversely of said head 2 but having straight sides 7. Centrally of the recess 6 the head is provided with an internally threaded radial bore 8, a counter-bore 9 forming a shoulder 10 between the same and the bore 8, and a second counter-bore 11 forming a shoulder 12 between the same and the counter-bore 9 and opening into the socket 5. An annular bearing disk 13 is threaded into the bore 8. A locking bolt 14 is slidably mounted in said disk and in the counter-bore 11 to project into a socket 15 formed in one side of the shank 4. A collar 16 on the bolt 14 limits projection of the latter. A helical compression spring 17 on the bolt 14 interposed between the bearing disk 13 and collar 16 urges the bolt into projecting position so that when the shank 4 is

inserted in the socket 5 the bolt 14 will enter the socket 15 with a snap action. The outer end of the locking bolt 14 in its locking position is offset inwardly of the mouth of the recess 6 to prevent injury to the bolt during operation of the drill. Preferably said end of the locking bolt is formed with a reduced portion 18 and a collar 19 facilitating grasping the bolt with the fingers to withdraw the same from locking position. In this connection it is to be noted that because of the described shape of the recess 6 the collar 19 may be easily and securely grasped for the purpose specified.

In Figure 4 the bit shank 20 is shown as round. This form of shank is provided with a key part 21 cooperating with a key way 22 in the head 2 to prevent turning of the shank in the socket and to take the strain off the locking bolt. Both forms of shank may be provided with an axial duct 23 for the passage of water therethrough for a purpose which will be understood.

The foregoing is a detailed description of a preferred form and one modification of my invention and it is believed that its operation and advantages will be apparent therefrom. It is to be understood, however, that right is herein reserved to other modifications of details described falling within the scope of the claim appended hereto.

What I claim is:

In a drill including a stock having a transversely round cutter head provided with an axial socket, a bit having a shank part removably fitted into said socket and a countersink in one side thereof, said head having a flat bottomed open ended recess in its side extending transversely thereof and a series of radially disposed counter-bores intermediate said recess and socket, and including outer and inner counter-bores and an intermediate counter-bore, an annular bearing disk threaded into the outer counter-bore flush with the bottom of said recess, a locking bolt slidably mounted in said bearing disk to extend through said counter-bores and seat in said countersink and being provided with a collar in the intermediate counter-bore, and a compression spring in said locking bolt intermediate said collar and bearing disk, said bolt having an outer end finger grip portion disposed in the seated position of said bolt within said recess.

JAMES BOOTH.