

H. C. LAWSON.
 DRILL HOLDER.
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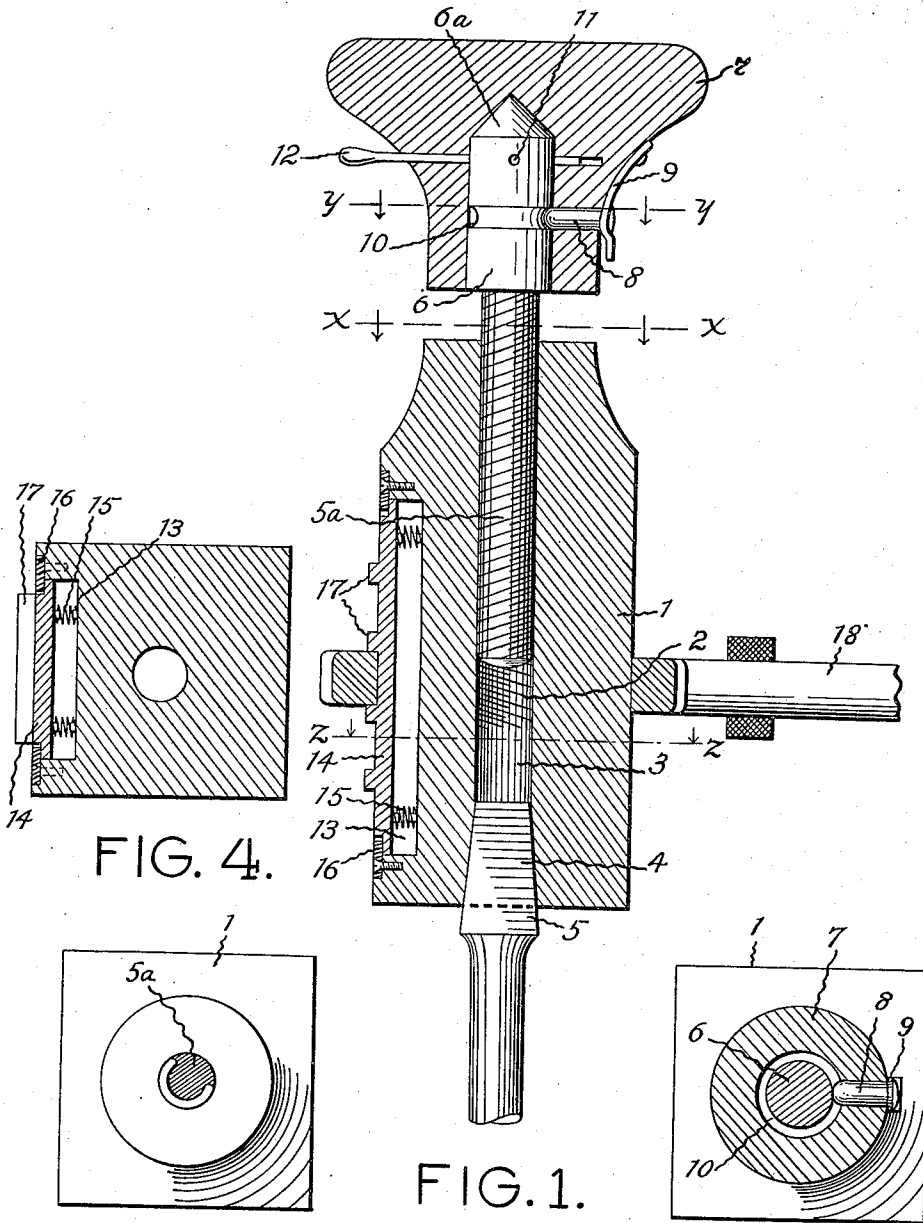


FIG. 4.

FIG. 1.

FIG. 2.

FIG. 3.

WITNESSES:

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DRILL-HOLDER.

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To all whom it may concern:

Be it known that I, HARRY C. LAWSON, a citizen of the United States, residing at McGregor, in the county of McLennan and State of Texas, have invented certain new and useful Improvements in Drill-Holders, of which the following is a specification.

My invention relates to a new and useful drill holder, and its object is to provide a drill holder which when manually subjected to rotation will automatically feed the drill into its work.

It is also an object of the invention to provide a drill holder of the character described which may be so adjusted that the rotation of the holder and drill will not be accompanied by the automatic feeding of the latter.

A still further object of the invention is to provide a device of the character described that will be strong, durable, efficient and simple and comparatively inexpensive to produce, also one in which the several parts will not be likely to get out of working order.

With the above and other objects in view, the invention has relation to certain novel features of construction and operation, an example of which is described in the following specification and illustrated in the accompanying drawings, wherein:

Figure 1 is an axial view of the drill holder showing the same engaging the shank of a drill. Fig. 2 is a transverse sectional view taken upon the line $x-x$ of Fig. 1. Figs. 3 and 4 are transverse sectional views taken upon the lines $y-y$ and $z-z$ of Fig. 1 respectively.

Referring now more particularly to the drawings, wherein like reference characters designate similar parts in all the figures, the numeral 1 denotes a socket member of square cross section formed with a central aperture comprising a threaded upper portion 2, an intermediate unthreaded portion 3, and a lower socket portion 4 of square cross section and adapted to receive the shank of a drill 5. The portion 2 of said aperture receives an elongated screw 5^a having one of its extremities projecting from the top of the socket member and formed with a head 6. The head 6 has a conical end face, as is indicated at 6^a and receives a cap 7, in which cap there is mounted a pin 8 perpendicular to the axis of the cap and rigidly carried by the free extremity of a leaf spring 9 ex-

teriorly mounted upon the cap. The inner end of the pin 8 normally projects into an annular groove 10 formed in the correlated portion of the screw 6, it being possible to displace the pin 8 from the groove 10 by distorting the spring 9 slightly away from the correlated cap. It is obvious that as long as the pin 8 remains engaged in the groove 10 the cap 7 will not be displaced from the screw 6 though it may undergo rotation relative to said screw. At some point within the cap 7 there is formed in the member 6 a plurality of tubular apertures 11 perpendicular to the axis of said member 6, into any one of which apertures, there may be inserted the inner end of a pin 12 slidably mounted in the cap 7 perpendicular to the axis of said cap.

In one of the lateral faces of the socket member, there is formed a rectangular depression 13, in which is fitted a metal plate 14, spaced from the vertical wall of the depression, a plurality of springs 15 being interposed between said plate and said wall. The springs 15 tend to displace the plate 14 out of the correlated depression, this tendency being limited by a pair of strips 16 overhanging the upper and lower edges of said depression. A plurality of spaced parallel ribs 17 are exteriorly formed upon the plate 14, parallel to its top and bottom edges, said ribs projecting from the depression 13 in the normal position of the correlated plate. By manually exerting a slight pressure upon the outer face of the plate 14, said plate may be displaced sufficiently into the depression 13 that the ribs 17 will no longer project therefrom. In Fig. 1, a wrench 18 is shown engaging the socket member and retained against displacement longitudinal of said member by two of the ribs 17. If it is desired to shift the wrench longitudinally this may be done by first forcing the plate 14 into the correlated depression. The plate 14 as illustrated is formed with a sufficient number of the ribs 17 to hold the wrench adjusted in four different positions of displacement longitudinal of the socket member.

An explanation will now be given as to the operation of my improved drill holder. The purpose of giving the member 1 a square cross section is to adapt said member to be engaged by the wrench 18 and thereby secure the necessary leverage to manually subject the drill and holder to rotation. For

light drilling, such as does not require a great amount of pressure, the workman will use my device as a breast drill, the cap 7 being rested against the workman's breast. For heavier work, the cap 7 will be removed, and a heavy downward pressure will be exerted upon the member 6^a, through the medium of a lever, weight, or any other suitable means. Hence, when rotation is manually applied to the member 1, and a rigid relation is established between the cap 7 and member 6, since the cap 7 will be restricted both against rotation and against upward displacement by the pressure acting downward upon said cap, there will necessarily ensue a downward displacement of the member 1 and the drill engaged by said member. This downward displacement will be however quite gradual so as to feed the drill to its work as the hole is formed.

If it be desired merely to communicate a rotation to the drill without producing an automatic feed of the same, the pin 12 may be sufficiently displaced outwardly to disengage it from the upper end of the screw 6, thereby making it possible for the rotation of the member 1 to be communicated to the screw 6 while the cap 7 remains stationary.

The invention is presented as including all such modifications and changes as properly come within the scope of the following claims.

What I claim is:

1. A drill holder comprising a socket

member of rectangular cross section, one face of said member being formed with a rectangular depression, a plate mounted in said depression, springs interposed between the plate and the depression wall parallel to said plate and a plurality of ribs rigidly mounted upon the exterior face of the plate projecting from the recess, said ribs being transverse of the axis of the drill holder and serving to prevent longitudinal motion of a wrench engaged between two of said ribs.

2. In a drill holder, a socket member having a recess in one side, and a spring pressed plate confined in said recess and having provision for retaining an operating tool on the socket member at various predetermined heights.

3. In a drill holder, a socket member having an elongated vertical recess on one side, a plate disposed in said recess, keepers secured on the member and projecting into the path of the plate, springs mounted in the recess and exerting an outward pressure against the plate, and transverse ribs provided on the outer side of the plate.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRY C. LAWSON.

Witnesses:

PEARL ALLEN,
J. G. CLARK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."