

C. ALISON.
 DRILL-SOCKET.

No. 178,258.

Patented June 6, 1876.

Fig. 1.

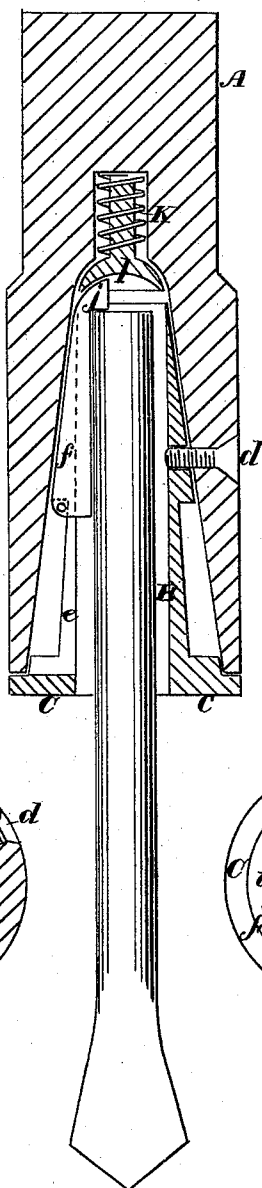


Fig. 2.

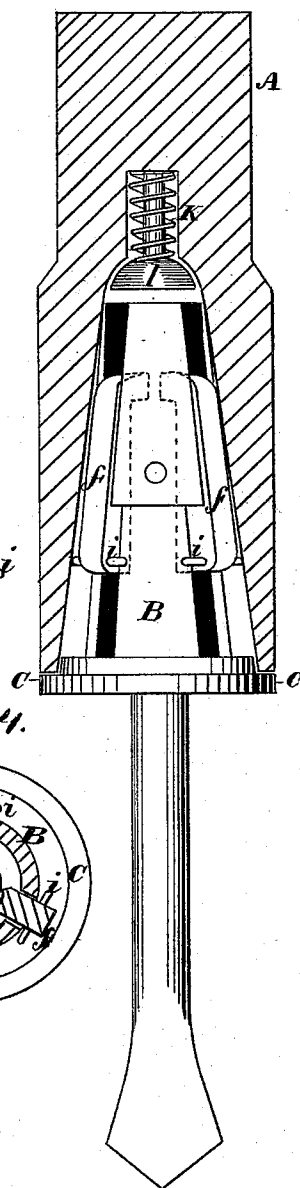


Fig. 3.

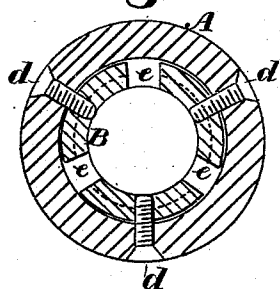
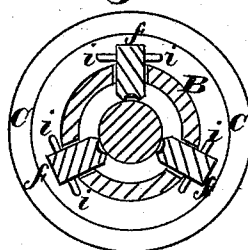


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE

CHARLES ALISON, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN DRILL-SOCKETS.

Specification forming part of Letters Patent No. **178,258**, dated June 6, 1876; application filed April 15, 1876.

To all whom it may concern:

Be it known that I, CHARLES ALISON, of San Francisco city and county, State of California, have invented an Improved Drill-Socket; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to an improved socket-head, for holding drills and other tools which are subjected to a twisting strain under pressure.

The object of my invention is to provide a tool-holder in which a cylindrical tool-shank can be securely held, thus enabling me to form a tool-point on the end of a piece of rod-steel, and use it as a drill or other similar tool without altering the form of its shank.

Referring to the accompanying drawings, Figures 1 and 2 are longitudinal sections of my device. Figs. 3 and 4 are transverse sections.

Let A represent a socket-head, in the lower end of which I make a conical socket, as represented. B is a thimble, which fits in the conical socket of the head A, and through the center of which is a hole, which forms the drill-socket, into which the shank of the tool is placed. This thimble has a flange, *c*, around its base, which fits against the lower end of the socket-head A when the thimble is inserted into the socket, and screws *d d* serve to secure it in place. A portion between the flange *c* and middle of the thimble is turned down, as represented, so as to form a recess surrounding the thimble, for the purpose hereinafter described, while the portion between the middle and upper end of the thimble is made tapering to fit the conical taper of the socket. The thimble is provided with three longitudinal slots, *eee*, which extend from the base or flange *c* to the upper end of the thimble, and in each slot I place a sliding dog, *f*, the back of which is made tapering or inclined, while the front side or face, which is presented through the slot, is made concave longitudinally, so as to form biting or gripping points or ridges along each edge. A lug, *i*, on each

side of the lower end of each dog moves in the recess between the flange *c* and middle of the thimble, and at the same time prevents the lower ends of the dogs from passing through the slot, while the upper ends of the three dogs drop freely toward the center of the bore in the thimble.

Each dog has a projecting shoulder, *j*, near its upper end, against which the end of the drill-shank will strike when it is inserted in the drill-socket; and when the shank is forced upward it will carry the dogs with it until the inclined backs of the dogs, moving against the inclined sides of the conical socket, force them far enough toward the center of the bore to bite or clamp them upon the drill-shank, so as to hold it firmly, and prevent it from turning as long as a pressure is applied against the opposite end of the drill, and the greater the pressure the more powerful will be the gripe of the dogs upon the shank.

In order to prevent the dog-heads from shifting to one side and setting the drill at an angle, I secure a pendent spiral spring, *k*, in the top or apex of the conical socket, and then secure in its pendent end a cup-shaped or concave metal button, *l*, by inserting the short shank of the button in the end of the spring. The upper ends of the dogs are rounded toward the center of the bore, so that as the drill lifts them upward they will be caught by the inverted cup-shaped button and retained in a central position. This spring also serves to aid in withdrawing the drill from the socket when it is desired to remove it.

I thus provide a tool-holder which will hold cylindrical shanks against torsion, and thus save much time and labor in forming the shanks of drills to adapt them to be held with the requisite tenacity.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The head A, having a conical socket, in combination with the slotted thimble B, with its loosely-sliding dogs *fff*, said dogs having inclined backs and toothed fronts, substantially as and for the purpose described.

2. In combination with the head A, provided with a conical socket, and having a slot-

ted thimble, B, secured on said socket, the loosely-sliding dogs *f f f*, having the projection or shoulder *j*, substantially as and for the purpose described.

3. The conically-socketed head A, with its slotted thimble B, sliding dogs *f f f*, with their shoulders or projections *j*, in combination with

the cup-shaped button *l* and spring *k*, all combined and arranged to operate substantially as and for the purpose described.

CHAS. ALISON.

Witnesses:

GEO. H. STRONG,
JNO. L. BOONE.