

(No Model.)

M. HARDSOEG.
COAL DRILL.

No. 537,287.

Patented Apr. 9, 1895.

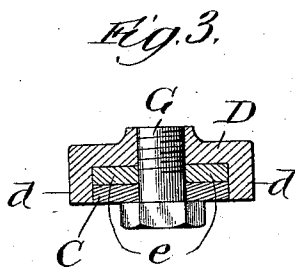
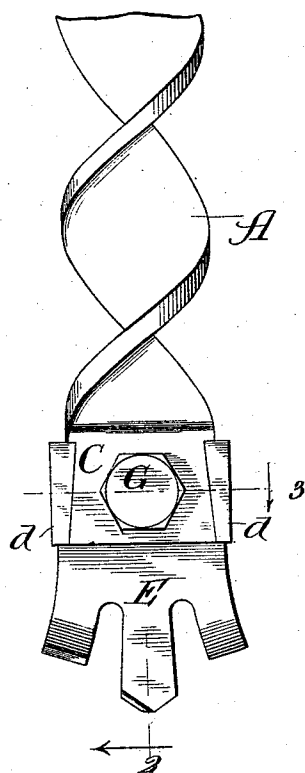
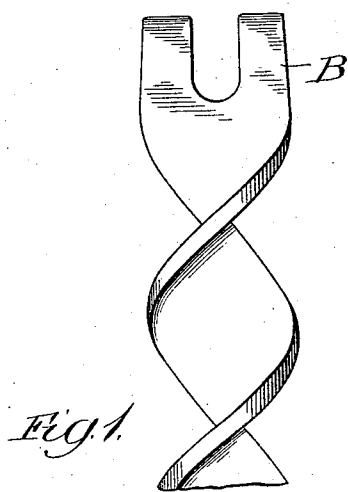


Fig. 4.

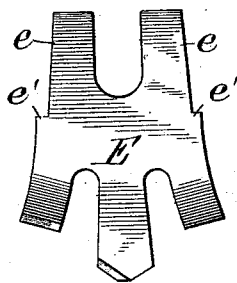
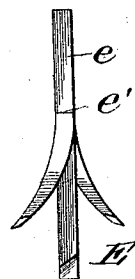


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

MARTIN HARDSOCC, OF OTTUMWA, IOWA.

COAL-DRILL.

SPECIFICATION forming part of Letters Patent No. 537,287, dated April 9, 1895.

Application filed January 23, 1894. Serial No. 497,747. (No model.)

To all whom it may concern:

Be it known that I, MARTIN HARDSOCC, a citizen of the United States, residing at Ottumwa, Iowa, have invented certain new and useful Improvements in Coal-Drills, of which the following is a specification.

The object of my invention is to provide a simple, economical and efficient coal drill; and my invention consists in the features, combinations and details hereinafter described and claimed.

In the drawings, Figure 1 is a front elevation of my improved drill and detachable bit; Fig. 2, a side elevation of a portion, partly in section, taken on line 2 of Fig. 1; Fig. 3, a transverse section, taken on line 3 of Fig. 1; Fig. 4, a front elevation of the detachable bit; and Fig. 5 a side elevation of Fig. 4.

In constructing my improvement, I make a body portion, A, of the twist drill type, formed by twisting a flat drill into the desired shape and pitch, and provide it with a shank, B, bifurcated for reasons hereinafter set forth. I provide a recess at the front end of the body portion by offsetting the same, as at C, and combining with it a removable flanged clip, D, provided with side flanges, *d*, *d*, which form the desired recess between them. Detachably secured in this recess is a bit, E, having a bifurcated shank portion *e*, which enters the recess and is securely clamped therein by means of the bolt, G, which is screw-threaded in the clip and passes through the slot of the bifurcated shank, in such manner that the bit may be moved by merely loosening the screw, without entirely taking all of the pieces apart.

It is intended that the rear end of the shank of the detachable bit should bear against the shoulder, *c*, of the body portion, and the shoulder, *e'*, also bear against the drill to prevent the strain coming on the bolt, or the wedging of the different parts.

The offset C of the drill is tapered toward the shank and the flanges *d* of the cap D correspondingly tapered to engage the offset. This construction prevents the parts from being disengaged during the withdrawal of the drill from a hole.

The advantages consequent to the use of my improved drill are that a body portion of any desired length can be used in connection with the detachable bit, or several body portions can be secured together to make a long working drill. Again, several bits may be used in connection with one body portion, so that during the sharpening or forging processes it would not be necessary for the operator to remain idle.

I am aware that the idea of removable bits and extension drills is not new, and do not desire to be understood as claiming this idea broadly. Nor do I wish to be unduly limited, any more than is pointed out in the claim, as I contemplate slight variations in form, construction and arrangement, as circumstances may suggest or render expedient, without departing from the spirit of the invention.

I claim—

In coal drills, the combination of a body portion having a shank at one end and an offset C at the front end tapering toward the shank, a removable cap C provided with tapered flanges *d* adapted to fit the tapered offset and form a recess between it and the offset, a bit portion provided with a bifurcated shank detachably secured in such recess, and a bolt to rigidly hold such parts together, substantially as described.

MARTIN HARDSOCC.

Witnesses:

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