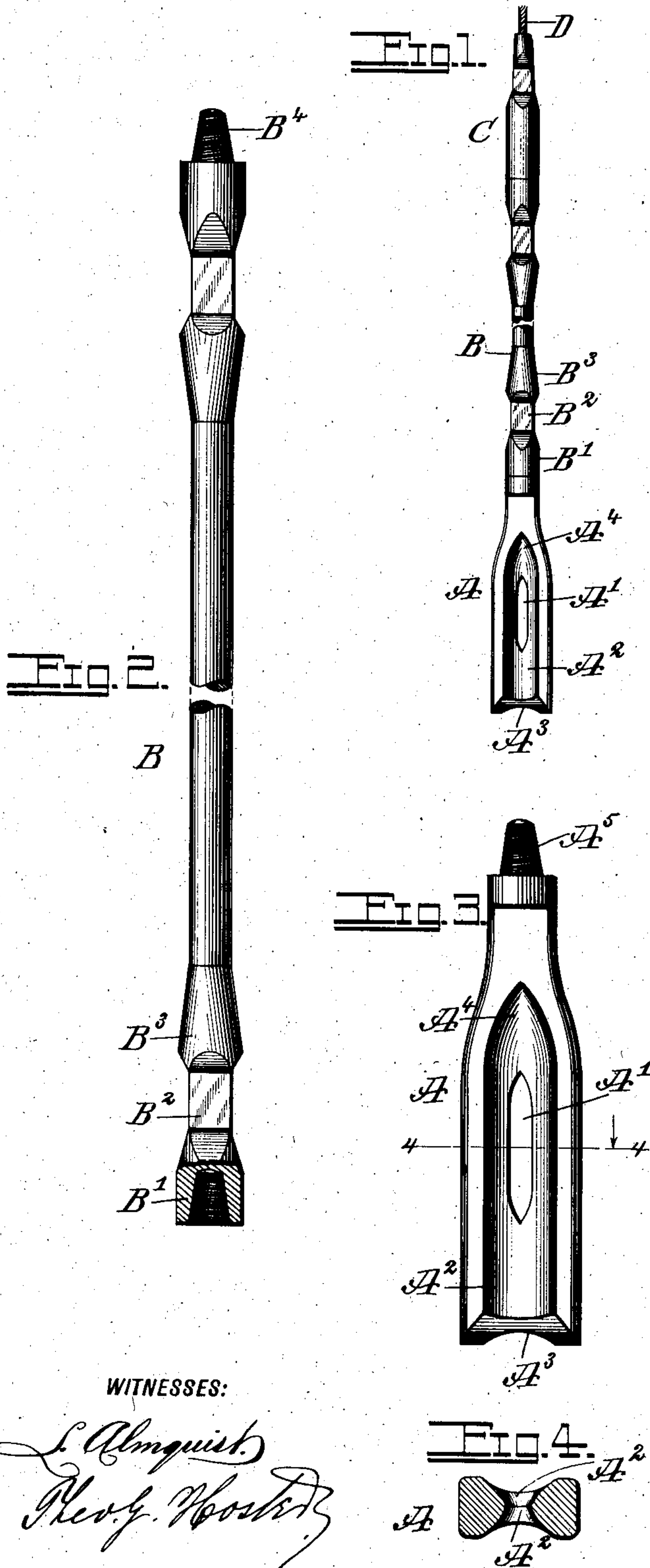


No. 834,167.

PATENTED OCT. 23, 1906.

A. C. SHUSTER.
DRILLING TOOL.

APPLICATION FILED JAN. 27, 1905.



WITNESSES:

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ANDY C. SHUSTER, OF ARROYO GRANDE, CALIFORNIA.

DRILLING-TOOL.

No. 834,167.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed January 27, 1905. Serial No. 242,879.

To all whom it may concern:

Be it known that I, ANDY C. SHUSTER, a citizen of the United States, and a resident of Arroyo Grande, in the county of San Luis Obispo and State of California, have invented a new and Improved Drilling-Tool, of which the following is a full, clear, and exact description.

The invention relates to deep-well drilling; and its object is to provide a new and improved drilling-tool arranged to permit convenient fishing up of a lost bit, to prevent injury to the drive-pipe shoe or pipe by the socket of the bit, and to allow the drillings to pass up away from the cutting edge of the bit to prevent clogging of the same and to permit it to be readily turned in the well.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement. Fig. 2 is an enlarged side elevation of the drill-rod, parts being in section. Fig. 3 is an enlarged side elevation of the bit, and Fig. 4 is a sectional plan view of the same on the line 4-4 of Fig. 3.

The drilling-bit A is fastened on the lower end of a drill rod or stem B, carrying at its upper end a head C, to which is secured a lifting cable or rope D, connected with suitable machinery for alternately raising and dropping the drilling-tool in the usual manner.

The drilling-bit A is provided with an elongated opening A', arranged between its ends and connected at opposite sides of the bit by channels A² with the lower or cutting edge A³ of the bit. Inclined guideways A⁴ lead to the upper end of the opening A', so that when the bit is lost in the well and a suitable fishing-tool is employed then the hooks of the fishing-tool can readily engage the opening A', so that the tool can be drawn up the well-hole to the surface.

As shown in the drawings, the opening A' is elongated in the direction of the length of the bit, and by having the recesses A² ar-

anged as described it is evident that the drillings pass up away from the cutting edge without danger of clogging the drilling-bit in the well. Hence by the arrangement described the drilling-bit can be readily turned to prevent the latter from making a flat hole in the bottom of the well.

The upper end of the drilling-bit A is provided with the usual threaded shank A⁵, screwing in a socket B' on the drill-rod B, the latter being provided immediately above the socket B' with a polygonal portion B², above which is arranged a swell B³, preferably in the shape of an inverted frustum of a cone. By having the swell B³ arranged as described it is evident that when using the drilling-tool the swell is not liable to strike and injure the drive-pipe shoe or the lower end of the pipe, as the swell properly guides the lower portion of the drilling-rod on the drive-pipe shoe.

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

1. A well-drilling tool comprising a lifting cable, a drill-rod, and a solid bit removably held on the lower end of the drill-rod and having an opening for engagement by a fishing-tool.

2. A well-drilling tool comprising a lifting-cable or rope, a drill-rod, a solid bit removably held on the lower end of the drill-rod and having an opening therein, and grooves leading to the opening from the cutting edge of the bit.

3. A well-drilling tool provided with a solid bit having an elongated opening above the cutting edge,

4. A well-drilling tool provided with a solid bit having an elongated opening above the cutting edge, and grooves leading to the opening from the cutting edge.

5. A well-drilling tool provided with a solid bit having an elongated opening above the cutting edge, and inclined guideways formed on the bit and leading to the said opening at the upper end thereof.

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

ANDY C. SHUSTER.

Witnesses:

TIMOTHY MUNGER,
ARTHUR W. HAWKINS.