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BORING TUBE OR ROD FOR BORING APPARATUS.
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No model.

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

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To all whom it may concern:

Be it known that we, ALEXANDER MCNAMARA and JOHN SCHANKE, of JOHANNESBURG, TRANSVAAL, have invented certain new and useful Improvements in or Apparatus for boring, the Boring Tubes or Rods for Boring Apparatus, of which the following is a specification.

This invention relates to the boring tubes or rods for boring apparatus. It is particularly well adapted for use with diamond drills or diamond-core drills designed for deep boring. The object of the invention is to buoy up and sustain the weight of the tubes or rods to some extent when in position in the bore-hole, and this is effected by placing an independent sealed or air-tight tube in the interior of the boring tube or rod. The air-tight tube is so constructed as not to interfere with the free passage of water through the boring-rod. By thus relieving the rods of a portion of their weight uniformly throughout the entire length of the rods it allows of their being made of lighter construction, as the strain to be borne by them is not nearly so great. As the weight is reduced, the power required to rotate the rods during boring operations will be correspondingly reduced.

Our invention will be fully described by aid of the accompanying drawings, in which—

Figure 1 illustrates an ordinary boring tube or rod with our invention applied thereto. Fig. 2 is a transverse section of Fig. 1. Fig. 3 represents the air-tight tube detached, and Fig. 4 is a transverse section of Fig. 3.

In the drawings, A indicates a boring-rod of the construction commonly used in diamond drills. The rod A is tapped or formed with an internal screw-thread a at each end for connecting it, by means of the screw-coupling B, to the extremity of the next rod, as shown at A' in Fig. 1. The coupling-piece B is made of the same diameter at the center as the rods A A' and with an external screw-thread b at each end, over which are screwed the ends of the tubes A A'. A hole b' is provided through the screw-coupling B to permit of the passage therethrough of the water.

In the interior of the boring-rod A is placed a sealed or water-tight tube C. The tube C externally is somewhat less in diameter than the rods A internally, so as to allow the water to circulate freely between them. The air-tight tubes C are preferably approximately equal in length to the boring-rod A between the screw-couplings. The tubes C are flattened on two sides at their extremities or are chisel-pointed, as is indicated at c, in order to prevent their choking or closing the passages 60 b' through the screw-coupling B.

If desired, the tubes C could be fixed in the interior of the boring-tubes A, so long as the water is allowed to pass between them; but we prefer to make them as separate parts and fit and retain them in the boring-tubes in the manner explained. The construction and arrangement described will, we believe, be found the most satisfactory and convenient in practice.

The air-tight tube C will preferably be placed in the boring-rod when the next rod above it is being attached. The tubes C may be placed in all the boring-rod or in a portion only, if preferred.

As will be readily understood, the effect produced by the air-tight tubes C, when immersed in the water, passing up through the boring-rods A is to buoy up the latter and materially assist in supporting the weight thereof.

What we claim as our invention, and desire to protect by Letters Patent, is—

1. In a boring-rod for boring apparatus the combination with the rod of a sealed or air-tight tube arranged inside the rod for the purpose of buoying same.

2. In a boring-rod for boring apparatus, in combination, the rod, a sealed or air-tight tube inside the rod arranged so as to allow the water to pass between the rod and tube, for the purposes described.

3. In a boring-rod for boring apparatus, in combination, the rod, a sealed or air-tight tube whose external diameter is less than the internal diameter of the rod said tube being concentrically arranged in the interior of the rod and forming an annular passage between it and the rod for the passage of water, substantially as described.

4. In a boring-rod for boring apparatus the combination with the rod of a sealed and air-
tight tube concentrically arranged in the interior thereof and forming therewith an internal annular passage for the water, and means for retaining the air-tight tube in position in said rod, substantially as and for the purposes specified.

5. In combination a boring-rod, a sealed or air-tight tube concentrically arranged in the boring-rod and forming a passage between the tube and rod for the water, a coupling-piece attached to the upper extremity of the rod for connecting it with the next rod above it, said coupling operating to retain the air-tight tube in position in the rod, substantially as described.

6. In combination, a boring-rod, a sealed or air-tight tube arranged in the interior thereof and forming therewith a passage for the water passing up the rod, a screw-coupling screwed into the extremity of the rod for connecting the ends of the rods, a hole formed through the coupling, and the flattened or chisel-pointed extremity of the tube to prevent the tube closing the hole in the coupling, substantially as described.

7. In combination, the boring-rod A, the internal screw-thread a in the ends thereof, the screw-coupling B, formed with the external screw-thread b at each end, screwed into the end of the rod A for attaching the next rod, the hole b' through the coupling B, the sealed or water-tight tube C arranged in the interior of the rod A and forming a passage between it and the rod for the passage of water up the rod the flattened or chisel-pointed extremities c of the tubes C, to prevent the latter chocking the passages b' through the coupling B, substantially as described.

In witness whereof we have hereunto set our hands in the presence of two subscribing witnesses.

ALEXANDER McNAMARA.
JOHN SCHANKE.

Witnesses:
CHAS. OVENDALE,
R. OVENDALE.