

BELL SYSTEM PRACTICES
Motor Vehicles and
Construction Apparatus

SECTION J6.077
Issue 1, April, 1931
Standard

EARTH BORING MACHINE

ROCK DRILL

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ROCK DRILL
ROCKING AND DRILLING
1931

1. GENERAL

1.01 This section covers the methods of drilling holes in rock with the "C," "HC," and "LC" earth boring machines using the 2-1/4 inch rock drill. The type "C" machine is the truck mounted unit which was standard before 1931. The "HC" machine is the present standard heavy duty, truck type unit. The "LC" machine is a lighter outfit for use on Fordson tractors, light trucks, etc.

1.02 This drill will bore in shale, sandstone and other classes of soft and medium rock but not in such formation as trap rock or hard granite.

1.03 The purpose of this drill is to bore holes for dynamiting in accordance with the instructions covering "Use of Dynamite."

2. PRECAUTIONARY MEASURES

2.01 Care should be exercised when removing the auger from the earth boring machine preparatory to attaching the rock drill. This operation should be done by removing the auger pin and pressing the auger off the shaft by slowly raising the shaft so that the top of the auger socket presses against the spring. While the auger is being pressed off by power in low gear, the workmen should stand clear so that they will not be struck by the auger when it drops to the ground.

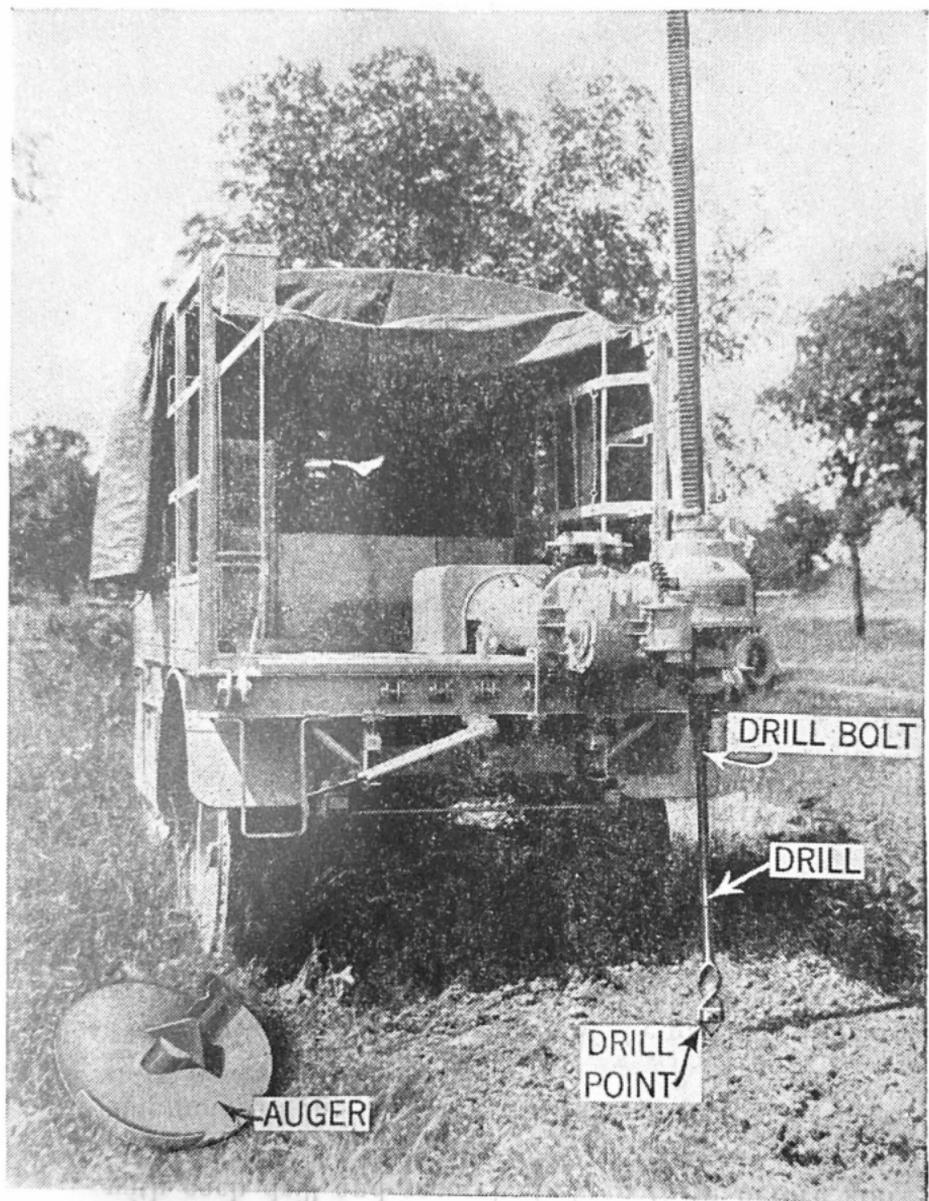
2.02 When drilling a hole in rock the truck should not be allowed to move, as any binding condition may bend or break the drill.

2.03 Care should be exercised in applying the power to the rock drill while drilling in order to prevent shearing of the drill bolt.

2.04 Do not attempt to rebores any hole which has had a charge of dynamite in it. Drill a new blast hole parallel to the first hole at least 2 feet distant from it.

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305 Be sure to use the standard drill bolt and not furnished
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 301 Before inserting the rock into the auger shaft bore.

3' PREPARATION FOR DRILLING

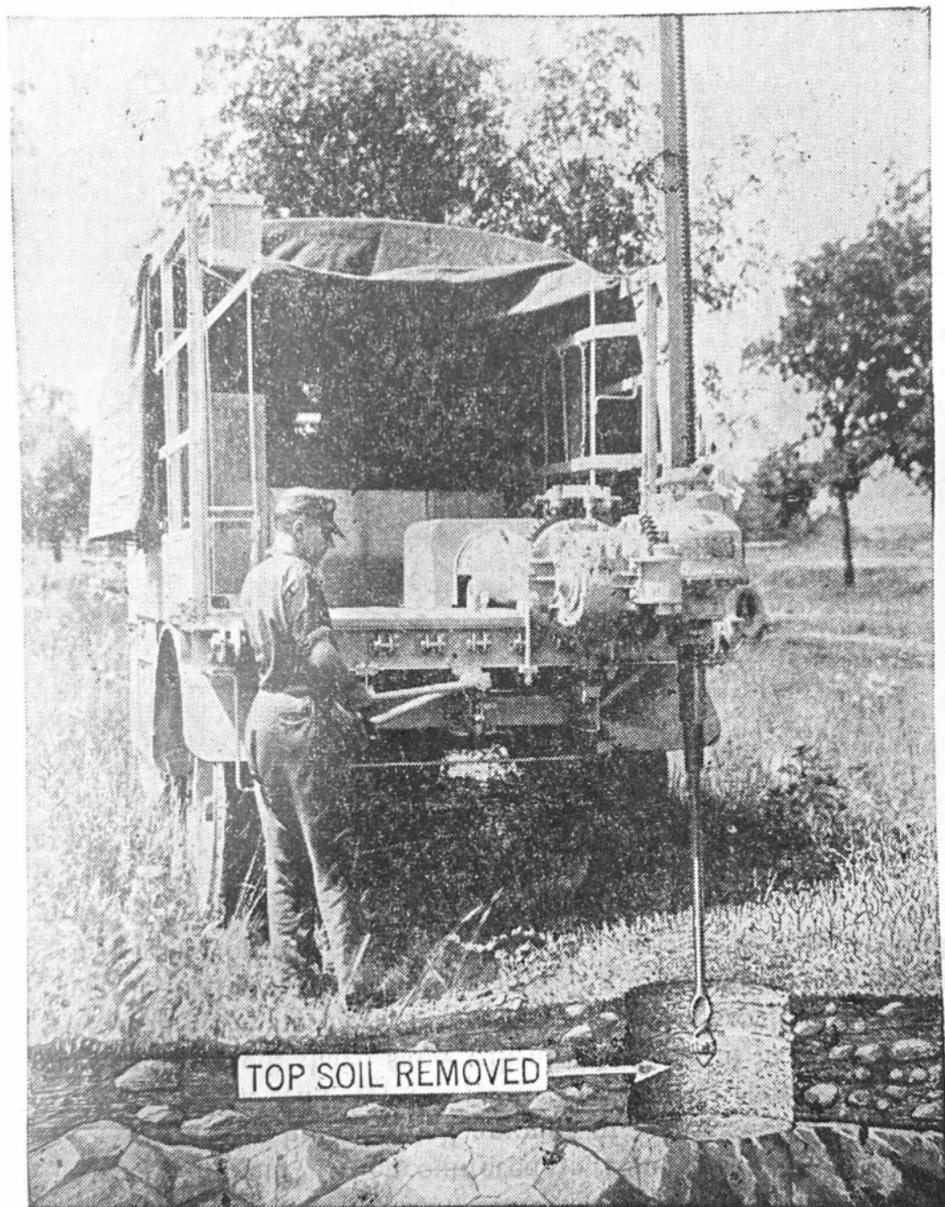
3. PREPARATION FOR DRILLING

3.01 Before inserting the rock drill into the auger shaft bore, the 1-1/4 inch reamed hole in the auger shaft should be cleaned out.

3.02 Be sure to use the standard drill bolt and nut furnished with each drill and securely tighten them before starting to bore.

3.03 The point of the drill should be sharp if satisfactory results are to be obtained.

3.04 If the rock is below the surface of the ground, the earth should be removed with the auger, or by some other method, before starting to bore.



TOP SOIL REMOVED →

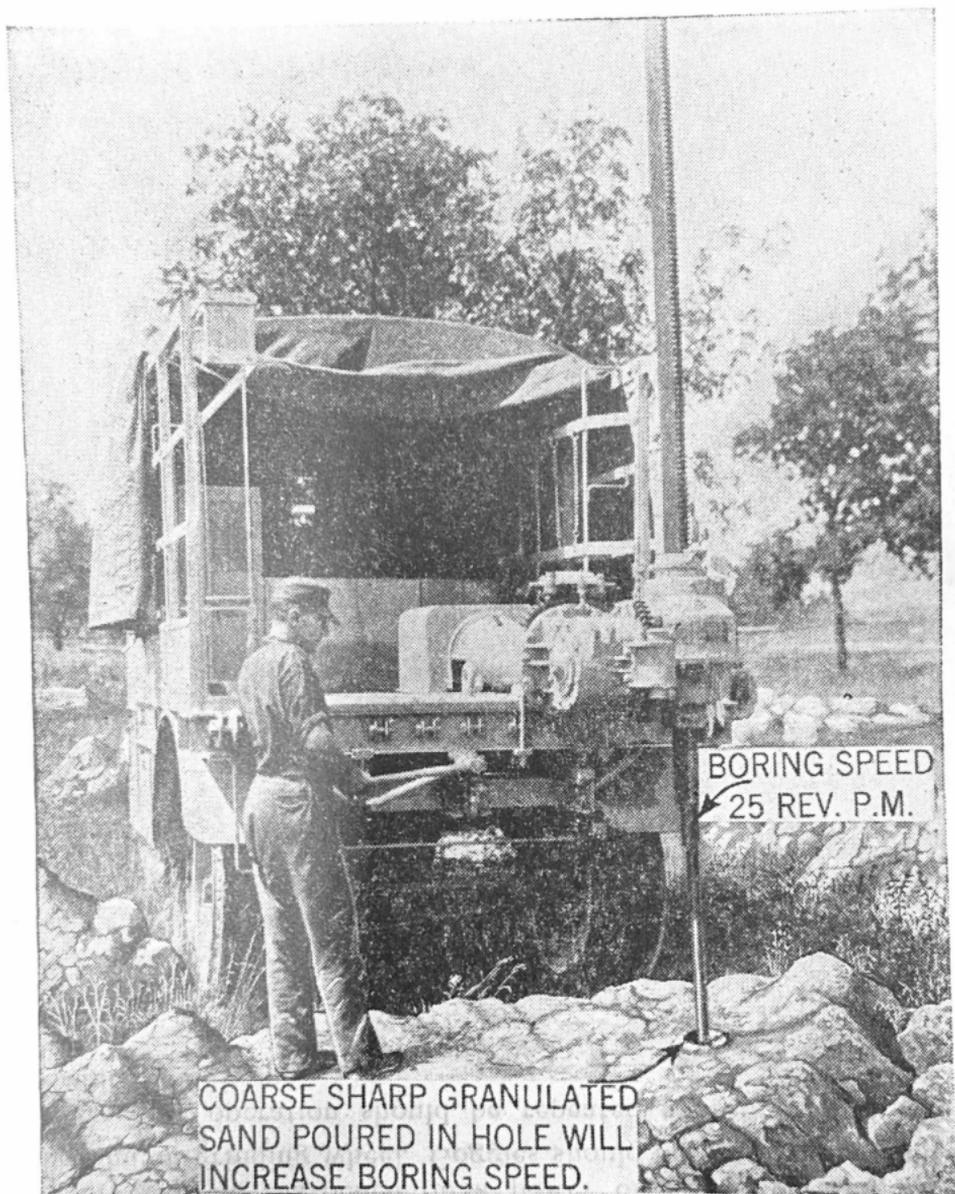
... and the cuttings removed after each successive depth of two revolutions per minute. It should be withdrawn from the hole before the drill should be used at approximately 25 ft per min. This drill is suitable for a maximum depth of 30 inches and is used for DRILLING IN ROCK.

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4. DRILLING IN ROCK

4.01 With this drill a maximum depth of 30 inches can be bored. The drill should be used at approximately 25 revolutions per minute. It should be withdrawn from the hole and the cuttings removed after each successive depth of two inches has been bored. This will prevent clogging of the drill.

4.02 If difficulty is encountered in removing the fine dust from the hole a small amount of water should be used. This also has a tendency to increase the boring speed. Coarse, hard, granulated, sharp sand will also be helpful in connection with drilling in hard rock especially when the rock is so hard that the drill point becomes dull quickly. Enough of the sharp sand should be used to fill the hole about 1 inch deep around the drill.



BORING SPEED
 25 REV. P.M.

COARSE SHARP GRANULATED
 SAND POURED IN HOLE WILL
 INCREASE BORING SPEED.

203 When the cutting edges of the blade become dull they
 require less of rock drilling.

201 The cutting blade is tipped with Hartzel's. This is a

2 DRILL MAINTENANCE

5. DRILL MAINTENANCE

5.01 The cutting blade is tipped with Haystellite. This is a very hard metal and should maintain a sharp edge for several feet of rock drilling.

5.02 When the cutting edges of the blade become dull they can be sharpened on a power or hand operated carborundum grinding wheel. Goggles should be used while grinding. This operation should be repeated as required by the drilling conditions.