

ABSTRACT

A tip end lid 12 mounted to a tip end of a casing pipe 11 includes a tip end lid case 13 substantially in a shape of a truncated cone, a ball valve 16 housed for vertical movement in the tip end lid case 13, and a valve seat portion 14 with which the ball valve 16 comes in contact to make the tip end of the casing pipe 11 airtight. The tip end lid case 13 is provided with an earth pressure sensor S1 for measuring earth pressure around the tip end lid case 13 on an outside of the case 13, a pressure sensor S2 for measuring air pressure in the casing pipe 11 on an inside of the case 13, and an air supply hole for sending compressed air into the case 13 inside the case 13.



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