

The invention relates to a drilling tool according to the precharacterising clause of claim 1.

DE-A 32 27 767 discloses a drilling tool for producing a drilled hole having an undercut. The drilling tool is equipped with a shaft portion that can be inserted into a drilling machine, a drilling head arranged at the front end and a stop ring attached to the drill shaft. Formed between the stop ring and the drilling head is a protuberant portion which narrows away towards the drilling head on the one hand and the stop ring on the other. After the depth of drilled hole determined by the stop ring has been reached, the drill axle is swung outwards by being tilted and at the same time, by means of a wobbling movement, the undercut is made in the region of the bottom of the drilled hole. The protuberant portion, cooperating with the wall of the drilled hole, acts as a pivot bearing, the narrowing of the drill shaft on the one hand making the swinging-out possible and on the other acting as a stop for limiting the pivot angle.

A disadvantage of the known drilling tool is, however, that the stop ring is rigidly connected to the drilling tool and comes to rest directly on the surface of the masonry. As a result, when a hammer drill is used in the usual way, the impacts of the hammer drill are transmitted via the drilling tool directly to the masonry. That can lead to crumbling of the mouth of the drilled hole or to damage to the surface of the masonry and/or to the drilling tool.

The problem on which the invention is based is, therefore, to provide a simple drilling apparatus for producing undercut drilled holes in which damage to the wall surface and/or to the drilling tool is very substantially avoided.

This problem is solved in the drilling tool of the precharacterising clause mentioned at the beginning by means of the features mentioned in the characterising part of claim 1.

The slotted sleeve, in conjunction with the bulbous collar formed on the drill shaft, forms the stop for limiting the depth of the drilled hole and for making the undercut. The stop flange provides the sleeve with a large area of support against the masonry surface. The simultaneous centering in the drilled hole produces a rotation-proof fixing of the sleeve which prevents the direct transmission of the impacts of the drilling tool to the masonry. The drilling tool is supported by way of the bulbous collar which is seated in the slightly concave stop surface of the centering sleeve. The centering sleeve thus prevents the impacts from hitting the masonry directly by way of the collar. Since, in addition, the entire surface of the stop flange continues to be supported even when the drilling tool is inclined, damage to the drilling tool caused by over-tilting is avoided.

The axial fixing of the centering sleeve on the drill shaft is achieved on the one hand by the collar and on the other by the shaft projection. The centering sleeve is bent out onto the narrowed portion formed between the collar and the shaft projection, which is made possible by the fact that the centering sleeve is slotted. This means also that the sleeve is easily replaced if that should be necessary as a result of wear.

If the drill shaft is equipped with grooves for drilling dust it is advantageous for the drilling dust grooves to extend beyond the collar. That ensures the removal of

drilling dust by way of the centering sleeve and beyond the collar.

The invention is explained in detail below with reference to the drawing.

The drilling tool comprises a drill shaft 1, the rear region of which is in the form of a shaft portion for inserting into a drilling machine. At the front end of the drilling tool is a drilling head 3 in which is inserted a drilling plate 4 having lateral cutting edges projecting from the drill shaft. In order to limit the depth of the drilled hole there is arranged on the drill shaft 1 a stop ring 2 which is formed by the stop flange 13 of a centering sleeve 14. The centering sleeve 14 has a longitudinal slot 15 and is mounted between a bulbous collar 16 and a shaft projecting-part 17. The shaft projecting-part 17 narrows in the direction of the drilling head 3, with the result that the shaft portion 1b between the shaft projecting-part 17 and the drilling head 3 limits the pivot movement during the making of the undercut 6 in a defined manner. The shaft projecting-part 17 is formed by the protuberant portion 5 of the drill shaft 1, which portion acts as a pivot bearing during the production of the undercut. The protuberant portion 5 rests against the wall of the drilled hole 7 and has in that region a cylindrical shape.

In order to be able to transport the drilling dust produced during the drilling operation out of the drilled hole 7, the drill shaft 1 has grooves 8 for drilling dust, which grooves extend from the drilling head, by way of the protuberant portion 5, to beyond the bulbous collar 16.

Patent claims

1. Drilling tool for producing drilled holes having an undercut, having a shaft portion that can be inserted into a drilling machine, a drilling head arranged at the front end of the drilling tool, a stop ring attached to the drill shaft, and a protuberant portion, formed between the stop ring and the drilling head, which protuberant portion narrows away towards the drilling head on the one hand and the stop ring on the other, characterised in that there is formed on the drill shaft (1) between the protuberant portion (5) and the shaft portion a bulbous collar (16), and that mounted on that side of the bulbous collar (16) that faces towards the drilling head (3), on the drill shaft (1), is a slotted sleeve (14) which acts as a centering sleeve and has a stop flange (13) acting as a stop ring and having a stop surface against which the collar (16) is supported.
2. Drilling tool according to claim 1, characterised in that the sleeve (14) is held by means of a shaft projecting-part (17) attached to the drill shaft (1) between the bulbous collar (16) and the shaft projecting-part (17).
3. Drilling tool according to claim 2, characterised in that the drill shaft (1b) tapers conically from the shaft projecting-part (17) in the direction towards the drilling head (3).
4. Drilling tool according to claim 1, characterised in that the drilling dust grooves (8) extend beyond the collar (16).



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