

REPUBLIC OF SOUTH AFRICA
PATENTS ACT, 1978**PUBLICATION PARTICULARS AND ABSTRACT**

(Section 32(3)(a) – Regulation 22(1)(g) and 31)

OFFICIAL APPLICATION NO.

LODGING DATE

ACCEPTANCE DATE

21 04 2005/01880

22 12 SEP 2003

43 13.3.06

INTERNATIONAL CLASSIFICATION

NOT FOR PUBLICATION

51 E21B

CLASSIFIED BY: WIPO

FULL NAMES OF APPLICANT

71 ATLAS COPCO ROCK DRILLS AB

FULL NAMES OF INVENTORS

72 1. ANDERSSON, KURT
2. JONSSON, PER

EARLIEST PRIORITY CLAIMED

COUNTRY

NUMBER

DATE

33 SE

31 0202855-3

32 27 SEP 2002

TITLE OF INVENTION

54 IMPACT ADAPTER FOR TRANSFER OF IMPACTS AND ROTATION FROM AN IMPACT ROCK DRILLING MACHINE TO A DRILL STRING

57 ABSTRACT (NOT MORE THAN 150 WORDS)

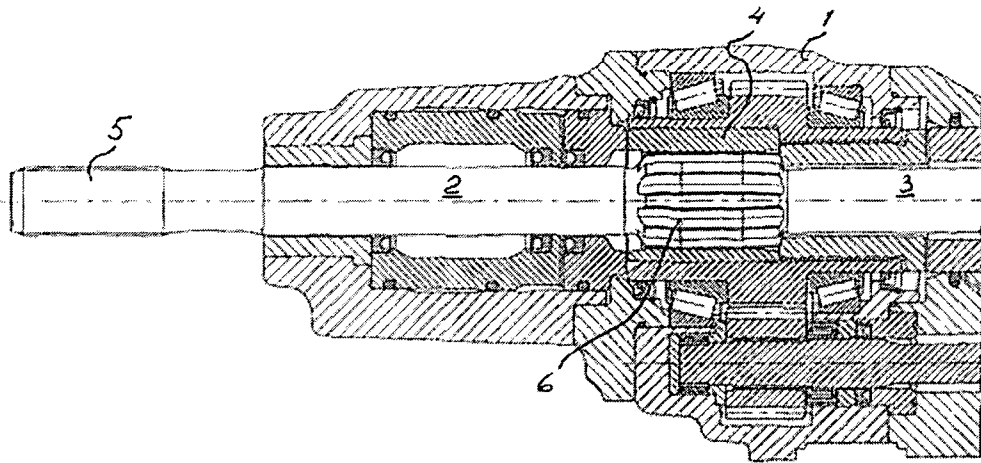
NUMBER OF SHEETS

13

If no classification is finished, Form P.9 should accompany this form.
The figure of the drawing to which the abstract refers is attached.

ABSTRACT

Impact adapter for transfer of impacts and rotation from an impact rock drilling machine to a drill string comprising a first end (5) for connection to a drill string and a second end provided with ridges (7) and interposed grooves (8) for transfer of rotation. The grooves (8) at the end (9) directed away from the first end (5) of the impact adapter (2) are widened in the direction away from the first end (5).



Impact adapter for transfer of impacts and rotation from an impact rock drilling machine to a drill string

The present invention relates to an impact adapter for transfer of impacts and rotation from an impact rock drilling machine to a drill string.

In previously known impact adapters ridges and grooves at the rear end of the impact adapter are used for transferring torque to a drill string from a driver journaled in the rock drilling machine. Because of manufacturing tolerances one has a certain play between the impact adapter and the driver in order to allow the axial movement caused by the impacts of the rock drilling machine against the impact adapter. This results in the impact adapter coming more or less obliquely in the driver. This oblique position in combination with the relative axial movement between the driver and the impact adapter often gives rise to breakage of one or more of the ridges adjacent the rear end of the impact adapter.

The present invention, which is defined in the subsequent claims, aims at decreasing the problem with ridge breakage by decreasing the surface pressure between impact adapter and driver. This is addressed by making the grooves between the ridges on the impact adapter wider at the rear end of the impact adapter.

An embodiment of the invention is described below with reference to the appended drawing in which fig 1 shows a section through a part of an impact rock drilling machine.

Fig 2 shows a part of the impact adapter according to the invention. Fig 3 shows a view from the right in fig 2.

The rock drilling machine shown in the drawing comprises a machine housing 1, consisting of several connected parts, in which an impact adapter 2 is displaceably arranged in a driver 4. The driver 4 is rotatable by means of a not shown motor. The driver transfers torque to the impact adapter 2 via splines 6 comprising ridges 7 and interposed grooves 8 at a second end of the impact adapter 2. The impact adapter 2 is at the front end, a first end, provided with a thread 5 for connection to a drill string in the usual way. The grooves 8 are at the end 9 directed away from the first end of the impact adapter widened away from the

first end, which is shown by means of the angle v . Furthermore the ridges 7 have at the rear end 9 a somewhat smaller radial extension, which is shown by means of the angle u . Through this it is achieved that obliqueness between impact adapter and driver gives a lower surface pressure than what is obtained without these widened grooves. In the drawing the ridges 7 are formed in the same way at the end directed away from the end 9. The grooves widened towards the ends are suitably produced by feeding the milling tool milling the grooves 8 somewhat towards the centre of the impact adapter at the groove ends.

Claims:

1. Impact adapter for transfer of impacts and rotation from an impact rock drilling machine to a drill string comprising a first end for connection to a drill string and a second end provided with ridges and interposed grooves for transfer of rotation, characterized in that the grooves at an end directed away from the first end of the impact adapter are widened in the direction away from the first end.

2. Impact adapter according to claim 1, characterized in that the ridges at the end directed away from the first end of the impact adapter have a smaller radial extension.

