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(33) SE

(71) Applicant

Sandvik AB

(Incorporated in Sweden)

S-811 81 Sandviken, Sweden

(72) Inventor

Arvo Leini

(74) Agent and/or Address for Service

Mewburn Ellis

**2/3 Cursitor Street, London, EC4A 1BQ,
United Kingdom**

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(56) Documents cited

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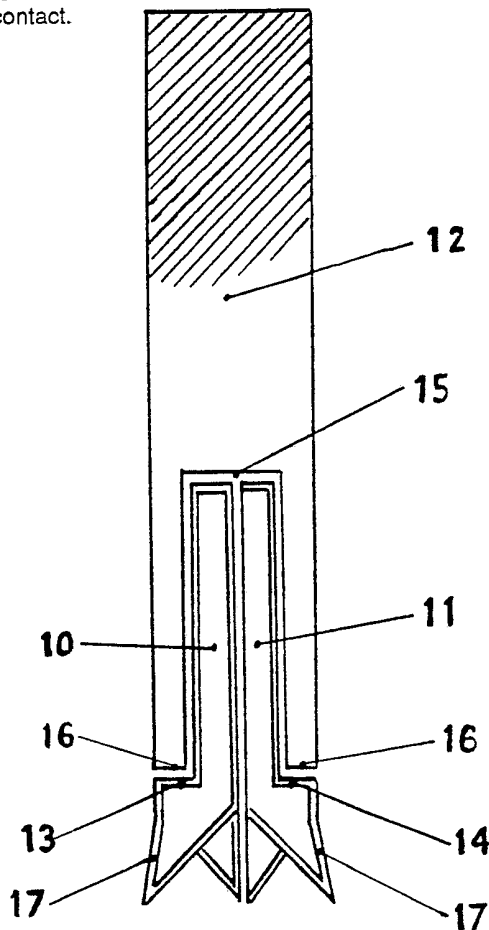
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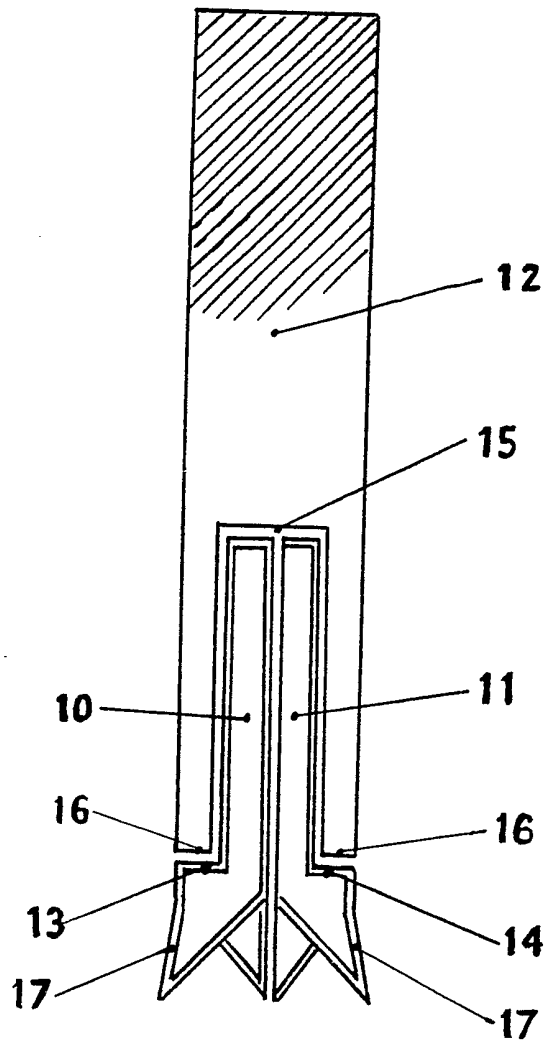
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(54) **Cutting devices**

(57) Cutting devices, eg. saws and knives, comprising at least one reciprocating cutting blade having a sliding contact face are provided with friction reducing means for that face. In the case of a power saw with two reciprocating sawblades in sliding contact with each other, one sawblade 10 is chrome-plated on all sides and the other sawblade 11 is chrome-plated on all sides except that side which during work is in contact with the first sawblade 10. This has been found to give low friction and low wear of the surfaces in contact.



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CUTTING DEVICESBackground

Many power saws and power knives are known, where two reciprocating blades are moving in contact with each other, sometimes sliding in a groove in a guidebar. The blades must be in contact with at least some pressure during work to avoid sawdust and fibers penetrating between the blades, which could make them stick in the groove or pry them apart. It is desirable to keep the friction between the blades low in spite of the contact pressure, since friction requires higher motor power and limits the durability of the blades through wear and overheating.

Among the many suggestions for lowering the friction is injection of air between the blades as in patent SE 451,812 or oil as in patent US 2,840,125, or the use of a film of tetraflouroethylene between the blades as in patent GB 2,134,038. It is also stated in patent GB 1,147,208 that hard coatings such as tungsten carbide must be avoided on the inside surfaces of two blades in rubbing contact.

Since pumps for air or oil constitute an added cost, and any oil can stain the workpiece or make the sawdust stick, it is desirable to find a new way to keep the friction low.

Description of the invention

By way of example only, reference is made to the accompanying figure, which shows a cross-section of a guidebar with two sawblades according to the invention.

Experiments have shown that the simultaneous achieving of low friction and low wear does not depend on the surface hardness per se as much as on the difference in hardness and the difference in crystal lattice. One combination of surfaces which shows very low wear and friction in spite of dry sliding contact is a chrome-plated surface sliding

against an untreated steel surface. It is superior to either two chrome-plated or two untreated surfaces.

5 The two sawblades (10,11) of the set in this embodiment of the invention are basically made as mirror images of each other apart from the surface treatment. Their upper parts are so thin that they can slide past each other in a groove (15) in a guidebar (12). Lower down they are provided with ledges (13,14) on the outsides, to carry the downward pressure from the outer layers (16) of the guidebar. At 10 the bottom the sawblades are provided with teeth, the details of which depend on which material is to be sawn.

According to the invention, the first sawblade (10) is provided with a hard metallic coating (17) such as chrome plating on all sides, and the other sawblade (11) is 15 provided with the same type of coating (17) on all sides except that side which during work will slide against the first blade (10), said side being without any coating. The groove (15) in the guidebar will not receive such a coating, nor will the undersides of the outer layers (16) 20 of the guidebar (12). In this arrangement, all sliding contact during work with the saw will occur between one chrome-plated and one untreated steel surface.

What has been described can also be applied to a power saw with two reciprocating blades without a guidebar, or to 25 reciprocating knife blades, and like cutting devices having at least one reciprocating blade with a sliding contact face.

CLAIMS

1. A cutting device having at least one reciprocating blade with a face in sliding contact with a further face of the device, one of said faces being
5 provided with a hard metallic coating and the other being without a coating.
2. A cutting device according to claim 1 comprising a pair of reciprocating blades, wherein said contact faces are on the respective blades.
- 10 3. A cutting device according to claim 1 or claim 2 wherein at least one further face of said blade or blades is also provided with said coating.
4. For use with a power saw, a set of two reciprocating blades arranged to dispose in sliding contact
15 with each other and with their thin upper parts inserted in a groove in a guidebar of the saw, the first sawblade being provided with a hard metallic coating on all sides, and the second sawblade being provided with the same metallic
20 coating on all sides except that side which is in sliding contact with the first sawblade, said side being without a coating.
5. A cutting device or a set of blades according to any one of the preceding claims wherein the coating is chrome plating.
- 25 6. A cutting device or a set of blades constructed and arranged for use substantially as described herein with reference to the accompanying drawing.
7. A power saw having a cutting device according to claim 6.