

(19) **DANMARK**

(10) **DK/EP 2448706 T3**



Patent- og
Varemærkestyrelsen

(12) Oversættelse af
europæisk patentskrift

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- (51) Int.Cl.: **B 23 D 61/12 (2006.01)** **B 26 B 9/02 (2006.01)**
- (45) Oversættelsen bekendtgjort den: **2020-04-06**
- (80) Dato for Den Europæiske Patentmyndigheds bekendtgørelse om meddelelse af patentet: **2020-02-12**
- (86) Europæisk ansøgning nr.: **10794464.7**
- (86) Europæisk indleveringsdag: **2010-07-02**
- (87) Den europæiske ansøgnings publiceringsdag: **2012-05-09**
- (86) International ansøgning nr.: **SE2010050768**
- (87) Internationalt publikationsnr.: **WO2011002411**
- (30) Prioritet: **2009-07-02 SE 0950520**
- (84) Designerede stater: **AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR**
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- (54) Benævnelse: **SAVKLINGE OG SAV**
- (56) Fremdragne publikationer:
DE-U1- 9 307 680
GB-A- 2 000 118
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US-A1- 2005 139 049
US-A1- 2010 180 452
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DESCRIPTION

[0001] The present invention relates to a saw blade as per the preamble of claim 1.

Prior Art

[0002] The American patent application with publication number US, A1, 2005/0139049 discloses systems and methods to cut/saw corrugated material of multi-layer type. This document discloses a saw blade as per the preamble of claim 1. There is found a band saw blade having a wavelike edge that is chamfered and set. The blade is considered to decrease the generation of dust during sawing in comparison with what is the case when sawing using a circular sawing machine. However, the generation of dust is still too great.

Summary of the Invention

[0003] A first object of the present invention is to provide a saw blade that causes minimal dust generation during sawing of, for instance, insulating material. A second object of the present invention is to provide a saw that is equipped with a saw blade according to the invention. Thus, the invention embraces a saw blade having teeth, at least one of said teeth being set and said teeth having at least one continuously continuous sharp edge that is common to the teeth and, in a main plane of extension of the saw blade and prior to setting, has either a pure sinusoidal shape or a modified sinusoidal shape, whereby the sharp edge is wave-shaped and lacks sudden sharp local direction changes along the extension of the saw blade.

[0004] The modified sinusoidal shape may partly have a different amplitude than the pure sinusoidal shape. The modified sinusoidal shape may partly have a different frequency or a different wavelength than the pure sinusoidal shape. The modified sinusoidal shape may partly have a different amplitude and a different frequency or a different wavelength than the pure sinusoidal shape.

[0005] At least one of said teeth may be set in one direction and at least one of said teeth may be set in the other direction. Every second tooth of said teeth may be set in one direction and every second tooth of said teeth may be set in the other direction. In a group of three sequencing teeth of said teeth, one tooth may be set in one direction, one tooth be set in the other direction and one tooth be unset. In a group of four sequencing teeth of said teeth, one tooth may be set in one direction, one tooth be set in the other direction and two teeth be unset. In a group of four sequencing teeth of said teeth, a first tooth may be unset, a second tooth be set in one direction, a third tooth be unset and a fourth tooth be set in the other direction.

[0006] Thus, the invention also embraces a saw comprising at least one saw blade according to the above. The saw may comprise at least one handle for handsawing. Said at least one saw blade may be detachable from said at least one handle. The saw may comprise equipment for machine sawing.

List of Figures

[0007]

Figure 1a shows, in a schematic view from above, a saw blade according to the invention, setting not being shown.

Figure 1b shows, in a side view, the saw blade according to Figure 1a supplemented with a partial enlargement and setting being shown.

Figure 1c shows, in a front view, a variant of the saw blade according to Figure 1a supplemented with a partial enlargement and setting being shown.

Figure 2 shows, in a side view, an alternative saw blade according to the invention and supplemented with a partial enlargement, occurring setting not being shown.

Description of Embodiments

[0008] A first embodiment of a saw blade according to the invention is seen in the Figures 1a and 1b. A saw blade 1 has a wave-shaped edge 2 with teeth 3. The edge 2 is chamfered to a sharp cutting edge 4 that runs in the entire length of the saw blade 1.

[0009] The edge 2 has, in a main plane of extension of the saw blade 1 and prior to setting of the teeth 3, a modified sinusoidal shape. The modification of the sinusoidal shape is such that the teeth 3 have ridges 5 on which said edge 2 is more extended in the main direction of extension of the edge than what corresponds to a pure sinusoidal shape of the edge at the same time as said teeth 3 have intermediate valleys 6 in which said edge 2 is more extended in the main direction of extension of the edge than what corresponds to a pure sinusoidal shape of the edge. From the partial enlargement in Figure 1b, it is seen that the edge 2 is more extended in the main direction of extension of the edge in the crest of each ridge 5 than the edge 2 is in the bottom of each valley 6. In the transition between each ridge 5 and valley 6, the edge 2 has a local direction of extension that is angled approx. 45° to the main direction of extension of the edge.

[0010] It should be observed that a second embodiment instead may have an edge 2 that is more extended in the main direction of extension of the edge in the bottom of each valley 6

than the edge 2 is in the crest of each ridge 5. A third embodiment may have an edge 2 that is as extended in the main direction of extension of the edge in the bottom of each valley 6 as in the crest of each ridge 5. A fourth embodiment may have an edge 2 that is not extended, i.e., the edge has a pure sinusoidal shape.

[0011] An additional embodiment of a saw blade according to the invention is seen in Figure 2. Here, the edge 2 has, in a main plane of extension of the saw blade 1 and prior to setting of the teeth 3, a modified sinusoidal shape for which the amplitude as well as the frequency and wavelength vary in a non-continuous way. Said parameters may also vary individually or in any combination, and in all cases continuously as well as non-continuously. If several parameters vary simultaneously, for instance, amplitude and frequency, both variations may be continuous or non-continuous or a first variation (no matter which) may be continuous while a second variation (no matter which) is non-continuous.

[0012] It should also be observed that, for each one of the mentioned embodiments, the edge 2 in the transition between each ridge 5 and valley 6 may have a local direction of extension that is angled approx. 0-90°, preferably approx. 10-80° and most preferably approx. 45° to the main direction of extension of the edge.

[0013] The teeth 3 are, for each one of the mentioned embodiments, alternately set, every second to the left and every second to the right, i.e., every second up from the plane of the paper and every second down under the plane of the paper in the partial enlargement in Figure 1 b. Of course, it is possible to conceive a number of other setting sequences, for instance, unset, set to the left, unset, set to the right, etc. recurrently. Observe that Figure 1c shows a variant having at least one tooth unset.

[0014] The saw blade 1 having the wave-shaped edge 2 saws insulating material such as "styrofoam" and mineral wool efficiently and causes a minimum of sawdust. The setting makes it easier for the blade to create sufficient free space during sawing so that the blade does not get caught. The fact that the edge 2 lacks sudden sharp local direction changes of the extension thereof also makes it easier for the blade to move freely during sawing and minimizes chip formation.

[0015] A saw according to the invention is provided with a blade according to the invention, and the blade may be fixedly mounted in a saw handle from the manufacturer but may also be detachably mounted in the handle. The saw may comprise equipment for machine sawing.

[0016] The wave-shaped edge 2 may also be present on saw blades for machine sawing, for instance, band saw blades, circular saw blades and compass saw blades.

[0017] The invention is not limited to the embodiments shown herein, but may be varied within the scope of the subsequent claims.

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US20050139049A1 [0002]

Patentkrav

1. Savklinge (1) med tænder (3), hvor mindst en af nævnte tænder (3) er udlagt og hvor nævnte tænder (3) har mindst en kontinuerlig skarp kant (2), der er
5 fælles for tænderne, **kendetegnet ved, at** nævnte skarpe kant, i et hovedplan af forlængelse af savklingen og før man udlægger, har enten en ren sinusform eller en modificeret sinusform, hvor den skarpe kant (2) er bølgeformet og pludselig mangler skarpe lokale retningsændringer langs forlængelsen af savklingen.
- 10 2. Savklinge (1) ifølge krav 1, hvor den modificerede sinusform delvist har en anden amplitude end den rene sinusform.
3. Savklinge (1) ifølge krav 1, hvor den modificerede sinusform delvist har en anden frekvens eller en anden bølgelængde end den rene sinusform.
- 15 4. Savklinge (1) ifølge krav 1, hvor den modificerede sinusform delvist har en anden amplitude og en anden frekvens eller en anden bølgelængde end den rene sinusform.
- 20 5. Savklinge ifølge krav 1, hvor mindst en af nævnte tænder (3) er udlagt i en retning og mindst en af nævnte tænder (3) er udlagt i den anden retning.
6. Savklinge ifølge krav 1, hvor hver anden tand (3) af nævnte tænder (3) er udlagt i en retning og hver anden tand (3) af nævnte tænder (3) er udlagt i den
25 anden retning.
7. Savklinge ifølge krav 1, hvor, i en gruppe af tre sekventerende tænder (3) af nævnte tænder (3), en tand er udlagt i en retning, en tand er udlagt i den anden retning og en tand ikke er udlagt.
- 30 8. Savklinge ifølge krav 1, hvor, i en gruppe af fire sekventerende tænder (3) af nævnte tænder (3), en tand er udlagt i en retning, en tand er udlagt i den anden retning og to tænder ikke er udlagt.

9. Savklinge ifølge krav 8, hvor, i en gruppe af fire sekventerende tænder (3) af nævnte tænder (3), en første tand ikke er udlagt, en anden tand er udlagt i en retning, en tredje tand er ikke udlagt og en fjerde tand er udlagt i den anden retning.

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10. Sav omfattende mindst en savklinge (1) ifølge et hvilket som helst af kravene 1-9.

11. Sav ifølge krav 10, som omfatter mindst et håndtag til håndsavning.

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12. Sav ifølge krav 11, hvor nævnte mindst ene savklinge (1) er aftagelig fra nævnte mindst ene håndtag.

13. Sav ifølge krav 12, som omfatter udstyr til maskinsavning.

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DRAWINGS

Fig. 1a



Fig. 1b

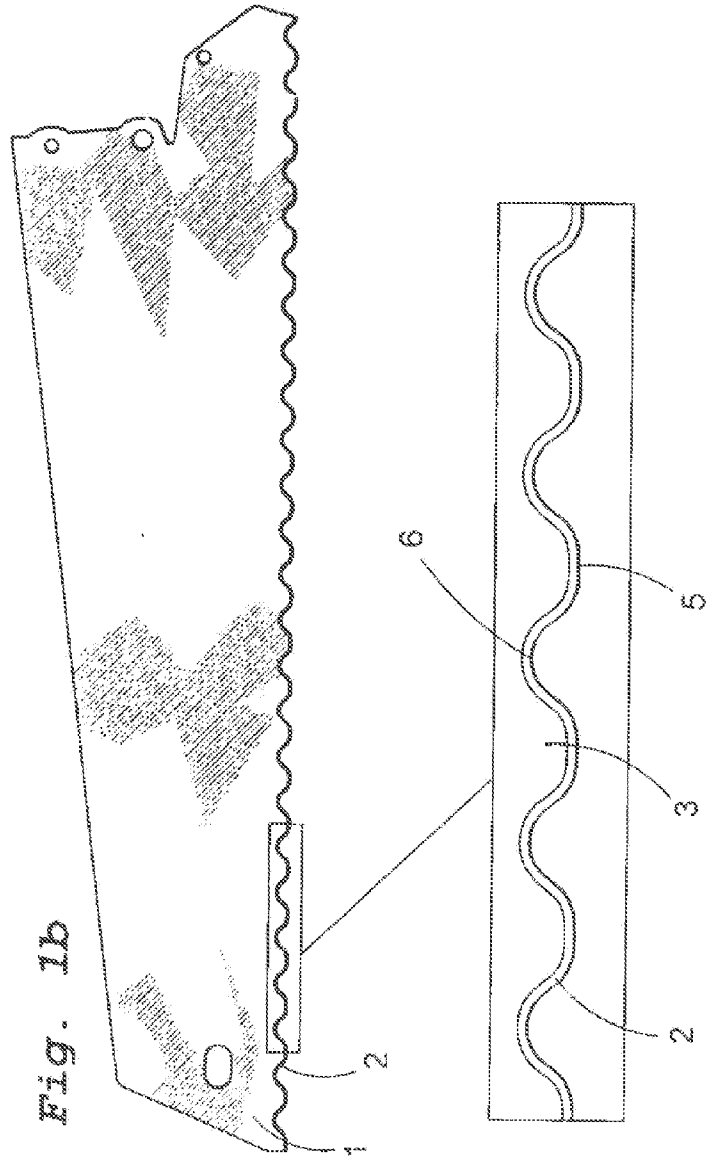


Fig. 1c

