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(54) **A REPLACEABLE WEAR COMPONENT**

(57) The disclosure relates to a replaceable wear component (1) for an industrial accessory (100), wherein the wear component (1) comprises:

- an inner wear member (10) comprising an inner wear surface (12),
- an outer wear member (20) comprising an outer wear surface (22),
- wherein the inner and outer wear members (10, 20) are configured to be releasably attached to each other so that the inner and outer wear surfaces (12, 22) are provided on opposing sides of the wear component (1), and
- wherein at least one of the inner and outer wear members (10, 20) further comprises:
 - a support surface (14, 24) provided on an opposite side with respect to its wear surface (12, 22),
 - a protruding portion (16, 26) provided on said opposite

side, wherein the protruding portion extends away from the support surface (14, 24) and in a direction away from the wear surface (12, 22) of the wear member so that it forms an extension of the wear member, and wherein the protruding portion (16, 26) comprises a mating surface (161, 261) facing away from the wear surface of the wear member, and

- wherein the mating surface (161) of the at least one of the inner and outer wear members (10) is adapted to face a corresponding mating surface (261) of the other one of the inner and outer wear members (20) when the inner and outer wear members (10, 20) are attached to each other. The disclosure further relates to an industrial accessory (100, 100').

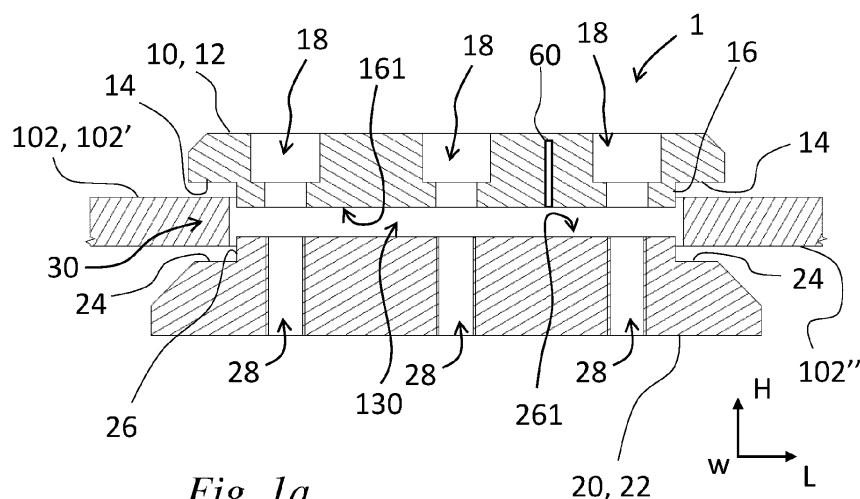


Fig. 1a

Description

TECHNICAL FIELD

[0001] The present disclosure relates to a replaceable wear component for an industrial accessory which is subjected to both internal and external wear during use. The present disclosure also relates to an industrial accessory comprising an inner side which is subjected to internal wear during use caused by abrasive material and an external side which is subjected to external wear during use caused by abrasive material.

BACKGROUND OF THE DISCLOSURE

[0002] An industrial accessory, such as a bucket for an earth moving machine, a load platform for moving earth material, and a load bay for moving earth material, is subjected to wear during use caused by abrasive material. To reduce the wear rate, the industrial accessory is typically made of an abrasive-resistant material, such as certain types of steel having a high abrasion resistance. In addition, the industrial accessory may also comprise separate wear components, or wear plates, which are attached to the industrial accessory. The wear components are typically attached to the industrial accessory at specific areas thereof where the abrasion caused by abrasive material during use is high.

[0003] Even though there exist different types of wear components for such industrial accessories, there is still a strive to develop further improved wear components.

SUMMARY OF THE DISCLOSURE

[0004] In view of the above, an object of the disclosure is to provide an improved replaceable wear component for an industrial accessory which at least partly alleviates one or more drawbacks of the prior art, or which at least provides a suitable alternative. A further object of the disclosure is to provide a replaceable wear component in which at least one of the following advantages is achieved: 1) the wear component's load absorption during use is improved; 2) the attachment and/or detachment procedure of the replaceable wear component is facilitated; 3) both the inner and external sides of the industrial accessory can be effectively protected by one component; 4) the replaceable wear component can be retro-fitted to many different types of industrial accessories; and 5) the replaceable wear component can be easily attached to industrial accessories with different plate thickness. A yet further object of the disclosure is to provide an improved industrial accessory comprising a replaceable wear component, which at least partly alleviates one or more drawbacks of the prior art, or which at least provides a suitable alternative.

[0005] According to a first aspect of the disclosure, at least one of the objects is at least partly achieved by a replaceable wear component according to claim 1.

[0006] Thus, there is provided a replaceable wear component for an industrial accessory.

[0007] The wear component comprises:

- an inner wear member comprising an inner wear surface,
- an outer wear member comprising an outer wear surface,
- wherein the inner and outer wear members are configured to be releasably attached to each other so that the inner and outer wear surfaces are provided on opposing sides of the wear component, and
- wherein at least one of the inner and outer wear members further comprises:

- a support surface provided on an opposite side with respect to its wear surface,
- a protruding portion provided on the opposite side, wherein the protruding portion extends away from the support surface and in a direction away from the wear surface of the wear member so that it forms an extension of the wear member, and wherein the protruding portion comprises a mating surface facing away from the wear surface of the wear member.

[0008] Furthermore, the mating surface of the at least one of the inner and outer wear members is adapted to face a corresponding mating surface of the other one of the inner and outer wear members when the inner and outer wear members are attached to each other.

[0009] By the provision of a replaceable wear component as disclosed herein, an improved replaceable wear component is achieved. For example, the present disclosure is based on a realization that by using a protruding portion as disclosed herein for at least one of the wear members, the accommodation of forces exerted on the wear component during use will be improved. More particularly, it has been realized that forces exerted on known wear components may result in a very high wear and tear on the attachment members, typically screws or bolts, so that eventually the attachment members may break. This may be especially relevant if forces exerted on the wear component are large in a direction corresponding to the extension of its wear surface. Accordingly, by configuring at least one of the wear members with a protruding portion as disclosed herein, the protruding portion can be inserted into an opening of the industrial accessory so that forces exerted on the wear component will at least partly be transferred from the wear component to the industrial accessory via the protruding portion. As such, forces transferred to the industrial accessory via any attachment member will be significantly reduced, or eliminated, implying increased service life of the wear component and of the attachment member(s).

[0010] In addition, as another example, by the provision of the replaceable wear component as disclosed herein, both the inside and the external side of the indus-

trial accessory can be more effectively protected during use. For example, by configuring the wear component with two separate wear members with corresponding mating surfaces which are facing each other when the wear members are attached to each other, and with respective inner and outer wear surfaces, the wear component will work as a single wear component which protects both the inside and the external side. Accordingly, instead of using e.g. separate and distant wear components on the inside and on the outside, there is provided a single wear component which extends through an opening of the industrial accessory.

[0011] An inner wear member as disclosed herein is a wear member which is intended to be provided on an inside of the industrial accessory. Accordingly, an outer wear member as disclosed herein is a wear member which is intended to be provided on an outside, or external side, of the industrial accessory.

[0012] The wear component as disclosed herein is replaceable due to the fact that the inner and outer wear members are releasably attached to each other.

[0013] By "*releasably attached*" is herein meant that the wear members can be attached to and detached from each other, for example without damaging, or at least not significantly damaging, any attachment members for attaching the wear members to each other.

[0014] Optionally, the at least one of the inner and outer wear members may be configured so that the support surface and the protruding portion thereof form a recess between the inner and outer wear members when being attached to each other. Thereby, an improved, more reliable and robust support to the industrial accessory may be achieved. Preferably, when the replaceable wear component is received in an opening of the industrial accessory, the recess may be used to at least partly enclose a portion of the industrial accessory which defines a perimeter of the opening.

[0015] Still optionally, the recess may extend at least partly around a perimeter profile of the wear component when the inner and outer wear members are attached to each other. More preferably, the recess may extend completely around the perimeter profile of the wear component when the inner and outer wear members are attached to each other. This implies a more reliable and robust support which can better withstand forces exerted thereon from several different directions.

[0016] Optionally, the wear component may be adapted so that the mating surface and the corresponding mating surface are able to be in conforming contact with each other when the inner and outer wear members are attached to each other. By "*conforming contact*" is herein meant that the corresponding surfaces are adapted to substantially match and follow each other all over an area therebetween when being attached to each other. Preferably, the mating surface and the corresponding mating surface are planar surfaces.

[0017] Optionally, the wear component may further comprise an intermediate washer element being adapted

to be placed in-between the mating surface and the corresponding mating surface when the inner and outer wear members are attached to each other. Thereby, the wear component may be easily adapted to different plate thicknesses of different industrial accessories. This implies a more flexible wear component, which in turn implies cost-effectiveness.

[0018] Optionally, the inner wear member may comprise at least one bore for receiving a respective attachment member, such as a screw or bolt, and the outer wear member may comprise at least one corresponding bore for receiving the respective attachment member, wherein the inner and outer wear members are adapted to be releasably attached to each other by insertion of the respective attachment member into the at least one bore and into the at least one corresponding bore. Accordingly, the at least one bore and the at least one corresponding bore are aligned when the inner and outer wear members are attached to each other. Thereby, instead of using different sets of attachment members for attaching one wear member to the other and vice versa, fewer attachment members may be used. Still optionally, the at least one bore of the inner and/or outer wear members may extend through the protruding portion.

[0019] Optionally, at least one of the inner and outer wear members may comprise a wear indicator which is adapted to provide a visual and/or haptic wear indicia to a user during use. Thereby, a user may more easily determine when it is time to replace at least one of the inner and outer wear members of the wear component. For example, the wear indicator may be provided by a bore extending in a direction towards the wear surface of the inner or outer wear member, such as in a direction being substantially perpendicular to an extension of the wear surface. The bore may terminate at a specific distance from the wear surface so that when the wear surface has been worn down the specific distance, an opening of the bore appears on the wear surface. Thereby, a user may identify the opening of the bore, implying that the wear member is worn and needs to be replaced.

[0020] Optionally, each one of the inner and outer wear members may comprise:

- a support surface provided on an opposite side with respect to its wear surface,
- a protruding portion provided on the opposite side, wherein the protruding portion extends away from the support surface and in a direction away from the wear surface of the wear member so that it forms an extension of the wear member, and wherein the protruding portion comprises a mating surface facing away from the wear surface of the wear member, and
- wherein the mating surface of the inner wear member is adapted to face the mating surface of the outer wear member when the inner and outer wear members are attached to each other.

[0021] Configuring the inner and outer wear members so that they are similar in shape may imply cost-effectiveness and facilitated attachment/detachment procedure.

[0022] Optionally, at least one of the inner and outer wear members may be made in one single piece, and/or at least one of the inner and outer wear members may comprise a separate protruding portion which is attached to another separate member of the at least one of the inner and outer wear members which comprises the inner or outer wear surface. The attachment of the separate protruding portion which is attached to the other separate member is preferably a permanent attachment, i.e. an irreversible attachment, such as a weld. Thereby, by configuring at least one of the wear members in one single piece or by at least two parts which are permanently attached to each other, the wear component may comprise few separate parts. This implies easier handling for a user. For example, the wear component may be assembled and attached to the industrial accessory by providing a single wear member on the inside and a single wear member on the outside.

[0023] Optionally, the protruding portion of the at least one of the inner and outer wear members may have an oblong profile, as seen in an extension of the protruding portion which corresponds to an extension of the wear surface of the at least one of the inner and outer wear members. Thereby, the wear component may be able to better withstand and accommodate forces in specific directions. More specifically, it has further been realized that for industrial accessories which are subjected to wear during use caused by abrasive material, the abrasive material is commonly provided onto the industrial accessory in a main direction. As such, by configuring the protruding portion with an oblong profile, a larger area on the protruding portion may accommodate the forces in the main direction, thereby resulting in a reduced pressure thereon compared to forces exerted onto a smaller area.

[0024] According to a second aspect of the disclosure, at least one of the objects is at least partly achieved by an industrial accessory according to claim 11.

[0025] Thus, there is provided an industrial accessory comprising an inner side which is subjected to internal wear during use caused by abrasive material and an external side which is subjected to external wear during use caused by abrasive material.

[0026] The industrial accessory further comprises:

- an opening between the inner side and the external side for receiving a replaceable wear component, and
- the replaceable wear component according to any one of the embodiments of the first aspect of the disclosure, wherein the replaceable wear component is received in the opening by providing the inner wear member from the inner side so that the inner wear surface faces away from the opening, and by

providing the outer wear member from the external side so that the outer wear surface faces away from the opening, and wherein the protruding portion of the at least one of the inner and outer wear members extends into the opening.

[0027] Advantages and effects of the second aspect of the disclosure are largely analogous to advantages and effects of the first aspect of the disclosure. It shall also be noted that all embodiments of the second aspect of the disclosure are applicable to all embodiments of the first aspect of the disclosure, and vice versa.

[0028] An inner side of the industrial accessory may be defined as a side where abrasive material is generally intended to be stored during use, at least temporarily stored. Accordingly, an external side of the industrial accessory may be defined as an opposite side to the inner side.

[0029] Optionally, when the replaceable wear component comprises a recess as disclosed herein, the recess may at least partly enclose a portion of the industrial accessory which at least partly defines a perimeter of the opening. More preferably, the recess may at least partly enclose a portion of the of the industrial accessory which extends around the complete perimeter of the opening when the replaceable wear component is received in the opening.

[0030] Optionally, the industrial accessory may be an earth moving accessory for an earth moving machine, such as any one of a bucket for moving earth material, a load platform for moving earth material, and a load bay for moving earth material.

[0031] Optionally, when the industrial accessory is a bucket, the opening may be provided on a heel section of the bucket which is provided between a bottom section and a side wall of the bucket. It has further been realized that the heel section of a bucket is an area of the bucket where wear components may require to be frequently replaced. Furthermore, especially the external side of the heel section is subjected to large forces when the bucket is collecting earth material. As such, by the provision of a wear component as disclosed herein at the heel section, an improved bucket will be achieved.

[0032] Optionally, the heel section may be inclined with respect to the bottom section and with respect to the side wall, such as the heel section may form an angle of substantially 45 degrees with respect to the bottom section and with respect to the side wall.

[0033] Still optionally, the heel section may comprise one or more replaceable heel section members which connect the side wall and the bottom section.

BRIEF DESCRIPTION OF THE DRAWINGS

[0034] With reference to the appended drawings, below follows a more detailed description of embodiments of the disclosure cited as examples.

[0035] In the drawings:

Figs. 1a-b are schematic sectional views of a replaceable wear component according to an example embodiment of the disclosure,

Fig. 2 is a schematic sectional view of a replaceable wear component according to another example embodiment of the disclosure,

Fig. 3 is a perspective view of a replaceable wear components according to an example embodiment of the present disclosure,

Fig. 4 is a sectional view of the replaceable wear component as shown in fig. 3,

Figs. 5a-b are schematic perspective views of an industrial accessory according to an example embodiment of the present disclosure,

Fig. 6 is a schematic perspective view of another industrial accessory according to an example embodiment of the disclosure, and

Figs. 7a-b are schematic views from below of respective wear members of respective replaceable wear components according to example embodiments of the disclosure

[0036] The drawings show diagrammatic exemplifying embodiments of the present disclosure and are thus not necessarily drawn to scale. It shall be understood that the embodiments shown and described are exemplifying and that the disclosure is not limited to these embodiments. It shall also be noted that some details in the drawings may be exaggerated in order to better describe and illustrate the disclosure. Like reference characters refer to like elements throughout the description, unless expressed otherwise.

DETAILED DESCRIPTION OF EXAMPLE EMBODIMENTS

[0037] Fig. 1a depicts a schematic and sectional view of a replaceable wear component 1 according to an example embodiment of the present disclosure. The section corresponds to a plane which is defined by a length extension L and a height extension H of the replaceable wear component 1. The height extension H extends in a direction which is perpendicular to extensions of the wear surfaces 12, 22 of the wear component 1, and the length extension L is perpendicular to the height extension H.

[0038] The replaceable wear component 1 is a replaceable wear component for an industrial accessory, for example an industrial accessory 100, 100' as shown in figs. 5-6, which is subjected to both internal and external wear during use caused by abrasive material.

[0039] Abrasive material as used herein may be defined as any material comprised in for example earth ma-

terial, such as stones of different sizes, gravel, sand, minerals etc. It may also be pre-processed material, such as metal scrap, building material, concrete, any type of waste material etc.

[0040] The wear component 1 comprises:

- an inner wear member 10 comprising an inner wear surface 12, and
- an outer wear member 20 comprising an outer wear surface 22.

[0041] The inner and outer wear members 10, 20 are configured to be releasably attached to each other so that the inner and outer wear surfaces 12, 22 are provided on opposing sides of the wear component 1.

[0042] The wear members 10, 20, and especially the wear surfaces 12, 22, are preferably made of hard abrasive-resistant material, such as different types of abrasive resistant steel. Purely by way of example, at least one of the wear surfaces 12, 22 may comprise a coating with an abrasive-resistant material.

[0043] Fig. 1a depicts the inner and outer wear members 10, 12 when being detached from each other and fig. 1b depicts the inner and outer wear members 10, 12 when being attached to each other.

[0044] The inner wear member 10 further comprises:

- a support surface 14 provided on an opposite side with respect to its wear surface 12,
- a protruding portion 16 provided on the opposite side, wherein the protruding portion extends away from the support surface 14 and in a direction away from the wear surface 12 of the inner wear member 10 so that it forms an extension of the inner wear member 10, wherein the protruding portion 16 comprises a mating surface 161 facing away from the wear surface 12 of the inner wear member 10.

[0045] As shown, the outer wear member 20 may in a similar manner further comprise:

- a support surface 24 provided on an opposite side with respect to its wear surface 22,
- a protruding portion 26 provided on the opposite side, wherein the protruding portion 26 extends away from the support surface 24 and in a direction away from the wear surface 22 of the wear member 20 so that it forms an extension of the outer wear member 20, wherein the protruding portion 26 comprises a mating surface 261 facing away from the wear surface 22 of the outer wear member 20.

[0046] Accordingly, as shown, each one of the inner and outer wear members 10, 20 may be configured with a respective support surface 14, 24 and a respective protruding portion 16, 26.

[0047] The mating surface 161 of the inner wear member 10 is adapted to face the mating surface 261 of the

outer wear member 20 when being attached to each other.

[0048] In the shown embodiment, the wear component 1 is provided through, i.e. mounted in, an opening 130 of an industrial accessory, for example the industrial accessory 100 and 100' as shown in figs. 5-6 which will be described in more detail in the below. The opening 130 is an opening through a portion 102 of the industrial accessory. The portion 102 is here a portion of a sheet metal plate, such as a sheet metal plate of a bucket 100 for an excavator as shown in figs. 5a-b or a sheet metal plate of a load bay 100' for a truck as shown in fig. 6.

[0049] As shown, the support surface 14 of the inner wear member 10 may be adapted to be received on and supported by a seat surface 102' of the portion 102 which is located on an inner side of the industrial accessory. The support surface 24 of the outer wear member 20 may be adapted in a similar manner, i.e. it may be adapted to be received on and supported by a seat surface 102" of the portion 102 which is located on an external side thereof. In the shown embodiment, the seat surfaces 102', 102" of the portion 102 are substantially planar surfaces.

[0050] As further shown, at least one of the inner and outer wear members 10, 20 may be configured so that the support surface 14, 24 and the protruding portion 16, 26 thereof form a recess 30 between the inner and outer wear members 10, 20 when being attached to each other. In the shown embodiment, the support surfaces 14, 24 and the protruding portions 16, 26 together form the recess 30.

[0051] As further shown, the recess 30 may extend at least partly around a perimeter profile of the wear component 1 when the inner and outer wear members 10, 20 are attached to each other.

[0052] Even though a recess 30 around a perimeter profile is shown, it shall be noted that the recess may additionally, or alternatively, be formed at other locations between the inner and outer wear members 10, 20. For example, as shown in figs. 7a and 7b, a protruding portion 16', 16" may be segmented with intermediate recesses 31, 32 located between the segments. Figs. 7a and 7b depict schematic views from below of respective inner wear members 10', 10". Accordingly, by way of example, there may be multiple of recesses 30, 31, 32 provided between the inner and outer wear members. In the shown embodiments, the multiple recesses 30, 31, 32 are formed by three separate segments of the protruding portion 16', 16" and by the support surface 14', 14". In fig. 7a, each segment 16' is shaped substantially as a rectangle, as seen from below. In fig. 7b, each segment 16" is shaped as a circle, as seen from below. Other shapes are of course also possible, such as an elliptic shape or a substantial square shape. Preferably, the outer wear member (not shown) is formed by similarly shaped segments of its protruding portion. As such, portions of the industrial accessory (not shown in figs. 7a-b) may extend in each one of the recesses 30, 31, 32

which are formed between the inner and outer wear members. By providing multiple recesses, the wear component 1 may better withstand and accommodate large forces which are directed in the extension of the wear surfaces 12, 22. Still further, by way of example, each one of the segments 16', 16" may also comprise an opening for receiving an attachment member as disclosed herein, e.g. a screw or bolt.

[0053] As shown in e.g. fig. 1b, the wear component 1 is preferably adapted so that the mating surface 161 and the corresponding mating surface 261 are able to be in conforming contact with each other when the inner and outer wear members 10, 20 are attached to each other. In the shown embodiment, the mating surface 161 and the corresponding mating surface 261 are in conforming contact with each other when the inner and outer wear members 10, 20 are attached to each other. It can further be gleaned from e.g. fig. 1b that the mating surfaces 161, 261 are here planar surfaces. The planar surfaces 161, 261 extend in a plane defined by the length extension L and a width extension w of the wear component 1. The width extension w is perpendicular to the length extension L and to the height extension H.

[0054] As shown in fig. 2, the wear component 1 may further comprise an intermediate washer element 40 which is adapted to be placed in-between the mating surface 161 and the corresponding mating surface 261 when the inner and outer wear members 10, 20 are attached to each other. Thereby, the wear component 1 will be more flexible and adaptable to different plate thicknesses of the industrial accessory. Accordingly, by way of example, the wear members' height may be standardized, whereby intermediate washer elements with varying thickness in the height extension H can be provided to vary the height of the wear component 1.

[0055] As further shown in e.g. figs. 1a-b and 2, the inner wear member 10 may comprise at least one bore 18 for receiving a respective attachment member 50, such as a screw or bolt, and the outer wear member 20 may comprise at least one corresponding bore 28 for receiving the respective attachment member 50. The inner and outer wear members 10, 20 are thereby adapted to be releasably attached to each other by insertion of the respective attachment member 50 into the at least one bore 18 and into the at least one corresponding bore 28. In the shown embodiments, there are three attachment members 50 provided in respective pairs of bores of the inner and outer wear members 10, 20. As shown, each pair of bores of the inner and outer wear members 10, 20 are aligned so that a respective attachment member 50 can be inserted therethrough. Even though three pairs of bores are shown, it shall be understood that there may be more or fewer pairs of bores depending on e.g. the size of the wear component 1. The attachment members 50 as shown in the embodiments are threaded screws or bolts. As such, at least one of the wear members 10, 20 may have corresponding threads in its bore(s) for the threaded screw or bolt. Other attachment means

are of course also possible, such as a bolt and nut connection, a releasable snap-fit connection etc.

[0056] The bores 18, 28, as shown, preferably extend in a direction from the inner wear surface 12 to the outer wear surface 22, i.e. in the height extension H. Still further, as shown, the bores 18, 28 preferably extend through each respective protruding portion, 16 and 26.

[0057] As further shown in figs. 1a-b, at least one of the inner and outer wear members 10, 20 may comprise a wear indicator 60 which is adapted to provide a visual and/or haptic wear indicia to a user during use. In the shown example, the inner wear member 10 is provided with a wear indicator 60 in the form of a bore which is drilled from the mating surface 161 towards the inner wear surface 12. The bore 60 terminates at a distance from the inner wear surface 12. As such, when the inner wear surface 12 is worn down so that the bore 60 is revealed, it results in a visual and/or haptic indicator for a user that the inner wear member 10 should be replaced. The outer wear member 20 may be equipped with a similar or different wear indicator.

[0058] As further shown in e.g. figs. 1a-b and 2, the inner and outer wear members 10, 20 may be made in one single piece. Alternatively, at least one of the inner and outer wear members 10, 20 may comprise a separate protruding portion which is attached to another separate member of the at least one of the inner and outer wear members which comprises the inner or outer wear surface.

[0059] Fig. 3 shows a perspective view of a wear component 1 similar to the ones shown in figs. 1a-b and 2. However, the embodiment in fig. 3 further shows that the protruding portion 16, 26 of the at least one of the inner and outer wear members 10, 20 may have an oblong profile, as seen in an extension of the protruding portion 16, 26 corresponding to an extension of the wear surface 12, 22 of the at least one of the inner and outer wear members 10, 12. As can be seen, the wear surfaces 12, 22, extend in respective planes which are defined by the length extension L and the width extension w. In fig. 3, the protruding portion 16 of the inner wear member 10 can be seen. However, the outer wear member 20 has in this embodiment a corresponding protruding portion 26, even though other shapes are also conceivable. Accordingly, the oblong protruding portion 16 extends in the length extension L and in the width extension w of the wear component 1, whereby its length in the length extension L is longer than its length in the width extension w. It shall be noted that other profiles are also possible, such as a circular profile.

[0060] As further shown in fig. 3, a washer element 52 may be provided for each attachment member 50. The washer element 52 may for example be a so-called tension-locking washer element which uses tension created by use of two adjacent washers to lock the screw or bolt. Alternatively, the washer element may be a more traditional friction-locking washer element.

[0061] Fig. 4 shows the wear component 1 of fig. 3 in

a sectional view defined by a plane which extends in the length extension L and the height extension H of the wear component. As shown also for this embodiment, a recess 30 is formed between the inner and outer wear members 10, 20. The recess 30 as shown extends around the complete perimeter of the wear component 1.

[0062] With reference to figs. 5a-b, schematic perspective views of an industrial accessory 100 according to an example embodiment of the present disclosure is depicted.

[0063] The industrial accessory 100, which here is in the form of a bucket for an earth moving machine, comprises an inner side 110 which is subjected to internal wear during use caused by abrasive material and an external side 120 which is subjected to external wear during use caused by abrasive material.

[0064] The industrial accessory 100 further comprises:

- an opening 130 between the inner side and the external side for receiving a replaceable wear component, and
- the replaceable wear component 1 according to any one of the embodiments of the first aspect of the disclosure.

[0065] In the shown embodiment, there is provided seven wear components 1 in respective openings on a heel section 140 of the bucket 100. It shall however be noted that there may be more or fewer wear components, for example depending on the size of the bucket 100. The wear components 1 as shown are here identical, even though in alternative embodiments the wear components may be of different shape.

[0066] The heel section 140 of the bucket 100 is as shown provided between a bottom section 150 and a side wall 160 of the bucket 100. Moreover, as shown, the heel section 140 may be inclined with respect to the bottom section 150 and with respect to the side wall 160. As further shown, the heel section 140 may form an angle of substantially 45 degrees with respect to the bottom section 150 and with respect to the side wall 160. Yet further, as shown, the heel section 140 may comprise a plurality of replaceable heel section members 141 which connect the side wall 160 and the bottom section 150. In the shown embodiment, the wear components 1 are provided on each heel section member 141.

[0067] Each replaceable wear component 1 is received in the respective opening 130 by providing the inner wear member 10 from the inner side 110 so that the inner wear surface 12 faces away from the opening 130, and by providing the outer wear member 20 from the external side 120 so that the outer wear surface 22 faces away from the opening 130. Furthermore, as shown in the previous figs., the protruding portion 16, 26 of the at least one of the inner and outer wear members 10, 20 extends into the respective opening 130.

[0068] Furthermore, similar to the embodiment shown in e.g. figs. 1a-b, each respective replaceable wear com-

ponent 1 comprises a recess 30. The respective recess 30 at least partly encloses a portion 102, see e.g. figs. 1a-b, of the industrial accessory 100 which at least partly defines a perimeter of the opening 130.

[0069] As mentioned in the above and shown in figs. 7a-b, the recess may be formed by use of a segmented protruding portion 16', 16" of the inner 10', 10" and/or outer wear members. Accordingly, the opening of the industrial accessory may be partitioned, forming corresponding openings adapted to receive the segmented protruding portion.

[0070] Even though it has been found that the wear component 1 is particularly advantageous for a bucket 100, the wear component 1 may also be used for other industrial accessories, such as a load platform for moving earth material, and a load bay for moving earth material. A schematic illustration of a load bay 100' for a truck is shown in perspective view in fig. 6. One or more wear components 1 may be provided on the load bay 100' at different locations, such as in the proximity of a tipping opening of the load bay 100'. For example, section A indicates an area at a bottom surface of the load bay 100' proximate the tipping opening where one or more wear components 1 may be provided. Other areas where one or more wear components 1 may be provided are for example in bottom corners of the load bay 100'.

[0071] It is to be understood that the present disclosure is not limited to the embodiments described above and illustrated in the drawings; rather, the skilled person will recognize that many changes and modifications may be made within the scope of the appended claims.

Claims

1. A replaceable wear component (1) for an industrial accessory (100), wherein the wear component (1) comprises:

- an inner wear member (10) comprising an inner wear surface (12),
- an outer wear member (20) comprising an outer wear surface (22),
- wherein the inner and outer wear members (10, 20) are configured to be releasably attached to each other so that the inner and outer wear surfaces (12, 22) are provided on opposing sides of the wear component (1), and
- wherein at least one of the inner and outer wear members (10, 20) further comprises:

- a support surface (14, 24) provided on an opposite side with respect to its wear surface (12, 22),
- a protruding portion (16, 26) provided on said opposite side, wherein the protruding portion extends away from the support surface (14, 24) and in a direction away from

the wear surface (12, 22) of the wear member so that it forms an extension of the wear member, and wherein the protruding portion (16, 26) comprises a mating surface (161, 261) facing away from the wear surface of the wear member, and

- wherein the mating surface (161) of the at least one of the inner and outer wear members (10) is adapted to face a corresponding mating surface (261) of the other one of the inner and outer wear members (20) when the inner and outer wear members (10, 20) are attached to each other.

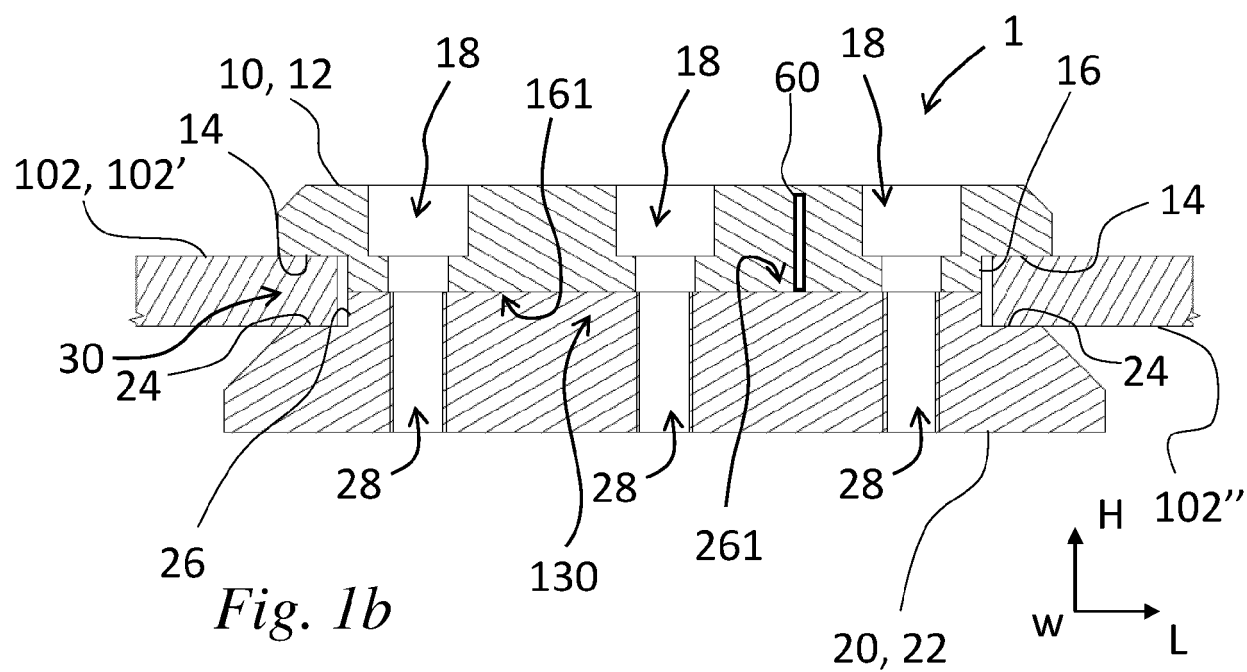
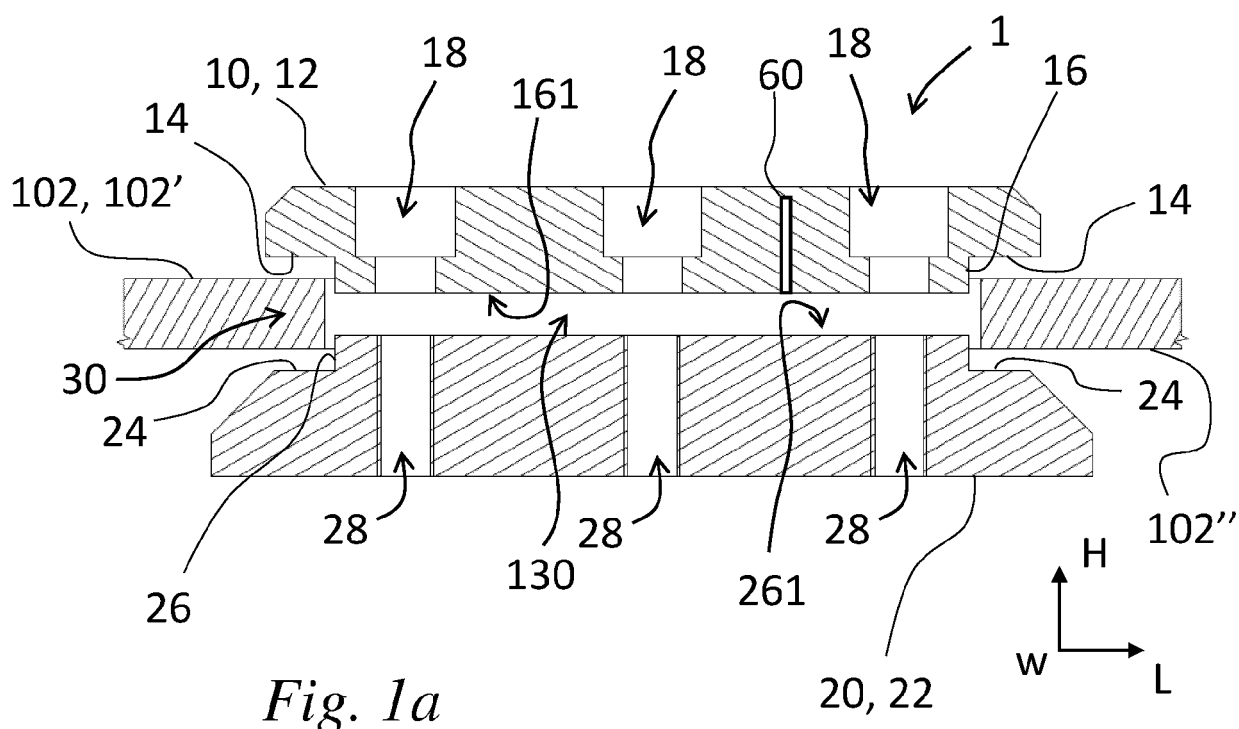
2. The replaceable wear component (1) according to claim 1, wherein the at least one of the inner and outer wear members (10, 20) is configured so that the support surface (14, 24) and the protruding portion (16, 26) thereof form a recess (30) between the inner and outer wear members when being attached to each other.
3. The replaceable wear component (1) according to claim 2, wherein the recess (30) extends at least partly around a perimeter profile of the wear component (1) when the inner and outer wear members (10, 20) are attached to each other.
4. The replaceable wear component (1) according to any one of the preceding claims, wherein the wear component is adapted so that the mating surface (161) and the corresponding mating surface (261) are able to be in conforming contact with each other when the inner and outer wear members (10, 20) are attached to each other.
5. The replaceable wear component (1) according to any one of the preceding claims, further comprising an intermediate washer element (40) being adapted to be placed in-between the mating surface (161) and the corresponding mating surface (261) when the inner and outer wear members (10, 20) are attached to each other.
6. The replaceable wear component (1) according to any one of the preceding claims, wherein the inner wear member (10) comprises at least one bore (18) for receiving a respective attachment member (50), such as a screw or bolt, and wherein the outer wear member (20) comprises at least one corresponding bore (28) for receiving the respective attachment member (50), wherein the inner and outer wear members (10, 20) are adapted to be releasably attached to each other by insertion of the respective attachment member into the at least one bore (18) and into the at least one corresponding bore (28).

7. The replaceable wear component (1) according to any one of the preceding claims, wherein at least one of the inner and outer wear members (10, 20) comprises a wear indicator (60) which is adapted to provide a visual and/or haptic wear indicia to a user during use. 5
8. The replaceable wear component (1) according to any one of the preceding claims, wherein each one of the inner and outer wear members (10, 20) comprises: 10
- a support surface (14, 24) provided on an opposite side with respect to its wear surface (12, 22), 15
 - a protruding portion (16, 26) provided on said opposite side, wherein the protruding portion extends away from the support surface (14, 24) and in a direction away from the wear surface (12, 22) of the wear member so that it forms an extension of the wear member, and wherein the protruding portion (16, 26) comprises a mating surface (161, 261) facing away from the wear surface of the wear member, and 20
 - wherein the mating surface (161) of the inner wear member (10) is adapted to face the mating surface (261) of the outer wear member (20) when the inner and outer wear members (10, 20) are attached to each other. 25
9. The replaceable wear component (1) according to any one of the preceding claims, wherein at least one of the inner and outer wear members (10, 20) is made in one single piece, and/or wherein at least one of the inner and outer wear members (10, 20) comprises a separate protruding portion which is attached to another separate member of the at least one of the inner and outer wear members (10, 20) which comprises the inner or outer wear surface (12, 22). 30
10. The replaceable wear component (1) according to any one of the preceding claims, wherein the protruding portion (16, 26) of the at least one of the inner and outer wear members (10, 20) has an oblong profile, as seen in an extension of the protruding portion (16, 26) corresponding to an extension of the wear surface (12, 22) of the at least one of the inner and outer wear members (10, 12). 35
11. An industrial accessory (100) comprising an inner side (110) which is subjected to internal wear during use caused by abrasive material and an external side (120) which is subjected to external wear during use caused by abrasive material, wherein the industrial accessory further comprises: 40
- an opening (130) between the inner side and 45

the external side for receiving a replaceable wear component, and

- the replaceable wear component (1) according to any one of the preceding claims, wherein the replaceable wear component (1) is received in the opening by providing the inner wear member (10) from the inner side (110) so that the inner wear surface faces away from the opening (130), and by providing the outer wear member (20) from the external side (120) so that the outer wear surface faces away from the opening (130), and wherein the protruding portion (16, 26) of the at least one of the inner and outer wear members (10, 20) extends into the opening (130). 50

12. The industrial accessory (100) according to claim 11, wherein, when the replaceable wear component comprises a recess (30) according to any one of claims 2-3, the recess (30) at least partly encloses a portion (102) of the industrial accessory which at least partly defines a perimeter of the opening (130). 55
13. The industrial accessory (100) according to any one of claims 11-12, wherein the industrial accessory is an earth moving accessory for an earth moving machine, such as any one of a bucket for moving earth material, a load platform for moving earth material, and a load bay for moving earth material.
14. The industrial accessory (100) according to claim 13, wherein the industrial accessory is a bucket, and wherein the opening (130) is provided on a heel section (140) of the bucket which is provided between a bottom section (150) and a side wall (160) of the bucket.
15. The bucket (100) according to claim 14, wherein the heel section (140) is inclined with respect to the bottom section (150) and with respect to the side wall (160), such as the heel section (140) forms an angle of substantially 45 degrees with respect to the bottom section (150) and with respect to the side wall (160). 60



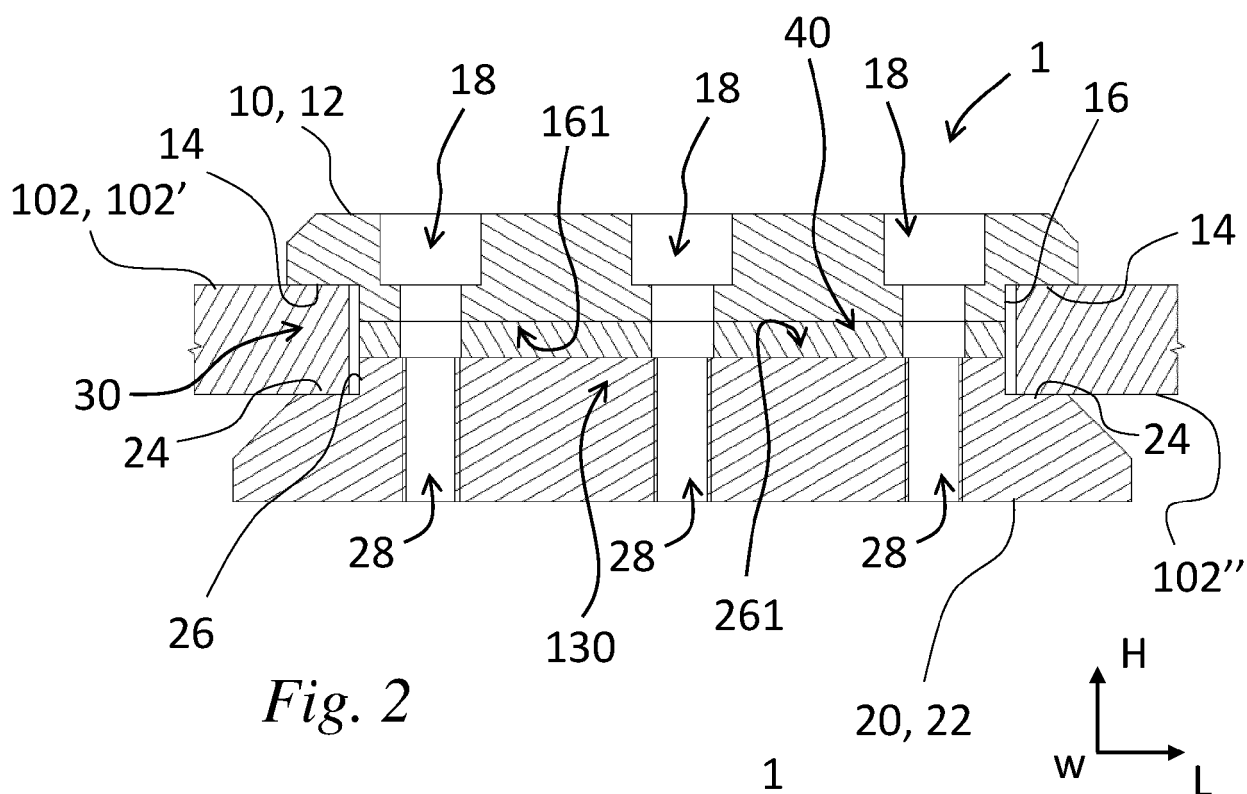


Fig. 2

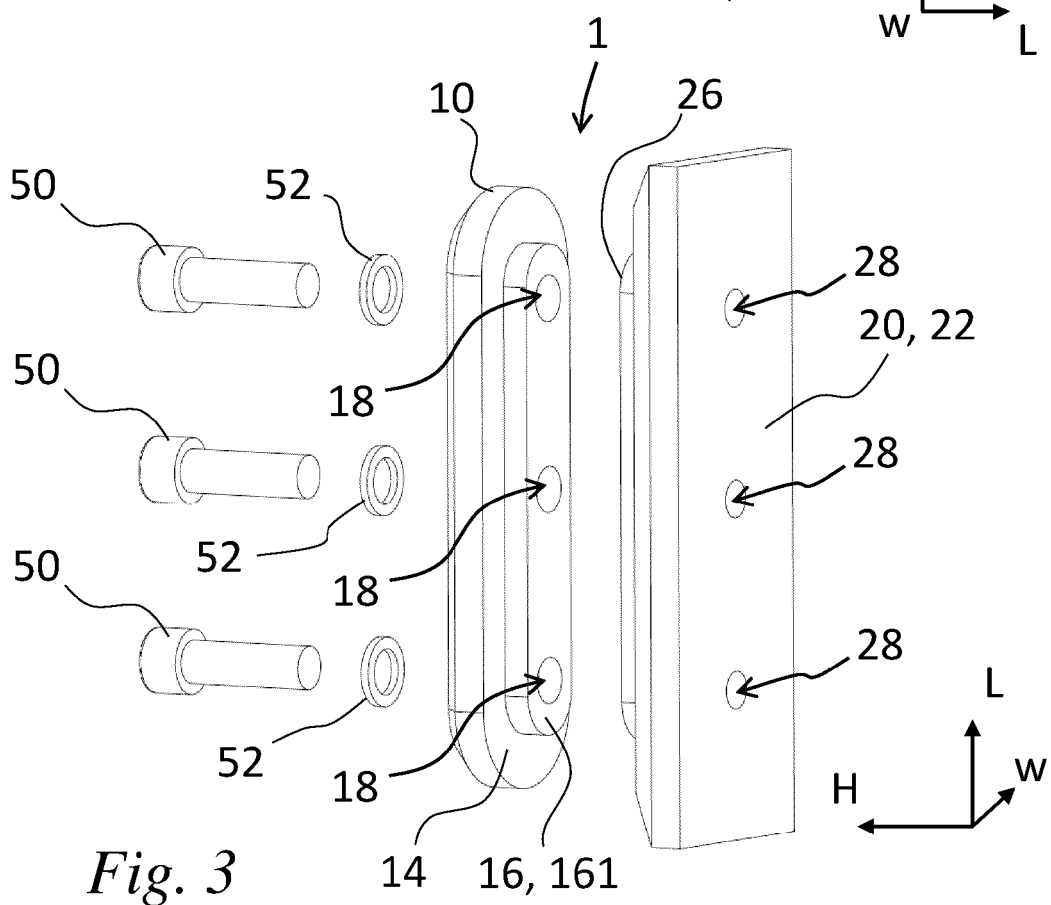
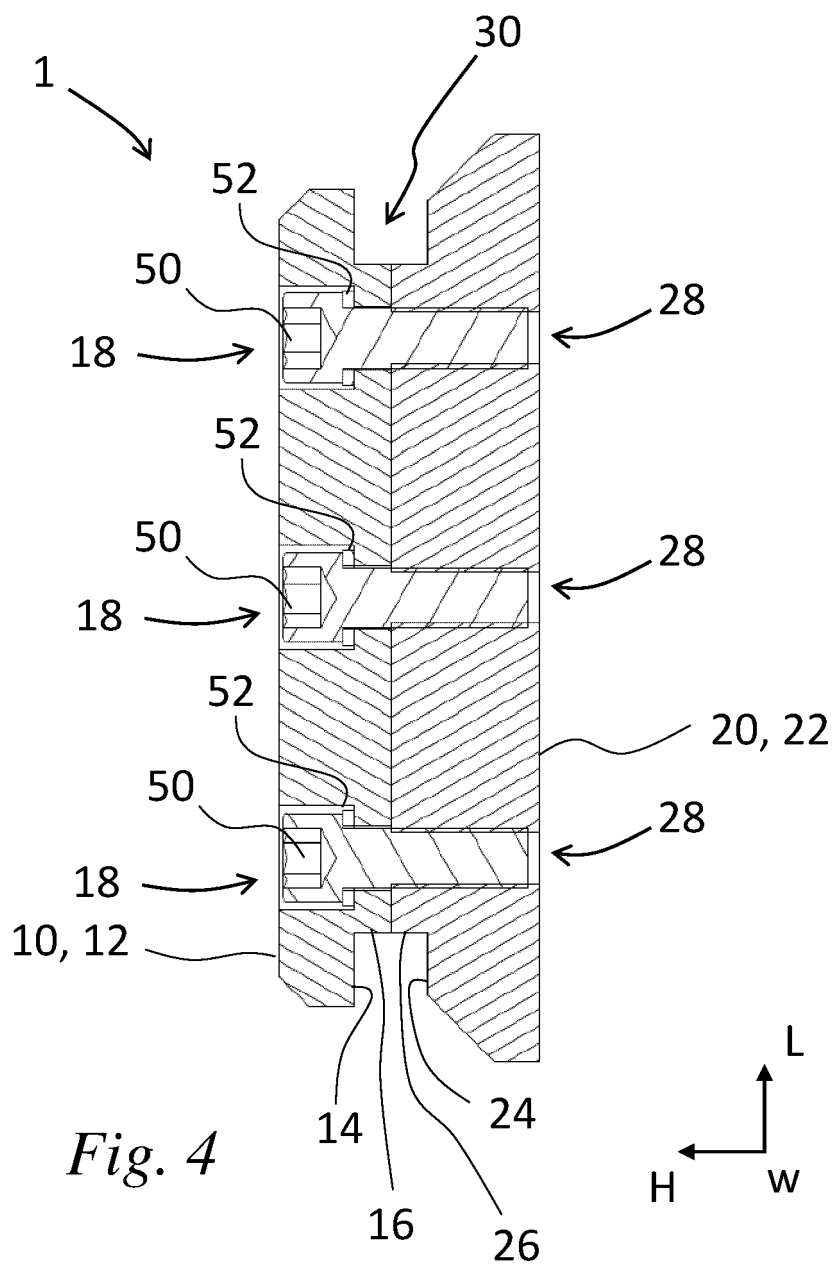
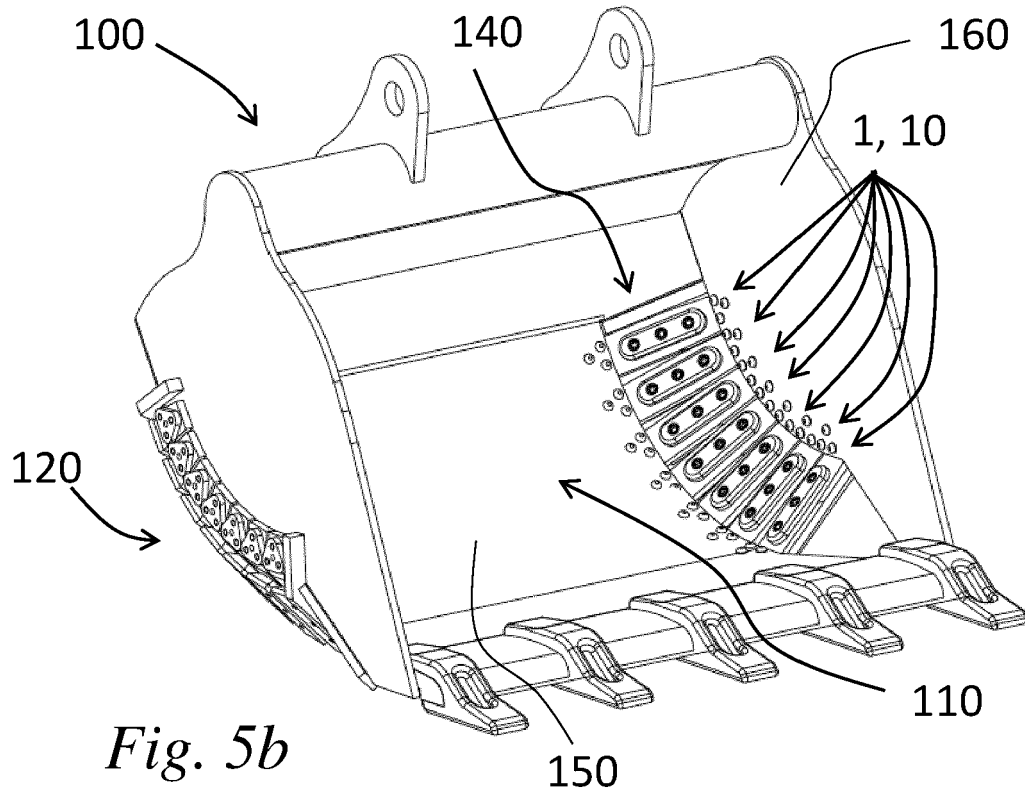
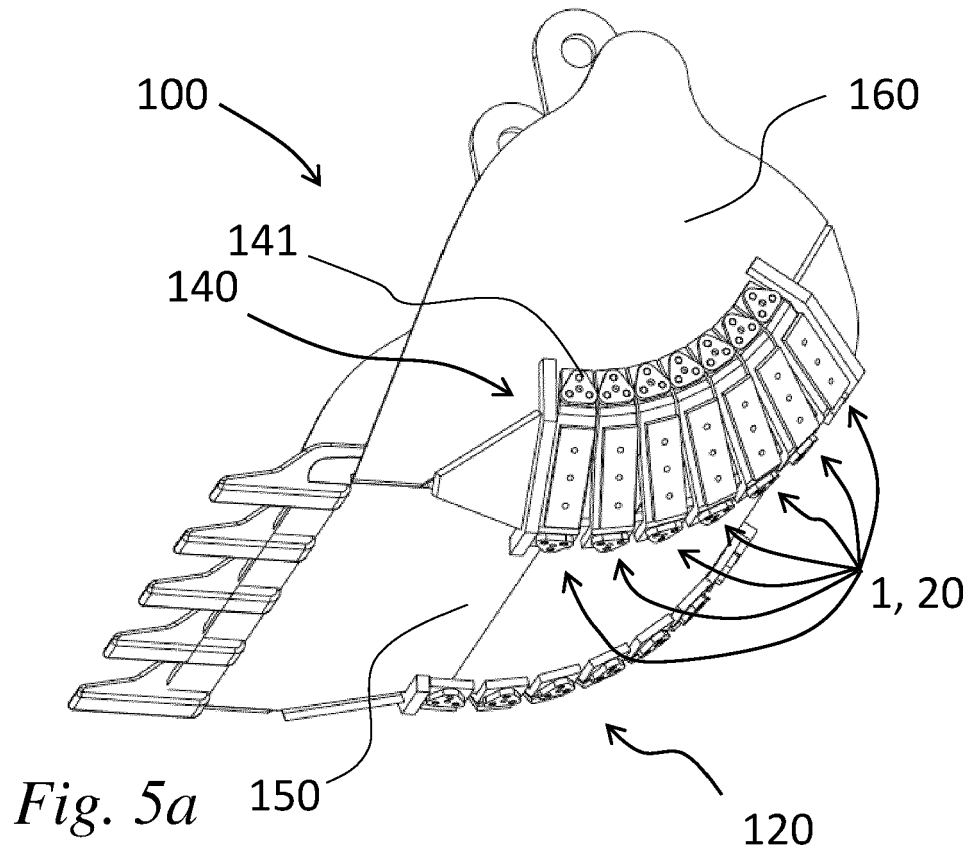


Fig. 3





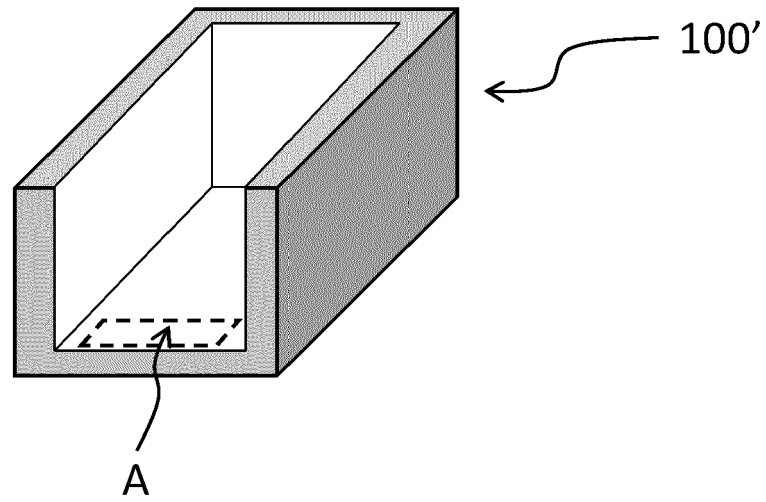


Fig. 6

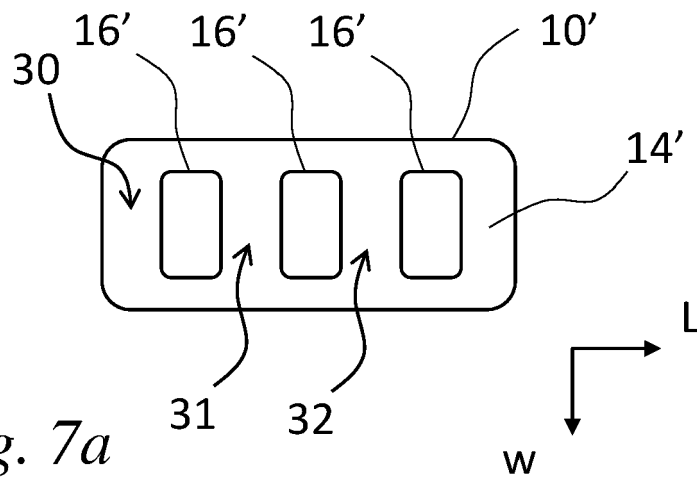


Fig. 7a

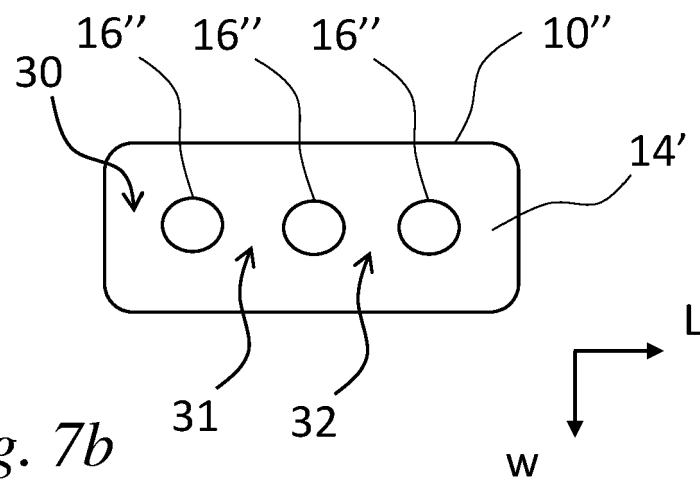


Fig. 7b



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Munich			Kühn, Thomas
Date of completion of the search			
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