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(54) **Screw conveyor**

(57) There is provided an embodiment of a screw conveyor (100) comprising a conveyor duct (102) for conveying material and an inlet duct (104) leading to the conveyer duct (102) for introducing the material into the conveyor duct (102). The inlet duct (104) comprises an inlet wall (105). A rotatable conveyor screw (106) is arranged in the conveyor duct (102) for transporting the material from the inlet duct (104) through the conveyor duct (102). A wear element (114) is provided, the wear element (114) forming an edge (111) between the inlet duct (104) and the conveyor duct (102). The wear element (114) has a wall portion (113) which forms part of the inlet duct (104) and abuts the inlet wall (105). Further, the wear element (114) only partially encompasses the conveyor screw (110) so as to be removable to thereby provide a free space between the inlet wall (105) and the conveyer screw (110).

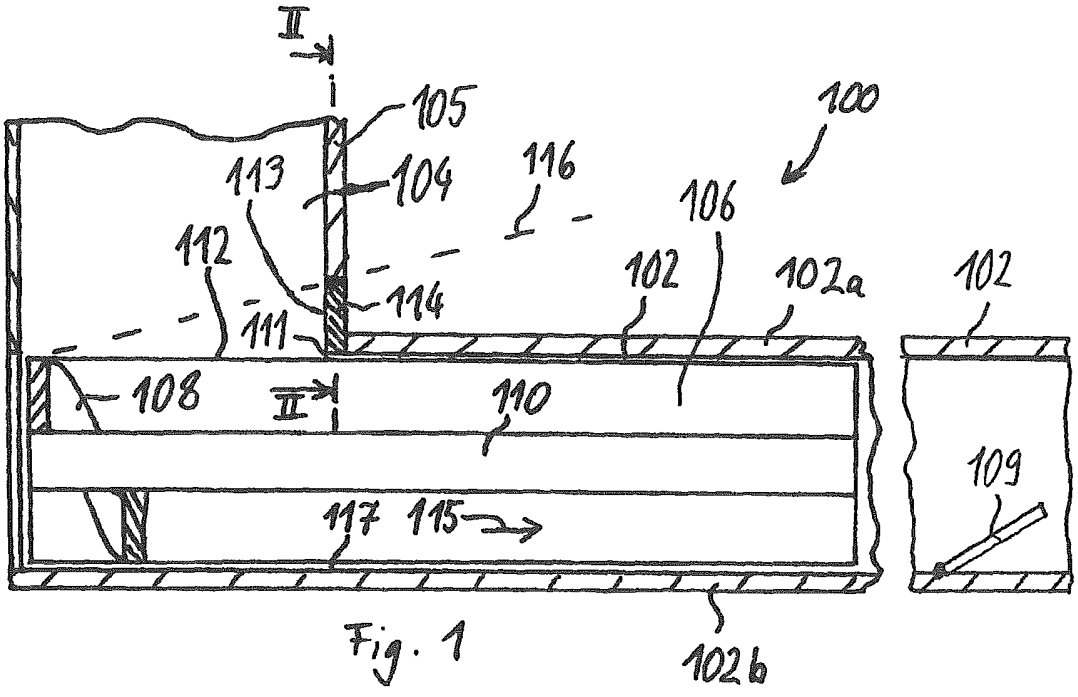

Fig. 1

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to the field of screw conveyors and screw presses.

BACKGROUND OF THE INVENTION

[0002] In screw conveyors, long pieces of the input material, for example pieces of tree branches and shrub may result in increased wear of the screw conveyor.

[0003] EP 0 790 122 B1 discloses an adjustable cutting plate with a cutting edge adjacent to the screw at the beginning of its tapering position for cutting up long items such as wooden poles and the like so that they can be passed through the apparatus. The screw itself may be provided with a cutting edge on its periphery to assist the cutting plate.

[0004] In view of the above-described situation, there exists a need for an improved technique and that enables to reduce the maintenance cost of a screw conveyor.

SUMMARY OF THE INVENTION

[0005] This need may be met by the subject-matter according to the independent claims. Advantageous embodiments of the herein disclosed subject-matter are described by the dependent claims.

[0006] According to an embodiment of a first aspect of the herein disclosed subject-matter, there is provided a screw conveyor comprising a conveyor duct for conveying material; an inlet duct for introducing material into the conveyor duct, the inlet duct comprising an inlet wall, the inlet duct leading to the conveyer duct; a rotatable conveyor screw arranged in the conveyor duct for transporting the material from the inlet duct through the conveyor duct; a wear element forming an edge between the inlet duct and the conveyor duct, the wear element having a wall portion forming part of the inlet duct, the wall portion abutting the inlet wall; the wear element only partially encompassing the conveyor screw so as to be removable to thereby provide a free space between the inlet wall and the conveyer screw.

[0007] This aspect of the herein disclosed subject-matter is based on the idea that by making the wear element removable so as to provide a free space between the conveyor screw and the inlet wall, the conveyor screw can be made removable with the screw conveyor remaining mounted at the installation site. It should be understood that in order to remove the conveyor screw without removing the screw conveyor from its installation site usually requires further measures, e.g. measures in accordance with further embodiments of the herein disclosed subject-matter.

[0008] The conveyor duct and the inlet duct may be arranged at an angle with respect to each other. For example, according to an embodiment, the inlet duct is arranged transverse to the conveyor duct. According to an embodiment, the edge between the inlet duct and the conveyor duct delimits the inlet duct in a transport direction in which the material is conveyed by the conveyor screw. Hence such an edge between the inlet duct and the conveyor is exposed to wear in particular if larger pieces of material are conveyed. In accordance with an embodiment, the edge is formed by a wear element in accordance with embodiments of the herein disclosed subject-matter and is configured for taking up the wear in this region, i.e. at an edge between the conveyor duct and the inlet duct. By exchanging the wear element, the edge between the inlet duct and the conveyor duct can be exchanged, thereby maintaining the function of the edge between the inlet duct and the conveyor duct.

[0009] According to an embodiment, the wear element is spaced from the conveyor screw by a first distance and the free space has a dimension between the inlet wall and the conveyor screw which is larger than the first distance.

[0010] According to an embodiment, the screw conveyor further comprises a flow restriction for the material to be conveyed, the screw conveyor thereby acting as a screw press. The flow restriction can be of any suitable type. For example, in an embodiment, the flow restriction is formed by an adjustable flap. By adjusting the cross-section of the flap in the conveyor duct, e.g. by changing its pivoting angle, the degree of flow restriction can be adjusted, thereby adjusting the pressing function of the screw press. According to another embodiment, the cross-sectional area of the conveyor duct may be reduced in order to act as a flow restriction.

[0011] According to a further embodiment, the screw conveyor comprises a support counteracting a torsional moment exerted on the conveyor duct due to the rotation of the conveyor screw. According to an embodiment, the support extends only over part of a circumference of the conveyor duct, for example only over a half of the circumference of the conveyor duct or less than a half of the circumference of the conveyor duct. According to a further embodiment, the support has an opening in axial direction, the opening having a width that is equal or larger than the width of the conveyor screw above the support. In this way, the conveyor screw can be removed through the opening without removing the support. According to an embodiment, the opening is continuous with the free space provided by the removed wear element.

[0012] In accordance with a further embodiment, the support forms part of the conveyor duct. For example, according to an embodiment, the support is of a generally cylindrical shape with a segment of the cylinder being removed. According to an embodiment, the removed segment or, in other words, the remaining opening of the support has a width that is larger or equal to the width of the conveyor screw mounted in the support. For example, in accordance with an embodiment, the support is arranged on the same side of the conveyor screw as the inlet duct. According to a further embodiment, the support

is formed on a side of the conveyor screw that is opposite the inlet duct. According to still other embodiments, the opening of the support may have another orientation with regard to the inlet duct, for example transverse to the inlet duct.

[0013] According to an embodiment, the conveyor duct comprises a removable part. For example, in accordance with an embodiment, the removable part is located in the opening of the support. Hence, in accordance with an embodiment the support and the removable part completely enclose the conveyor screw in circumferential direction. However, it should be noted that "compete enclosure" of the conveyor screw in circumferential direction does not necessarily mean that the enclosure is tight, e.g. fluid tight. For example, if the screw conveyor is a screw press, one or both of the support and the removable part may be formed as a sieve for allowing liquid pressed out of the conveyed material to be discharged from the screw conveyor through the sieve.

[0014] According to an embodiment, the removable part comprises at least one removable sieve. According to a further embodiment, the removable sieve is mounted to have axial clearance. Hence, in accordance with an embodiment, the at least one removable sieve is mounted in an opening of the conveyor duct and are slightly movable in axial direction before they are secured to the conveyor duct. Axial clearance of the at least one removable sieve facilitates removal of the sieve.

[0015] According to an embodiment, the removable part of the conveyor duct is secured to the remaining conveyor duct by a securing element. According to an embodiment, the securing element does not exert axial forces to the removable part. For example, the securing element may extend over the removable part in axial direction, or, in another embodiment, in circumferential direction, thereby securing the removable part to the conveyor duct.

[0016] According to a further embodiment, the wear element has a surface portion facing the removable part. For example, in an embodiment removal of the wear element and removal of the removable part provides a continuous opening above the conveyor screw, thereby allowing the conveyor screw to be removed from the conveyor duct through the continuous opening. In an embodiment, the surface portion of the wear element is directly abutting the removable part.

[0017] According to an embodiment, the wear element has, with regard to an axis of rotation of the conveyor screw, a radial dimension that varies in circumferential direction of the wear element. For example, in an embodiment the wear element has its largest dimension above the core of the conveyor screw. For example, in an embodiment the wear element comprises an radially outer edge opposite an radially inner edge facing the conveyor screw. According to an embodiment the radially inner edge has a shape mating an envelope shape of a portion of the conveyor screw that is located opposite the radially inner edge.

[0018] According to an embodiment, the wear element has a lateral width greater or equal to the lateral width of the conveyor screw. According to an embodiment, the lateral width of the conveyor screw is constant along its axial direction. According to a further embodiment, the lateral width of the conveyor screw changes in axial direction. In such a case, in an embodiment the wear element has a width greater or equal than the largest width of the conveyor screw. According to a further embodiment, the wear element has a width greater or equal to the lateral width of a portion of the conveyor screw that is located opposite the wear element.

[0019] According to a further embodiment, the conveyor duct opposite the wear element is flat in axial direction of the conveyor duct. For example, in an embodiment, a sieve may from a continuous inner surface of the conveyor duct portion opposite the wear element. According to a further embodiment, the conveyor duct may have a flat and fluid tight surface portion opposite the wear element.

[0020] According to an embodiment, the wear element forms part of the conveyor duct.

[0021] According to an embodiment of a second aspect of the herein disclosed subject-matter, a method of disassembling a screw conveyor in accordance with one or more embodiments of the first aspect is provided, the method comprising: removing the wear element; and removing the conveyor screw. In case the screw conveyor comprises the removable part according to an embodiment described with regard to the first aspect, the method according to an embodiment further comprises: before removing the conveyor screw, removing the removable part.

[0022] According to embodiments of the second aspect, the method is adapted for providing the functionality of one or more of the aforementioned embodiments and/or for providing the functionality as required by one or more of the aforementioned embodiments, in particular of the embodiments of the first aspect.

[0023] In the above there have been described and in the following there will be described exemplary embodiments of the subject matter disclosed herein with reference to a screw conveyor and a method of disassembling a screw conveyor. It has to be pointed out that of course any combination of features relating to different aspects of the herein disclosed subject matter is also possible. In particular, some embodiments have been or will be described with reference to apparatus type embodiments whereas other embodiments have been or will be described with reference to method type embodiments. However, a person skilled in the art will gather from the above and the following description that, unless otherwise notified, in addition to any combination of features belonging to one aspect also any combination between features relating to different aspects or embodiments, for example even between features of the apparatus type embodiments and features of the method type embodiments is considered to be disclosed with this application.

[0024] The aspects and embodiments defined above and further aspects and embodiments of the herein disclosed subject matter are apparent from the examples to be described herein after and are explained with reference to the drawings but to which the invention is not limited.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025]

Fig. 1 shows a screw conveyor in accordance with embodiments of the herein disclosed subject-matter.

Fig. 2 shows a cross-sectional view of the screw conveyor along line II-II in Fig. 1.

Fig. 3 shows a side view of a further screw conveyor in accordance with embodiments of the herein disclosed subject-matter.

Fig. 4 shows the screw conveyor of Fig. 3 with removable parts removed.

Fig. 5 shows in part a further screw conveyor in accordance with embodiments of the herein disclosed subject-matter.

Fig. 6 shows a cross-sectional view of a part of a conveyor screw in accordance with embodiments of the herein disclosed subject-matter.

DETAILED DESCRIPTION

[0026] The illustration in the drawings is schematic. It is noted that in different figures, similar or identical elements are provided with the same reference signs or with reference signs, which are different from the corresponding reference signs only within the first digit.

[0027] Fig. 1 shows a screw conveyor 100 in accordance with embodiments of the herein disclosed subject-matter.

[0028] It is noted that in the figures elements and features of the herein disclosed subject-matter are shown while other elements have been omitted in order to not obscure the description of the embodiments of the herein disclosed subject-matter. For example, Fig. 1 does not show a motor for driving the conveyor screw. However, such a motor will of course be present in an real implementation.

[0029] In accordance with an embodiment, the screw conveyor 100 comprises a conveyor duct 102 for conveying material (not shown in Fig. 1). The screw conveyor 100 further comprises an inlet duct 104 for introducing the material into the conveyor duct 102. To this end, the inlet duct 104 leads to the conveyor duct 102. In accordance with an embodiment, a rotatable conveyor screw 106 is arranged in the conveyor duct 102 for transporting the material from the inlet duct 104 through the conveyor duct 102. The conveyor screw 106 comprises a screw spiral 108 and a screw core 110. It is noted that in Fig. 1 only part of the screw spiral 108 is shown. The conveyor screw 106 defines an envelope of the conveyor screw indicated at 112. The envelope 112 illustrates the extent of the conveyor screw during rotation. In accordance with a further embodiment, the screw conveyor 100 comprises a wear element 114 which forms an edge 111 between the inlet duct 104 and the conveyor duct 102. According to an embodiment, the inlet duct 104 comprises an inlet wall 105 and the wear element 114 has a wall portion 113 forming part of the inlet duct 104. According to an embodiment, the wall portion 113 and the inlet wall 105 have aligned surface portions. For example, in an embodiment, the aligned surface portions of the wall portion 113 and the inlet wall 105 provide a (substantially) smooth transition between the alinged surface portions, thereby providing a (substantially) smooth inner surface of the inlet duct.

[0030] In accordance with an embodiment, the wear element 114 only partially encompasses the conveyor screw 106 so as to be removable in order to provide a free space between the inlet wall 105 and the conveyor screw 106. For example, if in addition to the wear element 114 an upper portion 102a of the conveyor duct is removed, the conveyor screw 106 can be pivoted upwards, e.g. in a position indicated by the dashed line at 116 in Fig. 1.

[0031] In accordance with an embodiment, in a portion 117 opposite the wear element 114 the conveyor duct is flat in an axial direction 115 of the conveyor duct 102. In accordance with an embodiment, the conveyor duct portion 117 opposite the wear element is part of a lower portion 102b of the conveyor duct.

[0032] In accordance with an embodiment, the wear element 114 forms a part of the inlet duct 104 and part of the conveyor duct 102, as shown in Fig. 1.

[0033] In accordance with an embodiment, the screw conveyor 100 comprises a flow restriction 109 in the conveyor duct 102. The flow restriction 109 generates a backpressure in the material conveyed in the conveyor duct, thereby generating a pressure in the material, resulting in dewatering of the material. Hence, in accordance with an embodiment, the screw conveyor 100 shown in Fig. 1 is a screw press. In accordance with an embodiment, the flow restriction is fixedly mounted in the conveyor duct 102. In accordance with a further embodiment, the flow restriction is moveable. In other embodiments, the flow restriction is formed by the cross sectional shape of the conveyor duct (not shown in Fig. 1).

[0034] Fig. 2 shows a cross-sectional view of the screw conveyor 100 along line II-II in Fig. 1.

[0035] In accordance with an embodiment, the wear element 114 has an inner edge 118 facing the conveyor screw (not shown in Fig. 2) and an outer edge 120 opposite the inner edge 118. In accordance with an embodiment, the inner edge 118 is concentric and/or the outer

edge 120 is eccentric with the envelope 112 of the conveyor screw 106. In accordance with an embodiment, the wear element 114 is sickle-shaped, as shown in Fig. 2. In accordance with a further embodiment, the wear element 114 has a width 122 that is greater or equal to the lateral width 124 of the conveyor screw 106. Further in accordance with an embodiment, the wear element 114 has, with regard to an axis of rotation of the conveyor screw (the axis of rotation extending perpendicular to the drawing plane of Fig. 2), a radial dimension that varies in circumferential direction of the wear element from a maximum radial dimension 126 in a center portion 128 of the wear element 114, whereas the radial dimension of the wear element decreases towards the lateral end portions 130 of the wear element 114.

[0036] Fig. 3 shows a side view of a further screw conveyor 200 in accordance with embodiments of the herein disclosed subject-matter.

[0037] In accordance with an embodiment, the screw conveyor 200 comprises a support 132 counteracting a torsional moment exerted on the conveyor duct 102 due to the rotation of the conveyor screw. In accordance with an embodiment, the support 132 comprises the bearings for the conveyor screw 106 (not shown in Fig. 3). According to a further embodiment, the support 132 counteracts the torsional moment exerted on the conveyor duct by the material to be conveyed in the conveyor duct.

[0038] In accordance with an embodiment, the support 132 forms part of the conveyor duct 102. For example, according to an embodiment, the support 132 forms a lower portion 102b of the conveyor duct 102. In accordance with an embodiment, the lower portion of the conveyor duct 102 is at least partially formed as a sieve, having a plurality of sieve openings 134, as shown in Fig. 3. According to an embodiment, the support 132 forms a segment of a cylinder. In accordance with a further embodiment, the support 132 has an opening 136 extending over a lateral width of the support that is greater or equal to the lateral width of the conveyor screw. In accordance with an embodiment, the opening 136 extends in downstream direction of the material conveyed (axial direction 115) from the wear element 114 beyond the axial end of the conveyor screw, indicated at 138 in Fig. 3. The axial end 138 of the conveyor screw is located opposite the inlet end of the conveyor screw which is located at the inlet duct 104. Hence, the far end 140 of the opening is located downstream the axial end 138 of the conveyor screw.

[0039] In accordance with an embodiment, the conveyor duct 102 comprises a removable part 142. In accordance with an embodiment, the conveyor duct comprises two or more removable parts 142, whereas in another embodiment, the conveyor duct comprises only a single removable part 142. In accordance with an embodiment, the removable part 142 is mounted opposite the support 132. In accordance with an embodiment, the removable part 142 comprises at least one removable sieve. For example, according to an embodiment, each removable part 142 consists of or comprises a single removable sieve.

[0040] In accordance with an embodiment, the removable sieves are mounted to have axial clearance, indicated at 144 in Fig. 3. The axial clearance 144 facilitates removal of the removable parts 142. In particular if the removable parts 142 are configured as sieves, an axial clearance does not adversely affect the function of the removable part, since there are already sieve openings 134 provided in the removable part.

[0041] In accordance with an embodiment, attachment elements 146 are provided for attaching the removable parts 142 to the support 132. The attachment elements 146 may be configured in any suitable way, e.g. in the form of attachment straps which are provided over the removable parts 142 and which are attached at its ends 148 to the support 132.

[0042] Fig. 4 shows the screw conveyor of Fig. 3 with the removable parts 142 removed.

[0043] Further in Fig. 4 the wear element 114 is removed. Therefore, the opening 136 in the lower portion 102b of the conveyor duct 102 together with the free space 149 provided by the removal of the wear element allows the conveyor screw 106 to be pivoted upwards as shown in Fig. 4. In particular, in accordance with an embodiment, the conveyor screw 106 is lifted up at its far end 138 thereby allowing pulling the conveyor screw 106 out of the conveyor duct 102, e.g. in a direction downstream-upwards. Thereby, the conveyor duct 102 or, in an embodiment, at least the supporting part 102b thereof can remain mounted at the installation side while the conveyor screw 106 is removed for maintenance. It should be noted that maintenance may not only be performed of the conveyor screw 106, but, in an embodiment, also of the wear element 114 (not shown in Fig. 4).

[0044] Fig. 5 shows in part a further screw conveyor 300 in accordance with embodiments of the herein disclosed subject-matter.

[0045] In accordance with an embodiment, the inlet wall 105 and the wear element 114 each comprise a hole indicated at 150 in Fig. 5, allowing screw fastening of the wear element 114 to the inlet wall 105, e.g. by providing a thread in one of the wear element or the inlet wall 105, e.g. in the inlet wall 105. In accordance with an embodiment, the wear element 114 comprises a recess 152 for receiving part of the inlet wall 105, thereby providing a smooth transition from the inlet wall 105 to the wear element 114, as shown in Fig. 5. In accordance with an embodiment, the wear element 114 comprises a surface 154 which continues the duct surface 151 of the inlet wall 105. In accordance with an embodiment, the wear element 114 comprises a further surface 156 which continues the inner surface 157 (duct surface) of a conveyor wall 159 the conveyor duct 102 which may be formed by the removable part 142.

[0046] In accordance with an embodiment, the wear element 114 has a surface portion 158 which faces the removable part 142 of the conveyor duct 102, as shown

in Fig. 5.

[0047] According to a further embodiment, the edge 111 between the inlet duct 104 and the conveyor duct 102 is formed by a protrusion 155, protruding in an upstream direction 153, opposite the downstream direction 115 of the material moving through the conveyor duct 102. The protrusion 155 may increase the durability of the wear element. According to a further embodiment, the protrusion has the shape of a protruding ring segment pointing in the upstream direction 153.

[0048] Fig. 6 shows a cross-sectional view of a part of a conveyor screw in accordance with embodiments of the herein disclosed subject-matter.

[0049] In accordance with an embodiment, the screw spiral 108 comprises an edge 160, the edge 160 pointing in downstream direction 115 of the material to be conveyed. According to an embodiment, the edge 160 is configured as sharp edge defining an angle smaller than 110 degrees, e.g. smaller than 100 degrees or smaller than 90 degrees. A sharp edge 160 may increase the efficiency of the screw conveyor.

[0050] In accordance with a further embodiment, the screw spiral 108 is armoured, having an armouring 162 at a portion pointing in the downstream direction 115. To this end, a first armouring layer may be applied to the screw spiral 108, as shown in Fig. 1. In other embodiments, instead of the armouring layer 162 any other suitable type of hardening may be applied to the screw spiral. According to a further embodiment, also part of the core 110 of the conveyor screw is armoured with the armouring 162. In accordance with a further embodiment, an armouring layer 164 is applied on top of the first armouring layer 162, e.g. in the form of a second armouring layer. In accordance with an embodiment, the second armouring layer 164 is applied only over the edge portion of the armouring 162, thereby forming the sharp edge 160 of the screw spiral 108. According to an embodiment, the second armouring layer 164 comprises or consists of wolfram carbide (WC).

[0051] It should be noted that any entity disclosed herein (e.g. components, units and devices) is not limited to a dedicated entity as described in some embodiments. Rather, the herein disclosed subject matter may be implemented in various ways and with various granularity on device level while still providing the desired functionality. Further, it should be noted that according to embodiments a separate entity may be provided for each of the functions disclosed herein. According to other embodiments, an entity is configured for providing two or more functions as disclosed herein.

[0052] It should be noted that the term "comprising" does not exclude other elements or steps and the "a" or "an" does not exclude a plurality. Also elements described in association with different embodiments may be combined. It should also be noted that reference signs in the claims should not be construed as limiting the scope of the claims.

[0053] In order to recapitulate the above described embodiments of the present invention one can state:

There is provided an embodiment of a screw conveyor comprising a conveyor duct for conveying material and an inlet duct leading to the conveyer duct for introducing the material into the conveyor duct. The inlet duct comprises an inlet wall. A rotatable conveyor screw is arranged in the conveyor duct for transporting the material from the inlet duct through the conveyor duct. A wear element is provided, the wear element forming an edge between the inlet duct and the conveyor duct. The wear element has a wall portion which forms part of the inlet duct and abuts the inlet wall. Further, the wear element only partially encompasses the conveyor screw so as to be removable to thereby provide a free space between the inlet wall and the conveyer screw.

List of reference signs

[0054]

100	screw conveyor
102	conveyor duct
102a	upper portion of 102
102b	lower portion of 102
104	inlet duct
105	inlet wall
106	conveyor screw
108	screw spiral
109	flow restriction
110	screw core
111	edge between the inlet duct and the conveyor duct
112	envelope of 106
113	wall portion of 114
114	wear element
115	axial direction
116	dashed line indicating pivoted conveyor screw
117	portion of 102 opposite the wear element
118	inner edge
120	outer edge
122	width of 114
124	width of 110
126	maximum radial dimension of 114
128	center portion of 114
130	lateral end portion of 114
132	support
134	sieve openings
136	opening
138	axial end of 106
140	far end of 136
142	removable part
144	axial clearance
146	attachment elements
148	ends of 146
149	free space provided by removal of 114
150	holes in 105 and 114

151 duct surface of 105
152 recess of 114
153 upstream direction
154 surface of 114
155 protrusion forming 111
156 further surface of 114
157 inner surface of 159
158 surface portion of 114
159 conveyor wall
160 edge of 108
162 armouring
164 armouring layer
200 screw conveyor
300 screw conveyor

Claims

1. Screw conveyor (100, 200, 300) comprising:

- a conveyor duct (102) for conveying material;
- an inlet duct (104) for introducing the material into the conveyor duct (102), the inlet duct (104) comprising an inlet wall (105), the inlet duct (104) leading to the conveyer duct (102);
- a rotatable conveyor screw (106) arranged in the conveyor duct (102) for transporting the material from the inlet duct (104) through the conveyor duct (102);
- a wear element (114) forming an edge (155) between the inlet duct (104) and the conveyor duct (102), the wear element (114) having a wall portion (113) forming part of the inlet duct (104), the wall portion (113) abutting the inlet wall (105);
- the wear element (114) only partially encompassing the conveyor screw (106) so as to be removable to thereby provide a free space (149) between the inlet wall (105) and the conveyer screw (106).

2. Screw conveyor according to claim 1, further comprising a flow restriction for the material to be conveyed, the screw conveyor (100, 200, 300) thereby acting as a screw press.

3. Screw conveyor according to claim 1 or 2, further comprising

- a support (132) counteracting a torsional moment exerted on the conveyor duct (102) due to the rotation of the conveyor screw (106).

4. Screw conveyor according to claim 3, the support (132) forming part of the conveyor duct (102).

5. Screw conveyor according to claim 3 or 4, the conveyor duct (102) comprising a removable part (142).

6. Screw conveyor according to claim 5, the removable part (142) being mounted opposite the support (142).

7. Screw conveyor according to any one of claims 5 or 6, wherein the removable part (142) comprises at least one removable sieve.

8. Screw conveyor according to claim 7, wherein the removable sieve is mounted to have axial clearance (144).

9. Screw conveyor according to any one of claims 5 to 8, the wear element (114) having a surface portion (158) facing the removable part (142).

10. Screw conveyor according to any one of the preceding claims, the wear element (114) having, with regard to an axis of rotation of the conveyor screw (106), a radial dimension that varies in circumferential direction of the wear element (114).

11. Screw conveyor according to claim 10,

- the wear element (114) having a lateral width (122) greater or equal to the lateral width (124) of the conveyor screw (106).

12. Screw conveyor according to any one of the preceding claims, wherein the conveyor duct (102) opposite the wear element (114) is flat in axial direction (115) of the conveyor duct (102.

13. Screw conveyor according to any one of the preceding claims, the wear element (114) forming part of the conveyor duct (102).

14. Method of disassembling a screw conveyor according to any one of the preceding claims, the method comprising:

- removing the wear element (114);
- removing the conveyor screw (106).

15. Method according to claim 14, wherein the screw conveyor comprises the features of claims 5 to 9, the method further comprising:

- before removing the conveyor screw (106), removing the removable part (142).

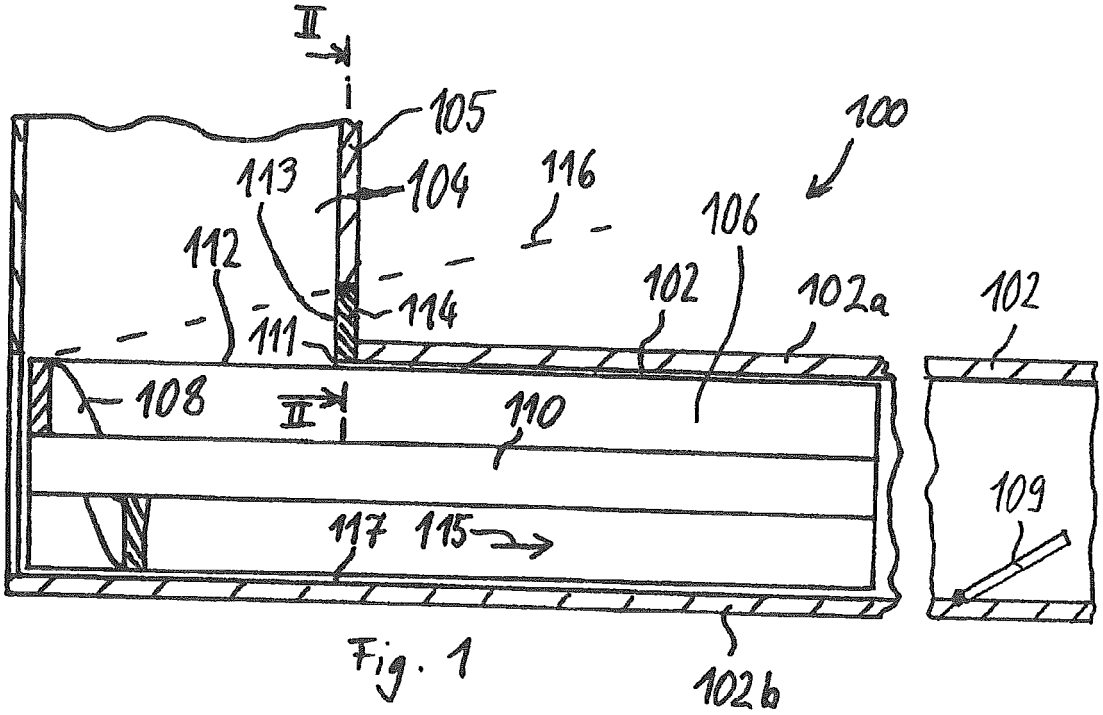
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Fig. 1

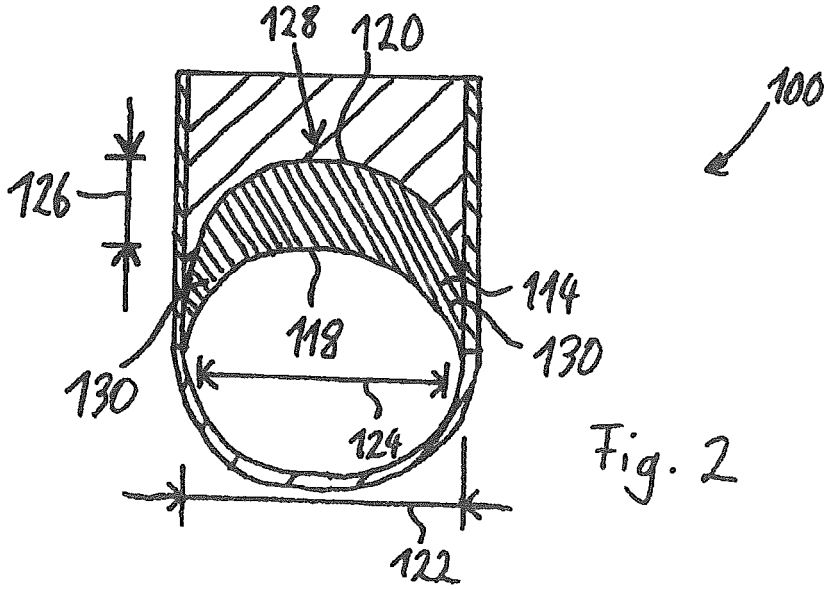
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Fig. 2

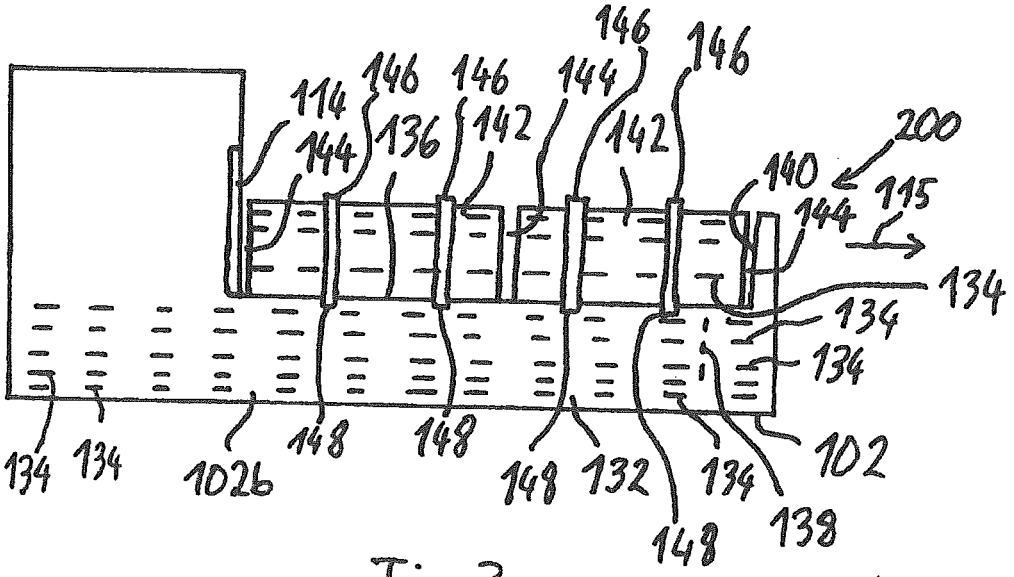
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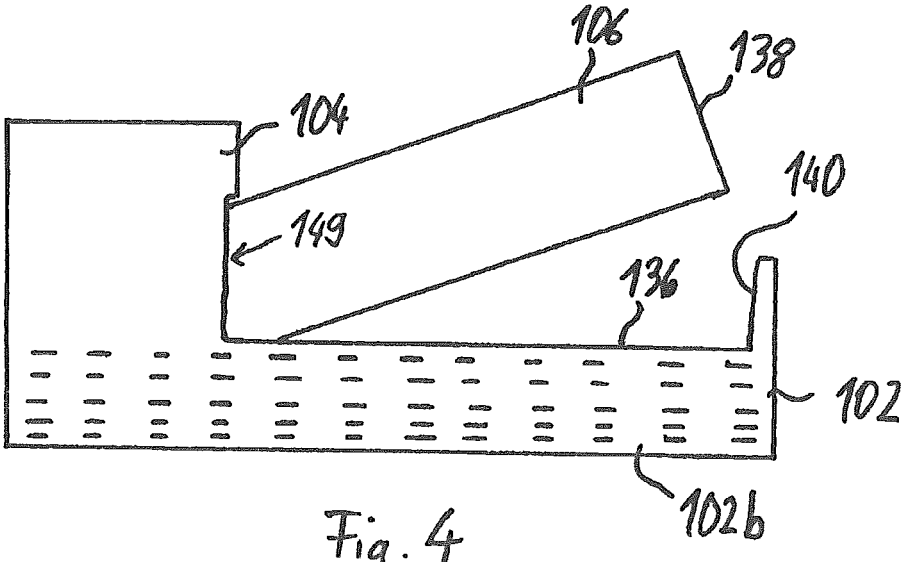
Fig. 3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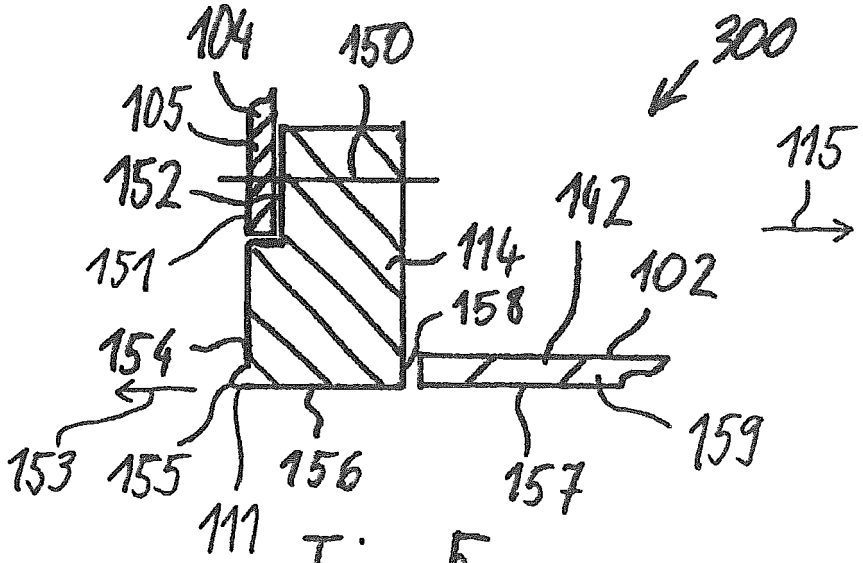
102b

Fig. 4


104
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111

Fig. 5

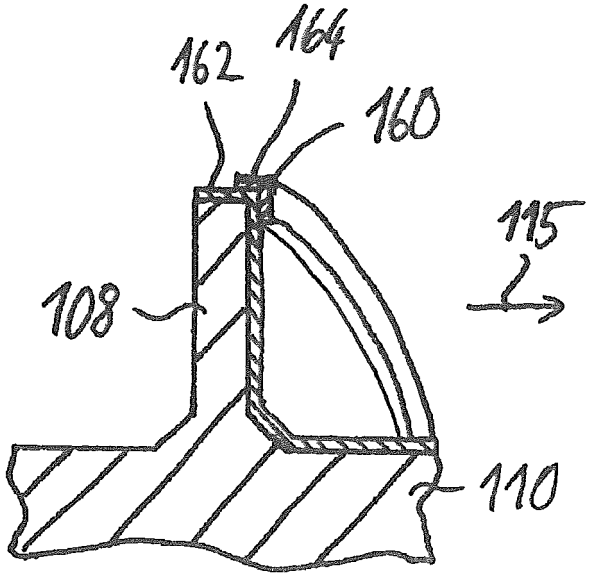
162
164
160
115
108
110

Fig. 6

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 0790122 B1 **[0003]**