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(54) **A MACHINE FOR GRINDING SLABS**

MASCHINE ZUM SCHLEIFEN VON BRAMMEN

MACHINE POUR MEULER DES DALLES

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Description

Technical field

[0001] This invention relates to the field of machining slabs, for example tiles, made from ceramic material, stone, glass or the like. In particular, the invention relates to a machine for grinding slabs.

Background art

[0002] It is known that the slabs produced industrially and which can be used as tiles for flooring and other types of covering require a grinding operation.

[0003] The main aim of this grinding operation is to guarantee the mutual orientation of the sides in such a way as to allow the placing alongside of the various slabs without clearance.

[0004] In the field of the industrial production of slabs this operation is carried out by means of grinding machines which are able to quickly process large quantities of ceramic products which feed in succession on a horizontal movement plane.

[0005] The sides of the products to be processed protrude laterally and come into contact with a succession of grinding wheels, which remove the excess material and move the outer perimeter flush and, if necessary, one or more inclined grinding wheels, for performance of the chamfering operation.

[0006] In commonly used machines, the grinding of the slabs is performed in two steps.

[0007] In a first step, they are ground by specific grinding wheels facing each other facing the movement plane on two opposite sides of each slab.

[0008] The slabs are then rotated by 90° in such a way that the two remaining sides can be ground by further grinding wheels facing and alongside the movement plane.

[0009] In order to be able to guarantee the mutual perpendicularity between the sides which are to be ground in the first step and the sides which are to be ground in the second step, the machines for grinding slabs have special positioning means which, after the rotation of the slabs, adjust the orientation on the movement plane in such a way that the sides already ground are perpendicular to the orientation of the subsequent grinding wheels.

[0010] For this purpose, the prior art teaches the use of the linear thrust elements located above the movement plane which, simultaneously with the passage of each slab, are lowered and transferred horizontally in an independent fashion so as to come into contact with the rear edge of the latter in such a way as to adjust the orientation.

[0011] A solution of this kind is described in document WO2011110907A1.

[0012] Disadvantageously, the kinematic mechanism linked to the movement of these thrust elements is complex and the movement mechanism is complex and requires a large number of movement units. Document WO 2016/207814 A1, on which the preamble of claim 1 is based, describes thrust elements whose distance is adjusted in an integral manner with the distance between heavy grinding wheel banks.

[0013] In this context, the technical purpose which forms the basis of this invention is to provide a machine for grinding slabs which overcomes at least some of the above-mentioned drawbacks of the prior art.

[0014] In particular, the aim of the invention is to provide a machine for grinding slabs which is an alternative to and more efficient than the prior art, with regard to the mechanism for moving the thrust elements.

[0015] Other examples of grinding machines of known type are described in patent documents EP 1 338 381 A2 and DE 10 2007 028786 A1.

Disclosure of the invention

[0016] The technical purpose indicated and the aims specified are substantially achieved by a machine for grinding slabs comprising the technical features described in one or more of the accompanying claims. The dependent claims correspond to possible different embodiments of the invention. Further features and advantages of the invention are more apparent in the non-limiting description which follows of a preferred embodiment of a machine for grinding slabs.

Brief description of the drawings

[0017] The description is set out below with reference to the accompanying drawings which are provided solely for purposes of illustration without restricting the scope of the invention and in which:

- Figure 1 shows a perspective view of a machine for grinding slabs made according to the invention;
- Figure 2 shows a perspective view of a detail of the machine of Figure 1, with some parts removed in order to better illustrate others;
- Figure 3 shows a detail of the machine of Figure 1;
- Figure 4 shows a perspective view of a detail of the machine of Figure 1, with some parts removed in order to better illustrate others;
- Figure 5A shows a perspective view of a detail of the machine of Figure 1, with some parts removed in order to better illustrate others;
- Figure 5B shows a perspective view from a different angle of the detail of Figure 5A.

Detailed description of preferred embodiments of the invention

[0018] With reference to the drawings, a machine for grinding slabs is indicated generically by the reference numeral 1 and it will be referred to below as "machine 1".

[0019] For the purposes of this generic description, the

term "slabs" means sheet-like elements made of ceramic, stone, glass or the like, such as, for example, tiles for floors or walls.

[0020] According to the preferred embodiment, the machine 1 comprises a main frame 10 which defines a supporting base of the machine 1 and supports a plurality of grinding and/or chamfering wheels 11.

[0021] The machine 1 also comprises a secondary frame 20 which can be connected to the main frame 10 by one or more connecting portions 21 and preferably having one or more supporting portions 22 configured for resting on the floor.

[0022] The main frame 10 supports a conveyor 12 configured for moving a plurality of slabs along a feed direction "A" from an infeed station "I" to an outfeed station "U" passing through a grinding station "R" on which the grinding wheels 11 face.

[0023] The conveyor 12 is configured to receive the slabs to be processed from a movement plane upstream of the machine 1 and connected to the conveyor 12 at the infeed station "I".

[0024] Preferably, the conveyor 12 comprises two pairs of belts and each pair of belts comprises a lower belt and an upper belt opposite to each other and configured to grip a slab positioned between them and move it along the feed direction "A".

[0025] The two pairs of belts are positioned in such a way that they grip on the slabs at respective side edges to be ground, in particular in such a way that the above-mentioned edges protrude laterally from the belts and are exposed.

[0026] Preferably, the grinding wheels 11 are connected to the main frame 10 in such a way that they are movable towards and away from the conveyor 12 to come into contact with the exposed lateral edges of the slabs passing through the grinding station "R" and perform the grinding and/or chamfering.

[0027] In this solution, the secondary frame 20 forms a structure which can be coupled to the main frame 10 in a modular fashion in order to increase the flexibility of use, only the main frame 10 and the components described above which are supported by it define, in effect, in itself an operational machine for grinding slabs.

[0028] According to the preferred embodiment, the secondary frame 20 defines a calibration station "C" upstream of said grinding station "R" and of the infeed station "I", at the movement plane upstream of the machine 1, and has positioning means 25 acting on the slabs which travel on the movement plane at the calibration station "C".

[0029] According to alternative embodiments not illustrated, the positioning means 25 act along the conveyor 12 and the calibration station "C" is positioned between the infeed station "I" and the grinding station "R", upstream of the latter.

[0030] In general, the positioning means 25 are configured for adjusting an orientation of the slabs which pass through the calibration station "C" to adjust the orientation with respect to their feed direction "A" defined by the conveyor 12.

[0031] More specifically, the positioning means 25 comprise sliding guides 26, preferably two, oriented parallel to the feed direction "A" and two carriages 27 which are slidable on them.

[0032] Preferably, the positioning means 25 comprise a single transfer actuator 28 configured for simultaneously moving the carriages 27 along the feed direction "A" between an advanced position and a withdrawn position in such a way that the carriages 27 are positioned at all times at the same longitudinal coordinate along the feed direction "A".

[0033] In particular, in the advanced position, the carriages 27 are positioned further upstream relative to the withdrawn position with reference to the feed direction "A" of the slabs.

[0034] In more detail, the translation actuator 28 is connected to the carriages 27 by means of the mechanical transmission units 29 which connect together in a kinematic fashion the movements of the carriages 27 on the sliding guides 26 in such a way that they move in a synchronous fashion with each other.

[0035] According to the preferred embodiment, the positioning means 25 comprise supports 30, each fixed to a respective carriage 27 in such a way that it can translate between the advanced position and the withdrawn position following the movement of the carriage 27.

[0036] Moreover, the positioning means 25 comprise thrust elements 35, preferably two, each rotatably connected to a respective support 30 in such a way as to be rotationally movable relative to it between an engaging position and a disengaging position.

[0037] Preferably, the thrust elements 35 are rotatable about respective axes of rotation 'G' oriented perpendicularly to the feed direction "A" and parallel to the plane in which the slabs lie.

[0038] In the engaging position the thrust elements 35 are configured for making contact against an end edge of a slab positioned in the calibration station "C" which advances towards the grinding station "R".

[0039] In the disengaging position, the thrust elements 35 are configured so as not to interfere with a feeding of the slabs positioned on the movement plane or on the conveyor 12 towards the grinding station "R".

[0040] The positioning means 25 comprise two rotation actuators 31 each connected to a respective thrust element 35 and configured to rotate about the respective axis of rotation "G" from the engaging position to the disengaging position.

[0041] Preferably, the rotation actuators 31 are mutually independent and configured to rotate the two thrust elements 35 independently of each other.

[0042] Moreover, the sliding of the carriages 27 along the sliding guides 26 allows the thrust elements 35 to be translated from the advanced position to the withdrawn position.

[0043] With reference to the structure of the thrust el-

ements 35, preferably each of them comprises an arm 36 hinged to one of the supports 30 at a relative end in such a way as to allow the rotation of the thrust element 35 between the engaging position and the disengaging position.

[0044] The other end is, on the other hand, free and configured to be positioned at the level of the slabs in the calibration station "C" when in an engaging position and able to position so as not to interfere with a feed of the slabs towards the grinding station "R" when in a disengaging position. Preferably, each arm 36 extends along a respective main line of extension shaped in such a way that its free end is oriented perpendicularly to the lying position of the slabs in the calibration station "C" when the respective thrust element 35 is in an engaging position.

[0045] Moreover, each thrust element 35 comprises a removable contact plug 37, connected to each arm 36 at the free end in such a way that it makes contact with a respective slab when in an engaging position during a transfer of the thrust element 35 from the advanced position to the withdrawn position.

[0046] The positioning means 25 comprise a mechanism for adjusting the reciprocal distance between the sliding guides 26 in such a way as to control the distance between the thrust elements 35 in a direction transversal to the feed direction "A".

[0047] In the embodiment illustrated, the sliding guides 26 are slidably mounted on further orientation guides 32 perpendicularly to the feed direction "A" and the above-mentioned adjustment mechanism comprises a unit 33 for adjusting the mutual distance between the sliding guides 26.

[0048] Preferably, the adjusting unit 33 can adjust the mutual distance between the guides 26, and therefore between the thrust elements 35, between a minimum of 400 mm and a maximum of 2400 mm.

[0049] The invention achieves the set aim by overcoming the drawbacks of the prior art.

[0050] In fact, the solution described defines an effective alternative to the prior art solutions and, thanks to the kinematic mechanisms which control the thrust elements, it is simpler and more efficient to perform the movement.

Claims

1. A machine (1) for grinding slabs, comprising:

- a conveyor (12) configured for moving a plurality of slabs along a feed direction (A) from an infeed station (I) to an outfeed station (U) passing through a grinding station (R);
- a plurality of grinding wheels (11) facing the grinding station (R) and configured for grinding one or more slabs in the grinding station (R);
- positioning means (25) acting on a calibration station (C) upstream of the grinding station (R) and configured for adjusting the orientation of one or more slabs relative to the respective feed direction (A);
- a main frame (10) supporting the plurality of grinding wheels (II), the main frame (10) defining a base for supporting the machine (1);

characterised in that it comprises a secondary frame
(20) supporting the positioning means (25), the secondary frame (20) having at least a supporting portion (22) configured for supporting or anchoring on the ground and at least a connecting portion (21) configured for a reversible connection with the main frame, the positioning means (25) comprising thrust elements (35) rotationally movable between an engaging position wherein the thrust elements (35) are configured for making contact against an end edge of a slab positioned in the calibration station (C), and a disengaging position, wherein the thrust elements (35) are configured so as not to interfere with a feeding of the slabs towards the grinding station (R),

the thrust elements (35) also being transferable parallel to the feed direction (A) between an advanced position and a withdrawn position, the positioning
means (25) comprising a mechanism for adjusting the reciprocal distance between the thrust elements (35) in a direction transversal to the feed direction (A).

2. The machine (1) according to claim 1, wherein the positioning means (25) comprise supports (30) which can be transferred in a direction parallel to the feed direction (A) for moving the thrust elements (35) between the advanced position and the withdrawn position, each thrust element (35) comprising an arm (36) having an end hinged to a respective support (30) in such a way as to allow a rotation of the thrust element (35) between the engaging position and the disengaging position and a free end configured to be positioned at the level of the slabs in the calibration station (C) when in an engaging position and so as not to interfere with a feed of the slabs towards the grinding station (R) when in a disengaging position.

3. The machine (1) according to claim 2, wherein each arm (36) extends along a respective line of extension shaped in such a way that the free end of each arm (36) is oriented perpendicularly to the lying position of the slabs in the calibration station (C) when the thrust element (35) is in an engaging position.

4. The machine (1) according to claim 2 or 3, wherein each thrust element (35) comprises a removable

contact plug (37), connected to each arm (36) in such a way that it makes in contact with a respective slab when the thrust element (35) is in an engaging position during a transfer of the thrust element (35) from the advanced position to the withdrawn position.

5. The machine (1) according to any one of claims 2 to 4, wherein the positioning means (25) comprise carriages (27) slidable on respective sliding guides (26) parallel to the feed direction (A), each support (30) being fixed to a respective one of the carriages (27) to allow transfer of the thrust elements (35) between the advanced position and the withdrawn position.

6. The machine (1) according to claim 5, wherein the positioning means (25) comprising a single transfer actuator (28) configured for simultaneously moving the slidable carriages (27) between the advanced position and the withdrawn position, the transfer actuator (28) being connected to the carriages (27) by transmission units that kinematically constrain the movement of the carriages (27) on the sliding guides (26).

7. The machine (1) according to any one of the preceding claims, comprising two rotation actuators (31) each connected to a respective thrust element (35), the rotation actuators (31) being configured for actuating the rotation of the thrust elements (35) from the engaging position to the disengaging position in a mutually independent fashion.

8. The machine (1) according to any one of claims 5, 6 or 7, wherein the sliding guides (26) parallel to the feed direction (A) are slidably mounted on further guides (32) perpendicular to the feed direction (A), the adjustment mechanism comprising a unit (33) for adjusting the distance between the sliding guides (26).

9. The machine (1) according to any one of the preceding claims, wherein the thrust elements (35) are rotationally movable between the engaging position and the disengaging position about an axis of rotation (G) parallel to a sliding plane of the slabs on the conveyor (12) and preferably perpendicular to the feed direction (A).

10. The machine (1) according to any one of the preceding claims, wherein the conveyor (12) is configured for receiving the slabs at the infeed station (I) from a movement plane upstream defining the calibration station (C), the positioning means (25) acting on the movement plane for adjusting the orientation of the slabs advancing towards the infeed station (I).

Patentansprüche

1. Maschine (1) zum Schleifen von Platten, umfassend:

- einen Förderer (12), der ausgelegt ist, um eine Vielzahl von Platten entlang einer Zuführrichtung (A) von einer Einführstation (I) zu einer Abführstation (U) zu bewegen, die durch eine Schleifstation (R) verläuft;
- eine Vielzahl von Schleifscheiben (11), die der Schleifstation (R) zugewandt und zum Schleifen einer oder mehrerer Platten in der Schleifstation (R) ausgelegt sind;
- Positionierungsmittel (25), die auf eine Kalibrierungsstation (C) stromaufwärts der Schleifstation (R) einwirken und zum Einstellen der Ausrichtung einer oder mehrerer Platten relativ zur jeweiligen Zuführrichtung (A) ausgelegt sind;
- einen Hauptrahmen (10), der die Vielzahl von Schleifscheiben (II) trägt, wobei der Hauptrahmen (10) eine Basis zum Tragen der Maschine (1) definiert;

dadurch gekennzeichnet, dass sie einen sekundären Rahmen (20), der die Positionierungsmittel (25) trägt, wobei der sekundäre Rahmen (20) mindestens einen Trägerabschnitt (22), der zum Tragen oder Verankern auf dem Boden ausgelegt ist, und mindestens einen Verbindungsabschnitt (21) umfasst, der für eine reversible Verbindung mit dem Hauptrahmen ausgelegt ist, wobei die Positionierungsmittel (25) Schubelemente (35) umfassen, die zwischen einer Eingriffsposition, in der die Schubelemente (35) ausgelegt sind, um einen Kontakt mit einer Endkante einer in der Kalibrierungsstation (C) positionierten Platte herzustellen, und einer Löseposition, in der die Schubelemente (35) ausgelegt sind, um eine Zuführung der Platten zur Schleifstation (R) hinführend nicht zu stören, drehbar beweglich sind, wobei die Schubelemente (35) auch parallel zur Zuführrichtung (A) zwischen einer vorgeschobenen Position und einer zurückgezogenen Position überführbar sind, wobei die Positionierungsmittel (25) einen Mechanismus zum Einstellen des reziproken Abstands zwischen den Schubelementen (35) in einer Richtung quer zur Zuführrichtung (A) umfassen.

2. Maschine (1) nach Anspruch 1, wobei die Positionierungsmittel (25) Träger (30) umfassen, die in einer Richtung parallel zur Zuführrichtung (A) zum Bewegen der Schubelemente (35) zwischen der vorgeschobenen Position und der zurückgezogenen Position überführt werden können, wobei ein jedes Schubelement (35) einen Arm (36) umfasst, der ein Ende, das an einem jeweiligen Träger (30) angelenkt ist, sodass eine Drehung des Schubelements (35) zwischen der Eingriffsposition und der Löseposition

ermöglicht wird, und ein freies Ende aufweist, das so ausgelegt ist, dass es an der Höhe der Platten in der Kalibrierungsstation (C) positioniert ist, wenn es sich in einer Eingriffsposition befindet, und dass es eine Zuführung der Platten in Richtung der Schleifstation (R) hinführend nicht stört, wenn es sich in einer Löseposition befindet.

3. Maschine (1) nach Anspruch 2, wobei sich ein jeder Arm (36) entlang einer jeweiligen Verlängerungslinie erstreckt, die geformt ist, sodass das freie Ende eines jeden Arms (36) senkrecht zur Liegeposition der Platten in der Kalibrierungsstation (C) ausgerichtet ist, wenn sich das Schubelement (35) in einer Eingriffsposition befindet.

4. Maschine (1) nach Anspruch 2 oder 3, wobei ein jedes Schubelement (35) einen entfernbaren Kontaktanschluss (37) umfasst, der mit einem jeden Arm (36) verbunden ist, sodass er mit einer jeweiligen Platte in Kontakt kommt, wenn sich das Schubelement (35) in einer Eingriffsposition während einer Überführung des Schubelements (35) von der vorgeschobenen Position in die zurückgezogene Position befindet.

5. Maschine (1) nach einem der Ansprüche 2 bis 4, wobei die Positionierungsmittel (25) Schlitten (27) umfassen, die auf jeweiligen Schiebeführungen (26) parallel zur Zuführrichtung (A) verschiebbar sind, wobei ein jeder Träger (30) an einem jeweiligen der Schlitten (27) befestigt ist, um eine Überführung der Schubelemente (35) zwischen der vorgeschobenen Position und der zurückgezogenen Position zu ermöglichen.

6. Maschine (1) nach Anspruch 5, wobei die Positionierungsmittel (25) einen einzelnen Überführungsantrieb (28) umfasst, der zum gleichzeitigen Bewegen der verschiebbaren Schlitten (27) zwischen der vorgeschobenen Position und der zurückgezogenen Position ausgelegt ist, wobei der Überführungsantrieb (28) mit den Schlitten (27) durch Übertragungseinheiten verbunden ist, die die Bewegung der Schlitten (27) auf den Schiebeführungen (26) kinematisch einschränken.

7. Maschine (1) nach einem der vorhergehenden Ansprüche, umfassend zwei Drehantriebe (31), die jeweils mit einem jeweiligen Schubelement (35) verbunden sind, wobei die Drehantriebe (31) ausgelegt sind, um die Drehung der Schubelemente (35) von der Eingriffsposition in die Löseposition auf eine wechselseitig unabhängige Weise zu betätigen.

8. Maschine (1) nach einem der Ansprüche 5, 6 oder 7, wobei die Schiebeführungen (26) parallel zur Zuführrichtung (A) verschiebbar an weiteren Führungen (32) senkrecht zur Zuführrichtung (A) montiert sind, wobei der Einstellmechanismus eine Einheit (33) zum Einstellen des Abstands zwischen den Schiebeführungen (26) umfasst.

9. Maschine (1) nach einem der vorhergehenden Ansprüche, wobei die Schubelemente (35) zwischen der Eingriffsposition und der Löseposition um eine Drehachse (G) drehbar beweglich sind, die parallel zu einer Gleitebene der Platten auf dem Förderer (12) und vorzugsweise senkrecht zur Zuführrichtung (A) verläuft.

10. Maschine (1) nach einem der vorhergehenden Ansprüche, wobei der Förderer (12) zum Aufnehmen der Platten an der Einführstation (I) von einer Bewegungsebene stromaufwärts, die die Kalibrierungsstation (C) definiert, ausgelegt ist, wobei die Positionierungsmittel (25) auf die Bewegungsebene einwirkt, um die Ausrichtung der Platten, die in Richtung der Einführstation (I) vorgeschoben werden, einzustellen.

Revendications

1. Machine (1) pour rectifier des dalles, comprenant :

- un convoyeur (12) configuré pour déplacer une pluralité de dalles le long d'une direction d'alimentation (A) à partir d'un poste d'alimentation (I) vers un poste de sortie (U) passant par un poste de rectification (R) ;
- une pluralité de meules (11) faisant face au poste de rectification (R) et configurées pour rectifier une ou plusieurs dalles dans le poste de rectification (R) ;
- des moyens de positionnement (25) agissant sur un poste de calibrage (C) en amont du poste de rectification (R) et configurés pour régler l'orientation d'une ou plusieurs dalles par rapport à la direction d'alimentation (A) respective ;
- un châssis principal (10) supportant la pluralité de meules (II), le châssis principal (10) définissant une base pour supporter la machine (1) ;

caractérisée en ce qu'elle comprend un châssis secondaire (20) supportant les moyens de positionnement (25), le châssis secondaire (20) comportant au moins une partie de support (22) configurée pour supporter ou s'ancrer au sol et au moins une partie de raccordement (21) configurée pour un raccordement réversible avec le châssis principal, les moyens de positionnement (25) comprenant des éléments de poussée (35) mobiles en rotation entre une position de mise en prise dans laquelle les éléments de poussée (35) sont configurés pour se mettre en contact contre un bord d'extrémité d'une dalle

positionnée dans le poste de calibrage (C), et une position de désengagement, dans laquelle les éléments de poussée (35) sont configurés de manière à ne pas interférer avec une alimentation des dalles vers le poste de rectification (R),

les éléments de poussée (35) étant aussi transférables parallèlement à la direction d'alimentation (A) entre une position avancée et une position retirée, les moyens de positionnement (25) comprenant un mécanisme pour régler la distance réciproque entre les éléments de poussée (35) dans une direction transversale à la direction d'alimentation (A).

2. Machine (1) selon la revendication 1, dans laquelle les moyens de positionnement (25) comprennent des supports (30) pouvant être transférés dans une direction parallèle à la direction d'alimentation (A) pour déplacer les éléments de poussée (35) entre la position avancée et la position retirée, chaque élément de poussée (35) comprenant un bras (36) comportant une extrémité montée articulée à un support respectif (30) de manière à permettre une rotation de l'élément de poussée (35) entre la position de mise en prise et la position de désengagement et une extrémité libre configurée pour être positionnée au niveau des dalles dans le poste de calibrage (C) lorsqu'elle est dans une position de mise en prise et de manière à ne pas interférer avec une alimentation des dalles vers le poste de rectification (R) lorsqu'elle est dans une position de désengagement.

3. Machine (1) selon la revendication 2, dans laquelle chaque bras (36) se prolonge le long d'une ligne d'extension respective formée de telle sorte que l'extrémité libre de chaque bras (36) est orientée perpendiculairement à la position d'appui des dalles dans le poste de calibrage (C) lorsque l'élément de poussée (35) est dans une position de mise en prise.

4. Machine (1) selon la revendication 2 ou 3, dans laquelle chaque élément de poussée (35) comprend une fiche de contact amovible (37) reliée à chaque bras (36) de telle manière qu'elle entre en contact avec une dalle respective lorsque l'élément de poussée (35) se trouve dans une position de mise en prise pendant un transfert de l'élément de poussée (35) de la position avancée à la position retirée.

5. Machine (1) selon l'une quelconque des revendications 2 à 4, dans laquelle les moyens de positionnement (25) comprennent des chariots (27) pouvant coulisser sur des guides coulissants (26) respectifs parallèles à la direction d'alimentation (A), chaque support (30) étant fixé à un chariot respectif des chariots (27) pour permettre le transfert des éléments de poussée (35) entre la position avancée et la position retirée.

6. Machine (1) selon la revendication 5, dans laquelle les moyens de positionnement (25) comprennent un actionneur de transfert (28) individuel configuré pour déplacer simultanément les chariots coulissants (27) entre la position avancée et la position retirée, l'actionneur de transfert (28) étant relié aux chariots (27) par des unités de transmission étant solidaires, de façon cinématique, du mouvement des chariots (27) sur les guides coulissants (26).

7. Machine (1) selon l'une quelconque des revendications précédentes, comprenant deux actionneurs de rotation (31) reliés chacun à un élément de poussée (35) respectif, les actionneurs de rotation (31) étant configurés pour actionner la rotation des éléments de poussée (35) de la position de mise en prise à la position de désengagement de manière mutuellement indépendante.

8. Machine (1) selon l'une quelconque des revendications 5, 6 ou 7, dans laquelle les guides coulissants (26) parallèles à la direction d'alimentation (A) sont montés de manière coulissante sur des guides supplémentaires (32) perpendiculaires à la direction d'alimentation (A), le mécanisme de réglage comprenant une unité (33) pour régler la distance entre les guides coulissants (26) .

9. Machine (1) selon l'une quelconque des revendications précédentes, dans laquelle les éléments de poussée (35) sont mobiles en rotation entre la position de mise en prise et la position de désengagement autour d'un axe de rotation (G) parallèle à un plan de coulissement des dalles sur le convoyeur (12) et de préférence perpendiculaire à la direction d'alimentation (A).

10. Machine (1) selon l'une quelconque des revendications précédentes, dans laquelle le convoyeur (12) est configuré pour recevoir les dalles en correspondance du poste d'alimentation (I) à partir d'un plan de déplacement en amont définissant le poste de calibrage (C), les moyens de positionnement (25) agissant sur le plan de déplacement pour régler l'orientation des dalles avançant vers le poste d'alimentation (I).

Fig.1

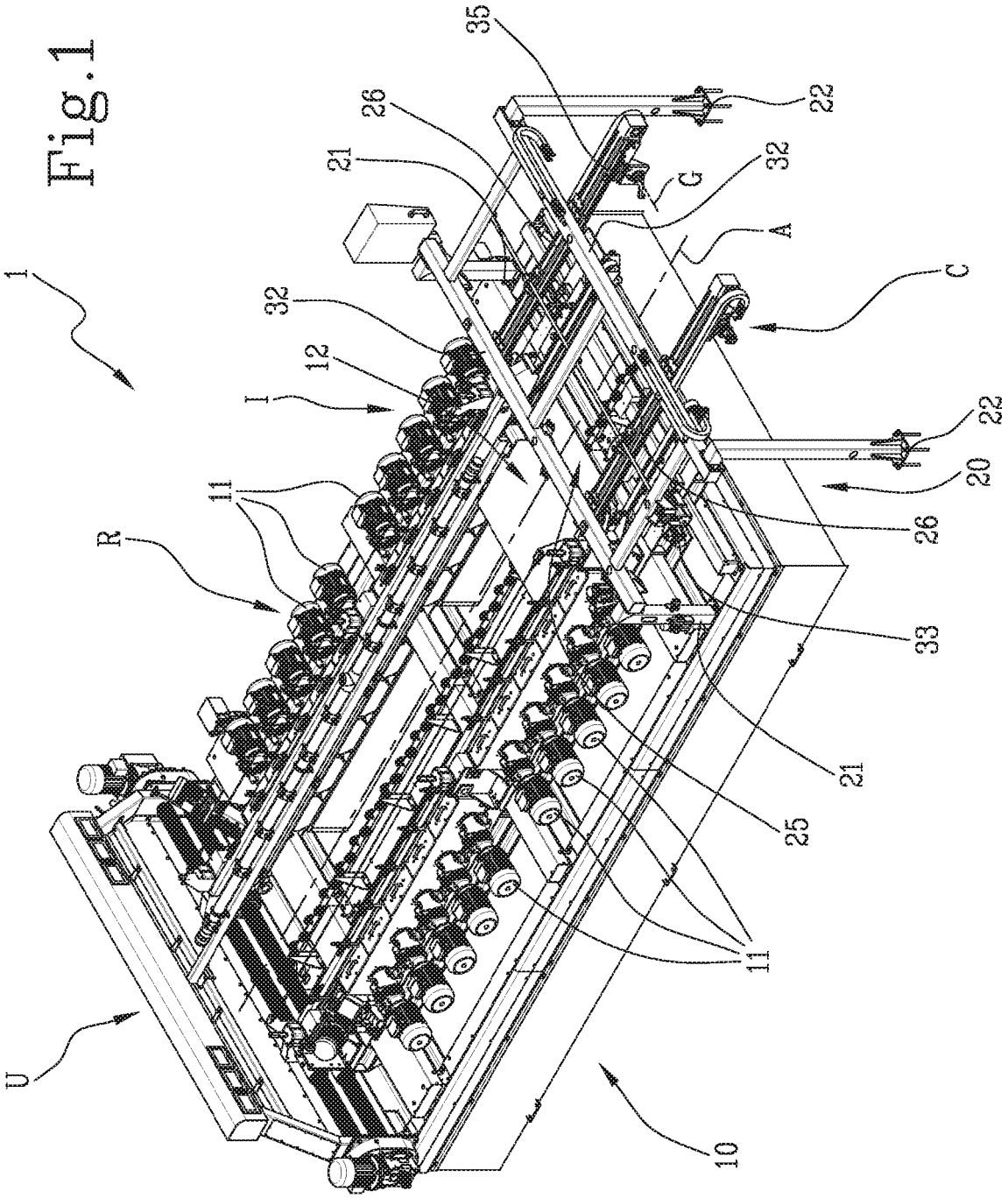
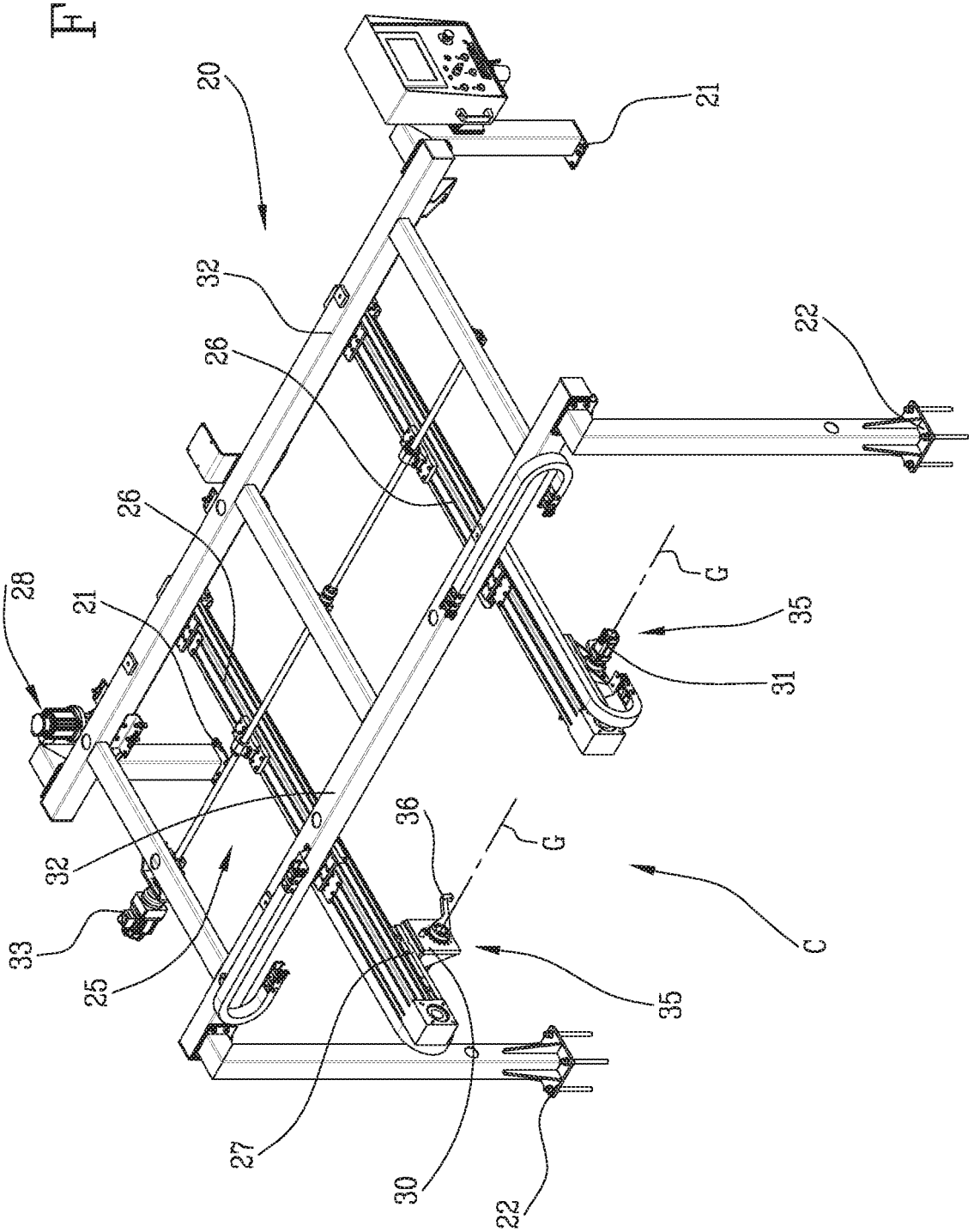


Fig.2



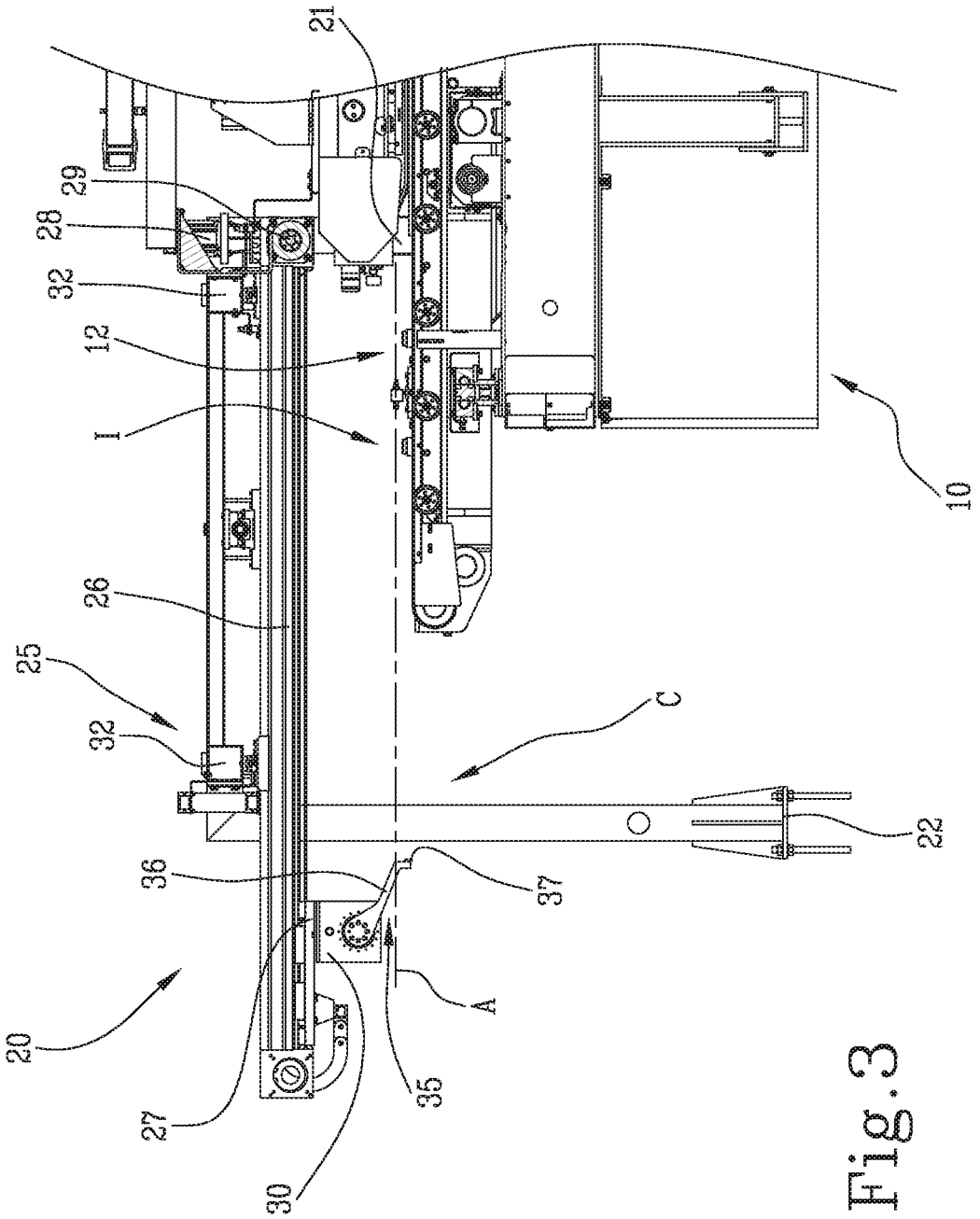


Fig.3

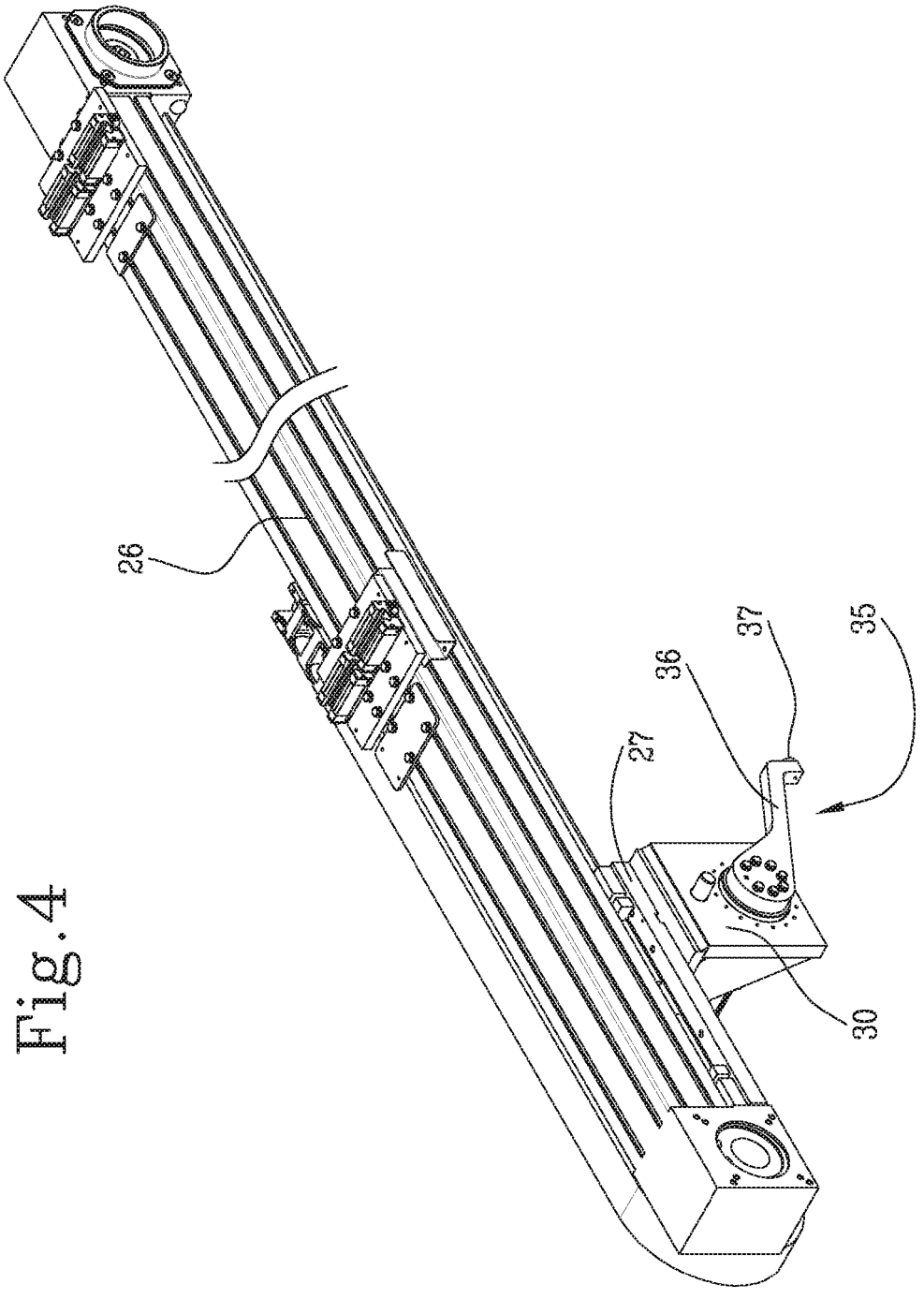


Fig. 4

Fig.5B

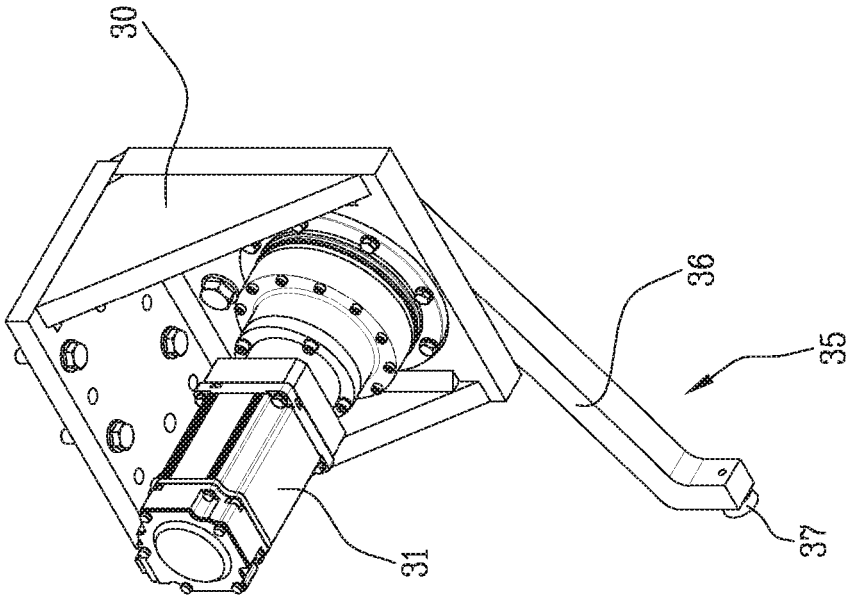
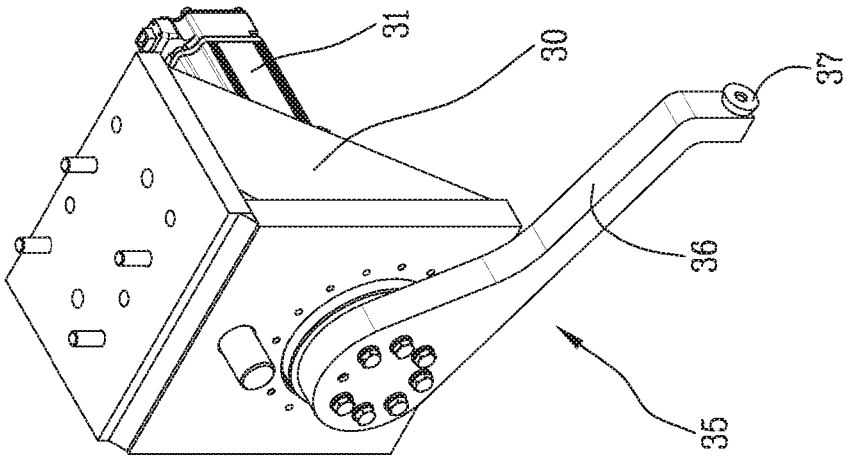


Fig.5A



REFERENCES CITED IN THE DESCRIPTION

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