



(11) **EP 2 272 642 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
14.03.2012 Bulletin 2012/11

(51) Int Cl.:
B27B 5/065 (2006.01) **B27B 27/08** (2006.01)
B27B 27/10 (2006.01) **B27B 31/00** (2006.01)

(21) Application number: **10168967.7**

(22) Date of filing: **08.07.2010**

(54) **Machine for cutting panels made of wood or the like**

Maschine zum Schneiden von Holz Platten oder dergleichen

Machine pour découper des panneaux en bois ou similaires

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

(30) Priority: **08.07.2009 IT BO20090439**

(43) Date of publication of application:
12.01.2011 Bulletin 2011/02

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EP 2 272 642 B1

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Description

[0001] The present invention relates to a machine for cutting panels made of wood or the like. As per the preamble of claim 1. An example of that is disclosed by EP 1 837 141A.

[0002] In particular, the present invention relates to a machine for cutting panels made of wood or the like of substantially rectangular shape, of the type comprising a base, defining a substantially horizontal resting surface for at least one panel made of wood or the like; a feed device for feeding the panel along the resting surface and through a cutting station; and a cutting device, mobile along a cutting surface substantially orthogonal to a feeding direction of the panel to separate at least one component from the panel itself.

[0003] In order to allow to execute inclined cuts, the machine comprises a first stop element, which is mobile parallel to the cutting surface, and cooperates with a second stop element, adapted to be manually inserted, when needed, in at least one seat obtained on the resting surface to orient the panel itself according to a predetermined angle with respect to the cutting plane itself.

[0004] Since the cutting plane has a plurality of seats adapted to receive the second stop element and the second stop element must be manually positioned each time within one of the seats, the known sawing machines of the type described above have some drawbacks mainly deriving from the fact that the positioning of the second stop element requires relatively long tooling times and is particularly exposed to the risk of positioning errors by operating personnel.

[0005] It is an object of the present invention to provide a machine for cutting panels made of wood or the like, which is free from the above-described drawbacks, and which is simple and cost-effective to be implemented.

[0006] According to the present invention, there is provided a machine for cutting panels made of wood or the like as per claim 1.

[0007] The present invention will now be described with reference to the accompanying drawings, which illustrate a non-limitative embodiment thereof, in which:

figure 1 is a diagrammatic plan view, with parts removed for clarity, of a preferred embodiment of the sawing machine of the present invention;

figure 2 is a diagrammatic plan view, with parts removed for clarity, of a detail of the machine in figure 1;

figure 3 is a diagrammatic side view, with parts removed for clarity, of the detail in figure 2; and

figure 4 is a diagrammatic bottom view, with parts removed for clarity, of the detail in figure 2.

[0008] With reference to the appended figures, numeral 1 indicates as a whole, a sawing machine for cutting panels 2 made of wood or the like, of substantially regular shape, comprising an elongated base 3, which extends in a horizontal direction 4, defines a substantially hori-

zontal resting surface P for at least one panel 2, and cooperates with a feed device 5 of known type adapted to feed the panel 2 along the base 3 in direction 4.

[0009] The panel 2 is fed by the device 6 through a cutting station 6 provided with a cutting assembly of known type and not shown, mobile in a horizontal direction 7 transversal to direction 4 and along a cutting plane T, substantially orthogonal to direction 4 itself to cut the panels 2.

[0010] With this regard, it is worth noting that the base 3 normally comprises a roller device 8 mounted upstream of the station 6 to support the panels 2 and a plurality of shaped beds 9 (four beds 9, in the case in point), which extend in direction 4, are parallel and arranged side-by-side, and are mounted downstream of the station 6 to support the components (not shown) separated by the panels 2 themselves.

[0011] The machine 1 further comprises an approach element 10, which is normally mounted on the cutting assembly (not shown) to move along the plane T in direction 7, is mobile between a raised operative position, in which the element 10 protrudes over the surface P, and a lowered resting position, in which the element 10 is substantially arranged underneath the plane P itself, and is adapted to normally move the panels 2 against a stop element (not shown) mounted at the station 6.

[0012] In order to enable the execution of inclined cuts, the element 10 is moved to a given position along the plane T in direction 7, cooperates with a first stop device defined by an elongated bar 11, which extends over the surface P in direction 7, and is moved by the device 5 to a given position along the base 3 in direction 4, and further cooperates with a second stop device 12 comprising a guide 13 fixed to a lower surface of one of the beds 9 parallel to direction 4.

[0013] The guide 13 supports a slide 14, which is slidingly coupled to the guide 13, and is further coupled by means of a nut screw to a screw 15 of an actuating device 16, an electric motor 17 of which turns the screw 15 to move the slide 14 along the guide 13 in direction 4.

[0014] The device 12 further comprises a stop element 18 rotationally coupled to the slide 14 to turn with respect to the slide 14, about a longitudinal axis 19 thereof, parallel to direction 7 between a raised operative portion (figure 3), in which the element 18 protrudes over the surface P, and a lowered rest portion (not shown), in which the element 18 is substantially arranged under the plane P itself. The element 18 is mobile from the raised operative position thereof to the lowered resting position thereof either manually or under the thrust of a panel 2 fed by the device 5 in direction 4, and is further manually mobile from the lowered resting position thereof to the raised operating position thereof.

[0015] The element 10, the bar 11, and the element 18 cooperate with one another to guarantee a correct positioning of the panel 2 according to a given angle with respect to direction 4 and to the plane T, and to allow to execute an inclined cut with respect to the side faces of

the panel 2 itself (figure 1). In particular, the elements 10 and 18 allow to correctly position a side face of the panel 2 in direction 7, and the bar 11 allows to correctly position a vertex of the panel 2 itself in direction 4.

[0016] The conformation of the stop device 12 allows to position the element 18 in any point of the guide 13 in relatively accurate and rapid manner.

Claims

1. A machine for cutting panels (2) made of wood or the like, the machine comprising: supporting means (3) defining a resting surface (P) for at least one panel (2); a cutting station (6); a feed device (5) for moving the panel (2) through the cutting station (6); a cutting device, which is mobile along a cutting plane (T) substantially orthogonal to a feeding direction (4) of the panel (2) for separating at least one component from the panel (2) itself; a first end-of-travel element (10), which is mobile parallel to the cutting plane (T); and a second end-of-travel element (18), which cooperates with the first end-of-travel element (10) for positioning the panel (2) so as to enable execution of an inclined cut; and being **characterized in that** it further comprises a guide (13) parallel to the feeding direction (4) and an actuator device (16) for moving the second end-of-travel element (18) along the guide (13) itself.
2. The machine according to Claim 1, wherein the second end-of-travel element (18) is mobile between a raised operative position, in which the second end-of-travel element (18) projects above the resting surface (P), and a lowered resting position, in which the second end-of-travel element (18) is substantially set underneath the resting surface (P) itself.
3. The machine according to Claim 2, wherein the second end-of-travel element (18) is mounted so as to turn about an axis of rotation (19) parallel to the cutting plane (T) between said raised operative position and said lowered resting position.
4. The machine according to Claim 3, wherein the second end-of-travel element (18) is mobile from the raised operative position into the lowered resting position under the thrust of the panel (2).
5. The machine according to any one of the preceding claims and further comprising a third end-of-travel element (11) for positioning the panel (2) correctly in the feeding direction (4).
6. The machine according to Claim 5, wherein the third end-of-travel element (11) is carried by the feed device (5).

7. The machine according to any one of the preceding claims, wherein the supporting means (3) comprise first and second supporting means (8, 9) mounted upstream and downstream, respectively, of the cutting plane (T) in the feeding direction (4); the guide (13) being mounted on the second supporting means (9).
8. The machine according to any one of the preceding claims, wherein the first end-of-travel element (10) is mobile along the cutting plane (T).

Patentansprüche

1. Maschine zum Schneiden von Tafeln (2) aus Holz oder dergleichen, umfassend: eine Trageinrichtung (3), die eine Tragfläche (P) für wenigstens eine Tafel (2) bildet; eine Schneidstation (6); eine Zufuhreinrichtung (5) zum Fördern der Tafel (2) durch die Schneidstation (6); eine Schneideinrichtung, die entlang einer Schneidebene (T) bewegbar ist, im Wesentlichen rechtwinklig zu einer Förderrichtung (4) der Tafel (2) zum Abtrennen wenigstens einer Komponente von der Tafel (2); ein erstes Hubbegrenzungselement (10), das parallel zur Schneidebene (T) beweglich ist; ein zweites Hubbegrenzungselement (18), das mit dem ersten Hubbegrenzungselement (10) zusammenarbeitet, um die Tafel (2) derart zu positionieren, dass das Ausführen eines geeigneten Schnittes möglich ist, **dadurch gekennzeichnet, dass** weiterhin eine Führung (13) parallel zur Förderrichtung (4) und ein Aktuator (16) zum Bewegen des zweiten Hubbegrenzungselementes (18) entlang der Führung (13) vorgesehen sind.
2. Maschine nach Anspruch 1, wobei das zweite Hubbegrenzungselement (18) beweglich ist zwischen einer angehobenen operativen Position, bei welcher das zweite Hubbegrenzungselement (18) über die Tragfläche (P) übersteht, und einer abgesenkten Ruheposition, in welcher das zweite Hubbegrenzungselement (18) im Wesentlichen unterhalb der Tragfläche (P) angeordnet ist.
3. Maschine nach Anspruch 2, wobei das zweite Hubbegrenzungselement (18) derart montiert ist, dass es um eine Drehachse (19) parallel zur Schneidebene (T) zwischen der angehobenen operativen Position und der abgesenkten Ruheposition verdrehbar ist.
4. Maschine nach Anspruch 3, wobei das zweite Hubbegrenzungselement (18) unter dem Schub der Tafel (2) bewegbar ist von der angehobenen operativen Position zur abgesenkten Ruheposition.
5. Maschine nach einem der vorausgegangenen Ansprü-

che, weiterhin umfassend ein drittes Hubbegrenzungselement (11) zum Positionieren der Tafel (2) genau in Förderrichtung (4).

6. Maschine nach Anspruch 5, wobei das dritte Hubbegrenzungselement (11) von der Zufuhreinrichtung (5) getragen ist.
7. Maschine nach einem der vorausgegangenen Ansprüche, wobei die Trageinrichtung (3) ein erstes und ein zweites Tragmittel (8, 9) umfasst, stromaufwärts beziehungsweise stromabwärts der Schneidebene (T) in Förderrichtung (4) angeordnet, und wobei die Führung (13) an der zweiten Trageinrichtung (9) montiert ist.
8. Maschine nach einem der vorausgegangenen Ansprüche, wobei das erste Hubbegrenzungselement (10) entlang der Schneidebene (T) bewegbar ist.

Revendications

1. Machine destinée à couper des panneaux (2) réalisés en bois ou d'un autre matériau similaire, la machine comprenant : un moyen de support (3) définissant une surface d'appui (P) pour au moins un panneau (2) ; une station de coupe (6) ; un dispositif d'alimentation (5) pour déplacer le panneau (2) à travers la station de coupe (6) ; un dispositif de coupe, qui se déplace le long d'un plan de coupe (T) de manière essentiellement orthogonale à une direction d'alimentation (4) du panneau (2) pour séparer du panneau (2) lui-même au moins un composant ; un premier élément de fin de course (10), qui se déplace parallèlement au plan de coupe (T) ; et un deuxième élément de fin de course (18), qui coopère avec le premier élément de fin de course (10) pour positionner le panneau (2) de sorte à permettre l'exécution d'une coupe en biais ; et étant **caractérisée en ce qu'elle** comprend en outre un guide (13) parallèle à la direction d'alimentation (4) et un dispositif d'actionnement (16) pour déplacer le deuxième élément de fin de course (18) le long du guide (13) lui-même.
2. Machine selon la revendication 1, dans laquelle le deuxième élément de fin de course (18) se déplace entre une position fonctionnelle élevée dans laquelle le deuxième élément de fin de course (18) se projette au-dessus de la surface d'appui (P), et une position de repos abaissée, dans laquelle le deuxième élément de fin de course (18) est essentiellement positionné au-dessous de la surface d'appui (P) elle-même.
3. Machine selon la revendication 2, dans laquelle le deuxième élément de fin de course (18) est monté de sorte à pivoter autour d'un axe de rotation (19)

parallèle au plan de coupe (T) entre ladite position fonctionnelle élevée et ladite position de repos abaissée.

4. Machine selon la revendication 3, dans laquelle le deuxième élément de fin de course (18) se déplace de la position fonctionnelle élevée vers la position de repos abaissée sous l'effet de la poussée du panneau (2).
5. Machine selon l'une quelconque des revendications précédentes comprenant en outre un troisième élément de fin de course (11) pour positionner correctement le panneau (2) dans la direction d'alimentation (4).
6. Machine selon la revendication 5, dans laquelle le troisième élément de fin de course (11) est transporté par le dispositif d'alimentation (5).
7. Machine selon l'une quelconque des revendications précédentes, dans laquelle le moyen de support (3) comprend des premier et deuxième moyens de support (8, 9) respectivement montés en amont et en aval du plan de coupe (T) dans la direction d'alimentation (4) ; le guide (13) étant monté sur le deuxième moyen de support (9).
8. Machine selon l'une quelconque des revendications précédentes, dans laquelle le premier élément de fin de course (10) se déplace le long du plan de coupe (T).

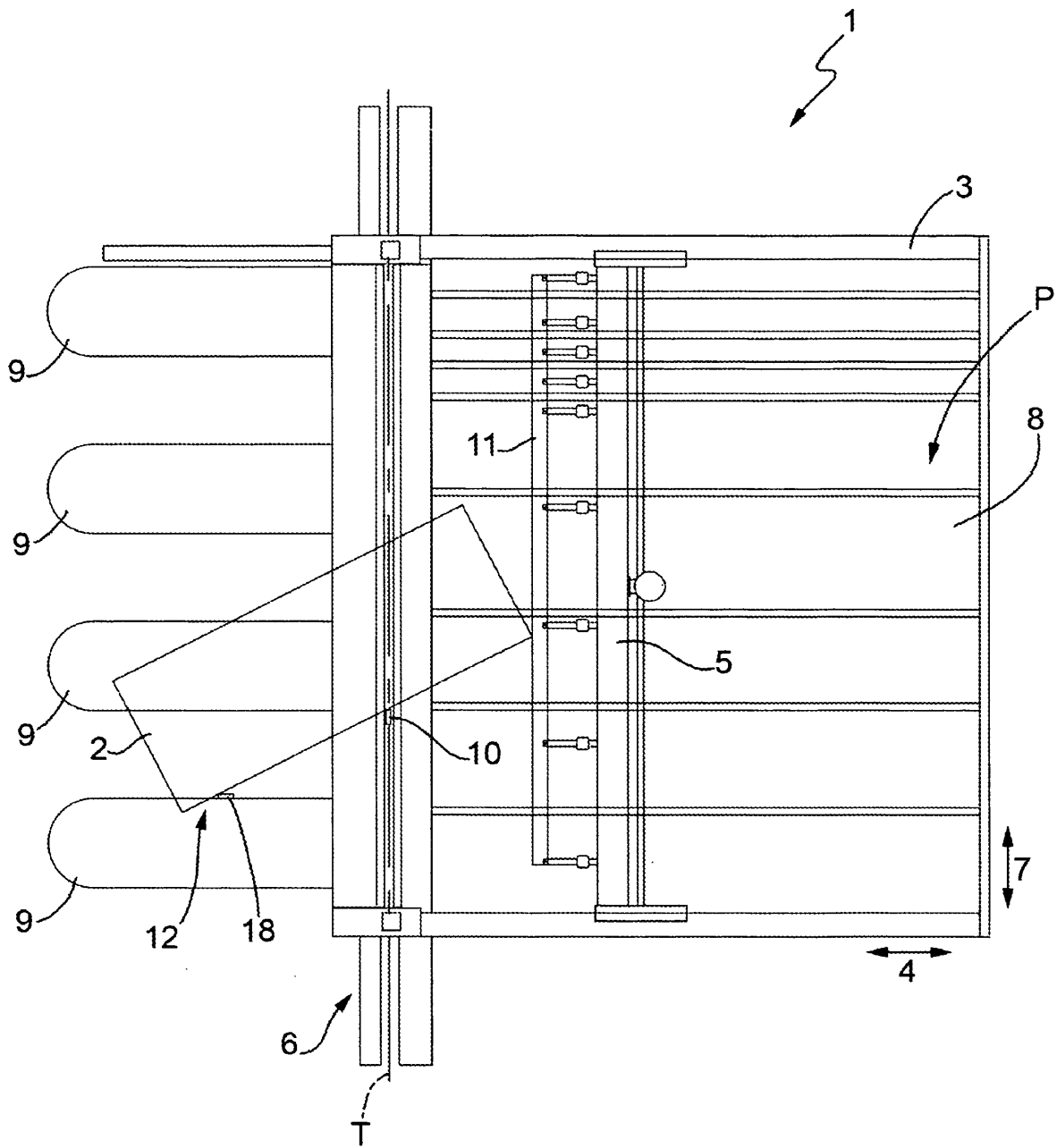
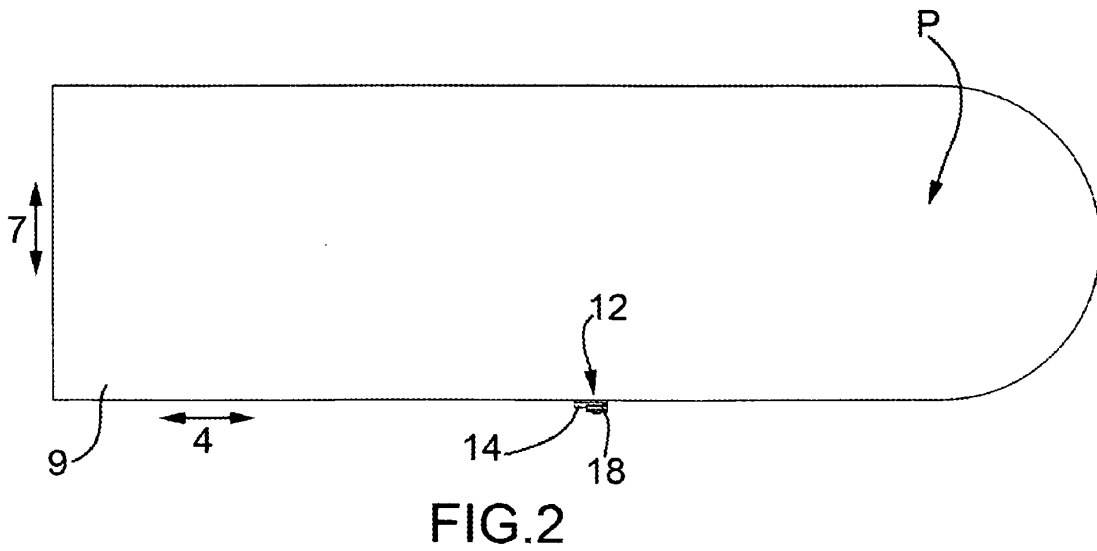
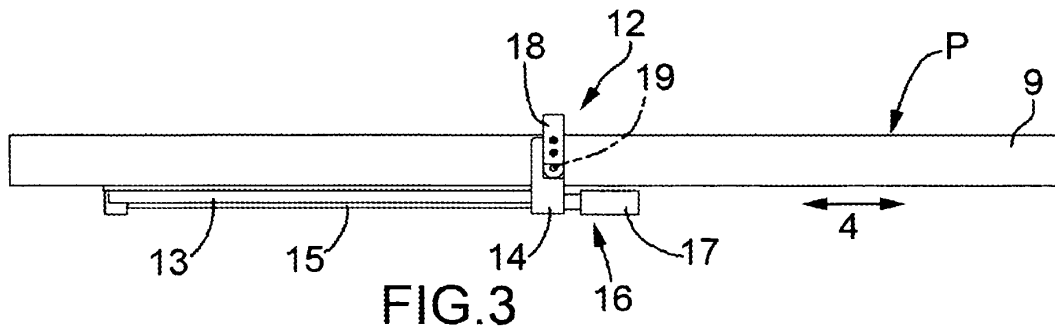
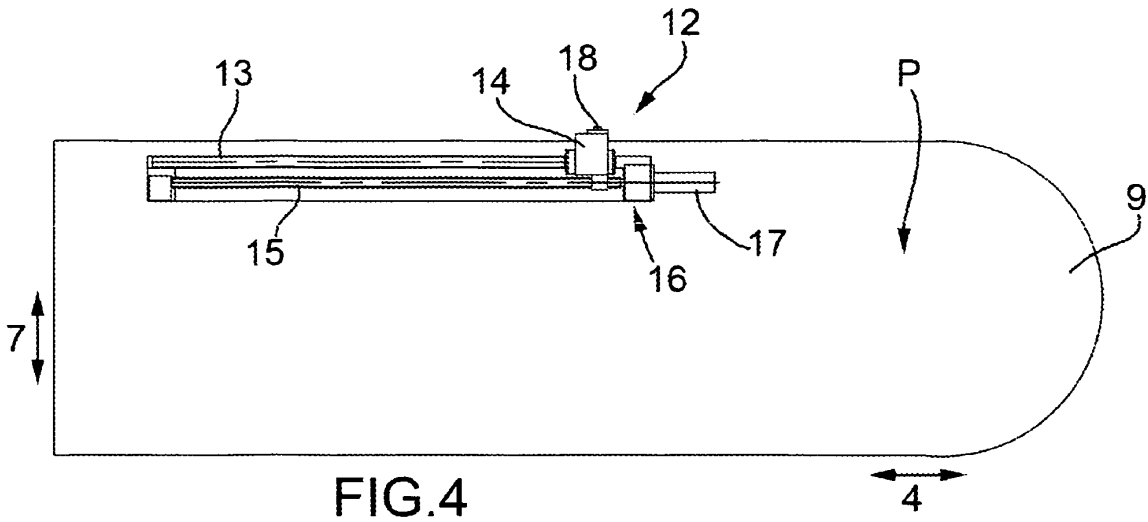


FIG.1



REFERENCES CITED IN THE DESCRIPTION

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