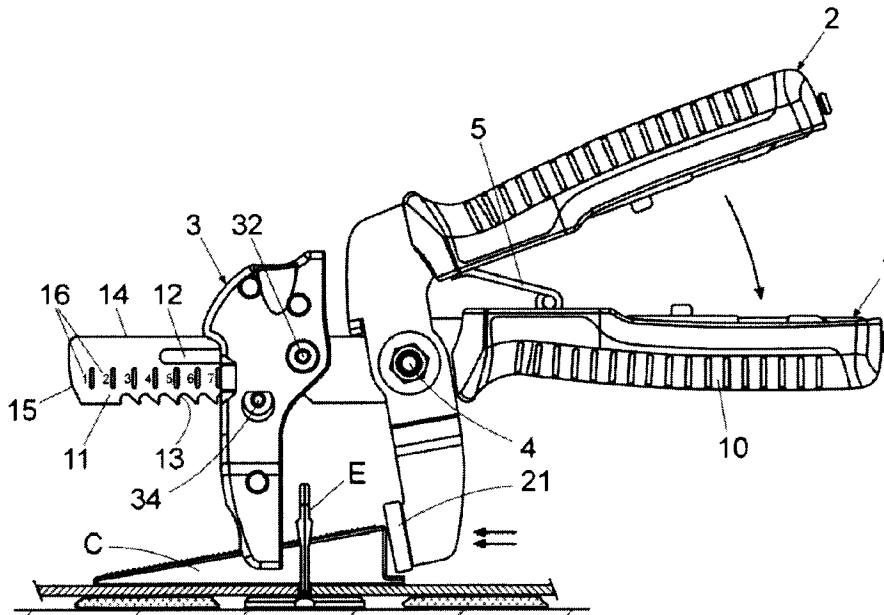




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(54) Titre : PINCE POUR SERRAGE DE PIECES SERVANT AU NIVELLEMENT DES CARREAUX DE PAREMENT
(54) Title: PLIERS FOR TIGHTENING PARTS FOR LEVELLING CLADDING TILES



(57) Abrégé/Abstract:

The invention relates to pliers for tightening parts for levelling cladding tiles, comprising: - a first arm (1) with a handle (10) and a guide bar (11); - a second arm (2) with a handle (20) and a contact surface (21) with a levelling wedge; - a rotation shaft (4); and - a supporting stop (3) comprising: a passage (31) for assembly in the guide bar; a shaft (32) assembled in a longitudinal slot (12) of the guide bar for the longitudinal movement of the supporting stop (3) with respect to the guide bar (11) and the relative rotation thereof between a fastening position with a pawl (13, 34) and a longitudinal movement position of the supporting stop (3) with respect to said guide bar (11); and a spring (33) which tends to maintain the supporting stop (3) in the fastening position with respect to the guide bar (11).

ABSTRACT

The invention relates to pliers for tightening parts for levelling cladding tiles, comprising: - a first arm (1) with a handle (10) and a guide bar (11); - a
5 second arm (2) with a handle (20) and a contact surface (21) with a levelling
wedge; - a rotation shaft (4); and - a supporting stop (3) comprising: a passage
(31) for assembly in the guide bar; a shaft (32) assembled in a longitudinal slot
(12) of the guide bar for the longitudinal movement of the supporting stop (3) with
respect to the guide bar (11) and the relative rotation thereof between a fastening
10 position with a pawl (13, 34) and a longitudinal movement position of the
supporting stop (3) with respect to said guide bar (11); and a spring (33) which
tends to maintain the supporting stop (3) in the fastening position with respect to
the guide bar (11).

PLIERS FOR TIGHTENING PARTS FOR LEVELLING CLADDING TILES

Technical field

The invention relates to pliers for tightening parts for levelling cladding
5 tiles, which are known in the market and are made up of a pushing wedge and a
T-shaped levelling element.

These pliers are applicable in the construction sector, in particular, in jobs
involving laying cladding tiles on diverse surfaces; and they have features which
facilitate the adjustment of the pliers, without needing to use any tools, and
10 correctly tighten the levelling parts, depending on the thickness of the tiles to be
leveled.

Prior state of the art

Patent EP2532806 (ES2598702T3) discloses a device for levelling rigid
15 cladding plates arranged on a surface to be cladded, the device in question
comprising a levelling element and a tightening wedge and a manual tool or pilers
for the actuation thereof.

The levelling element, with a T-shaped cross section, comprises a flat base
adapted to rest on the surface to be cladded, and a flat flange, perpendicularly
20 joined to the base and provided in the lower portion thereof with a first opening
wherein the wedge can be inserted and end notches to weaken it against
shearing stresses.

The tightening wedge comprises a lower settling surface and an upper
working surface, adapted to transmit a tensile stress towards the second element
25 which tends to separate the levelling part from the surface; said working face
having slots that define saw-like teeth, in order to stop the backward movement
of the wedge with respect to the second element.

The manual tool comprises: - a support equipped with a handle made of
polymeric material on a first end and a graduated scale on a second end, in order
30 to apply the suitable force depending on the height of the cladding tiles or plates;
- a support element, made of polymeric material, comprising a guide adapted to
enable the movement thereof along the support and legs separated by an
opening which enables the passage of the wedge and which are adapted to
provide spacing between the support and the cladding plate and; - a pusher made
35 of polymeric material joined by means of a joint to the support and equipped with
a first gripping portion and a second pushing portion for pushing the wedge by

pivoting the support by means of the joint, causing stresses in order to separate the levelling piece and the surface to be cladded.

5 These pliers or tool, like other ones existing on the market, have fastening means for fastening the supporting stop in different positions along the support consisting of a screw assembled threaded into the supporting stop which exerts a pressure against the guide.

10 These fastening means have different drawbacks when used: difficulty of actuation when the operator is wearing protective gloves; need to use a tool for actuating the screw, especially when fastening paste of the tiles is deposited on the thread, the deterioration of the thread from wear due to frequent changes in position of the supporting stop; risk of unwanted movement of the supporting stop due to insufficient tightening of the fastening screw, and risk of it sliding along the guide bar of the support.

15 Therefore, the technical problem that arises is the development of pliers, of the type mentioned above, which satisfactorily solves the problems mentioned above relating to the fastening of the supporting stop with respect to the guide bar of the support.

Description of the invention

20 The pliers for tightening parts for levelling cladding tiles of the invention are of the type mentioned above. These pliers have features aimed at satisfactorily solving the problems described regarding the fastening of the supporting element in different positions, suitable for acting on the levelling parts and performing the levelling of tiles with different thicknesses.

25 Specifically, these pliers comprise: - a first arm, straight, having a handle on a rear end and a guide bar on a front end for the movable assembly of a supporting stop of the levelling element; - a second arm, at an angle, having a rear end provided with a handle and having a contact surface with the pushing wedge on a front end; - a shaft for rotating the arms of the pliers and; - means for fastening the supporting stop in different positions along the guide bar of the first arm.

30 To solve the problem described, and according to the invention, the supporting stop comprises: a passage with a height greater than the guide bar; a shaft assembled in a longitudinal slot of the guide bar and which enables the longitudinal movement of the supporting stop along the guide bar and the relative

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rotation thereof between a fastening position and a longitudinal movement position of the supporting stop with respect to said guide bar; and a spring which acts against a surface of the guide bar and tends to maintain the supporting stop in the fastening position with respect to the guide bar.

5 The means for fastening the supporting stop in several positions, longitudinally spaced with respect to the guide bar, are made up of a straight pawl comprising: a row of teeth defined along the guide bar, and a stop or tab assembled in the supporting stop and which: in the fastening position of the supporting stop is housed between any two consecutive teeth of the guide bar,
10 and in the longitudinal movement position of the supporting stop is arranged spaced from the end of the teeth.

 The spring assembled in the supporting stop tends to cause the rotation of said supporting stop towards a fastening position wherein the stop or tab is locked between the teeth of the guide bar, preventing said supporting stop from being
15 moved longitudinally with respect to the guide bar.

 In order to change the position of the supporting stop, it is sufficient to turn it manually, overcoming the resistance of the spring, until the stop or tab is released from the teeth, reaching a movement position wherein the supporting stop can run along the guide bar to the desired position, depending on the
20 thickness of the tiles to be leveled.

 Once this position is reached, it is sufficient to release the supporting stop so that the spring rotates it back to a fastening position and the stop or tab is locked between two consecutive teeth of the guide bar.

 With these features the problems posed are satisfactorily resolved since:
25 the change in position of the supporting stop does not require the actuation of any screws; this is very simple since it is sufficient to manually rotate the supporting stop until it is released from the teeth in order to move it along the guide bar; and the pawl ensures secure fastening of the supporting stop in the chosen position and prevents undesired movements thereof.

30 These and other additional features of the invention, set out in the appended claims, will be understood more easily in view of the embodiment example shown in the figures described below.

Brief description of the contents of the drawings

35 As a complement to the description provided herein, and for the purpose of helping to make the features of the invention more readily understandable, the

present specification is accompanied by a set of drawings which, by way of illustration and not limitation, represent the following:

5 - Figure 1 shows an elevation view of the pliers of the invention during the tightening of a pushing wedge and of a tile-levelling element in opposite directions.

- Figure 2 shows an elevation view of the pliers of the previous figure, wherein the supporting stop has been shown in a fastening position and a vertical cross section has been performed in order to enable the visualisation of the fastening elements thereof with respect to the guide bar.

10 Figure 3 shows an elevation view of the pliers, wherein the supporting stop has been shown in a longitudinal movement position with respect to the guide bar, released from the teeth of said guide bar.

Detailed description of embodiments of the invention

15 Figure 1 shows the pliers for tightening parts for levelling cladding tiles, which act in opposite directions against a pushing wedge (C) acting on the tiles to be leveled and against a T-shaped levelling element (E) which is moved upwards due to the action of the inclined upper surface of the wedge, and which acts against the lower surface of the tiles pressing them against the lower surface
20 of the wedge, performing the levelling thereof.

The pliers comprise: a first metal arm (1), straight, having a handle (10) on a rear end and a guide bar (11) on a front end for the movable assembly of a supporting stop (3) of the levelling element (E); and a second metal arm (2), at an angle, having a handle (20) on a rear end and a contact surface (21) with the
25 push wedge (C) on a front end; said arms (1, 2) being related by a rotation shaft (4).

The supporting stop (3) comprises a passage (31) with a height greater than the guide bar (11) and a shaft (32) assembled in a longitudinal slot (12) of the guide bar (11); said shaft (32) enables the longitudinal movement of the
30 supporting stop (3) along the guide bar (11) and the relative rotation thereof between: a fastening position shown in Figures 1 and 2, and a longitudinal movement position of the supporting stop (3) with respect to said guide bar (11), shown in Figure 3.

Said supporting stop (3) has a spring (33) which acts against a surface of the guide bar (11) and it tends to maintain the supporting stop (3) in the fastening
35 position with respect to the guide bar (11) shown in Figures 1 and 2.

The means for fastening the supporting stop (3) in several positions, longitudinally spaced with respect to the guide bar (11), are made up of a straight pawl comprising: a row of teeth (13) defined along the guide bar (11), and a stop or tab (34) assembled in the supporting stop (3) and which: in the fastening
5 position of the supporting stop (3) is housed between any two consecutive teeth (13) of the guide bar (11), and in the longitudinal movement position of the supporting stop (3) is arranged spaced from the end of the teeth (13).

As seen in the attached figures, the guide bar (11) has a first longitudinal edge (14) which makes up the supporting surface of the spring (33) of the
10 supporting stop (3), and a second longitudinal edge (15), parallel to the previous one, wherein the row of teeth (13) of the pawl is defined.

To ensure that in the fastening position the supporting stop (3) is unable to move with respect to the guide bar (11), the teeth (13) of the guide bar (11) are inclined towards the rear end of the first arm (1) of the pliers, carrying the
15 corresponding handle (10), meaning, in the direction opposite from the actuation of said supporting stop (3) against the levelling element (E).

The guide bar (11) comprises a graduated scale (16) indicating different fastening positions of the supporting stop (3) with respect to the row of teeth (13), for levelling tiles with different thicknesses.

20 These pliers have a spring (5) which acts against the first arm (1) and the second arm (2) and it tends to maintain the pliers in the open position, the arms (1, 2) recovering the position thereof when the manual pressure required for the actuation thereof is released.

Having sufficiently described the nature of the invention, in addition to a
25 preferred exemplary embodiment, it is hereby stated for the relevant purposes that the materials, shape, size and layout of the described elements may be modified, provided that it does not imply altering the essential features of the invention claimed below.

The embodiments of the present invention for which an exclusive property or privilege is claimed are defined as follows:

1. Pliers for tightening parts for levelling cladding tiles, said pliers comprising:

a first arm, straight, having a handle on a rear end and a guide bar on a front end for a movable assembly of a supporting stop of a levelling element;

a second arm, at an angle, having a rear end provided with a handle and having a contact surface with a pushing wedge on a front end;

a rotation shaft relative to the arms of the pliers; and

means for fastening the supporting stop in different positions along the guide bar of the first arm;

wherein the supporting stop comprises:

a passage with a height greater than the guide bar; and

a shaft assembled in a longitudinal slot of the guide bar and which enables a longitudinal movement of the supporting stop along the guide bar;

and wherein the means for fastening the supporting stop in several positions, longitudinally spaced with respect to the guide bar, are made up of a straight pawl comprising:

a row of teeth defined along the guide bar; and

a stop or tab assembled in the supporting stop and able to be housed between any two consecutive teeth of the guide bar,

wherein:

the shaft assembled in the longitudinal slot of the guide bar further enables relative rotation of the supporting stop between a fastening position, in which the stop or tab is housed between any two consecutive teeth of the guide bar, and a longitudinal movement position, in which the stop or tab is arranged spaced from an end of the teeth; and

the supporting stop further comprises a spring which acts against a surface of the guide bar and tends to maintain the supporting stop in the fastening position with respect to the guide bar.

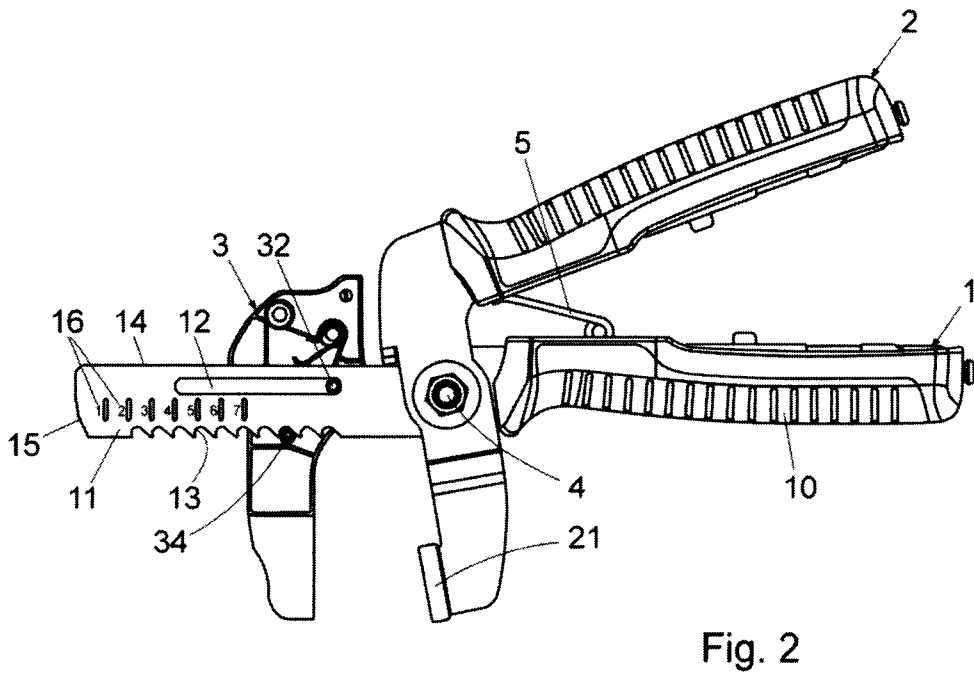
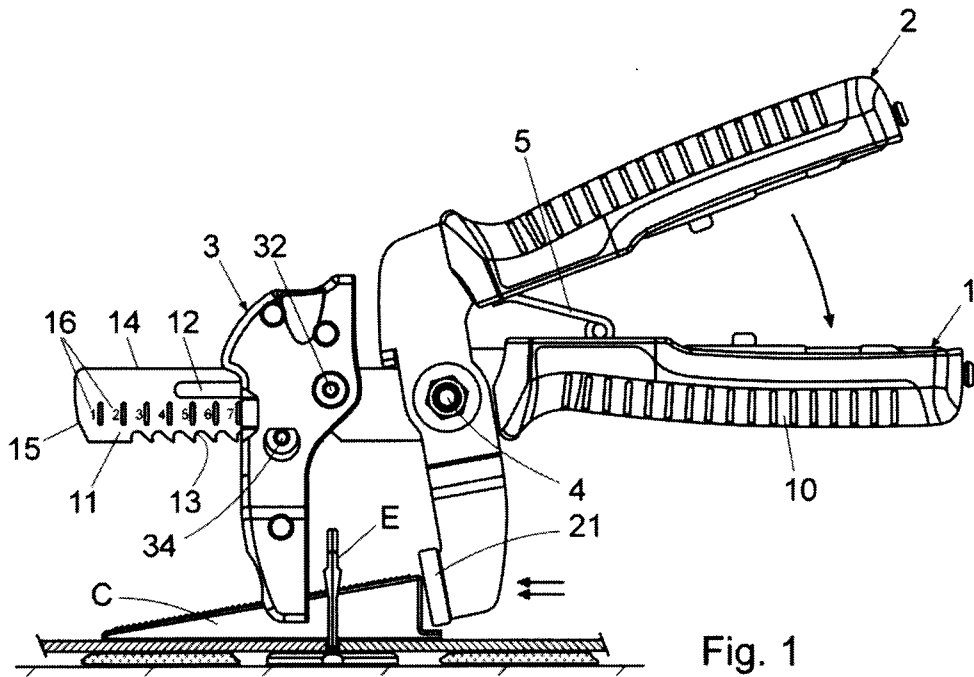
2. The pliers, according to claim 1, wherein the guide bar has a first longitudinal edge which makes up the supporting surface of the spring of the

supporting stop, and a second longitudinal edge, parallel to the first longitudinal edge, wherein the row of teeth of the pawl is defined.

3. The pliers, according to claim 1 or claim 2, wherein the teeth of the guide bar are inclined towards the rear end of the first arm of the pliers, carrying the corresponding handle.

4. The pliers, according to any one of claims 1 to 3, wherein the guide bar comprises a graduated scale indicating different fastening positions of the supporting stop with respect to the row of teeth of the pawl, for levelling tiles with different thicknesses.

5. The pliers, according to any one of claims 1 to 4, wherein the pliers comprise a spring which acts against the arms of the pliers and tends to maintain the pliers in an open position.



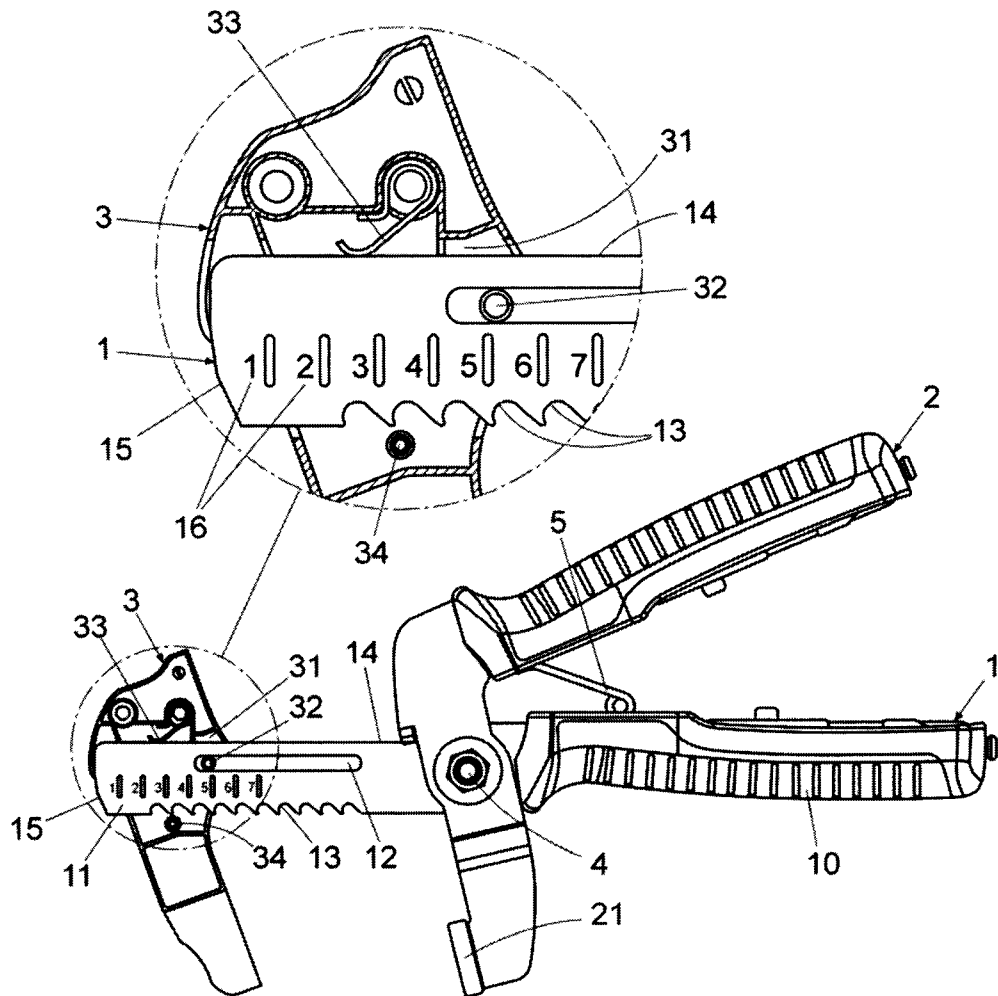


Fig. 3

