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(54) Device for deburring and beveling flat pieces, with a variable beveling angle.

(57) A device for deburring and beveling flat pieces with a variable beveling angle, which comprises a pair of abrasive rotating belts (3,4), one or both of which are inclined as to the plane and machining line, a pair of pulleys (9-11, 10-12) supporting said abrasive belts (3,4), a handwheel (5) allowing the displacement of a saddle (13) according to the tickness of the piece (2) to be machined.

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DEVICE FOR DEBURRING AND BEVELING FLAT PIECES, WITH A VARIAVLE BEVELING ANGLE

The present invention relates to a device for deburring and beveling flat pieces, such as sheets of whatever thickness, of iron or other materials, which can be either portable or connected to supporting systems with conveyor belt.

It is known that beveling with burr removal from the edges is required for flat pieces whose thickness ia inferior to their other dimensions, obtained through shearing, blanking and trimming, or other operations like plastic moulding.

This operation is sometimes carried out in an unsatisfactory and unevenly way, by means of brushes rotating against the deburring edge, or by means of triangle-shaped tools scraping on the edge itself.

The present invention aims at removing the burrs from the edges in a uniform and regular way, thus obtaining a perfect deburring without any peculiar artifice.

This and other aims that will be better disclosed later on are all achieved by the present invention, characterized in that it consists of a pair of rotating abrasive belts which bevel through contact with their properly rotating surface.

Each belt is supported by a pair of pulleys (driving and driven one) ; the belts face the edges of the piece to be beveled. One or both the rotation axes of the belt pulleys - the former for the upper edge, the latter for the lower one - are inclined at a suitable angle to form a "slide" at the leading end, to progressively remove the material, and to perfectly finish it, as a function of the abrasive belt width.

The relative motions are the rotation of the belts and the feed in of the piece towards the device, the two rotating belts between which it is operated being in touch with its edges. These abrasive belts are mounted in a self-contained mechanic group which comprises, besides their motorization and guide on rotating pulleys, the other mechanical elements necessary for the functioning, being the two belts inclined at an opposite angle.

The whole group is closed in a carter ; a hole for the connection to a dust suction duct is provided. Other features and advantages will become apparent from the following description and from the attached drawings which illustrate, diagramatically and by way of example, an embodiment of the invention. With reference to the said drawings :

- Fig. 1 illustrates a perspective view of the whole group ;
- Fig. 2 illustrates a front view ;
- Fig. 3 illustrates a lateral view.

With reference to said drawings, the device can be connected through plate 1 to a bench for the piece feed in, by means of screws. On the feed in plan, piece 2 is fed in from left to right passing between the abrasive belts 3 and 4, which are in touch with its upper and lower edge, respectively.

Figg. 2 and 3 show both the inclinations the rotating belts can have to carry out the required operation (in some cases, only one inclination can be given).

On the driving pulleys, motorizations 6 and 7 are shown, and the pairs of pulleys 9-11 and 10-12 which make it possible the opposite rotation of each belt on the driven pulley (for instance, pulley 9 rotates clockwise, pulley 10 anticlockwise).

The displacement required because of the different thickness of the pieces to be operated is controlled through handwheel 5, by means of its threaded rod, by sliding saddle 13.

Claims

1) DEVICE FOR DEBURRING AND BEVELING FLAT PIECES, WITH VARIABLE BEVELING ANGLE, consisting of a pair of abrasive belts rotating with opposite motion, characterized in that one or both of them have opposite inclinations.

2) DEVICE, as claimed in Claim 1, characterized in that two abrasive belts are each driven by a pair of pulleys (9-11, 10-12) with inclined axes in order to make the inclination of the plane of one or both belts (3,4) possible with respect to the machining line of piece (2), whose upper and lower edges are in touch with the belts.

3) DEVICE as claimed in Claim 1, characterized in that a handwheel (5) allows the displacement of a saddle (13) with a slide for the positioning of the abrasive belts (3, 4) as a function of the piece (2) thickness.

4) DEVICE as claimed in Claim 1, wherein the pulleys (9-11, 10-12) supporting the abrasive belts (3, 4) are assembled into a self-contained mechanic group with all the other necessary accessories.

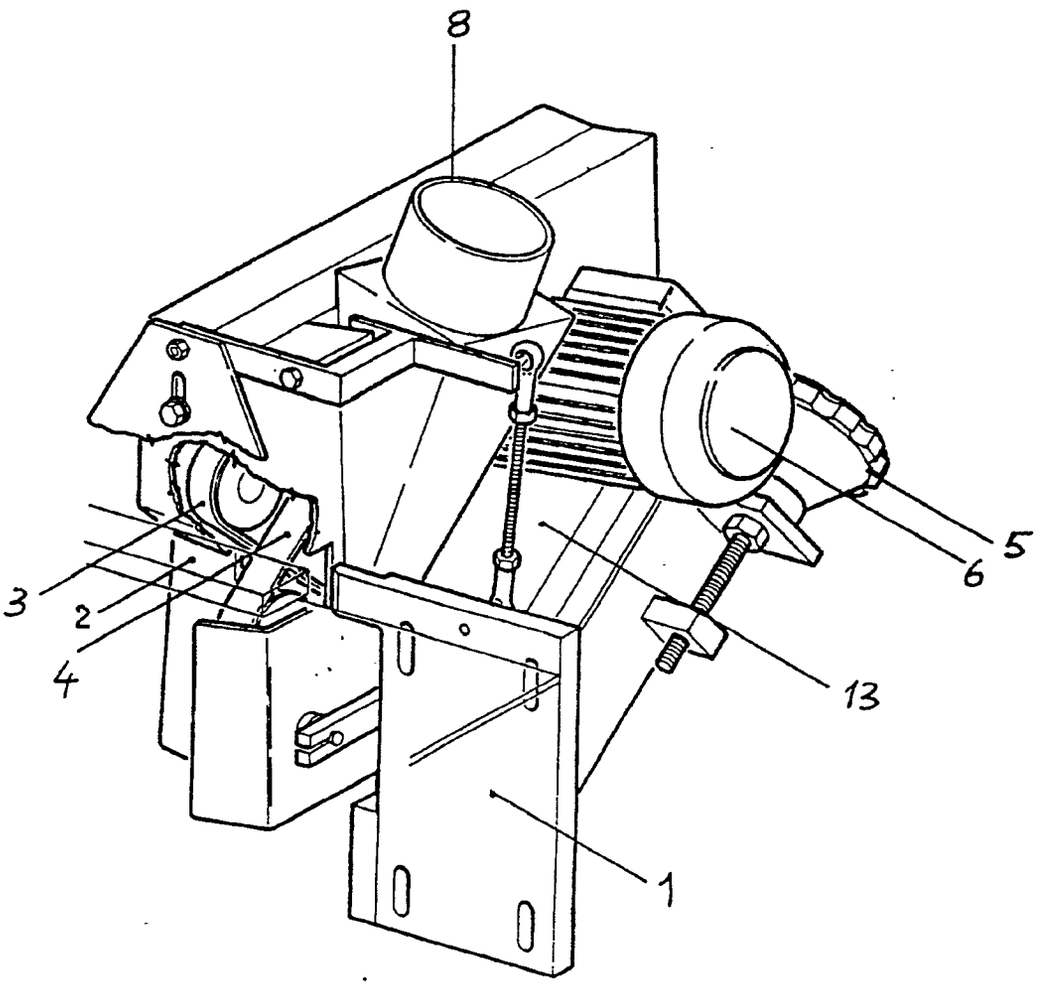

FIG.1

FIG.2

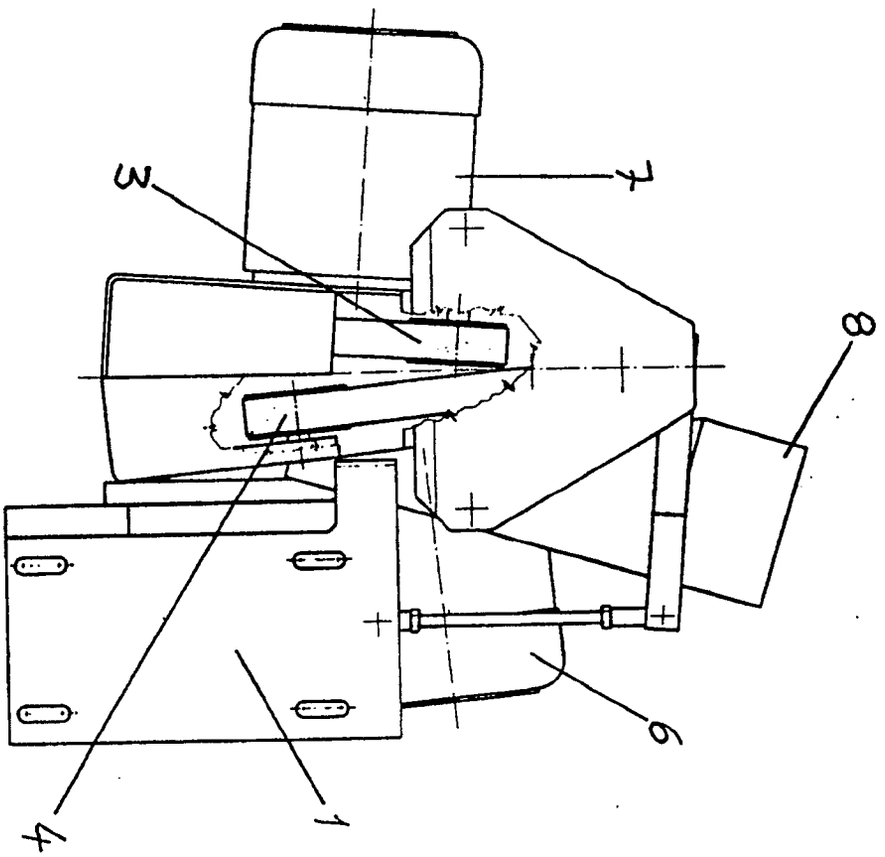

FIG.3