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ABUTMENT DEVICE FOR A SUPPORTING TABLE

Filed Nov. 1, 1967

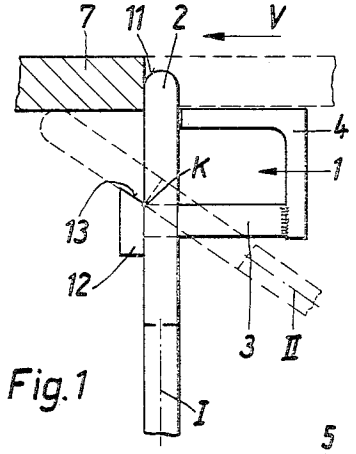

Fig. 1

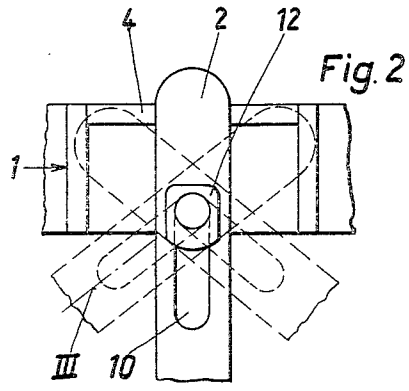

Fig. 2

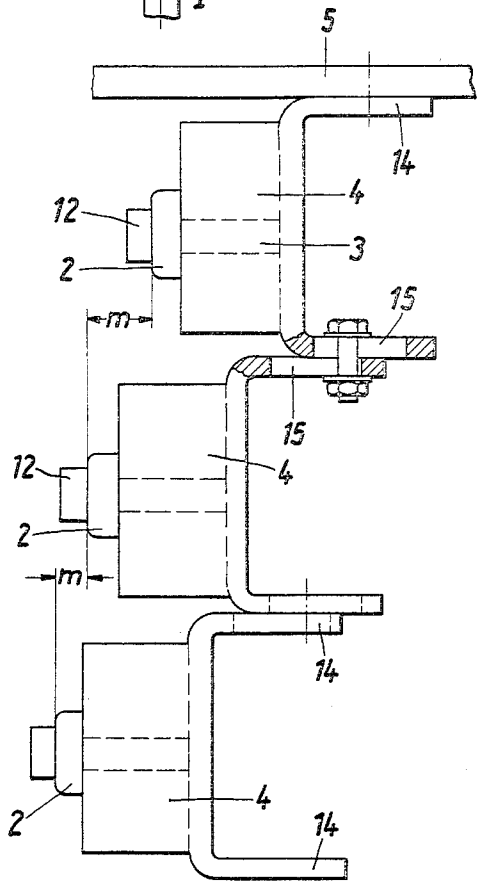

Fig. 3

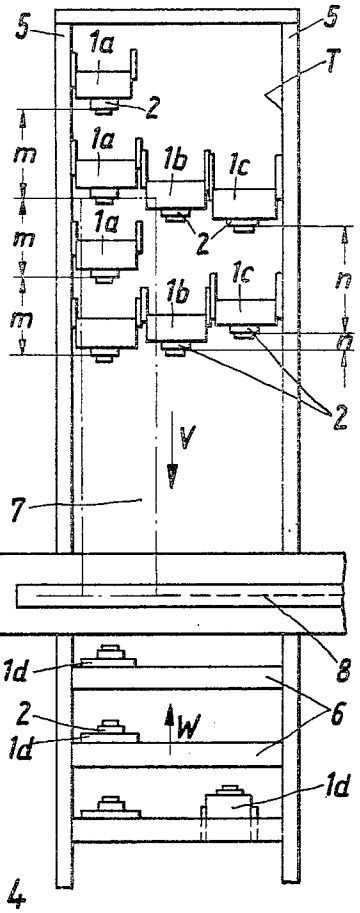

Fig. 4

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ABUTMENT DEVICE FOR A SUPPORTING TABLE

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Int. Cl. B27b 27/10
U.S. Cl. 143—168 6 Claims

ABSTRACT OF THE DISCLOSURE

An abutment device for supporting tables, which comprises a supporting table having longitudinal edges. At least one abutment member is pivotally mounted on the supporting table. Means for permitting swinging of the abutment member between the longitudinal edges of the supporting table in both cross directions and in one longitudinal direction to a position below the supporting face of the supporting table are provided. The abutment member is rendered inoperative in response to pressure by a workpiece on the abutment member in a predetermined direction and upon pressure release returns automatically to the abutment position.

The present invention relates to an abutment device for a supporting table, in general, and to such abutment device which can be rendered inoperative by pressing a workpiece against thereto in a predetermined direction, and which assumes automatiaclly the abutment position, upon release, in particular.

Such devices are secured to the supporting table at predetermined distances from each other and serve for securing working places producing exact sizes, for instance as support in connection with an oscillating saw for production of series sections of boards or scantlings.

The conventional known abutment devices of this type permit only a displacement of the piece to be cut in working directions, thus forwardly, and are brought into abutment position generally by means of spring pressure upon release. These devices are, as a rule, secured to the longitudinal edge of the table and at an engagement rail particularly provided therefor, so that a perfect work is possible only in connection with workpieces with a straight abutment edge.

In addition, the working procedure is rendered more difficult with the known abutment devices, due to the fact that the inoperativeness of the abutment row disposed in front of the end abutment must be performed by lateral pressing of the goods to be cut with a comparatively great exertion of force, so that particularly suitable and additional labor, respectively, was required for this operation, or the number of abutments to be applied has to be limited.

It is one object of the present invention to provide an abutment device for a supporting table which avoids the drawbacks of the known devices.

It is another object of the present invention to provide an abutment device for a supporting table which is designed such that the abutment member is swingably mounted between the longitudinal edges of the supporting table in both cross directions and in one longitudinal direction up to below the supporting face.

It is yet another object of the present invention to provide an abutment device for a supporting table wherein the abutment members are disposed as individual elements in any manner lengthwise and/or crosswise staggered within the range of the supporting face, so that a unit-composed variable abutment system results, which

makes possible uniform or different measure graduations with any selected distances.

Since upon abutment of the workpiece its weight contributes also to the holding down of the forward abutment row, the force to be applied during working is smaller than before, whereby the workpiece can be moved without particular exertion of force in all directions over the inoperative abutment bodies. In order to reduce as much as possible the braking effect, the upper edge of the abutment member, which engages the workpiece, is friction reducing, by example rounded off, in accordance with the present invention.

With these and other objetcs in view, which will become apparent in the following detailed description, the present invention will be clearly understood in connection with the accompanying drawing, in which:

FIGURE 1 is a side elevation of an abutment device designed in accordance with the present invention;

FIG. 2 is a front elevation of the abutment device;

FIG. 3 is a top plan view of a combination of a plurality of abutment devices; and

FIG. 4 is a top plan view of a supporting table with a plurality of abutment devices.

Referring now to the drawing, and in particular to FIGS. 1 and 2, the abutment device **1** comprises substantially an abutment member **2** and a carrying bolt **3** of the latter, the carrying bolt **3** being a part of a carrier **4**, which is, by example, of angular shape. The carrier **4** can form, as seen in FIGS. 3 and 4, in connection with further abutment devices and with the longitudinal rails **5** and cross beams **6**, respectively, of the supporting table "T," the supporting face, on which the workpiece **7**, by example, a board, is guided against the tool, by example, a buzz saw **8**.

The abutment member **2** is shown in FIG. 1 in its operative position I and in point-dotted lines in its inoperative position II. In the position I, the part of the abutment member **2** projecting about the support face supports itself on the carrier **4**, so that here the workpiece **7** can abut with its cross edge. Since the abutment member **2** is equipped with a slot **10** for a pendulum suspension on the bolt **3** it can be turned upon advancement in working direction, in the direction of the arrow "V," into the position II by the applied workpiece **7**, whereby, due to the rounded off upper edge **11**, a displacement of the workpiece **7** on the abutment member **2** is simplified. As soon as the workpiece **7** frees the abutment member **2** and does not cover the latter any more, the abutment member **2** swings automatically back into the abutment member position I due to the overweight of its part disposed below the tipping edge "K." The tipping edge "K" is defined such, that the bolt head **12** is equipped with an inclination **13**, the inclining angle corresponds with the angle of inclination of the abutment member **2** in the position II. The disadvantageous longitudinal displacement of the abutment member **2** is removed thereby during the transformation from the position I to the position II or vice versa.

In order to permit sliding of the workpiece also in cross-direction over the supporting table, the abutment member **2** is swingable towards both sides into the position III (FIG. 2), whereby the return swinging takes place likewise automatically by the force of gravity. The guide slot **10** makes possible thereby also a yielding movement, which runs simultaneously in the longitudinal and crosswise direction, so that the workpiece can be moved from all sides onto the supporting face equipped with the abutment devices.

As shown in FIGS. 3 and 4, the abutment devices **1** can be composed as a unit composed system to systems of any selected measure graduations and can be applied to the supporting table. The carriers **4** can be equipped thereby with U-shaped members **14**, which make possible the

clamping together with the adjacent abutment device, as well as a securing on the longitudinal rails **5** of the supporting table. An exact alignment on the desired measure graduation "*m*" can be made possible by the arrangement of longitudinal slots **15** in the U-shaped members **14**.

In FIG. 4 abutment devices I*a* are provided for equally large measure graduations "*m*" on the longitudinal rail **5**. By this arrangement equally long blanks can be produced with the saw **8** by step-wise advancement in the direction "V" and abutment of the workpiece **7**. The abutment members, which are disposed below the workpiece, are turned into the position II (or III) (see FIGS. 1 and 2). During advancement of the workpiece the successively freed abutment members swing back automatically into the abutment position I.

The further abutment devices I*b* and I*c*, respectively, disposed on the supporting table make possible other measure graduations "*n*," whereby graduations of the order of *m*/*m* can be produced without difficulties. Since the non-required abutments can swing in longitudinal or crosswise direction into the inoperative position II and III, respectively, the width of the workpiece is not limited by the abutments.

The abutment devices I*d* are provided on the other side of the tool and of the saw blade **8**, respectively, and, by example, on the cross beams **6**. Here the tool is advanced in the direction of the arrow "W," or it can abut in the direction of the arrow "V" from the other side. In the last case, the workpiece must swing out prior to each advance-step towards the right and can be moved from there prior to the next abutment.

It is suitable for the worker for a fast orientation, if the individual abutment devices I*a*, I*b*, I*c*, and I*d* are equipped with markings, from which the size of the particular measure graduations can be taken.

Within the scope of the present invention the shown particulars can deviate from the shown form. Thus the swinging of the abutment member into the positions II and III can be achieved also such, that the carrying bolt extends obliquely upwards and the bore receiving the bolt in the abutment member has countersink means.

It is essential that by the invention a lateral swinging of the abutment members for 180° and forwardly for 90° is possible.

While I have disclosed several embodiments of the present invention, it is to be understood that these embodiments are given by example only and not in a limiting sense, the scope of the present invention being determined by the objects and the claims.

I claim:

1. An abutment device for supporting tables, comprising

a supporting table having longitudinal edges,

at least one abutment member pivotally mounted on said supporting table,

means permitting swinging of said abutment member between said longitudinal edges of said supporting table in both cross directions and in one longitudinal direction to a position below the supporting face of said supporting table, and

said abutment member is rendered inoperative in response to pressure by a workpiece on said abutment member in a predetermined direction and upon pressure release returns automatically to the abutment position.

2. The abutment device, as set forth in claim **1**, wherein

said abutment member has an upper edge of a friction reducing characteristic, and

said upper edge is adapted to engage a workpiece.

3. The abutment device, as set forth in claim **2**, wherein

said upper edge of said abutment member is rounded off.

4. The abutment device, as set forth in claim **1**, which includes

a bolt secured to said supporting table parallel to its supporting surface and constituting a pivot for said pivotal mounting of said abutment member, and

said abutment member has a longitudinal slot and is suspended above its point of gravity on said bolt, in order to permit said swinging of said abutment member in one longitudinal direction and in both cross-directions.

5. The abutment device, as set forth in claim **1**, which includes

a bolt secured to said supporting table inclined upwardly towards the supporting face of said supporting table and constituting a pivot for said pivotal mounting of said abutment member, and

said abutment member has a bore receiving said bolt and said bore is equipped with countersink means.

6. The abutment device, as set forth in claim **1**, wherein

said supporting table has a plurality of abutment devices and a plurality of cross beams disposed at predetermined distances from each other, and

at least one of said abutment devices is secured to each of said cross beams.

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HARRISON L. MUNSON, Primary Examiner

PO-1050
(5/69)

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,483,903 Dated December 16, 1969

Inventor(s) Alfons Reinhardt

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In the heading of the patent specification, lines 2 and 3,

for "Alfons Reinhardt, 7464 Schomberg, near Balingen, Schomberg, Germany"

read - - Alfons Reinhardt, 7464 Schömberg, near Balinge Germany - -

SIGNED AND
SEALED
JUN 2 1970

(SEAL)
Attest:

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Commissioner of Patents