United States Patent

[11] **3,568,557**

[72] Inventor **Eduard Hanni**
Zofingen, Switzerland

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[73] Assignee **Haemmerle A. G., Maschinenfabrik**
Zofingen, Switzerland

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[33] **Austria**
[31] **A9018/67**

[54] **SHEET METAL CUTTING DEVICE**
2 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** **83/519,** 83/564, 83/598, 83/609
[51] **Int. Cl.** **B26d 11/00**
[50] **Field of Search** 83/598, 599, 564, 597, 609, 610, 549, 673, 3; 83/519

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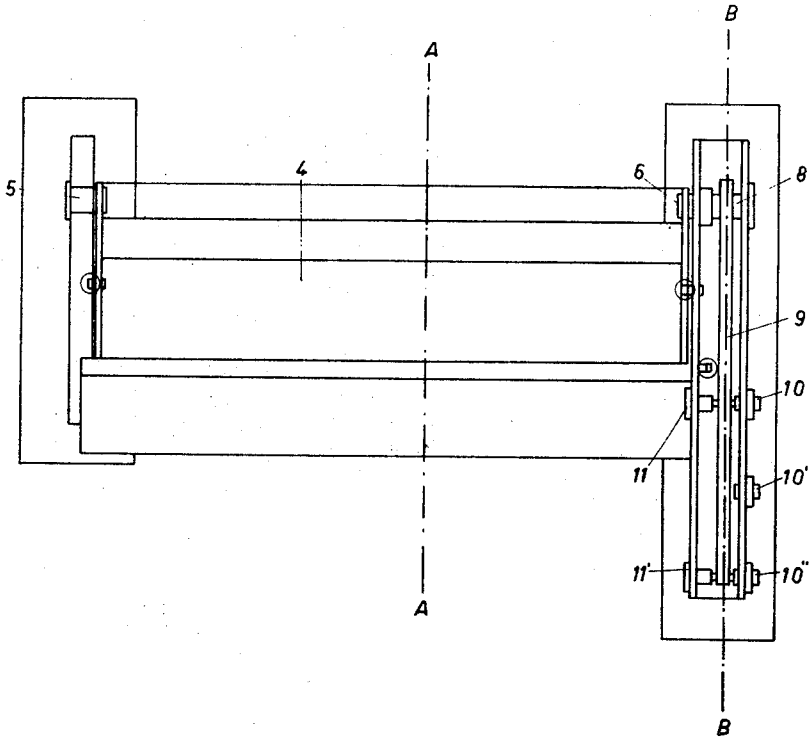
Primary Examiner—Andrew R. Juhasz
Assistant Examiner—James F. Coan
Attorney—Abraham A. Saffitz

ABSTRACT: A sheet metal cutting device incorporating a sheet feed table on which a bottom blade and bottom transverse blade are mounted integrally, a top blade borne in a pivotable beam and a transverse top blade mounted perpendicularly to the latter, said transverse blade being mounted about the axis of said beam in a vertical plane perpendicular to the cutting plane of the top blade and being guided at the sides by adjustable guide elements. The transverse top blade is mounted to pivot on a lateral prolongation of the axis of rotation of the beam and the two top blades are pivoted independently of one another and can be individually operated each by its own separate actuating element.



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3 Sheets-Sheet 1

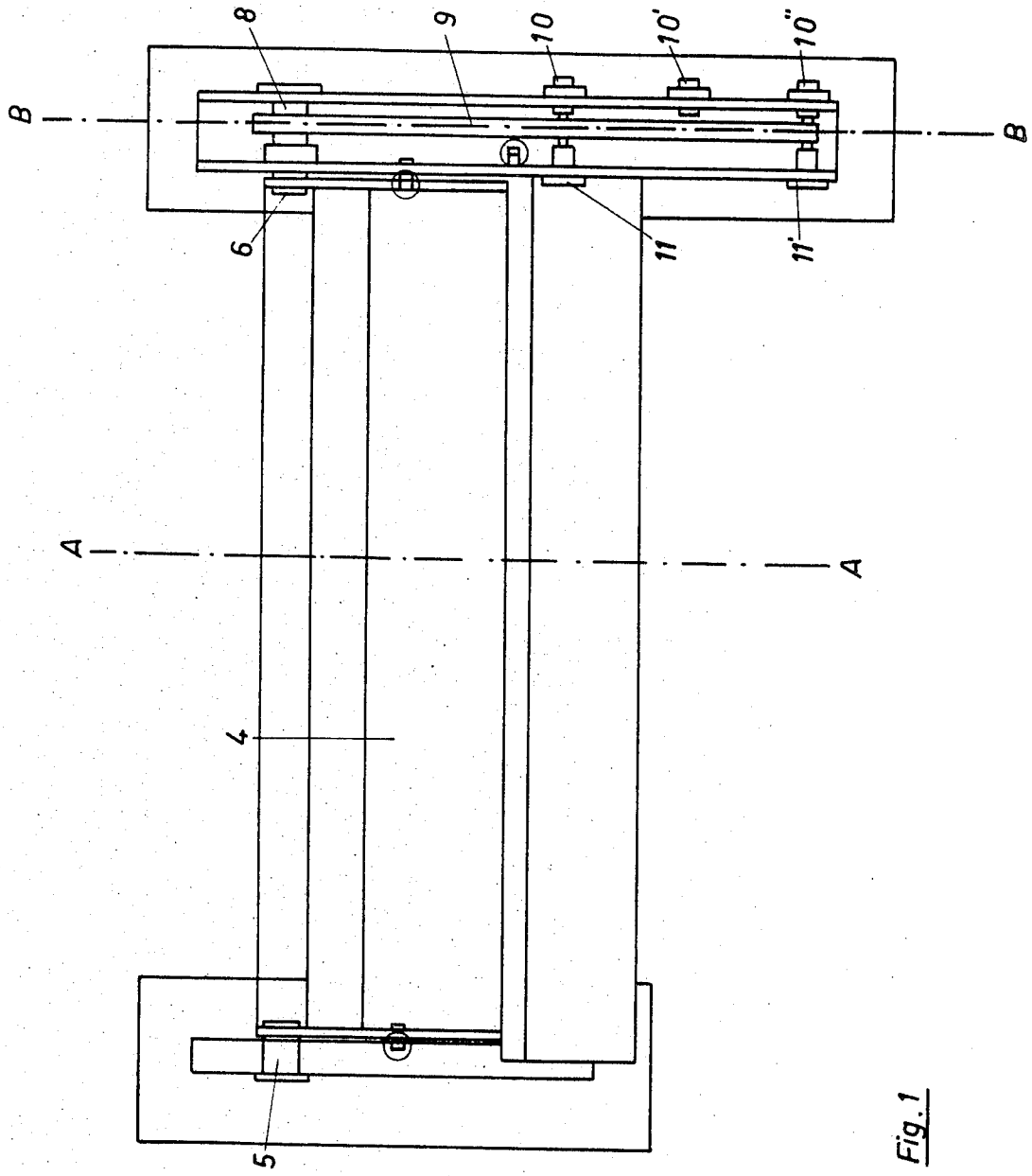

Fig. 1

INVENTOR
EDUARD HANNI

BY Abraham A Seffitz
ATTORNEY

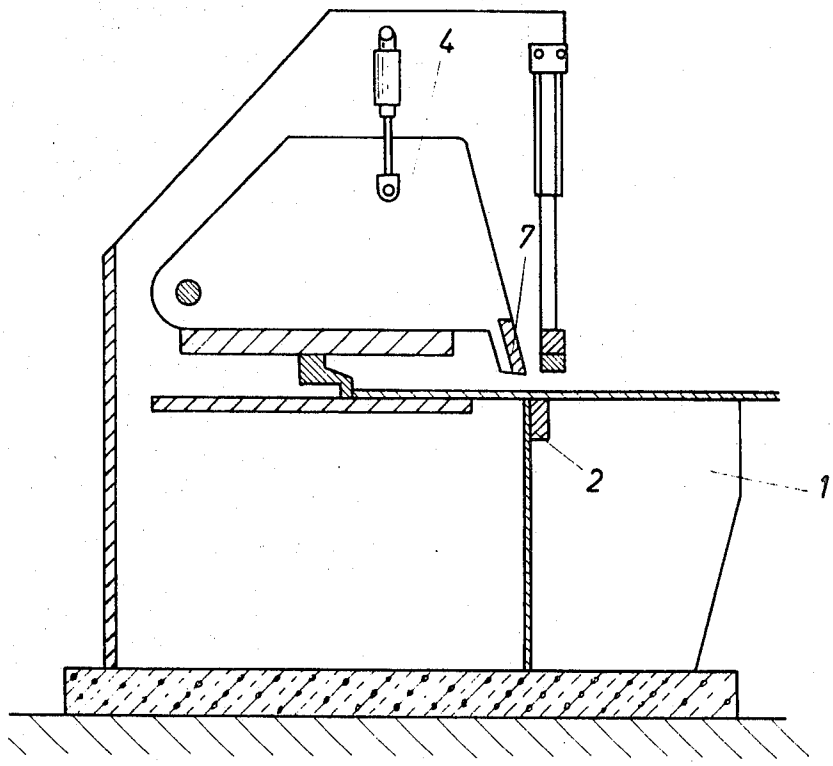

Fig. 2

INVENTOR
EDUARD HANNI

BY Abraham A. Saffitz
ATTORNEY

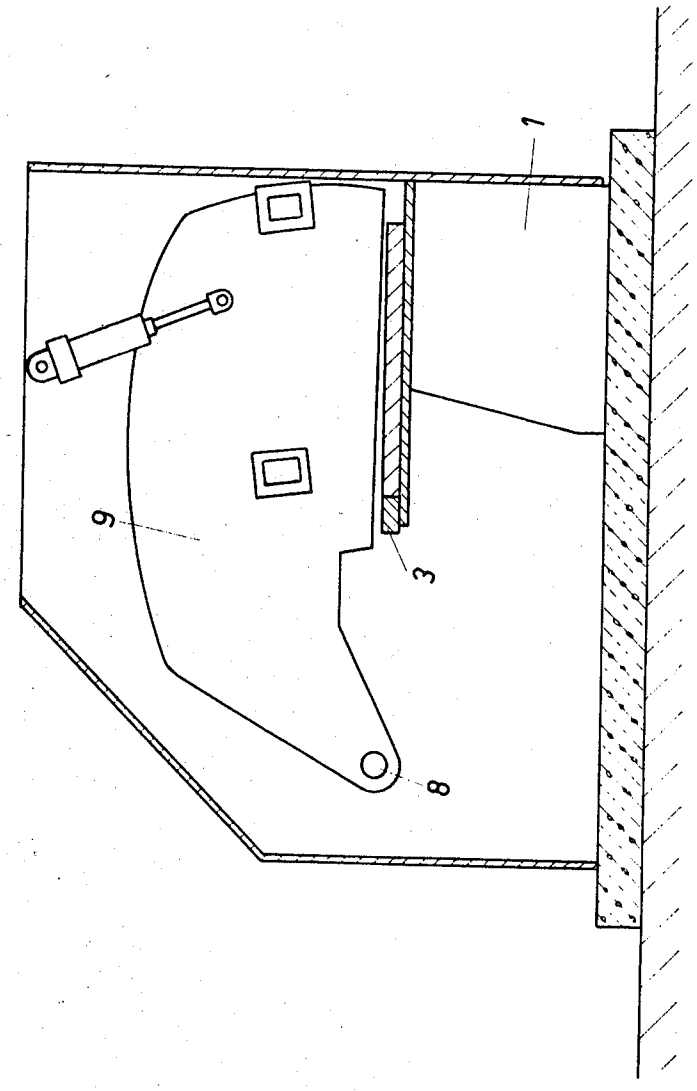

Fig. 3

INVENTOR
EDUARD HANNI

BY Abraham A. Siffetz
ATTORNEY

SHEET METAL CUTTING DEVICE

BACKGROUND OF THE INVENTION

The present invention relates to a sheet metal cutting device incorporating a bottom blade mounted integrally on a sheet feed table, a top blade borne in a pivotable beam and a transverse blade mounted perpendicularly to the latter.

Since, using existing sheet metal cutting devices of the foregoing type, it is possible to cut plates along one side only, it is necessary to proceed as follows if for example it is desired to cut a rectangular plate to a defined size:

The uncut plate is fed into the machine, the first edge is cut, the plate is then turned through 90°, again cut, and so on until all four edges have been cut. Devices of this type have the following disadvantages:

A great deal of time is spent in turning the plate; in addition the repeated turning entails the risk of damage, for example by scoring; and finally there is a danger that if the plate is not fed with sufficient care into the machine the cutting angle will deviate from an exact 90°.

The object of the invention is to introduce a sheet metal cutting device which permits extremely rapid and precise cutting to size of rectangular plates. It is characterized by the fact that the transverse blade is arranged to pivot about the axis of the pivotable beam in a vertical plane perpendicular to the cutting level of the top blade and is guided at the sides by adjustable guide elements. This permits one to cut a plate to a desired rectangular size with two cuts and a single turn.

It is preferable for the transverse blade, which functions as a top blade, to be mounted to pivot on a lateral prolongation of the axis of rotation of the pivotable beam.

In addition, the two top blades are movable individually toward and away from each other and independently of one another and each operable by its own separate actuating element.

The appended drawings illustrate one example of the execution of the subject of the invention, namely:

FIG. 1 shows a diagrammatic view from above of the proposed device;

FIG. 2 shows a section in accordance with the line A–A in FIG. 1; and

FIG. 3 shows a section in accordance with the line B–B in

FIG. 1.

The proposed sheet metal cutting device incorporates a plate feed table 1 in which are mounted a first bottom blade 2 and a second bottom blade 3 at right angles to it. Provided in addition is a beam 4 capable of being pivoted about the two shafts 5 and 6 and incorporating a first top blade 7. A second top blade 9 is mounted to pivot on a prolongation 8 of the shaft 6. The top blade 7 operates in conjunction with the bottom blade 2 and the top blade 9 with the bottom blade 3.

The two pairs of blades are connected to a mechanical, electrical or hydraulic driving device not illustrated.

The top blade 9 is guided at the sides by guiding elements 10, 10', 10'', 11 and 11', and these guiding elements are adjustable.

In order to cut a plate to a rectangular shape, the following operations are now necessary: the uncut plate is fed into the sheet metal cutting device and both pairs of blades are actuated simultaneously. By this means two adjacent plate edges are simultaneously cut at right angles to one another. The plate is then withdrawn, turned about diagonally and again cut with both pairs of blades simultaneously. It is thus possible to cut the plate to the desired rectangular size with two cuts and a single turn. In addition, it is possible for example to feed a long sheet of metal through the device, one pair of blades cutting a longitudinal edge to size while the resultant metal strip can be cut into pieces by the second pair of blades, without the need to withdraw the sheet from the device and reintroduce it facing another way. In this case the two pairs of blades are actuated independently of one another.

I claim:

1. A sheet metal cutting device comprising a sheet feed table on which a bottom blade and a transverse bottom blade are integrally mounted at right angles to each other, a first top blade mounted on a pivotable beam, a transverse top blade mounted perpendicularly to said first top blade, said transverse top blade being pivotably mounted on a lateral projection along the axis of said pivotable beam and moving in a vertical plane perpendicular to the cutting plane of the top blade, guiding means at the sides of each of said two top blades including adjustable guide elements.

2. A sheet metal cutting device in accordance with claim 1, including actuating means for independently and separately operating each of said two top blades.