

[54] WORK-TABLE ON MACHINES FOR PROCESSING METAL IN SHEET OR PLATE FORM

[72] Inventor: Eduard Alexander Hänni, Zofingen, Switzerland

[73] Assignee: Hammerle A.G., Zofingen, Switzerland

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[58] Field of Search.....267/119, 130

[56] References Cited

UNITED STATES PATENTS

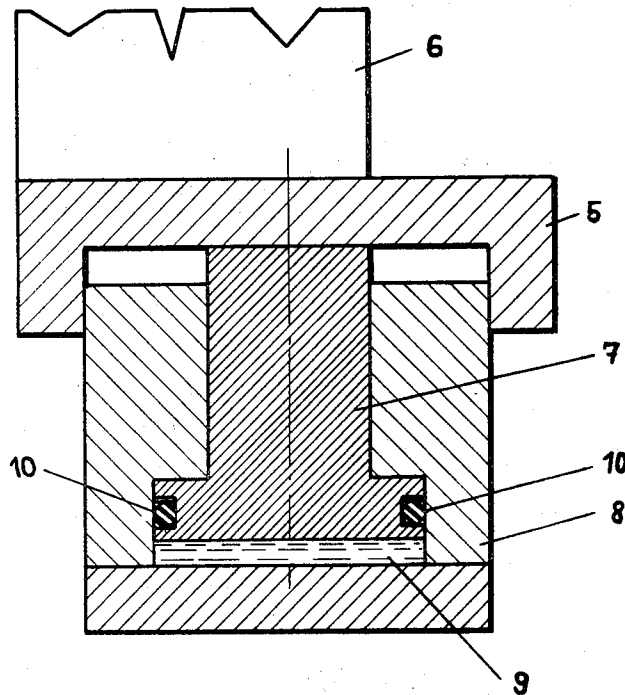
2,389,818	11/1945	Rode et al.	267/119
2,918,272	12/1959	Williamson.....	267/119
3,303,774	2/1967	Shiokawa	267/119

Primary Examiner—Drayton E. Hoffman
Attorney—Edwin E. Greigg

[57] ABSTRACT

A work-table having a table panel, a support element which supports the table panel across a load bearing dimension of the panel, and itself defines over the same dimension with a bottom part an oil chamber the oil in which will support the support element and panel.

1 Claim, 2 Drawing Figures



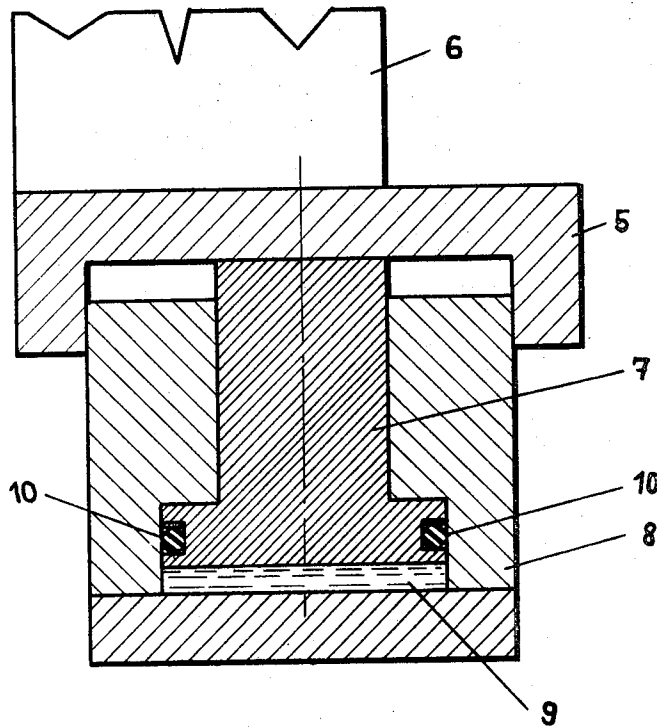


Fig. 1

INVENTOR.
Edward A. Hänni
BY
Edwin L. Geigg

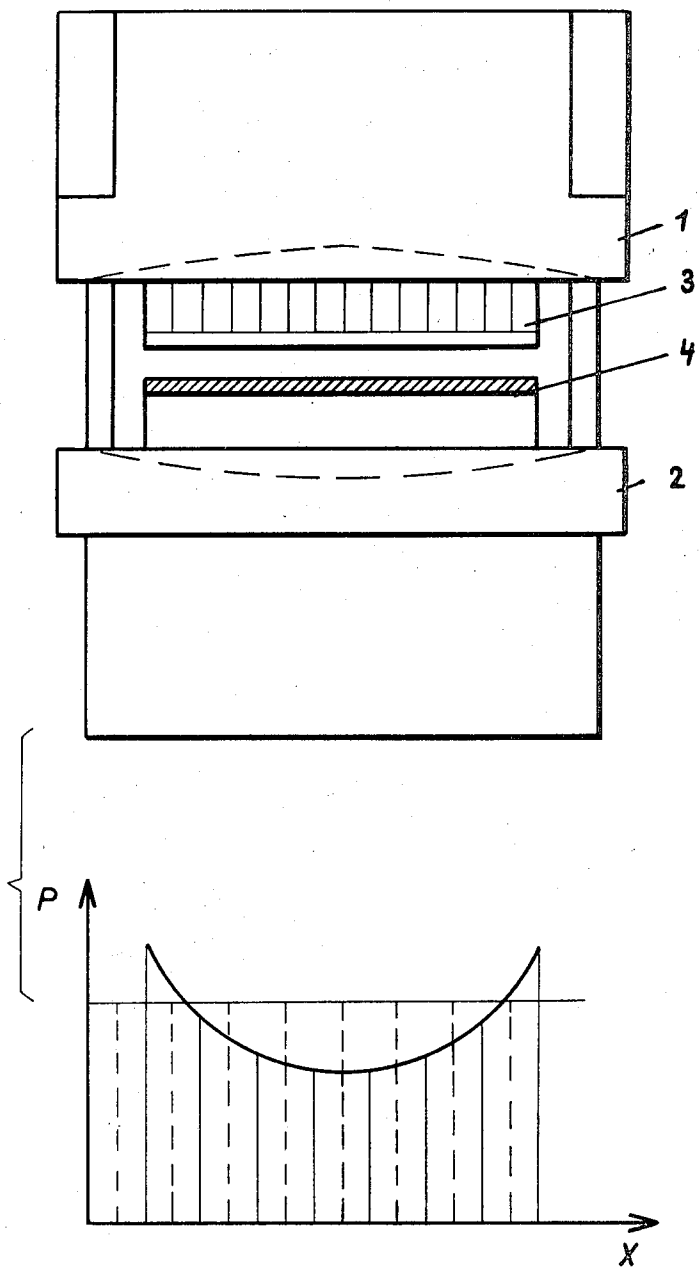


Fig. 2

WORK-TABLE ON MACHINES FOR PROCESSING METAL IN SHEET OR PLATE FORM

The invention relates to a work-table on machines for processing metal in sheet or plate form, more particularly press brakes. A frequent occurrence in high-pressure press brakes is that while a workpiece is being dealt with, the push-rod bends up and the work-table bends down, with the result that there remains between the top tool and the bottom tool a gap which is larger towards the center than at both ends; machining accuracy is therefore impaired.

Suggestions have been made to compensate for such inaccuracies. For instance, a centring plate is known having a curvature strip which is transversely adjustable on a keyway and which is retained at both ends on the bottom part of the centring plate. This system provides fairly accurate compensation for bending, but with the great disadvantage that readjustment is required upon any change of material or tools or pressure.

It is an object of this invention to provide a work-table for machines for processing metal in sheet or plate form, more particularly press brakes, which compensates automatically for bending of this kind or ensures that no such bending can occur.

According to the present invention there is provided a work-table for a machine for processing metal of the class including sheet and plate, more particularly press brakes, and including a table panel, a support element which corresponds to the length of the table panel mounted in a bottom part and vertically displaceable therein and defining therewith a chamber for receiving oil on which the element will rest.

In order that the invention may be well understood there will now be described an embodiment thereof, given by way of example only, reference being had to the accompanying drawings in which:

FIG. 1 is a diagrammatic view in cross section of an embodiment of the work-table according to the invention, and

FIG. 2 is a diagrammatic view of a conventional press brake and associated pressure diagram.

FIG. 2 includes a diagrammatic front view of a press

brake comprising a ram 1 and a work-table 2. A first tool 3 is disposed on ram 1 and a second tool 4 cooperating with tool 3 rests on table 2. Under load, particularly if the load is not evenly distributed, bending may occur in the form indicated by broken lines. This condition is shown in heavy lines in the pressure diagram in FIG. 2, P denoting the pressure and X denoting the place on the work-table.

FIG. 1 is a diagrammatic view in section of the new work-table according to the invention, comprising a panel 5 bearing a machining tool 6. Panel 5 rests on a support element 7 extending over the whole length of panel 5 and in cross section resembling an inverted T; element 7 is mounted for vertical displacement in a bottom member 8. The interior thereof in shape corresponds to the element 7, but when the same is in its top end position a space 9 remains free at the bottom of member 8. Space 9 is filled with oil at high pressure; sealing elements 10 on the support element 7 prevent the oil from escaping.

When a downwards pressure is applied to panel 5, the same descends slightly together with element 7 and the pressure is transmitted to the oil in chamber 9. If the pressure e.g. at the center of panel 5 is greater than at the ends thereof, the back-pressure at the center of the panel is correspondingly greater than at the ends thanks to the compensating action of the oil cushion in chamber 9. The pressure distribution is therefore as indicated by thin lines in the diagram — i.e., pressure distribution is completely uniform. Consequently, bending cannot occur and so a workpiece can be processed very accurately.

I claim:

1. A work-table for a machine for processing metal, said work-table being subjected to high pressure and including a table panel, and a support element having an inverted T-shape mounted in a bottom part with the head of the T cooperating with abutments on the bottom part to limit upward movement of the support element, said support element also having lateral sealing elements for making sealing engagement with the bottom part and vertically displaceable therein and defining therewith a chamber for receiving oil on which the element will rest.

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