

PAPER CUTTER

5 The present invention relates to a manually operable paper cutter of the type which can be set on a table, and which includes a thin-walled base presenting a rectangular supporting surface and a lateral cutting edge along one side of the surface, two holding jaws located in the region of the cutting edge and projecting above the surface of the base, a guide rail extending parallel to the lateral cutting edge and held between the jaws, and a cutting assembly
10 including a rotary wheel cutter mounted on the rail for displacement therealong. Such cutting devices, briefly identified as wheel cutters, are described in, for example, German Offenlegungsschrift No. DE-OS 2,158,890 and the counterpart U.S. Patent No. 3,766,816.

15 It is an object of the present invention to construct a cutter of the above-mentioned type in such a manner that it is more dependable in operation, is simpler and less expensive to manufacture, and offers comfortable handling in use. The above and other objects are accomplished,
20 according to the invention, by providing the cutter with two one-piece side members each including a respective holding jaw and extending along essentially the entire length of a respective one of the sides of the base which is perpendicular to the cutting edge, each side member being an injection
25 molded plastics member, and supporting feet for the cutter associated with each member. The base is preferably cut out of a sheet of steel.

As the side members border on the side edges of the base over the entire length of the latter, and the inner
30 side edges of the side members project over the surface of the base, the side edges of the base need not be deburred or trimmed. Due to the particular structural configuration of the side members, any cutting or stamping burrs which might project toward the top should not lead to injuries during
35 operation.

By designing the side members as supporting feet or receptacles therefor, the base will not come in contact, during operation of the cutter, with the surface of an underlying supporting table so that it need not be feared
5 that the table will be damaged, e.g. by scratching, during use of the cutter.

If at least one of the side members includes a portion disposed above the supporting surface of the base and presenting an inner edge extending at a right angle to the
10 lateral cutting edge of the base and forming an abutment edge for the material to be cut, it is no longer necessary to provide a separate contact ruler at a right angle to the lateral cutting edge to aid positioning of the material to be cut, as is always required at one side of the base in
15 known paper cutters. Preferred embodiments of the present invention even include an abutting edge at each side so that during work with the cutter, a left-hand abutment edge or a right-hand abutment edge can be selected for the material to be cut.

20 In further accordance with the invention, the portion of the one side member is in the form of a strip covering its respective side of the base. The strip thus shields and extends across the associated side of the base, to cover that side and to extend so far inwardly that possible
25 cutting burrs are completely hidden. Furthermore, the embodiment encompassing this feature in practical use permits a simple and, most of all, secure and undetachable connection between the side members and the base by means of engagement openings along each side of the base which is
30 perpendicular to the cutting edge, and projections in each side member formed to interlock with the openings to connect the side members to the base. The openings can be cut out in a simple manner when the supporting base is cut out of a metal sheet, or can be shaped thereto at that time.

5 The secure connection is improved by constructing the projections to engage in the openings by snapping in under a spreading tension and/or by deforming ultrasonically. The connection of the side members with the base at locations spaced over the entire length of the side members provides high operational safety which is augmented by the favourable lever ratios.

10 The stability of the cutter can be increased by making the supporting feet of rubber and inserting them in recesses provided in the bottoms of the side members.

15 When the lateral cutting edge is sharpened and itself acts as a counterblade for the wheel cutter, the simplicity of the cutter is enhanced. Moreover, it avoids malfunctions in operation, as may occur if the counterblade is separate as a result of loosening of its connection with the base.

20 In accordance with one advantageous embodiment of the invention, the cutter is provided with a support member for the supporting surface disposed in the region of and parallel to the lateral cutting edge, and resting against the bottom face of the base, the support member having end portions and the side members being provided with recesses in which the end portions rest to support the support member. This serves to avoid operational problems which could result when the cutting edge itself acts as a counterblade for the wheel. The stability of the counterblade is increased significantly because bending of the base is prevented. This effect is particularly enhanced when the support member is a sheet metal strip so orientated that its width, i.e. its larger transverse dimension, is perpendicular to the supporting surface.

According to another preferred embodiment of the invention, each holding jaw is provided with a recess at its side facing the other jaw, and a pressure pad extends parallel to the

lateral cutting edge and is held by its ends in the recesses. A pressure pad having this construction is easily exchangeable or insertable after assembly of the cutter. Further, each holding jaw can be provided with a slit groove which
5 opens to one edge of the holding jaw, with each end of the guide rail being seated as a press fit in the slit groove of the respective jaw. This form of construction makes it possible to mount the guide rail together with the wheel blade head after the slide members have been connected with the
10 base, which simplifies the assembly process. Moreover, this structure permits easy removal of the guide rail and of the wheel blade head, e.g. for the purpose of repair or for sharpening the wheel blade.

In further accordance with the invention, the side of
15 the base opposite the lateral cutting edge may be formed by bending the metal sheet forming the base downwardly. This eliminates the need for deburring the base edge parallel to the cutting edge side to avoid the danger of injury to the operator.

20 An embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawings, in which:-

Fig. 1 is an exploded perspective view of a wheel cutter according to the invention; and,

25 Fig. 2 is a perspective view of the wheel cutter of Fig. 1, in its assembled or operational configuration, viewed from the side opposite to that of Fig. 1.

Referring to the drawings, the table top or base 1 of the cutter shown in Figs. 1 and 2 is formed as a stamped
30 steel sheet. Its lateral cutting edge 2 is designed as a counterblade for the rotary cutter wheel disposed in the housing 3 and not shown in detail in the drawing. The housing 3 of the cutter wheel can be moved manually along the lateral cutting edge or counterblade 2, in the direction of

the arrow 5 of Fig. 1, on a guide rail 4 which is parallel to the table top 1 and to the lateral cutting edge 2. In order to assure a good grip, a gripping rib 6 is formed on the housing 3.

5 The side edges 7 and 8 of the table top 1 are bordered over their entire lengths by moulded plastics side members 9 and 10. The plastics material is preferably an acrylonitril butadiene styrene copolymer. One-piece holding jaws 12 and 13 are formed integrally with the side members 9 and 10, and 10 project beyond the upper surface 11 of the table top 1. The holding jaws 12 and 13 are disposed in the region of the ends of the lateral cutting edge 2, and serve to hold the guide rail 4.

 The side members 9 and 10 form or support supporting 15 feet 14 for the table top 1. Each member 9 and 10 has a side edge strip 16 which extends at a right angle to the lateral cutting edge 2 of the table top 1, and which projects beyond the corresponding side edge 7 or 8 of the table top and overlies surface 11 to form an abutment and alignment 20 edge 15 for the material to be cut. The inner side edges 15 are each part of a respective strip 16 which is integral with a respective one of the side members 9, 10, covers a side edge 7 or 8 of the table top 1, and rests on the surface 11 of the table top.

25 Each strip 16 carries at its lower surface, projections 18 which are distributed along their respective strip 16 in the longitudinal direction 17 of the strip and are formed to engage in an interlocking and undetachable manner into locking recesses 19 which pass through the table top 1 and 30 extend from side edges 7 and 8. The interlocking projections 18 are embedded in their mating recesses 19 in the table top 1 by being deformed, for example by ultrasonic effect. However, the projections may also be snapped into the

locking recesses under a spreading tension. The supporting or stand-up feet 14 may also be designed as rubber plugs which are inserted into corresponding recesses provided on the undersides of the side members 9 and 10.

The lateral cutting edge 2 of the table top 1 is ground as a counterblade for the rotary cutting wheel. In the region of the lateral cutting edge 2, a supporting member in the form of a sheet metal strip 20 is disposed in an upright orientation in the region of the lateral cutting edge 2 and extends approximately parallel thereto underneath the table top 1 to rest against the bottom face of the latter. The ends 21 and 22 of the metal strip 20 rest in recesses 23 which are provided as abutments in the side members 9 and 10.

The holding jaws 12 and 13 of the side members 9 and 10 are each provided, on their insides, with a recess 24 in which is held a respective end 25 or 26 of a pressure ruler or pad 27 extending parallel to the lateral cutting edge 2 of the table top 1 for the material to be cut. The pressure ruler 27 may be made of, for example, an acrylic plastics material, and is correspondingly flexible in design so that it can be installed or replaced after assembly of the cutter without requiring the side members 9 and 10 to be removed from the table top 1, which would in any case be virtually impossible due to their permanent fastening. Paper to be cut may be inserted and held between pad 27 and surface 11.

The holding jaws 12 and 13 are each provided with a slotted groove 29 which opens at the upper edge 28 of the holding jaw. The ends 30 of the guide rail 4 rest in the slotted grooves 29 with a clamped or pressure fit. Each jaw 12 and 13 is further provided with a recess 31 associated with groove 29 and into which a respective end 30 of the guide rail is received in an interlocking manner.

The table top edge 32 which is parallel to the lateral cutting edge 2 is formed as a downward bend in the steel sheet.



CLAIMS

1. A manually operable cutter which can be set on a table and which comprises a thin-walled base presenting a rectangular supporting surface and a lateral cutting edge along one side of the surface, means defining two holding jaws located in the region of the cutting edge and projecting above the surface of the base, a guide rail extending parallel to the lateral cutting edge and held between the jaws, and a cutting assembly including a rotary wheel cutter mounted on the rail for displacement therealong, in which said means defining the two holding jaws comprise two one-piece side members each including a respective holding jaw and extending along essentially the entire length of a respective one of the sides of said base, which side is perpendicular to said cutting edge, each said side member being an injection-moulded plastics member, and supporting feet for said cutter are associated with the side members.

2. A cutter as claimed in Claim 1, wherein said base is made from stamped steel sheet.

3. A cutter as claimed in Claim 1 or Claim 2, wherein at least one of said side members includes a portion disposed above said supporting surface of said base and presenting an inner edge extending at a right angle to said lateral cutting edge of said base and forming an abutment edge for material to be cut.

4. A cutter as claimed in Claim 3, wherein said portion of said one side member is in the form of a strip covering its respective side of said base.

5. A cutter as claimed in Claim 3 or Claim 4, wherein said base is provided with engagement openings along each side thereof which is perpendicular to said cutting edge, and each



said member is provided with projections formed to interlock with said openings to connect said side members to said base.

6. A cutter as claimed in Claim 5, wherein said projections are engaged in said openings by snapping-in under a spreading tension and/or deforming ultrasonically.

7. A cutter as claimed in any preceding Claim, wherein said supporting feet are made of rubber and are inserted in recesses provided at the undersides of said side members.

8. A cutter as claimed in any preceding Claim, wherein said lateral cutting edge is sharpened and itself acts as a counterblade for said wheel.

9. A cutter as claimed in any preceding Claim, and further comprising a support member for said supporting surface disposed in the region of and parallel to said lateral cutting edge and resting against the bottom face of said base, said support member having end portions and said slide members being provided with recesses which receive said end portions to support said support member.

10. A cutter as claimed in Claim 9, wherein said support member is a sheet of metal strip so orientated that its width is perpendicular to said supporting surface.

11. A cutter as claimed in any preceding Claim, wherein each said holding jaw is provided with a recess at its side facing the other jaw, and the cutter further comprises a pressure pad extending parallel to said lateral cutting edge and held by means of its ends in the recesses.

12. A cutter as claimed in Claim 1, wherein each said holding jaw is provided with a slot groove which opens to one edge of the holding jaw, with each end of the said guide



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rail being seated as a press fit in said slot groove of a respective jaw.

13. A cutter as claimed in Claim 12, wherein each said holding jaw is further provided with a detent recess associated with said slot groove for interlocking with its associated end of said guide rail.

14. A cutter as claimed in any preceding Claim, wherein the side of said base which is opposite said lateral cutting edge is constituted by a downwardly bent portion of the base.

15. A manually operable cutter, substantially as hereinbefore described with reference to the accompanying drawings.

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