

[54] KNIFE FOR CUTTING OUT CLIPPINGS

[75] Inventor: Shohachi Himeno, Tokyo, Japan

[73] Assignee: Conde Kabushiki Kaisha, Japan

[22] Filed: May 9, 1973

[21] Appl. No.: 358,809

[52] U.S. Cl. 30/294; 30/DIG. 3

[51] Int. Cl.² B26B 3/00; B26B 29/02

[58] Field of Search 30/294, 317, 286, 293, 30/DIG. 3, 164.9

[56] References Cited

UNITED STATES PATENTS

1,503,739	8/1924	Zurcher	30/286
1,627,515	5/1927	Laird	30/293 UX
2,555,142	5/1951	Levin	30/320
2,679,098	5/1954	Deicken	30/294 UX
2,688,187	9/1954	Pauli	30/294 X
2,743,519	5/1956	Hazelton	30/294 X
3,153,852	10/1964	Lipton	30/DIG. 3

3,448,518	6/1969	Sklar	30/335 X
3,448,519	6/1969	Tobias	30/293
3,724,010	4/1973	Scholl	30/294
3,726,010	4/1973	Yokoyama	30/335

Primary Examiner—Al Lawrence Smith

Assistant Examiner—J. T. Zatarga

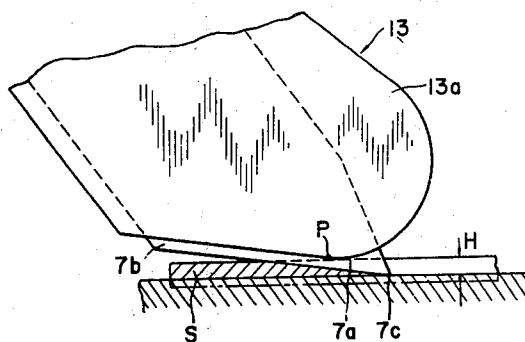
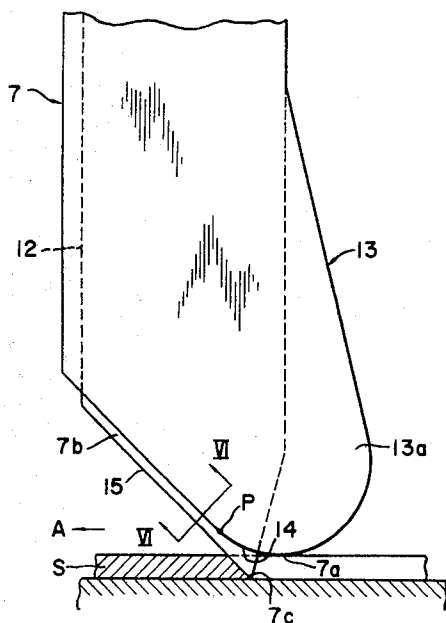
Attorney, Agent, or Firm—Waters, Schwartz & Nissen

[57]

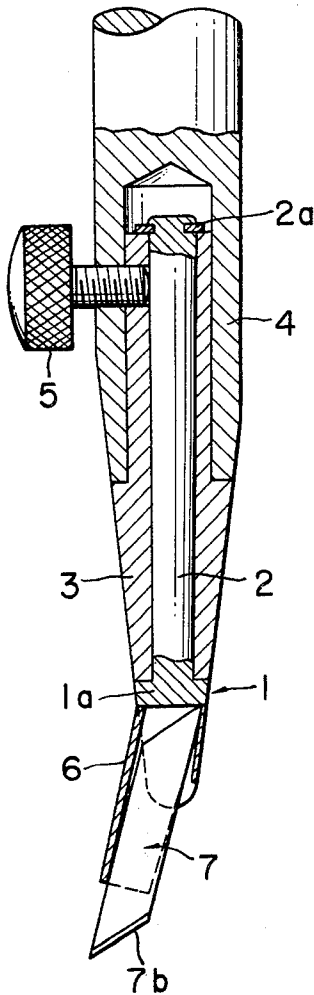
ABSTRACT

A clipping knife for cutting out clippings from a sheet of paper has a knife blade having a ledge-like or skid-like contact surface for sliding contact with a surface of the paper and a cutting edge disposed in the vicinity of the contact surface and extending beyond it by a cutting depth distance corresponding to the thickness of the paper, whereby the cutting edge is limited by the sliding contact to cut the paper only to a depth substantially equal to its thickness, and whereby the underlying material is protected from damage.

4 Claims, 11 Drawing Figures



F I G. 1



F I G. 2

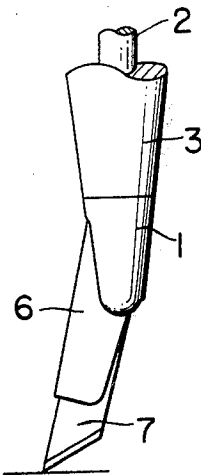


FIG. 3(a)

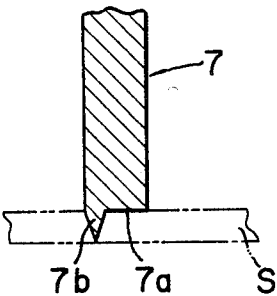


FIG. 3(c)

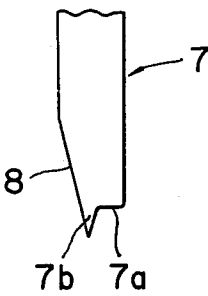


FIG. 3(b)

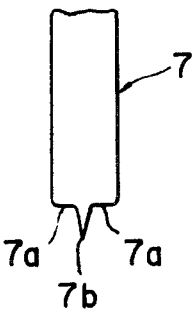


FIG. 3(d)

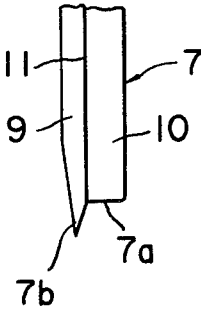


FIG. 4

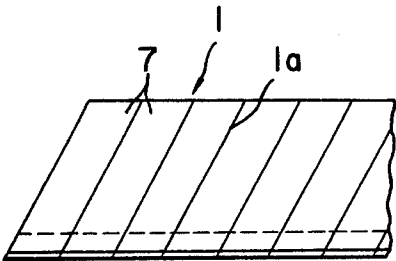


FIG. 5

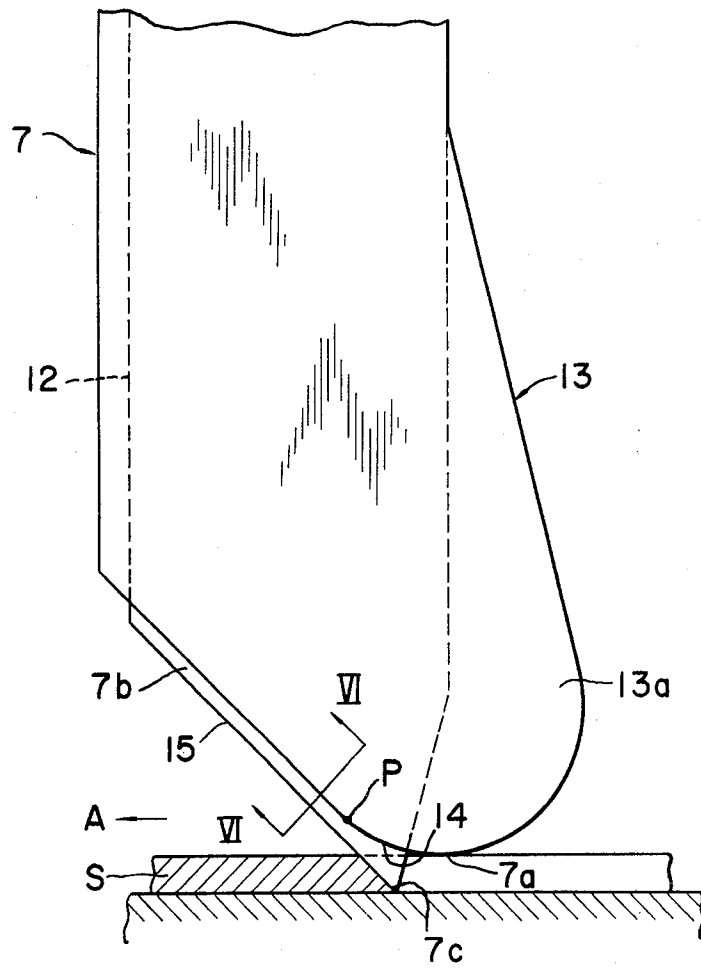


FIG. 7

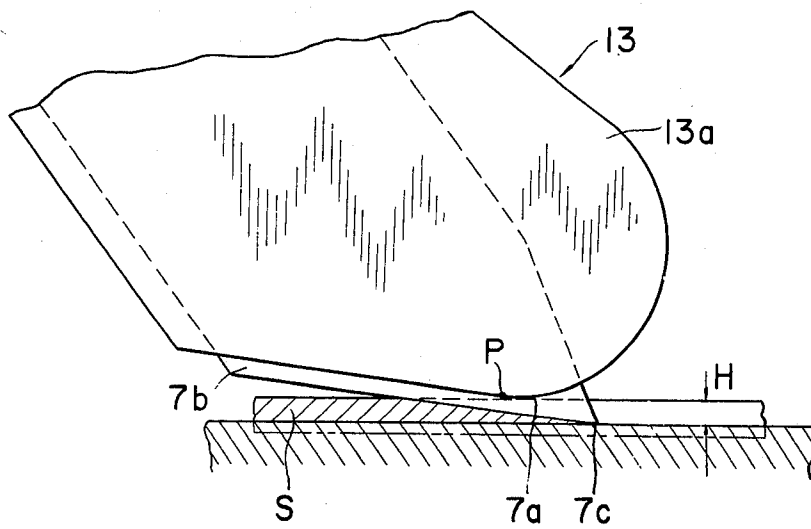


FIG. 6

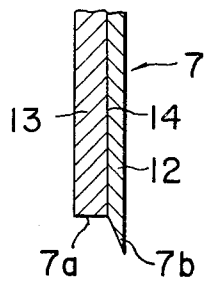
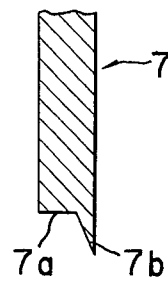


FIG. 8



KNIFE FOR CUTTING OUT CLIPPINGS

BACKGROUND

This invention relates generally to cutlery and knife-like tools and more particularly to improvements in clipping knives of the type for cutting out, for example, a part of a printed page of a publication such as a newspaper or a magazine.

Clipping knives of the instant type known heretofore have been of complicated construction and, moreover, have unavoidably made cuts in a manner to leave rough cut edges of the clippings and to penetrate deeply to printed material underlying and superimposed by the desired clippings, thereby damaging the underlying material.

SUMMARY

In view of these difficulties encountered in the prior art, it is an object of this invention to provide a clipping knife by which parts of publications and the like can be cut out cleanly without damaging underlying printed pages.

According to this invention, briefly summarized, there is provided a clipping knife as stated above which comprises a blade holding structure and a knife blade of generally planar shape held by the holding structure and having a contact surface substantially perpendicular to the plane of the blade for sliding contact with a surface of the paper and a cutting edge disposed in the vicinity of the contact surface and extending beyond the contact surface by a cutting depth distance corresponding to the thickness of the paper, whereby the cutting edge is limited by said sliding contact to cut the paper only to a depth substantially equal to its thickness.

The nature, principles, and utility of this invention will be more clearly apparent from the following detailed description with respect to a preferred embodiment of the invention and modifications thereof when read in conjunction with the accompanying drawings, in which the same and like parts are designated by the same and like reference numerals.

DRAWINGS

In the drawings:

FIG. 1 is an enlarged side elevation, with parts cut away and with parts in longitudinal section, showing the working end of one example of a clipping knife according to this invention;

FIG. 2 is an enlarged, fragmentary side view of the exterior of the working end of the knife shown in FIG. 1;

FIG. 3(a) is an enlarged, fragmentary cross section of a cutting blade constituting an essential part of the knife of this invention;

FIGS. 3(b), 3(c), and 3(d) are end views respectively showing modifications of the cutting blade shown in FIG. 3(a);

FIG. 4 is a fragmentary side view showing a strip of metal scribed with oblique break-off cutting lines dividing the strip into a plurality of cutting blades;

FIG. 5 is a greatly enlarged, fragmentary side view showing a modified example of the knife blade according to the invention;

FIG. 6 is a fragmentary section taken along the plane indicated by line VI—VI as viewed in the arrow direction;

FIG. 7 is a view similar to FIG. 5 showing the knife blade in slanted state; and

FIG. 8 is a view similar to FIG. 6 showing a modification of the knife blade shown in FIG. 5.

DETAILED DESCRIPTION

In FIGS. 1 and 2, a holder 1 is secured to the working end of an instrument such as a pen holder or a compass. This holder 1 comprises a base head 1a and a shank 2 formed integrally with the base head. The shank 2 is loosely fitted in a chuck 3 and prevented from slipping thereout by a fastener 2a. The chuck 3 also has a shank part, which is fitted in a hollow bore at the working end of the instrument 4 such as a pen holder or a compass and is prevented from slipping out by a set screw 5.

A blade holding sheath 6 formed by folding an elastic material is fixed to the outer end of the base head 1a of the holder 1 with a slight angle of inclination relative to the axis of the holder 1. The folded, parallel flank parts of this sheath 6 form therebetween a narrow slot, in which a knife blade 7 is detachably fitted and clamped elastically by the flank parts of the sheath.

The blade 7 has a shape in plan view which is substantially a parallelogram with two acute angles and long sides substantially parallel to the sheath 6. As shown in FIGS. 1 and 3(a), a flat abutment or contact surface 7a is formed along at least one of the short sides of the blade 7, and along one side of this contact surface 7a, there is provided a cutting edge 7b of an incisive length corresponding to the thickness of paper S to be cut.

As modifications of the blade 7 shown in FIG. 3(a), the cutting edge 7b may be shifted to the center as shown in FIG. 3(b) or formed as a contiguous extension of a flank bevel 8 as shown in FIG. 3(c). Furthermore, as indicated in FIG. 3(d), a blade piece 9 having a cutting edge 7b and a backing plate 10 to be lap-joined to the blade piece 9 along one face 11 may be formed separately. The backing plate 10 may, of course, be formed from a material such as a synthetic resin, for example.

The knife blade 7 may be conveniently fabricated in plural number, as indicated in FIG. 4, from a long strip I of stock material, partial break-off cuts 1a being scribed with a specified inclination angle in the strip I to divide the strip into a succession of parallelograms each to be broken off as a knife blade 7.

Thus, in the clipping knife as described above, a flat contact surface 7a is formed on at least one short side of the knife blade 7 in the shape substantially of a parallelogram, and close to this contact surface 7a, a cutting edge 7b of an incisive length corresponding to the thickness of a paper S to be cut. Accordingly, the depth of cut of the cutting edge 7b is regulated by the contact surface 7a. Therefore, even if the knife is pressed against the paper S with excessive force, the cutting edge 7b cannot penetrate beyond the paper S being cut to cut the underlying paper sheet, and the paper S can be smoothly cut. At the same time, since the knife blade has a simplified form, it can be easily fabricated and produced at low cost.

In another improved example of this invention as shown in FIGS. 5 and 6, the knife blade 7 comprises a blade piece 12 having a cutting edge 7b and a backing plate 13 lap-joined to the blade piece 12 along one face 14 similarly as in the knife blade illustrated in FIG. 3(d). The backing plate 13 has an abutment or contact

surface 7a as in the preceding example. The backing plate 13, however, has a bulbous projection 13a projecting in the direction opposite to the direction A of the knife cutting advance.

The lower edge 14 of this projection 13a, as viewed in side view with the knife in upright state, has the shape of an arc of relatively large diameter extending rearward from a point P disposed somewhat forward, with respect to the cutting advance direction A, from the cutting tip 7c of the cutting edge 7b of the knife. The shape of this arc 14 is so determined that, when the knife blade 7 assumes the upright attitude as shown, the lowest point of the contact surface 7a, which contacts the upper surface of the paper S, is slightly toward the rear from the cutting tip 7c when the cutting direction A is considered the front or forward direction.

Furthermore, the arc 14 has a shape such that it departs progressively from the straight-line extreme edge 15 of the cutting edge 7b from the point P toward the rear. The backing plate 13 is preferably made of a material, for example, aluminum, of lower wear resistance than the cutting edge 7b, which is made of steel.

It will be apparent that the knife blade 7 can be made integrally throughout of the same material as indicated in FIG. 8.

When, in the use of a knife having a knife blade 7 as described above, the knife blade 7 is held upright as indicated in FIG. 5, the cutting action proceeds as the contact surface 7a contacts and slides along the upper surface of the paper S at a point slightly to the rear of the cutting tip 7c of the cutting edge 7b with respect to the cutting direction A.

When the knife blade 7 is tilted forward in the cutting direction as indicated in FIG. 7, the contact surface 7a contacts and slides along the upper surface of the paper S at a point forward of the cutting tip 7c, and the depth of cut H becomes shallow. Accordingly, the cutting operation can be carried out the correspond to deviations and other changes in the thickness of the paper by this regulable feature of the blade.

Since the material of the backing plate 13 having the contact surface 7a as its lower edge portion has a lower wear resistance than that of the cutting edge 7b, there is no possibility of the cutting tip 7c wearing faster than the contact surface 7a. That is, difficulties such as inability of the cutting tip 7c to cut cleanly through the entire thickness of the paper because of insufficient projecting length thereof due to relatively rapid wear thereof do not occur. Moreover, there is no possibility of damage to the paper or to the underlying article.

Furthermore, since the contact surface 7a has an arcuate profile of a large radius, the adjustment of the angle of inclination of the knife is facilitated, and cutting papers with various depths of cuts completely therethrough is possible without damaging the paper and underlying article.

I claim:

1. A knife for cutting out clippings from a sheet of paper, comprising a knife blade of generally planar shape and having a contact surface substantially perpendicular to the plane of the blade for sliding contact with a surface of the paper and a cutting edge disposed in the vicinity of said contact surface and extending beyond the contact surface by a cutting depth distance, said contact surface having a contour of a convex fair curve, when viewed in the direction perpendicular to the plane of the blade, of a large radius of curvature, the relationship between the dimensions and shapes of said contact surface and the cutting edge being so selected that the depth of cut of the cutting edge into the paper can be adjustably varied by varying the angular attitude of the knife blade relative to the paper, said contact surface having a contour of a convex fair curve formed by an edge surface of a bulbous projection extending rearwardly with respect to the cutting direction of the knife, the blade piece in planar view having two long sides and at least one short side at an acute angle to one of the long sides, the short side forming a straight cutting edge with a cutting tip at the vertex of the acute angle, the contact surface being parallel to the cutting edge for a major portion of the length of the cutting edge then rising arcuately from a point slightly forwardly of the cutting tip with respect to cutting advance of the knife and extending rearwardly of the cutting tip along the arc progressively departing thereby from the straight line portion parallel to the cutting edge, the cutting edge extending beyond the contact surface along the parallel portion by a cutting depth distance corresponding to the small thickness of a single sheet of paper, whereby when the knife is held at an angle to the surface of the paper with the parallel portion of the contact surface in contact with the paper, the cutting edge is limited by said contact surface portion to cut the paper only to a depth substantially equal to its thickness, the arcuate portion of the contact surface being such that for varying thicknesses of single sheets of paper the knife may be tilted progressively rearwardly to cut increasing thicknesses of single sheets of paper, the use of the knife in upright attitude to the paper positioning a portion of the arcuate portion of the contact surface in sliding contact with the paper at a point rearwardly of the cutting tip with respect to cutting advance of the knife.

2. A knife as claimed in claim 1 wherein said knife blade comprises a blade piece having said cutting edge and a backing plate lap-jointed to the blade piece and having said contact surface.

3. A knife as claimed in claim 2 wherein said backing plate is made of a material of lower wear resistance than the material of said cutting edge.

4. A knife as claimed in claim 1 wherein said contact surface and said cutting edge are integrally made of the same material.

* * * * *