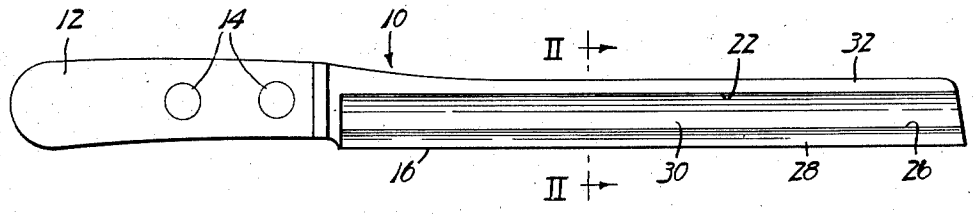
Aug. 28, 1951 H. W. BARNARD 2,566,112

KNIFE BLADE CONSTRUCTION

Filed Feb. 9, 1949

Fig. 1.



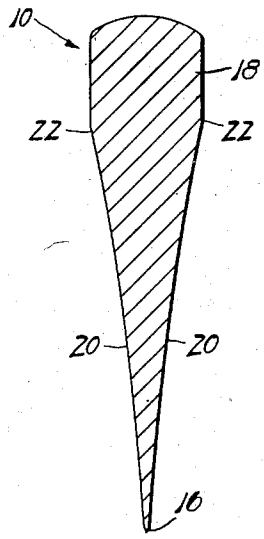


Fig. 3.

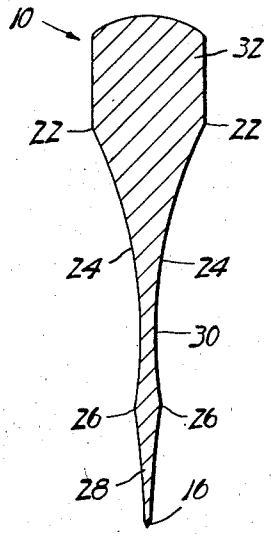


Fig. 2.

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KNIFE BLADE CONSTRUCTION

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1 Claim. (Cl. 30—357)

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This invention relates to knives, and more particularly to a novel knife blade construction which is particularly useful in connection with utility knives of the so-called meat or food carving or slicing types.

One of the objects of the invention is to provide a knife blade of improved construction whereby to acquire in a single knife blade the combined advantages of a "hollow ground" knife edge construction and a construction embodying multiple blade sections which become successively useful as the blade wears away, whereby as the blade wears and is sharpened, the various sections of the blade are employed successively as the cutting edge while the advantages of "hollow ground" construction are obtained throughout the useful life of the entire blade.

Another object of the invention is to provide an improved knife blade of the character above described which may be formed to increased depth dimension in section while avoiding undesirable thickening of the blade section at the heel portion thereof, such as would normally occur in the case of a conventional hollow ground construction wherein the sectional depth is increased without at the same time employing the principle of the present invention.

Another object of the invention is to provide an improved knife blade construction embodying the features and advantages aforesaid while at the same time providing the blade to be of overall relatively thin section for easing cutting operations, while at the same time avoiding undesirable lateral flexibility in the blade, thereby giving the user accurate control in slicing operations.

Another object of the invention is to provide an improved knife blade construction which will provide increased useful life in proportion to the amount of blade metal employed, while at the same time retaining a relatively thin sectioned form for the blade and laterally bracing it in novel manner so as to be resistant to undesirable flexing such as would prevent accurate slicing control.

Other objects and advantages of the invention will appear from the specification hereinafter.

In the drawings:

Fig. 1 is a side elevation of a knife embodying the invention;

Fig. 2 is a section, on an enlarged scale, taken along line II—II of Fig. 1; and

Fig. 3 is a section corresponding to Fig. 2, but showing the sectional form of the knife blade at an intermediate stage of manufacture thereof.

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Whereas the knife shown in the drawing is of the so-called "slicer" type, such as may be employed for carving meats or cutting bread or other such purposes, it will be appreciated that the invention may be applied with equal facility to other types of knife blades, and that the invention is not limited to the form of blade shown and described herein. In the drawing the knife blade is designated generally at **10** and is provided with a handle **12** in any suitable manner, such as by means of rivets **14**. The knife blade may of course be constructed of any suitable metal, and may be initially forged or blanked out from suitable stock and then shaped to a form approximating the sectional form illustrated by Fig. 3. Thus, at this stage of the manufacture the knife blade comprises a cutting edge portion **16**; a heel or top edge portion **18**; and converging side portions **20—20** interconnecting the heel and cutting edge portions of the knife.

However, as illustrated in Fig. 3, the side wall portions of the knife blade are given a cylindrically "hollow ground" surface configuration as shown in the drawing; the process of "hollow grinding" such blades being presently well known in the art and readily performed by suitable mechanisms designed for the purpose. The curvatures thus given to the side walls of the knife blade extend from the cutting edge **16** into the region of the heel of the blade, as to the points **22—22** indicated on Fig. 3. As shown in the drawing, the points **22—22** are somewhat below the top edge of the blade, but is to be understood that the invention is not so limited and that the curvatures **20—20** may be arranged to continue all the way to the top edge of the blade or to run out at any desired position therebelow.

However, in accord with the present invention the hollow ground side walls **20—20** are next subjected to further "hollow grinding" operations so as to provide supplementary concave surfaces such as are shown at **24—24** (Fig. 2) which "run out" from the primary curvatures **20—20** such as at the points **22** and **26** (Fig. 2). Thus, as shown in Fig. 2, the sectional form of the finished knife blade may comprise a hollow ground first cutting section **28**, which has been ground to a relatively large radius curvature; a hollow ground secondary cutting section **30**, which has been ground to a relatively small radius curvature; and a relatively thick "back bone" or top heel section **32**. Thus, the cutting sections and the back bone section merge into the shank portion of the blade structure which runs into the handle of the knife; whereby it will be under-

stood that the relatively thick back bone section of the blade functions to laterally brace the blade against deflections from the intended cutting course, as guided by the handle portion of the knife.

However, it is a particular feature and advantage of the present invention that the relatively thin-section hollow ground portions of the blade are also laterally braced locally by the increased thickness portion of the blade between the points **26—26** (Fig. 2) when the knife blade is in substantially new condition; that is when the cutting portion **28** of the blade is still in existence. Consequently, although the knife blade is relatively deep and slim in sectional view when in its original or new condition, it is laterally braced by means of the ridge-like structure defined by the metal between the points **26—26** and in the back bone section **32**; whereby the blade is adequately stiffened (laterally) for accurate slicing control. Then, as the blade becomes progressively worn and ground away as a consequence of blade sharpening operations, the material forming the primary cutting portion **28** is dissipated and further sharpening and wearing operations then proceed against the metal of the secondary cutting portion **30**. At this stage of the life of the knife blade the lateral bracing material between the points **26—26** is non-existent, but because the sectional depth of the blade has also been substantially decreased, the back bone portion **32** now functions adequately as a single lateral bracing means for the blade to provide accurate slicing control.

Thus, it will be appreciated that the invention contemplates a knife blade which is intended to be of prolonged usefulness in that it is adapted to be constructed of increased sectional depth for any given overall sectional width, compared to any other "hollow ground" knife blade construction; and that throughout the consecutive stages of blade section employment the blade sections are locally reinforced against lateral deflection by means which do not interfere with blade cutting efficiency. In fact, it is another feature of the present invention that when the knife blade of Fig. 2, for example, is possessed of a cutting edge within the range of the primary cutting portion **28**, the wedge shaped sectional form thereof functions to spread the material being cut so as to avoid frictional contact with the balance of the knife blade, thereby producing a free cutting operation throughout all stages of the life of the blade.

The knife blade of the invention may of course be finally finished in any desired manner and in accord with any desired pattern of surface ornamentation. For example, the surfaces of the heel portion **32** and of the primary cutting portion **28** may be "mirror-polished" while the surfaces of the secondary concave cutting portion **30** may be "glaze" finished; thereby contributing substantially to the ornamental and distinctive appearance of the blade. It is to be understood of course that whereas the drawing illustrates only a two-section knife blade construction, the invention contemplates that the same principles may be applied in manufacture of a knife blade having any desired number of consecutively available sections through which the cutting edge may progress as wear and sharpening operations remove the metal; and that although only one form of the invention has been shown and described in detail it will be apparent to those skilled in the art that the invention is not so limited but that various changes may be made therein without departing from the spirit of the invention or the scope of the appended claim.

I claim:

A carving knife comprising a handle and a knife blade extending rigidly therefrom, said blade comprising a relatively thick heel portion and a cutting portion extending parallel thereto, said cutting portion having opposite side walls entirely formed with longitudinally parallel multiple concave surface portions, the concave surface portion at each side adjacent the heel portion of said blade having a relatively large radius and the other concave surface portions at opposite sides of said blade having radii of much greater length, said cutting portion at a point intermediate the extent of the concave surface portions providing a thickened portion parallel to the cutting edge and acting as a stiffening reinforcement for the lower concave portion of the blade.

HARLIN W. BARNARD.

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