This invention relates to cutlery and, more particularly, to a novel construction for a knife having a detachable blade.

In work requiring the use of knives and the frequent sharpening thereof, the blade often wears down and renders the knife obsolete while the handle of the knife is still serviceable. If the worn knife is discarded it represents a monetary loss, whereas a removably blade would permit replacement by a new blade and a corresponding saving in expense. The present invention accordingly provides a novel knife construction in which the replacement of a worn blade by a new blade can be readily accomplished.

In some occupations, such as in the field of meat cutting and butchery, a knife having a large blade and commonly referred to as a butcher knife or steak knife is used for certain operations, and a knife having a smaller blade and commonly known as a boning knife is used for other operations. The novel knife construction of this invention makes possible the continued use of a worn steak knife blade for boning knife purposes, with a resulting saving in expense, upon adaptation and transference of the worn blade to a boning knife handle.

It is now common practice where knives are used extensively and require frequent sharpening, such as in meat markets, for the knives to be owned and sharpened by a grinding concern. Since such a concern may have many customers and consequently a large stock of knives, the novel construction of the present invention becomes very useful and important in saving of expense by making possible the above-mentioned replacement of worn blades and the above-mentioned adaptation and transference of worn steak knife blades to boning knife use.

The present invention provides a novel knife construction having increased strength and durability and in which breakage or splitting of the handle is largely prevented.

Additionally, this invention provides a novel construction for a knife of the detachable blade type: wherein a ferrule forms a part of a blade-and-ferrule assembly and carries threaded means engageable by a retaining means for holding the assembly in a mounted relation on a handle; wherein the ferrule has flanges in a protective relation to, and drawn against, front end portions of the handle; wherein the blade has a shank portion and the ferrule has vertically disposed flat parallel side walls lying on opposite sides of such shank portion; wherein the front end of the handle has a vertical slot for receiving the ferruled portion of the blade-and-ferrule assembly; and wherein a portion of the handle forms closure wall means across the lower end of the slot as a cover and bottom rest for the lower portion of the ferrule.

Other objects, novel characteristics and advantages of this invention will be apparent in the following detailed description and in the accompanying drawings forming a part of this specification and in which,

FIG. 1 is a side elevation of a knife embodying the novel construction provided by this invention;

FIG. 2 is a side elevation showing the detachable blade in a worn condition, all adapted to further use;

FIG. 3 is a partial top plan view of the knife of FIG. 1;

FIG. 4 is a partial side elevation showing, in detached relation, the blade-and-ferrule assembly of the knife of FIG. 1;

FIG. 5 is a partial top plan view of the blade-and-ferrule assembly of FIG. 4;

FIG. 6 is a partial side elevation of the handle of the knife of FIG. 1;

FIG. 7 is a partial top plan view of such handle; and

FIG. 8 is a fragmentary view showing, in detached relation and partially in section, the blade retaining member of the knife of FIG. 1.

As a preferred embodiment of this invention, FIG. 1 shows a knife 10 comprising a blade 11 having a cutting edge 12, and a handle 13 adapted to be manually grasped for manipulating the knife. The knife 10 also comprises blade-to-handle connecting means which permits renewal and replacement of the blade 11 when the latter has become worn.

The handle 13 can be of wood or other suitable material and is appropriately shaped to be comfortably grasped by the human hand. The handle 13 is provided with a vertical slot 15 in the front end portion thereof and a longitudinal passage 17 within the handle and which, in this case, extends axially through the handle including the rear end portion 18 thereof. The passage 17 includes a counterbore portion 19 which is intersected by the vertical slot 15.

As shown in FIGS. 4 and 5 the blade 11 forms one member of a blade-and-ferrule assembly 20 which is a preformed assembly adapted to be detachably mounted on the handle 13 by means of a screw or the like 21 disposed in the passage 17. In addition to the blade 11, the assembly 20 comprises a ferrule 22 and threaded means which, in this case, is a nut having the form of a yoke member 23.

The blade 11 is shown as being a long and wide blade preferably made of stainless steel and having the shape commonly provided for meat cutting knives of the kind referred to as steak knives. As the result of repeated sharpening of the blade 11 it will become worn to the extent that it is no longer suitable for steak knife use. The knife handle 25 is adapted to the blade 22 to which the worn steak knife blade 11 can be readily converted. Because of the detachable connection provided by this invention for the knife blade, the handling of this blade can be readily mounted on a boning knife handle 26 to constitute the boning knife 27 of FIG. 2 which will be further described hereinafter.

The blade 11 is provided at the rear end thereof with a shank portion 28 on which the ferrule 22 is mounted and which shank portion has a hole 29 of a suitable size therein. The ferrule 22 is shown as being a one-piece sheet metal member having vertically disposed flat parallel side walls 31 and 32 lying on opposite sides of such shank portion; wherein the front end of the handle has a vertical slot for receiving the ferruled portion of the blade-and-ferrule assembly; and wherein a portion of the handle forms closure wall means across the lower end of the slot as a cover and bottom rest for the lower portion of the ferrule.

Other objects, novel characteristics and advantages of this invention will be apparent in the following detailed description and in the accompanying drawings forming a part of this specification and in which,

FIG. 1 is a side elevation of a knife embodying the novel construction provided by this invention;

FIG. 2 is a side elevation showing the detachable blade in a worn condition, all adapted to further use;

FIG. 3 is a partial top plan view of the knife of FIG. 1;

FIG. 4 is a partial side elevation showing, in detached relation, the blade-and-ferrule assembly of the knife of FIG. 1;
The side walls 31 and 32 of the ferrule and the arms 37 and 38 of the yoke member are provided with suitable openings aligned with the hole 29 of the shank portion 28. A securing member 40 extends through the hole and openings for connecting the ferrule 22, the shank portion 28, and the yoke member 23 in a preassembled relation as the above-mentioned blade-and-ferrule assembly 20. The securing member 40 is here shown as being a pin but, if desired, it can be a rivet or screw.

When the assembly 20 is applied to the handle 13 the yoke member 23 is received in the counterbore 19, as mentioned above, and the rear portion of the ferrule 22 engages in the vertical slot 15. When the screw 21 is engaged with the thread 36 of the yoke member 23 and is tightened, the flanges 33 and 34 of the ferrule 22 are drawn against the front end portion 16 of the handle 13. As shown in FIGS. 1 and 8, the screw 21 is provided at the rear end thereof with a head 41 which is received in a shallow counterbore 42 of the handle 13. The head 41 is here shown as having a socket 43 for receiving a suitable wrench. The underside of the head 41 is preferably provided with a concave recess 44 so that, when the screw 21 is tightened, the head 41 will not be likely to cause splitting or breaking of the handle 13.

The engagement of the ferrule flanges 33 and 34 with the handle 13, the front end portion 16 is provided with a pair of oppositely inclined vertically disposed bevel surfaces 47 and 48 on opposite sides of the slot 15. When the blade and ferrule assembly 20 is mounted on the handle 13 as explained above and the screw 21 is tightened, the flanges 33 and 34 will be drawn rearwardly against the bevel surfaces 47 and 48 in a covering and protective relation thereto.

The inclined relation of the ferrule flanges 33 and 34, and of the bevel surfaces 47 and 48 with which they cooperate, results in a reinforcement of the front end portion 16 of the handle 13 for strongly resisting any tendency for splitting or breaking of the handle. This thrust engagement of the flanges 33 and 34 with the bevel surfaces 47 and 48 also provides a blade-to-handle connection of increased strength for greater rigidity and stability in the knife 10.

The ferrule flanges 33 and 34 also provide the advantage that meat particles and the like are prevented from entering the slot 15 and counterbore 19 of the handle 13. These flanges also prevent marring or nicking of the front end portion 16 of the handle as the result of the common practice of dropping the knife 10 blade-first into a support rack.

To further strengthen the blade-to-handle connection in the knife 10, the handle 13 is provided with integral wall means 50 on the front end portion 16 thereof and which extends across and closes the lower end of the slot 15 as shown in FIGS. 6 and 7. The closure wall means 50 also forms a bottom rest engageable by the lower portion of the slot 15 and counterbore 19 of the handle 13. The engagement of the lower portion of the ferrule with the wall means 50 provides additional support for the blade and ferrule assembly 20 and, as a cover for the slot 15 and the bottom portion of the ferrule, the wall means 50 also prevents entry or accumulation of meat particles or the like at this location.

The wall means 50 includes laterally and forwardly projecting corner lugs 51 and 52 at the lower ends of the bevel surfaces 47 and 48. At the lower ends of the bevel surfaces 47 and 48, the flanges 33 and 34 seat on these lugs to further strengthen and rigidify the blade-to-handle connection.

Reverting now to the boning knife 27 shown in FIG. 2, it will be seen that the blade 25 thereof is considerably smaller than the blade 11 of the knife 10; and accordingly, the boning knife handle 26 is shown as being somewhat smaller than the handle 13 but is otherwise of substantially the same construction and embodies the same features which have already been described above and to which the same reference characters have been applied.

In the boning knife 27, the blade and ferrule assembly 20 is substantially identical with that of the knife 10 with the exception that the lower portions of the ferrule 22 and the shank portion 28 have been ground down so that the ferrule will be receivable in the vertical slot of the relatively smaller boning knife handle 26. Because of the adaptability of the blade and ferrule assembly 20 of the relatively larger knife 10 of FIG. 1 to the relatively smaller boning knife 27 of FIG. 2, it will be seen that the knife construction provided by this invention affords a considerable saving in equipment expense.

From the foregoing detailed description it will now be recognized that this invention provides a novel knife construction having a removable blade and in which all of the above-mentioned advantages are fully realized.

Although the novel knife construction of this invention has been illustrated in and described herein to a somewhat detailed extent, it will be understood, of course, that the invention is not to be regarded as being correspondingly limited in scope but includes all changes and modifications coming within the terms of the claims hereof.

Having described my invention, I claim:

1. A knife comprising: a handle having a vertically disposed slot in one end thereof and a passage connected with the slot and extending therefrom longitudinally within the handle; a blade having a shank portion received in said slot; a ferrule removable received in said slot comprising spaced parallel plate portions lying on opposite sides of said shank portion; a yoke member comprising threaded means and a pair of arms on opposite sides of said ferrule; means extending through said arms, plate portions and shank portion for detachably connecting the same to constitute a blade and ferrule assembly; and retaining means in said passage and engaged with said threaded means for maintaining said assembly in a mounted relation on said handle.

2. A knife comprising: a handle having a vertically disposed slot in the front end thereof and a pair of front end surfaces along opposite sides of said slot; a blade and ferrule assembly comprising a blade having a shank portion, and a ferrule means mounted on and secured to said shank portion; a ferrule means being removable received in said slot and having spaced planar surfaces lying on opposite sides of said shank portion and a pair of flanges projecting outwardly from said opposite sides of said shank portion and overlying said front end surfaces; and retaining means extending longitudinally within said handle and detachably connecting said blade and ferrule assembly for holding said assembly in assembled relation with said handle with said ferrule received in said slot and said flanges drawn tightly against said front end surfaces.

3. In a knife of the character described; a handle having a vertically disposed slot in the front end thereof and a somewhat passageway including a counterbore intersected by said slot; said handle also having oppositely inclined bevel surfaces on said front end on opposite sides of and vertically coextensive with said slot; a ferrule received in said slot comprising a one-piece sheet metal member having spaced parallel vertical side walls and oppositely extending and oppositely inclined vertical flanges along the front edges of said side walls and overlying said bevel surface; a blade carrying a cutting edge and having a shank portion received in the space between said side walls; a nut comprising a threaded sleeve received in said counterbore and oppo-site arms on the outer opposite sides of said walls; a securing member extending transversely through said arms, walls and shank portion for connecting the same to constitute a blade and ferrule assembly; closure wall means on said front end and extending across the lower end of said slot as a bottom rest engageable by the lower portion of said ferrule; and retaining screw means in
said passage and engaged with said nut for holding said assembly in a mounted relation on said handle with said flanges drawn against said bevel surfaces.

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