June 30, 1942. E. J. ST. JACQUES 2,288,555

SPOT KNIFE

Filed July 13, 1939

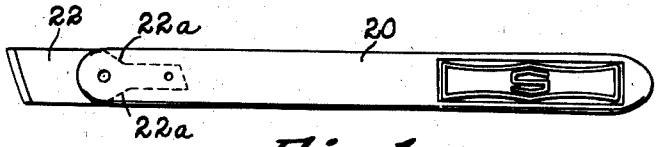

Fig. 1.

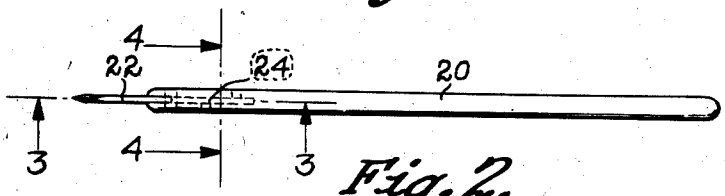

Fig. 2.

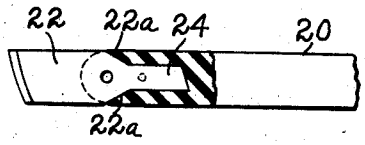

Fig. 3.

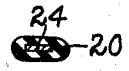

Fig. 4.

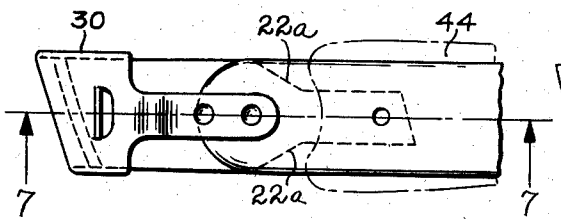

Fig. 5.

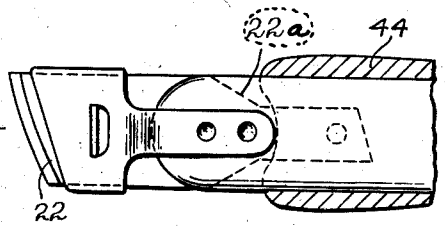

Fig. 6.

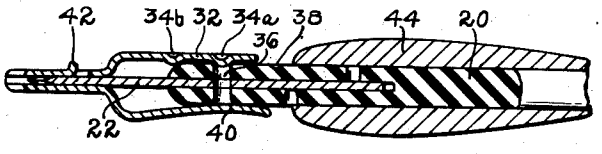

Fig. 7.

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Patented June 30, 1942

2,288,555

UNITED STATES PATENT OFFICE

2,288,555

SPOT KNIFE

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Application July 13, 1939, Serial No. 284,220

3 Claims. (Cl. 30—151)

This invention relates to a spot knife having a handle made from a plastic molding material and provided with an aperture for receiving the tang of the spot knife blade.

An object of this invention is to produce a spot knife that is cheap, efficient, dependable and in which the blade may be easily replaced by a new blade.

Other objects and advantages reside in the construction of parts, the combination thereof and the mode of operation, as will become more apparent from the following description.

In the drawing, Figure 1 is a top plan view of the spot knife disclosed herein.

Figure 2 is a side view of the spot knife.

Figure 3 is a fragmentary sectional view showing the relative arrangement of the tang with respect to the handle.

Figure 4 is a cross sectional view taken substantially on the line 4—4 of Figure 2.

Figure 5 is a fragmentary top plan view of the knife enclosed and protected by a sheath.

Figure 6 is a view similar to Figure 5, wherein the sheath has been drawn upon the blade of the knife so as to expose the cutting edge.

Figure 7 is a fragmentary, cross sectional view taken substantially on the line 7—7 of Figure 5.

Spot knives are used in the printing industry in the building of make-readies and hand cut overlays. The hand cut overlays or make-readies are built from paper or vegetable parchment, so as to have varying thicknesses, the thicknesses varying according to the gradations of shading in the cut or print to be reproduced. This may be accomplished by bodily removing cut-out portions from the laminated sheet, as disclosed in the patent to Bishop No. 2,088,398 patented July 27, 1937.

It seems that in the past, pressmen have utilized a make-shift spot knife assembly, wherein the parts are held together by adhesive tape, it being necessary to remove the adhesive tape whenever it is desirable to replace the blade, which must be replaced at frequent intervals. The main body of such handles is usually made from wood. Due to the extreme lightness that is required, no other material has been found suitable.

Applicant has produced a spot knife wherein the handle is molded from plastic molding material, as for example, Bakelite that is reenforced by suitable fibrous material. The tang of the blade snugly fits into an aperture in the end of the handle. It is notoriously old to project the tang of a blade into a handle so as to hold the blade in position, either by pressfitting the tang into the aperture or by the use of cement or sealing material which sets, so as to rigidly cement the tang in position. Due to the light weight that is required in the handle used for spot knives, it would not be feasible to pressfit the tang into position, as the material of the handle would fail. Also, it would be impractical to use a cement that hardens for holding the tang in position, as the removal of the blade would result in a failure of the handle, as the force required to break the cement would break the handle.

In the present embodiment, the handle, which is extremely light weight, is provided with an aperture that is a trifle larger than the tang. Instead of using a permanently setting cement to hold the tang in position, a non-setting cement is used which is drawn into the crevice between the tang and the walls of the aperture by capillary attraction. The stickiness of this non-setting cement cooperates with the capillary attraction of the surrounding parts to hold the blade in position. In replacing the blade, it is merely necessary to exert an outward pull on the blade, causing the non-setting cement to yield, thereby permitting the removal of the old blade and the insertion of a new one. The dimensions of the tang and of the aperture are such that when the non-setting cement is used, the cement prevents sideward movement of the knife blade relative to the handle, that is, the blade does not have a to and fro movement with respect to the handle. At the same time, the blade may be removed from the handle, as the force exerted upon the blade along the longitudinal axis thereof permits the removal of the blade.

The pressmen are experts at the production of make-ready. The cutting away of portions of laminated sheets is a skilled operation. Due to the fact that the pressmen have been accustomed to the use of adhesive tape in holding the parts of the knife in assembled relation, each pressman has become accustomed to a handle of a certain thickness. One pressman may desire a thin finger grip portion and another pressman may desire a thick grip. That being the case, rubber sleeves may be provided for the handle, so that a predetermined sleeve, selected from a plurality of sleeves of varying thicknesses, may be used, which sleeve simulates the thickness of the knife that the pressman has been accustomed to use. That being the case, the lower end of the handle is usually encased in the selected rubber sleeve.

Referring to the drawing, the reference character 20 indicates the handle of a spot knife provided with a cutting blade 22 provided with converging portions 22*a* merging into a tang 24 projecting into a suitable aperture in the handle, as best seen by referring to Figures 3 and 4. The aperture in the handle 20 is substantially the same size as the tang 24, there being only sufficient clearance so as to permit a film of non-setting adhesive material to be lodged between the tang 24 and the walls of the aperture. The aperture terminates in diverging edges, against which are seated the converging portions 22*a* of the blade. This insures a solid support for the blade which effectively resists inward thrust thereof. This film or layer of adhesive material, probably through capillary attraction, holds the blade in position, so that it does not drop out of the aperture; but permits forcible removal of the blade without fracturing or breaking the handle.

The handle portion 20 is molded from a plastic molding material, such as a fibrous material impregnated with Bakelite, which is very light in weight. Those skilled in the art prefer a very light handle, as the preparation of make-readies is very tiresome and the weight of the knife becomes noticeable.

The spot knife is generally carried in the pocket of the owner when not in use. In order to prevent accidents and to protect the blade, which is "razor" sharp, a sheath 30 that is open at the end encircles the blade 22 and is provided with an open outer end which permits the blade 22 to project beyond the end of the sheath, as viewed in Figure 6, by merely pushing or actuating the sheath inwardly towards the handle. One side of the sheath 30 is provided with a spring portion 32 having a pair of depressions forming squirts or inwardly directed projections 34*a* and 34*b*, adapted to be seated in or engage a recess or hole 36 in the side wall of the handle 20. When the sheath is in the "out" position, as viewed in Figures 5 and 7, the inwardly directed projection 34*a* is seated in the recess 36 and when the sheath is in the "in" position, the projection 34*b* is seated in the recess 36. When the projection 34*b* is seated in the recess 36, the projection 34*a* is then seated in a recess 38. The opposite side of the sheath is provided with a clip 40, that may be used to hold the knife and the sheath in the pocket when not in use. An ear 42 is struck out of one side of the sheath, which may be used to manually actuate the sheath from one position to the other.

As already stated, the handle is light weight. In Figure 2 of the drawing, the handle has been shown drawn to actual size. Some operators consider the dimensions of the handle too small for convenient manipulation, especially if the fingers are large. If such is the case, a rubber sleeve 44, shown in section in Figures 6 and 7, may be slipped over the end of the sheath and the handle, so as to increase the grip area of the handle. This sleeve 44 may be selected from a plurality of sleeves of varying sizes, so as to satisfy the requirements of the particular user of the knife. The sleeve may be independent of or juxtaposed upon the sheath. As shown in the drawing, the outer end of the sleeve 44 tightly grips and encircles the sheath 30, so as to be moved with the sheath from one position to the other. The sides of the handle may be embossed with suitable advertising material or any other designation or emblem.

Although the preferred modification of the device has been described, it will be understood that within the purview of this invention various changes may be made in the form, details, proportion and arrangement of parts, the combination thereof and mode of operation, which generally stated consist in a device capable of carrying out the objects set forth, as disclosed and defined in the appended claims.

Having thus described my invention, I claim:

1. A spot knife assembly including a long slender handle having an aperture merging into diverging edges located in one end thereof, a spot knife blade having a main body portion substantially the width of the handle, which body portion merges into converging portions terminating in a tang projecting into the aperture and snugly fitted therein, and a non-setting adhesive material coating the tang for removably holding the blade in fixed position with respect to the handle.

2. A spot knife assembly including a long slender handle having an aperture merging into diverging edges located in one end thereof, said handle having a recess in one side thereof, a spot knife blade having a main body portion substantially the width of the handle, which body portion merges into converging portions terminating in a tang projecting into the aperture and snugly fitted therein, a non-setting adhesive material coating the tang for removably holding the blade in position, and a sheath encircling the blade, said sheath having an open outer end through which the blade may project when the sheath is moved inwardly towards the handle, one side of said sheath being provided with an extension having inwardly directed projections adapted to be seated in the recess in the side of the handle for holding the sheath in adjusted position, the other side of the sheath having a clip for engaging the side of the handle to urge the inwardly directed projection into the recess, said clip holding the knife and sheath assembly in a pocket when not in use.

3. A spot knife assembly including a long slender molded handle having a shouldered aperture located in one end thereof, said handle having a recess in the side thereof, a spot knife blade having a main body portion substantially the width of the handle, which body portion is provided with a tang projecting into the aperture and snugly fitted therein, a non-setting adhesive material coating the tang for removably holding the blade in position, a sheath encircling the blade, said sheath having an open outer end through which the blade may project when the sheath is moved inwardly towards the handle, said sheath having inwardly directed projections, and means for locking the sheath in adjusted position, said locking means including one of said inwardly directed projections seated in said recess in the handle.

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