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E. A. EASTMAN

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RELEASABLE RETENTION STRUCTURE FOR SCABBARD-KNIFE COMBINATION

Filed March 25, 1963

2 Sheets-Sheet 1

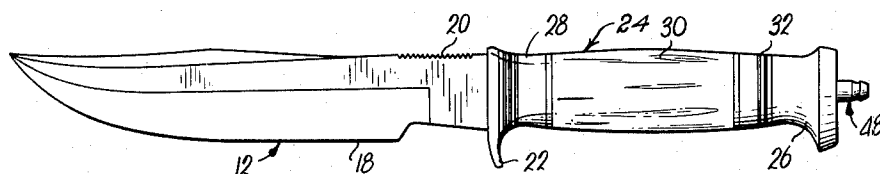


Fig. 1.

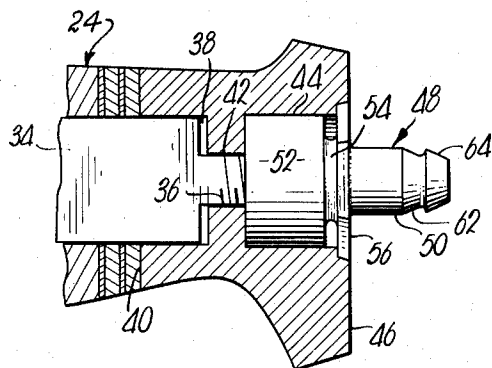


Fig. 2.

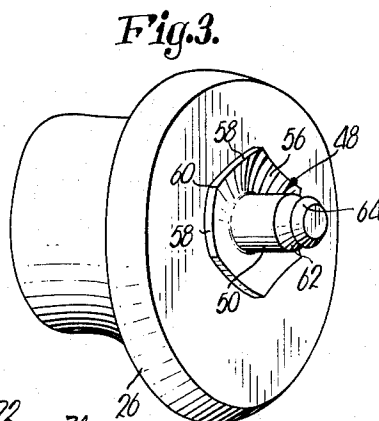


Fig. 3.

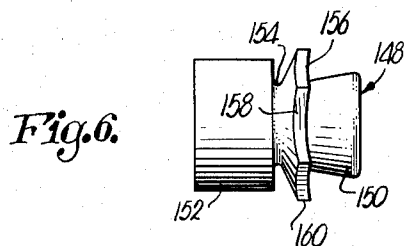


Fig. 6.

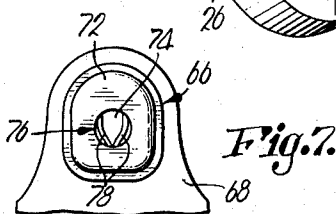


Fig. 7.

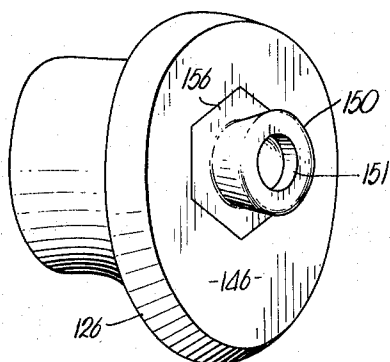


Fig. 5.

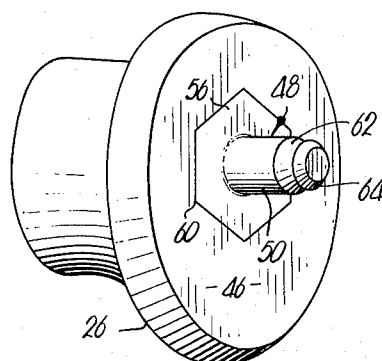


Fig. 4.

INVENTOR.  
Edward A. Eastman

BY

Novy, Schmidt, Johnson & Novy  
ATTORNEYS.

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E. A. EASTMAN

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2 Sheets-Sheet 2

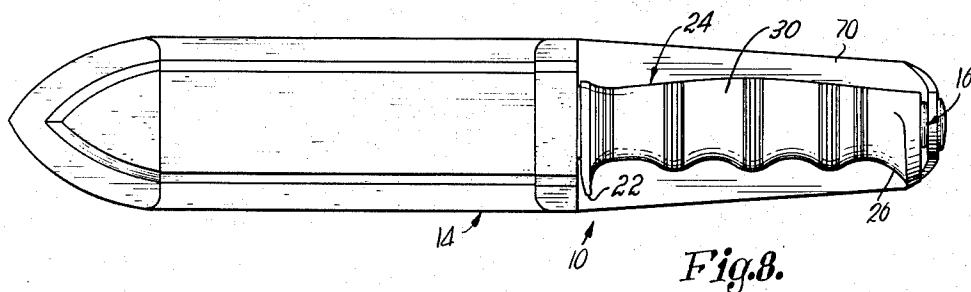


Fig. 8.

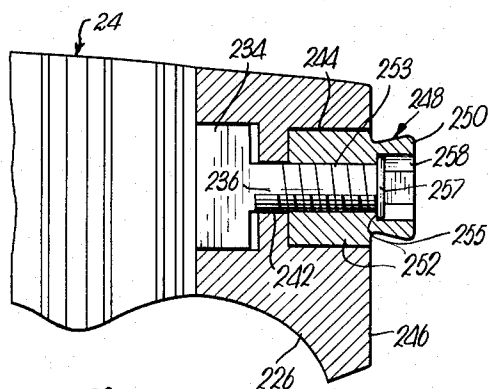


Fig. 9.

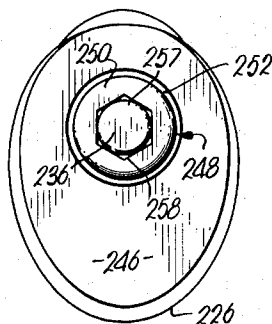


Fig. 10.

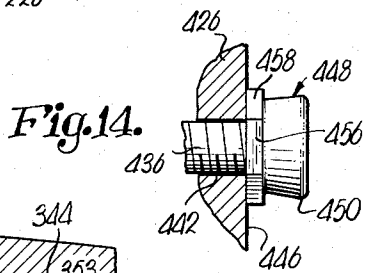


Fig. 14.

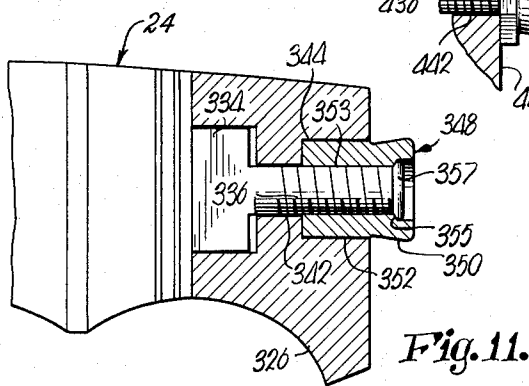


Fig. 11.

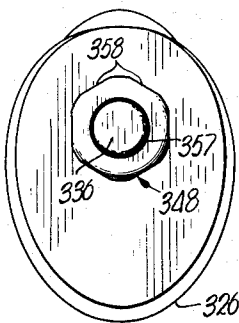


Fig. 12.

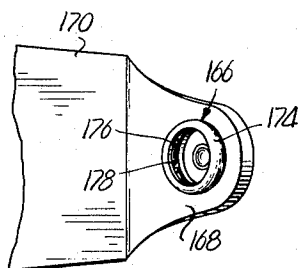


Fig. 13.

INVENTOR  
Edward A. Eastman

BY

Hovey, Schmidt, Johnson & Hovey  
ATTORNEYS.

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## RELEASABLE RETENTION STRUCTURE FOR SCABBARD-KNIFE COMBINATION

Edward A. Eastman, 9726 E. 26th Terrace,  
Independence, Mo.

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5 Claims. (Cl. 30—344)

This invention relates to knife structure and a protective sheath or scabbard therefor and, more particularly, to improved fastening means for releasably securing a knife in place within such a scabbard.

It is the primary object of the present invention to provide a knife assembly including a knife and a protective scabbard therefor, wherein the knob of the knife and the scabbard itself are provided with fastening means permanently coupled therewith and capable of being releasably secured to the scabbard within the latter and removed therefrom only upon releasing the fastening means, all to the end that positive retention of the knife in the scabbard is assured so long as the fastening means are intercoupled.

Another object of the present invention is to provide improved fastening means of the type described wherein the fastening means on the knife is releasably mounted in place on the knob thereof and then positively locked against movement relative to the knife so as to provide a permanent connection between the knob and the fastening means to thereby prevent the separation of the latter from the knob.

Still another object of the present invention is the provision of a fastener of the type described for connection with the knob of a knife wherein the fastener is provided with a projecting portion thereon which may be forced against and embedded in the knob so as to permanently lock the fastener to the knob and thereby prevent relative movement therebetween.

A further object of the present invention is the provision of a fastener of the aforesaid character for the knob of a knife wherein the fastener has a central bore provided with a shoulder, and is disposed for receiving a threaded stud forming a part of the knife and extending through the knob whereby the stud, after the latter is disposed in the bore, may be peened so as to be forced against the shoulder to thereby lock the fastener to the knob to preclude relative movement therebetween.

Another object of the present invention is the provision of a fastener for the knob of a knife wherein the fastener may be readily coupled to the knob by the use of conventional hand tools before the fastener is locked to the knob so as to preclude the necessity for special tools or skills to effect the coupling of the fastener to the knob.

In the drawings:

FIGURE 1 is a side elevational view of a knife provided with one embodiment of the improved fastening means which forms the subject matter of the present invention;

FIG. 2 is an enlarged, fragmentary, cross-sectional view of the knob of the knife and illustrating the threaded shank and the fastener coupled therewith in elevation, and further illustrating the means locking the fastener to the knob to prevent relative movement therebetween;

FIG. 3 is a perspective view of the knob with the fastener coupled therewith and illustrating the locking means on the fastener before the locking means is permanently coupled to the knob;

FIG. 4 is a view similar to FIG. 3 but illustrating the locking means embedded in the knob;

FIG. 5 is a perspective view of the knob provided with another embodiment of the fastener and showing the locking means therefor embedded in the knob;

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FIG. 6 is a side elevational view of the fastener utilized with the knob of FIG. 5 and showing the initial position of the locking means prior to the embedding of the latter in the knob;

FIG. 7 is an enlarged, fragmentary, elevational view of the overlapping flap of a scabbard in which the knife of FIG. 1 is to be removably disposed, and illustrating a fastener adapted to be releasably coupled to the fastener carried on the knob of the knife illustrated in FIGS. 1-4 so as to releasably secure the knife to the scabbard;

FIG. 8 is a side elevational view of a scabbard and a knife disposed within the scabbard, and further illustrating the fastening means on the knife and scabbard which are intercoupled for releasably securing the knife within the scabbard;

FIG. 9 is an enlarged, fragmentary, cross-sectional view of the knob of a knife and illustrating the interconnection thereof with a threaded shank and a third embodiment of the fastener of the present invention;

FIG. 10 is an end elevational view of the knob illustrated in FIG. 9 and showing the locking structure for permanently securing the fastener to the knob;

FIG. 11 is a view similar to FIG. 9 but illustrating a still further embodiment of the fastener, the fasteners of FIGS. 9 and 11 being distinguished by the way in which the same are coupled onto the threaded stud by conventional hand tools;

FIG. 12 is an end elevational view of the knob illustrated in FIG. 11 and showing the locking means for securing the fastener to the knob;

FIG. 13 is an enlarged, perspective view of the flap of the scabbard of FIG. 8 and illustrating the fastener which mates with any one of the fasteners of FIGS. 5, 6 and 9-12 for releasably securing the knife to the scabbard;

FIG. 14 is an enlarged, side elevational view of another embodiment of the fastener on the knob of a knife, the knob being shown in cross section and provided with a threaded stud for releasably receiving the fastener.

The knife assembly of the present invention is broadly denoted by the numeral 10 and includes a knife 12 and a knife-receiving scabbard 14, as shown in FIG. 8. Fastening means 16 is provided on knife 12 and scabbard 14 for releasably securing knife 12 in the position shown in FIG. 8. Thus, the removal of knife 12 from scabbard 14 may be effected only when the fastening means 16 is separated, thus permitting knife 12 to be moved longitudinally of scabbard 14 in the usual manner.

Knife 12 includes a blade 18 having a serrated, thumb-receiving edge portion 20, a finger stop 22, a shank 24, and a knob 26, all of which is shown in FIG. 1. Shank 24 may be comprised of a number of parts 28, 30 and 32 surrounding a plate-like extension 34 of blade 18, extension 34 being best illustrated in FIGS. 2, 9 and 11. An externally threaded stud 36 is integral with and extends outwardly from extension 34 so as to couple the corresponding fastening means to knife 12.

Knob 26 is provided with a recess 38 in one face 40 thereof for receiving the end portion of extension 34 as is clear in FIG. 2. A first bore 42 communicates with recess 38 centrally of the latter and connects recess 38 with a larger bore 44 in the opposed face 46 of knob 26. Stud 36 extends through bore 42 and projects partially into bore 44 and terminates short of face 46 of knob 26.

A first embodiment of the fastening means 16 of the present invention is shown in FIGS. 1-4 and includes a fastener 48 having a button 50, a boss 52 and a neck 54 interconnecting button 50 and boss 52.

Boss 52 is provided with a central, internally threaded bore (not shown) which threadably receives stud 36 for

coupling fastener 48 to extension 34. Boss 52 is provided with a cylindrical outer surface complementally received within bore 44 so that neck 54 is adjacent face 46, but within bore 44, as is clear in FIG. 2.

A flange 56 is integral with fastener 48 at the neck 54 thereof and is provided with wrench-engaging flats 58 at the periphery thereof, flats 58 defining a series of points 60 which initially lie in a plane spaced from the plane passing through the junction between neck 54 and button 48. Thus, flange 56 is flared in a direction toward button 50 as is shown in FIG. 3, wherein fastener 48 is coupled with knob 26. It is to be noted that the distance between diametrically opposed flats 58 is substantially equal to the diameter of bore 44 so that in the position of FIG. 3, flange 56 engages face 46 only at locations proximal to points 60.

The material forming flange 56 is of a hardness greater than the hardness of knob 26 so that, when a sufficient force is applied to flange 56 in and around points 60 thereof, the flange 56 will be embedded in face 46 of knob 26 so as to sufficiently lock flange 56 and thereby fastener 48 to knob 26. As shown in FIG. 2, flange 56 is embedded in face 46 so that the outer surface of flange 56 is substantially flush with face 46 of knob 26. It can be seen, therefore, that flange 56 serves as tool-engaging means while at the same time providing locking means when the same is embedded within face 46. To facilitate the embedding of flange 56 in face 46, neck 54 and the junction between flange 56 and button 50 are rounded as shown in FIG. 2 to assure that flange 56 may be deflected toward boss 52 without damage to the structure of fastener 48.

Button 50 is provided with an annular indentation 62 adjacent the outer end thereof and a frusto-conical surface 64 between the outer end and indentation 62. Button 50 is adapted to be releasably coupled with a fastener 66 on a flap 68 hingedly mounted on an extension 70 forming a part of scabbard 14 as shown in FIG. 8. The material of scabbard 14 is preferably of leather or the like so that the flexibility of the material provides the hinged connection between flap 68 and extension 70.

Fastener 66 is provided with a plate-like member 72 having a central aperture 74 therein for receiving button 50, and a spring wire 76 having generally spaced legs 78 which are moved apart when the same are engaged by surface 64 of button 50. Button 50 is retained within fastener 66 when legs 78 are received within indentation 62. Fastener 66 is disconnected from fastener 48 when manual pressure is applied to flap 68 to force the latter in a direction away from flange 56.

It can be seen that fastener 48 includes tool-engaging means for facilitating the connection thereof with stud 36, and is provided with locking means for preventing the removal of fastener 48 from knob 26 and further is provided with a button for releasable interconnection with flap 68 of scabbard 14. FIG. 4 shows a perspective view of fastener 48 with the flange 56 thereof embedded in face 46 of knob 26. FIG. 1 also shows the view of fastener 48 from the side of knife 12.

Another embodiment of the fastener for the knob of a knife is illustrated in FIGS. 5 and 6 and includes a fastener 148 having a boss 152, a button 150 and a neck 154 interconnecting button 150 with boss 152. Boss 152 is provided with a central, internally tapped bore for receiving a stud similar to stud 36 passing through bores in a knob 126. The bores in knob 126 are similar in all respects to bores 42 and 44 of knob 26.

Fastener 148 is provided with a flange 156 similar in all respects to flange 56 of fastener 48. Flange 156 is provided with tool-engaging flats 158 which define a series of spaced points 160 which are adapted to be embedded in face 146 of knob 126 in the same manner as points 60 are embedded in face 46 of knob 26. Thus, the tool-engaging flats 158 facilitate the coupling of fastener 148 to a threaded stud within knob 126 and also

the points 160, when embedded in face 146, provide locking means for preventing the removal of fastener 148 from knob 126.

Button 150 is provided with a frusto-conical, outer surface as shown in FIG. 6 which is releasably received within a cup-shaped member of a fastener 166 illustrated in FIG. 13. Fastener 166 is secured to a flap 168 forming a part of an extension 170 of a scabbard similar in all respects to scabbard 14. Member 174 is provided with a spring wire 176 disposed within a recess 178 configured to permit the expansion of wire 176 when engaged by the outer end of button 150. When button 150 is disposed within member 174, wire 176 surrounds and engages the outer surface of button 150 to releasably retain the latter within member 174.

Fastener 166 may be disconnected from fastener 148 by applying manual pressure to flap 168 to move member 174 in a direction away from flange 156. FIG. 5 shows flange 156 embedded in face 146 and further illustrates the position of button 150 for intercoupling relationship with member 174. Button 150 is shown in FIG. 5 with a central bore 151 which may be configured to form a shoulder therewithin. Additional locking means may be provided by peening the end of the stud coupling fastener 148 to the remainder of the knife, provided of course, that the bore 151 communicates with the bore in boss 152.

Another embodiment of the fastening means which may be coupled to the knob of a knife is illustrated in FIGS. 9 and 10 and includes a fastener 248 having a boss 252 receivable within the bore 244 in the face 246 of a knob 226. A blade extension 234 is provided with a stud 236 which passes through a bore 242 in knob 226 and then into bore 244, for coupling relationship with the internally threaded bore 253 of boss 252. Bore 253 extends completely through fastener 248 and is enlarged adjacent the outer end of the latter to form an annular shoulder 255. When boss 252 is threaded onto stud 236, the latter extends to a point just beyond shoulder 255. The outer end of the stud 236 is then peened to provide a projection or lip 257 which engages shoulder 255 and thereby locks fastener 248 within bore 244.

Fastener 248 is provided with button 250 at the outer end thereof, button 250 having a frusto-conical, outer surface which is received within a fastener of the type similar in all respects to fastener 166 of FIG. 13.

Button 250 is provided with wrench-engaging flats 258 within the extension of bore 253 adjacent the outer end of fastener 248. Flats 258 facilitate the connection of boss 252 with stud 236. When properly carried on knob 226, fastener 248 is disposed with the junction between boss 252 and button 250 substantially flush with the face 246 of knob 226.

Another embodiment of the fastener for the knob of a knife is illustrated in FIGS. 11 and 12 and includes a fastener 348 having a button 350 and a boss 352, the latter being received within a bore 344 of a knob 326. A blade extension 334 carries a stud 336 which extends into a bore 342 and then into bore 344 for coupling with the internally threaded bore 353 of boss 352. Bore 353 is enlarged adjacent the outer end of fastener 348 to form a shoulder 355. Stud 336 normally extends beyond shoulder 355 so that the outer end of stud 336 may be peened to form a projection or lip 357 which engages shoulder 355 to lock fastener 348 to knob 326. Button 350 is provided with a series of wrench-engaging flats 358 on the periphery thereof as is clear in FIG. 12 to facilitate the connection of fastener 348 to stud 336.

Fastener 348 is adapted to be operably coupled with a fastener similar in all respect to fastener 166 of FIG. 13.

Another embodiment of the fastener for the knob of a knife is illustrated in FIG. 14 and includes a fastener 448 having a button 450 provided with an internally threaded bore (not shown) for receiving the stud 436 of a blade

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extension similar in all respects to blade extension 334. Stud 436 extends through a bore 442 within a knob 426. Fastener 448 is provided with a flange 456 having wrench-engaging flats 458 thereon which facilitate the coupling of fastener 448 to stud 436. It is noted that flange 456 engages the outer face of knob 426 when fastener 448 is properly coupled with knob 426.

The bore through button 450 is configured to provide a shoulder similar in all respects to shoulder 355 in fastener 348. Thus, the end of stud 436 may be peened so as to form a projection or lip which engages the shoulder within the button 450 so as to lock fastener 448 to knob 426. Fastener 448 is adapted to be releasably coupled with a fastener similar in all respects to fastener 166 illustrated in FIG. 13.

It is clear that the present invention provides tool-engaging means for facilitating the connection of the same with the threaded stud on a blade extension. In addition, the present invention provides locking means for preventing the removal of the fastener from the knob so as to assure positive coupling therebetween. The present invention further includes a button forming a part of a fastening device so as to facilitate the releasable intercoupling of the fastener to a fastener complementary thereto and coupled to the flap of a scabbard extension.

It is to be noted that scabbard 14 is constructed in such a manner as to permit knife 12 to be inserted into scabbard 14 with either side of the knife adjacent to extension 70. Thus, knife 12, shown in FIG. 8, may be removed from scabbard 14, rotated 180°, and then re-inserted in scabbard 14, all without binding with or interference from any part of the scabbard.

The position of the fastening means on the knob of knife 12, is such as to permit the knife to be inserted either way into the scabbard, so as not to interfere with proper coupling action thereof with the fastening means on flap 68.

Thus knife assembly 10 may be worn on the right or left side of the person so as to permit either right handed person or a left handed person to properly utilize knife assembly 10.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a knife:

said knife having a blade provided with an extension terminating in an externally threaded stud, a knob surrounding the stud, and a shank surrounding the extension between the blade and the knob, presenting a handle, said knob having an outer face, a perforated partition spaced inwardly from said face, and a bore between the face and the partition, said stud extending through the partition;

a fastener having an internally tapped boss screw-threaded on the stud within the bore in engagement with the partition for holding the shank on the extension and the knob on the stud, with the shank and the knob clamped tightly between the blade and the boss, the bore and the boss having smooth, complementary, cylindrical surfaces, rendering the boss freely rotatable in the bore; and

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an element on the fastener disposed outwardly from the boss for locking the fastener to the knob, the boss being between the extension and the element, said element having a polygonal periphery, presenting a number of tool-receiving flats for rotating the boss, said element being embedded within the knob flush with said face.

2. For use with a scabbard:

a knife having a blade provided with an extension terminating in an externally threaded stud, a knob surrounding the stud, and a shank surrounding the extension between the blade and the knob, presenting a handle, said knob having an outer face, a perforated partition spaced inwardly from said face, and a bore between the face and the partition, said stud extending through the partition;

a fastener having an internally tapped boss screw-threaded on the stud within the bore in engagement with the partition for holding the shank on the extension and the knob on the stud, with the shank and the knob clamped tightly between the blade and the boss, the bore and the boss having smooth, complementary, cylindrical surfaces, rendering the boss freely rotatable in the bore,

said fastener having means for releasably connecting the same with said scabbard;

an element on the fastener disposed outwardly from the boss for locking the fastener to the knob, the boss being between the extension and the element,

said element having a polygonal periphery, presenting a number of tool-receiving flats for rotating the boss, said element being embedded within the knob flush with said face.

3. The invention of claim 2:

said means including a button extending outwardly from said element exteriorly of the knob, said button having a frusto-conical surface therearound.

4. The invention of claim 3:

said surface being at the outermost extremity of the button and progressively decreasing in diameter as said extremity is approached, there being an indentation around the button between said element and said surface adjacent the latter.

5. The invention of claim 4:

said surface progressively decreasing in diameter as said element is approached.

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WILLIAM FELDMAN, *Primary Examiner*.

M. HENSON WOOD, JR., *Examiner*.