

[54] **FOLDING KNIFE**

[76] Inventor: **Ronald W. Lake**, 38 Illini Dr.,
Taylorville, Ill. 62568

[22] Filed: **Feb. 11, 1972**

[21] Appl. No.: **225,699**

[52] U.S. Cl. **30/161**

[51] Int. Cl. **B26b 1/04**

[58] Field of Search..... 30/155, 158, 159,
30/160, 161, 164

[56] **References Cited**

UNITED STATES PATENTS

988,068	3/1911	Beardsley.....	30/161
3,568,315	3/1971	Smith.....	30/161
2,731,719	1/1956	Tabellario.....	30/164
822,432	6/1906	Crawford.....	30/155

FOREIGN PATENTS OR APPLICATIONS

956,744	1/1957	Germany	30/155
---------	--------	---------------	--------

[57]

ABSTRACT

The following specification describes a knife in which a pair of plates are spaced apart along one edge by an elongate pivotable detent member having a tooth at one end for engagement in a recess of the blade under the influence of a cantilever spring to latch the blade in open position. The cantilever spring is integrally formed on a spacer located at the butt end of the knife and the detent member is operated from the butt end against the spring bias to release the blade for enabling the blade closure. The detent member tooth also engages a recessed portion of the blade to hold the blade closed under the spring bias. A projection adjacent the cutting edge of the blade engages a stop on the detent to prevent the cutting edge of the blade from being dulled on closure. In addition the external surfaces of the plates are recessed to receive a respective inlay of contrasting appearance and the pins supporting the blade and spacer are finished flush with the plate surface to disguise their appearance.

Primary Examiner—James L. Jones, Jr.
Assistant Examiner—Mark S. Bicks

3 Claims, 7 Drawing Figures

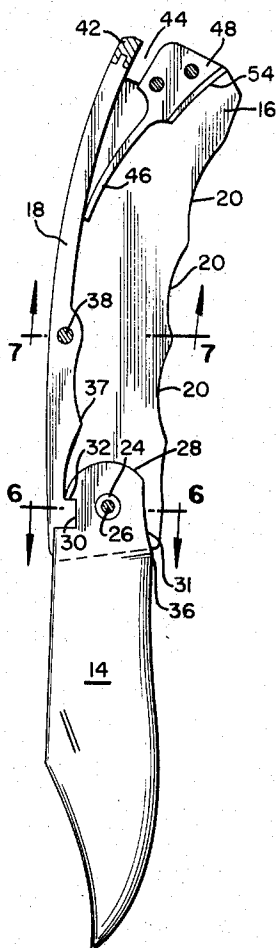


FIG. 1

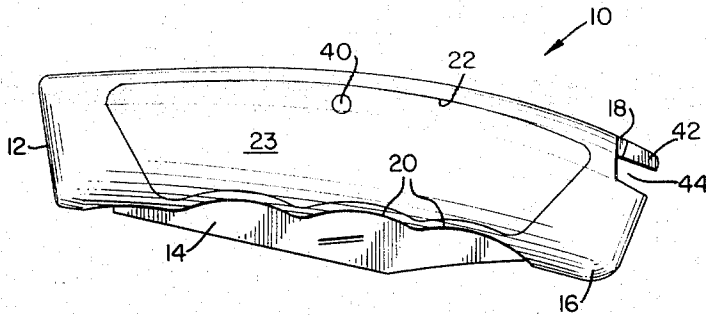


FIG. 2

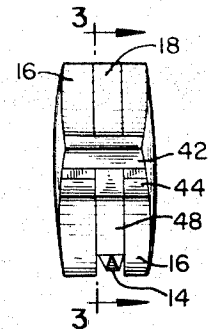


FIG. 3

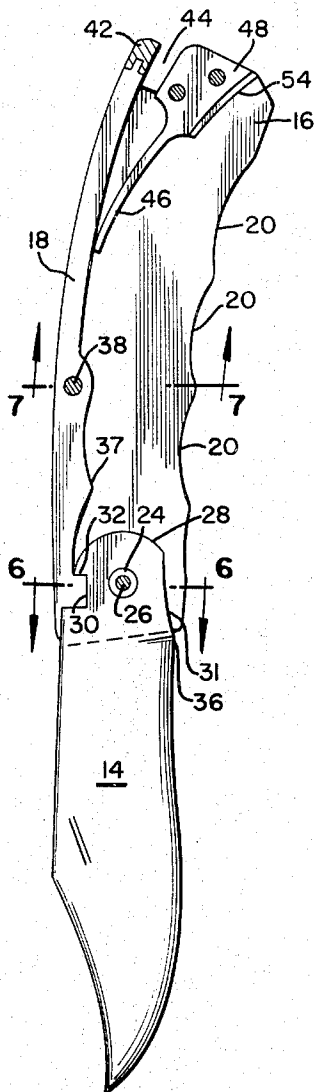


FIG. 4

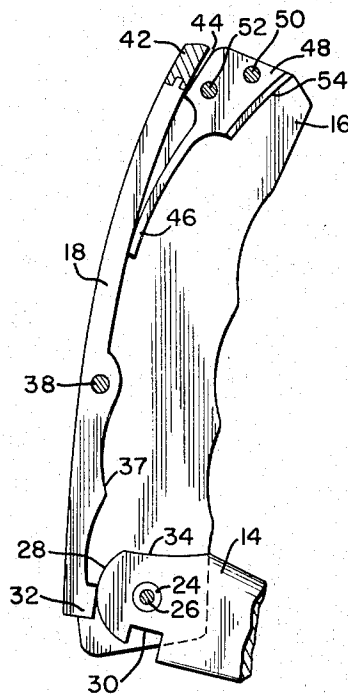


FIG. 5

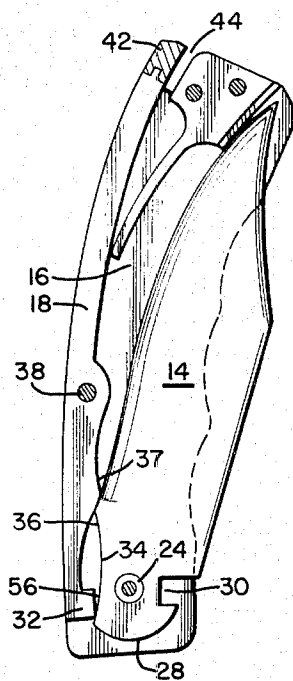


FIG. 6

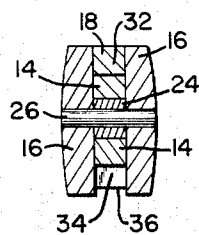
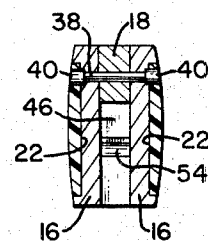


FIG. 7



FOLDING KNIFE

FIELD OF THE INVENTION

This invention relates in general to folding knives and more particularly to a knife having a more reliable and durable blade release and of improved appearance.

BACKGROUND OF THE INVENTION

Prior art knife release mechanisms usually incorporate a release member in the grip area of the blade handle where it is subject to accidental release if the release spring is weak and mars the knife's appearance. In addition, the relatively small release area creates a problem in field use when the fingers are cold or wet, while the release mechanism is liable to malfunction if dirt lodges in the mechanisms.

SUMMARY OF THE INVENTION

The present invention provides an improved release mechanism in which the release member is a pivotable elongate detent member forming the top side of the handle and having a widened portion overlapping a short recess at the rear or butt end of the handle to provide a large operating or gripping area to facilitate release. A tooth formed on the detent member opposite the butt end engages in a recess formed in the knife blade to lock the blade open. A cantilever spring integrally formed on a spacer located at the rear or butt end of the knife handle serves to bias the detent tooth into the blade recess to hold the blade locked open. The spring is therefore strong and securely positioned. Pressing on the detent member butt end pivots the detent member against the spring bias to lift the tooth from the blade recess and enables the blade to be rotated into the closed position. The detent tooth then engages a portion of the blade forward of the blade pivot and the spring urges the blade to the closed position.

The knife's appearance is enhanced by an annular recess in the external surfaces of a pair of plates forming the handle with each recess receiving an inlay having a contrasting visual effect to the handle with each inlay corresponding to the general shape of the handle. In addition pins supporting the blade and spring are finished flush with the handle surface to disguise their appearance while the detent member pin is provided with end caps of contrasting appearance to the inlay.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view of a knife incorporating the principles of the present invention and shown in closed position.

FIG. 2 is a rear elevational view of the knife shown in FIG. 1.

FIG. 3 is a sectional view taken along the line 3—3 in FIG. 2 to illustrate the release mechanism with the blade shown in open position.

FIG. 4 is a sectional view similar to FIG. 3 illustrating the release mechanism with the knife blade partially shown intermediate it's closed and open position.

FIG. 5 is a sectional view similar to FIGS. 3 and 4 showing the blade in closed position.

FIG. 6 is a sectional view taken along the line 6—6 in FIG. 3; and

FIG. 7 is a sectional view taken along the line 7—7 in FIG. 3.

BRIEF DESCRIPTION OF THE PREFERRED ARRANGEMENT

Referring to FIG. 1 a knife incorporating the principles of the present invention are indicated by the reference character 10. The knife 10 includes a handle 12 and a steel or stainless steel blade 14.

The handle 12 is formed to two parallel longitudinally extending escutcheons or plates 16 spaced by an elongate detent member 18 following the top edge of the plates 16. Each plate 16 comprises a polished metal preferably of brass having a curved elongate top edge for fitting the palm and ample finger recesses 20 of substantially 3/4 inches width along the opposite or bottom elongate edge to facilitate gripping. An annular recess 22 in the outer or external surface of each plate 16 conforming to the shape of the elongate top edge and bottom edge finger recesses of the plates is fitted with a respective inlay of ebony, wood or wood-grained plastic 23 secured in the respective recess 22 to enhance the knife's appearance. The edge of each inlay is flush with the plates and has an external surface contour corresponding to the plates.

The blade 14 is pivotably supported at one end between the plates 16 by a hardened bushing 24 on a pin 26 adjacent the forward or blade end of the handle 12. Bushing 24 in addition to relieving wear aids in spacing the plates. The pin 26 is press fit in the plates 16 and the pin ends are formed over and finished flush with the plate surface so as to be relatively invisible. The end of blade 14 supported between the plates has a generally circular cam or raised surface 28 thereon terminating in a recess 30 at one end of surface 28 for engaging tooth 32 at one end of detent member 18 to lock the blade in open position. The other end of the cam surface 28 terminates in recessed portion 34 extending generally toward the cutting edge of the knife with a short projection 36 located between the portion 34 and the cutting edge for engaging a stop 37 on the detent member 18 when the blade is closed, while the detent tooth 32 rests against the recessed portion 34 as seen in FIG. 5.

The detent member 18 is pivotably supported intermediate its ends between the plates 16 by a pin 38 press fit into the plates 16. Brass caps 40 are located over opposite ends of pin 38 to provide a contrasting appearance with the inlay.

The butt end of the detent member 18 opposite tooth 32 is provided with a widened palm or finger operating grip 42 secured to member 18 and overlapping a short recess 44 formed in the top portion of the butt or back end of the plates 16. The grip 42 on being moved downwardly pivots the tooth 32 upwardly to disengage the tooth 32 from the cam recess 30 for permitting the blade to be closed.

The tooth 32 is normally biased downwardly toward the blade recess 30 by a cantilever spring 46 about 1 1/4 inches long and almost as wide as the space between plates 16. The spring 46 is integrally formed on a spacer 48 located at the heel or butt end of the knife and between the plates 16 just below the recess 44. The spacer 48 is fixed to the plates by a pair of spaced pins 50 and 52 press fit in the plates 16 and whose ends are finished flush with the plates so as to be relatively invisible. A brass shim 54, at the bottom edge of the spacer 48 is provided to protect the cutting edge of the blade.

3

In operation the blade 14 may be opened by simply grasping the edge of the blade opposite the cutting edge and projecting from between the plates 16 as seen in FIG. 1 and rotating the blade 14 against the bias of spring 46 about the axis of pin 26. The tooth 32 rides upwardly along surface 28 to pivot the detent member clockwise as seen in FIG. 4 against the bias of spring 46 until the recess 30 is aligned with tooth 32. The spring 46 then rotates the detent member counterclockwise as seen in FIGS. 3 and 4 to engage the tooth 32 in recess 30. The tooth and recess are each engaged then along the radial surfaces transverse to the elongate axis of the blade when open to lock the blade in open position and prevent inadvertent closing of the blade against the fingers.

To close the blade, the finger grip portion 42 of the detent member 18 is pivoted clockwise as seen in FIGS. 3 or 4 into the recessed portion 44 against the bias of spring 46 to lift the tooth 32 from recess 30. The blade is now rotated counterclockwise as seen in FIGS. 3 and 4 and the tooth rides on surface 28. When the recessed portion 34 of the blade aligns with tooth 32 the bias on member 18 is relieved by movement of the tooth into the recessed portion which brings the stop 37 into alignment with projecting portion 36 for stopping the blade movement as shown in FIG. 5. In the event the blade 14 should close with extreme force the blade end can force the detent member to rotate against the bias of spring 46, but the blade will simply strike the brass shim 54 and stop.

It will be noted that in the closed position as shown in FIG. 5 the bottom surface 56 of the tooth 32 engages the edge of the blade recessed portion 34 at a position spaced on the opposite side of the axis of pins 26 and 38 from the spring 46 so that the spring 46 biases the blade into its closed position. Thus shortly after the blade engages portion 34 the spring 46 will urge the blade toward a closed position. Likewise on opening spring 46 will provide resistance to opening until the tooth 32 passes portion 34 or is almost halfway open.

The foregoing constitutes a description of an improved knife whose inventive concepts are believed covered by the foregoing description and accompanying claims.

I claim:

1. A knife comprising a pair of elongate parallel metal plates each having a plate recess at one end, an elongate detent member intermediate said plates extending along an elongate edge of said plates with said detent member having a grip at one end overlapping said recess, a tooth at the other end of said detent member, a detent pivot pin press fixed in said plates for pivotably supporting said detent member intermediate the ends of said detent member, a knife blade having

4

a cutting edge adapted to be recessed between said plates in response to said blade being closed, a pin extending through said plates carrying a hardened bushing extending through said blade only for pivotably supporting one end of said blade between said plates adjacent said other end of said detent member, a cam surface formed on said one end of said blade with said surface terminating in a recess for receiving said tooth in response to said blade being pivoted to an open position for locking said blade in said open position, a metal spacer between said plates adjacent said plate recess, metal spacer pins extending through said plates and spacer for fixing said spacer between said plates, a cantilever spring integrally formed on said spacer and extending toward said detent member pivot pin for engaging said detent member between said detent pivot pin and said detent member one end to bias said tooth into engagement with said blade recess and for resisting movement of said detent member one end toward said plates, said detent member one end being manually movable into said plate recesses against said spring bias for disengaging said tooth from said blade recess to enable rotation of said blade toward a closed position with said cam surface supporting said tooth against said spring bias, a stop formed on one elongate edge of said detent member spaced intermediate said tooth and pivot pin, stop engaging means on said blade intermediate said cam surface and the cutting edge of said blade for engaging said stop in response to said blade being moved into a closed position between said plates, the outer surfaces of said plates each having a recess formed therein of annular periphery with each outer surface recess having edges extending adjacent and generally parallel to the elongate edges of the respective plate, a respective inlay received in each outer surface recess with each inlay being dimensioned to fill the respective outer surface recess and of a material differing in color from said plates, a cap extending axially from opposite ends of said detent pivot pin and encircled by a respective inlay and of a material differing in color from each inlay, and a soft metal portion carried by said spacer for engagement by the cutting edge of said blade.

2. The knife claimed in claim 1 in which said spacer pins and blade pivot pin are of similar metal to said plates and finished flush with the external surfaces of said plates to disguise the appearance of said pins.

3. The knife claimed in claim 1 in which said stop is formed at the intersection of one end of a recess in the one edge of said detent member and the respective edge, and said stop engaging means is formed at the intersection of one end of a recess in the cutting edge of said blade with said cutting edge.

* * * * *

55

60

65