



*Repetto*

***EXCLUSIVE UTILITY KNIFE  
TECHNOLOGY AND INNOVATION***

***UTILITY KNIVES  
WITH LENS & OPTICS TECHNOLOGY***

CONFIDENTIAL

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**C O N F I D E N T I A L**

[www.repetto.com](http://www.repetto.com)

*The 2 minute demonstrations in our website illustrates AutoLoad's extraordinary capability to changing a used blade for a new blade in **1.5 seconds** without ever touching a blade, by the simple movement of just your thumb.*

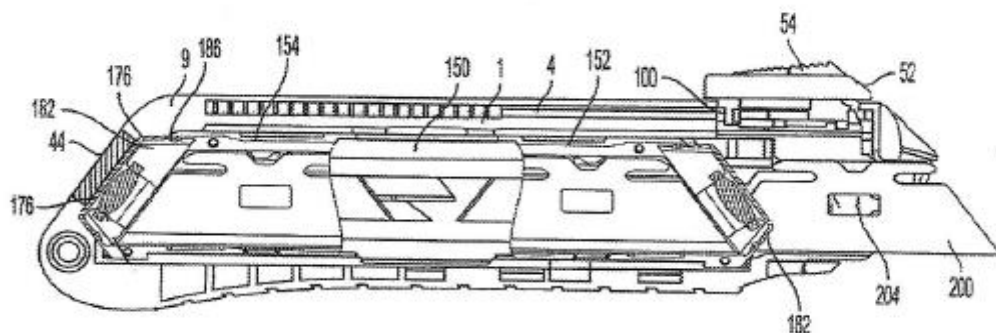
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US010800052B1

**(12) United States Patent**  
**Fossella****(10) Patent No.: US 10,800,052 B1**  
**(45) Date of Patent: Oct. 13, 2020****(54) UTILITY KNIFE, BLADE, AND CARTRIDGE****(71) Applicant: Repetto LLC, Scituate, MA (US)****(72) Inventor: Gregory Fossella, Hull, MA (US)****(73) Assignee: Repetto LLC, Scituate, MA (US)****(\*) Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.**(21) Appl. No.: 16/452,270****(22) Filed: Jun. 25, 2019****Related U.S. Application Data****(60) Provisional application No. 62/861,212, filed on Jun. 13, 2019.****(51) Int. Cl.**  
**B26B 5/00 (2006.01)**  
**B25G 1/08 (2006.01)****(52) U.S. Cl.**  
**CPC B26B 5/003 (2013.01); B25G 1/08 (2013.01)****(58) Field of Classification Search**  
**CPC B26B 27/005; B26B 5/001; B26B 5/003**  
**USPC 30/2, 162**  
See application file for complete search history.**(56) References Cited****U.S. PATENT DOCUMENTS**2,390,964 A 12/1945 Savoy  
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WO WO 03/009975 A2 2/2003**OTHER PUBLICATIONS****[No Author Listed]** Soft Grip Tools for Hard Hat® Jobs. Always Tools, Inc. 2005:2-7.**(Continued)****Primary Examiner** — Kenneth E Peterson  
**(74) Attorney, Agent, or Firm** — Wolf, Greenfield & Sacks, P.C.**(57) ABSTRACT**

A utility knife has a disposable blade cartridge in its handle that has new and used blade compartments. Fresh blades are disposed in the new blade compartment and one end of each is advanced one at a time substantially out of the compartment into operative position by a carrier that is controlled by a push button assembly. When the active blade is to be replaced, it is moved by the carrier into the used blade compartment, and a new blade may then be withdrawn from the new blade compartment into the operative position. The cartridge may be reversed when the one end of all the blades in the new blade compartment are used, placing what was the used blade compartment at the front, and the unused end of each blade may be advanced into the operative position. When all are used, a new cartridge may replace the used cartridge.

**16 Claims, 31 Drawing Sheets**

# *Repetto Utility Knife Patents*

**United States Patent No: US 10,800,052**

*New Twenty Year Term Utility Knife Patent  
Issued October 13, 2020*

*This new utility knife patent has broad  
coverage resulting in a number of different  
new products and features.*

## **Additional Utility Knife Patents**

**US 7,395,600      US 7,418,784,  
US 6,966,113      US7, 533,467**

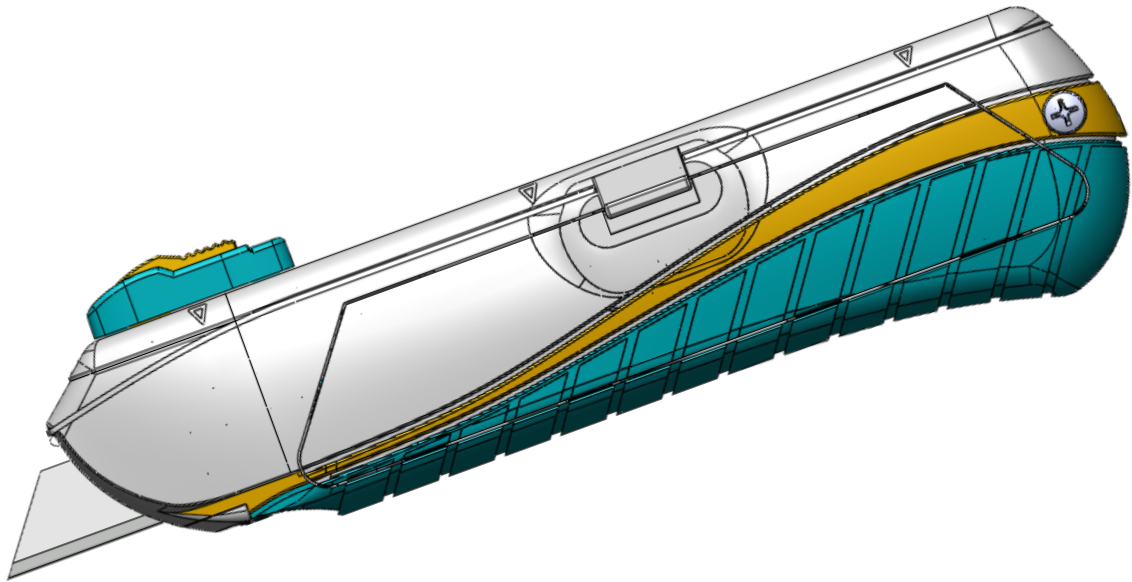
## ***You have to do the impossible or it's just another product!***

*Repetto's operational features change an old blade for a new blade in "eight tenths of one second" without ever touching a blade by the simple movement of just your thumb.*

*Accurate "blade changing time" calculated by the videographer. A video operates at 30 frames per second, our total blade change takes only 24 frames which = 8/10 of one second.*

*What is not apparent is how a series of individual blade changing steps inside the knife can instantaneously and smoothly fuse together a number of individual mechanical elements for continuous, rapid, and flawless operational reliability.*

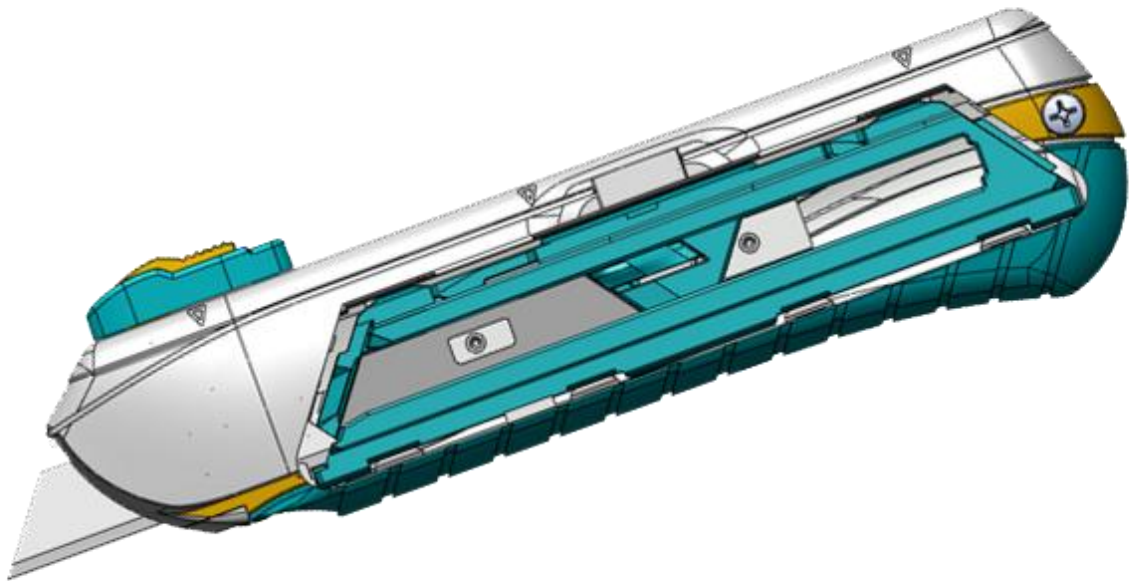
# *Blade Changing Technology*



The Repetto new utility knife patent embodies an exclusive blade changing technology. The Repetto knife can change an old blade for a new blade without ever touching a blade in **8/10 of one second**, by the simple movement of just your thumb.

This blade changing procedure can be quickly repeated by simply rotating the patented blade cartridge inside of the knife.

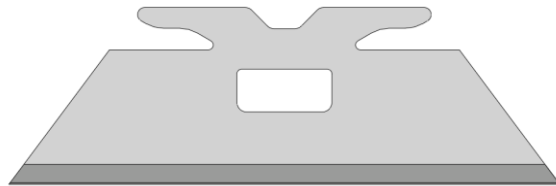
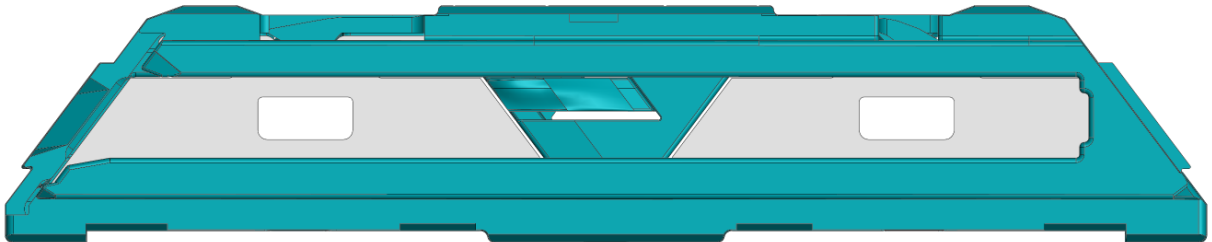
# *Utility Knife Technology*



When a cartridge is loaded into the knife, all 10 blades are in the front “new blade” compartment. When a used blade is deemed to be dull, it is moved into the rear “used blade” compartment. Once all 10 used blades are moved into the rear “used blade” compartment, the cartridge is rotated. Therefore, all 10 blades that were in the rear “used blade” compartment are now in the front “new blade” compartment.

# *Patented Blades In Cartridge*

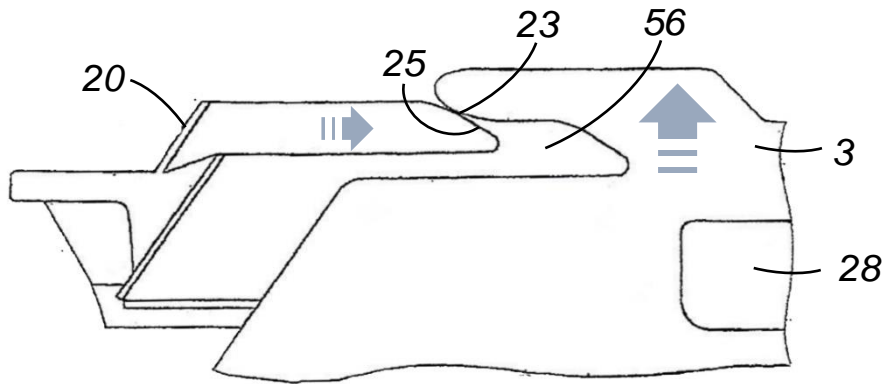
## **Repetto's Ten Blade Cartridge**



Repetto's cartridge contains ten patented blades. Two identical halves of the cartridge are required for rotating the cartridge to use the second end of each blade. The two halves of the cartridge are fused together by ultrasonic welding.

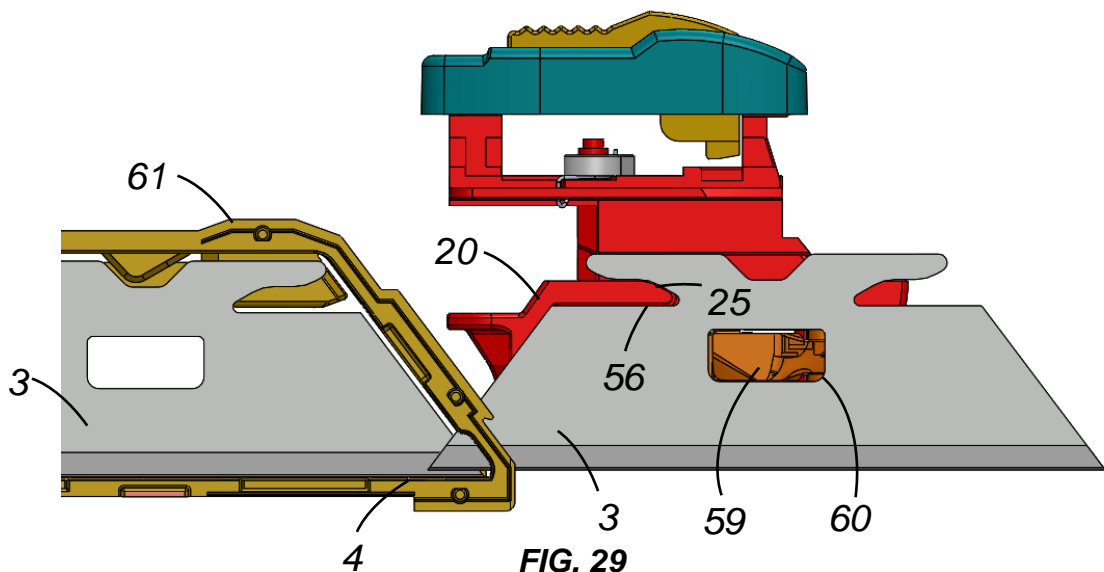


# Engaging Blade While Concurrently Raising Blade Off of Cartridge Floor



**FIG. 16**

**FIG 16:** As Carrier Lifter 25 begins to engage Blade 3 sitting on cartridge floor 4, blade edge 23 begins to ride up Carrier Lifter 25, concurrently, spring loaded support 59 snaps into blade hole 60 locking Blade 3 securely onto Carrier 20.

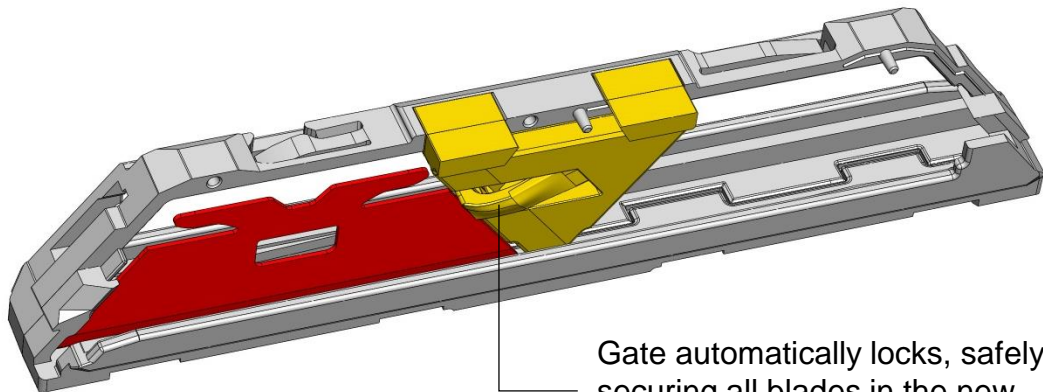


**FIG. 29**

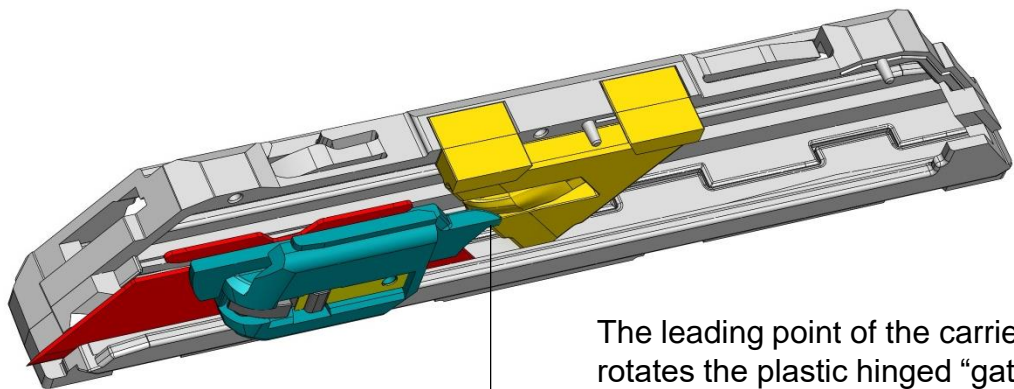
**FIG 29:** Carrier 20 is fully engaged into blade slot 56. Blade 3 is now fully raised off the floor 4 of the Cartridge 61.

## *Unlocking the Cartridge “Gate”*

The cartridge gate between the new blade compartment and the used blade compartment is always locked securing blades safely in their respective compartments. Once that blade has passed through the gate it automatically springs closed and locks. Whereas this operational procedure is only one segment of our entire blade changing process of *eight tenths of one second*, this individual segment occurs in far less time or a fraction of a second.



Gate automatically locks, safely securing all blades in the new blade compartment.



The leading point of the carrier rotates the plastic hinged “gate” inward to allow the blade the carrier is transporting to pass through the open gate into the used blade compartment.

# Improved Front Spring

The front spring is one of the most important operational components in the knife. Our new front spring #5 is a fully enclosed configuration shown in FIG. 72a which is a vast improvement over all current front springs in the industry. All current front springs have a free end (#200) as shown in FIG. 72b.

After continuous usage some of the front springs in the industry reduce force due to the free end #200 of the spring.

**Manufacturing.** Type 301 SS full hard, tensile strength = 185,000 PSI minimum. Higher tensile SS must be tested for formability and ability to make the part form. The part has to be stress relieved after forming.

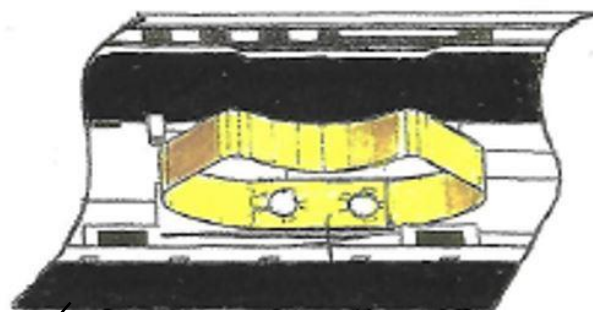


Fig. 72a

5

200

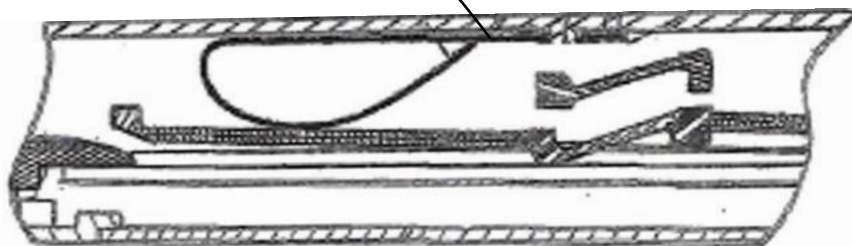


Fig. 72b

# *The A side of cartridge in use*

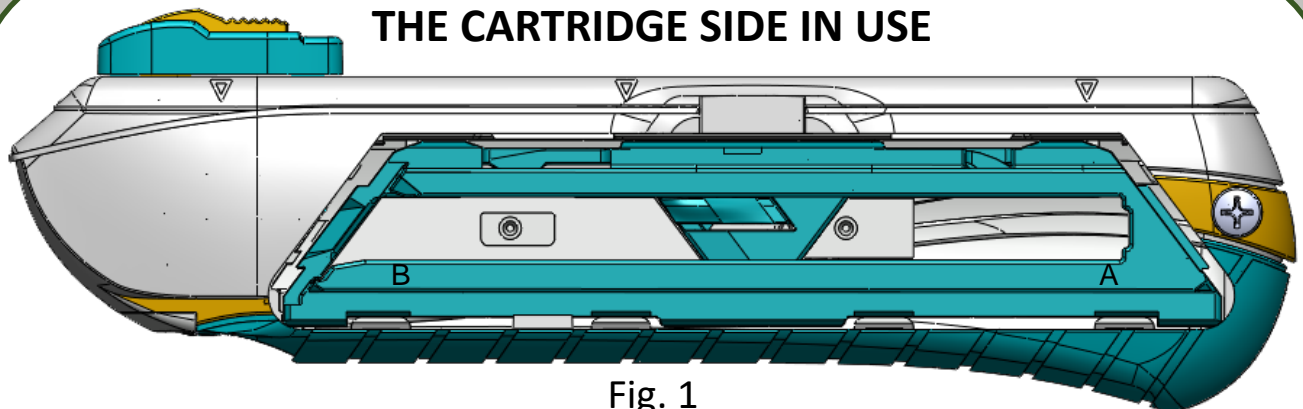


Fig. 1

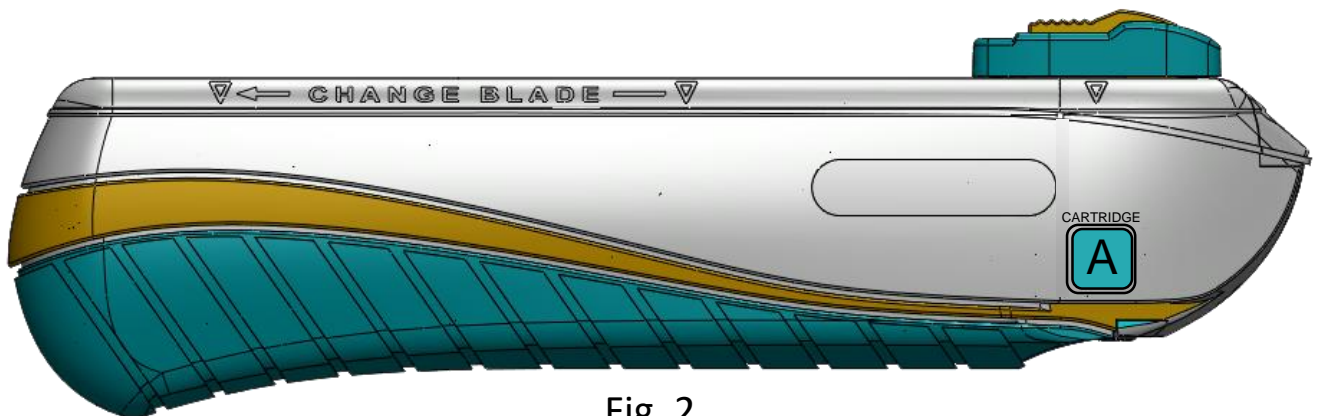


Fig. 2

**Fig. 1** Shows a utility knife with a 10-blade cartridge in the knife cartridge chamber. The cartridge displays the letters A and B on the cartridge.

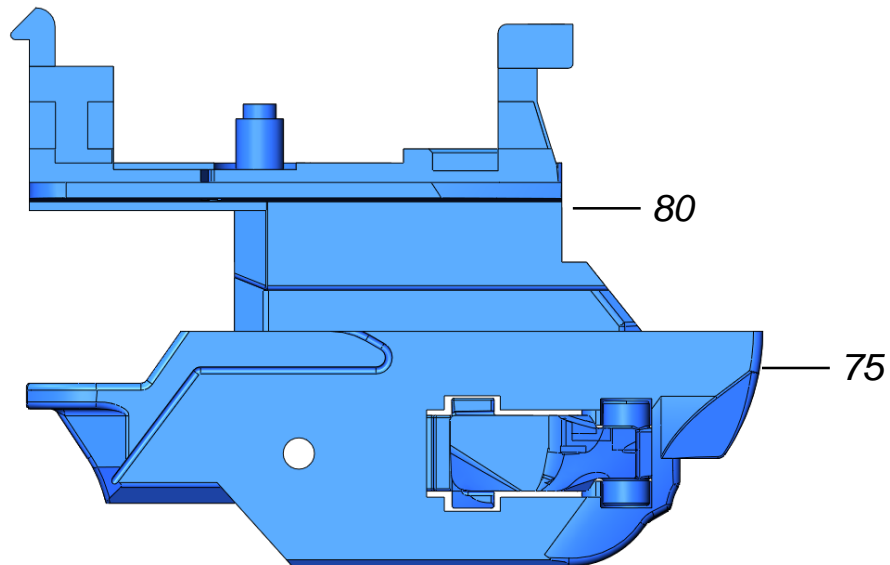
**Fig. 2** If the first side of the cartridge is in use the letter A would appear in the window. This signifies the knife is using the first end of the 10 blades. This would also signify there is a second end of 10 blades still available for use for a total of 20 blades.

Once the cartridge is rotated to use the second end of the blades, the letter B would be shown in the cartridge window signifying there is 10 less blades available for use.

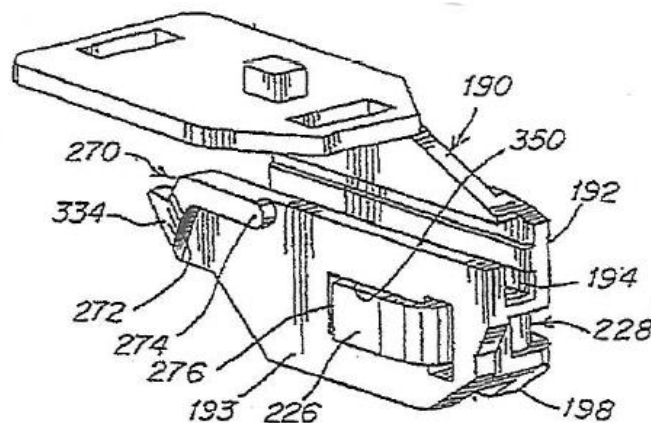
**This “Cartridge Side in Use” feature is one of a number of Repetto Utility Knife Options**

# Key knife component

Repetto's New Patent dated October 13, 2020 includes improvements to carrier 80 with a long body configuration with extension 75. This new carrier 80 achieves a secure and stable function with industry standard blades.



The Original Patent carrier has a short body which results in an unsupported span of industry standard blades. This unsupported span of blades causes a blade to pivot downward at the end of the short carrier at location 192 rotating the opposite end of the blade upward disengaging its operational connection with blade pusher 272.



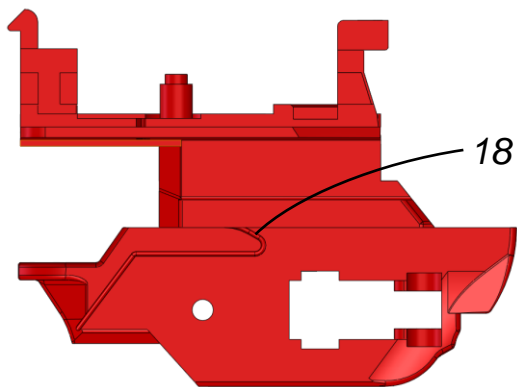
# *Lenses & Optics*

*Various types of magnifying lenses and optics can display the blade status **inside** of a knife. All blade status inside of the knife require lighting such as fiber optics lighting illuminators and fiber optic lighting and sensing systems.*

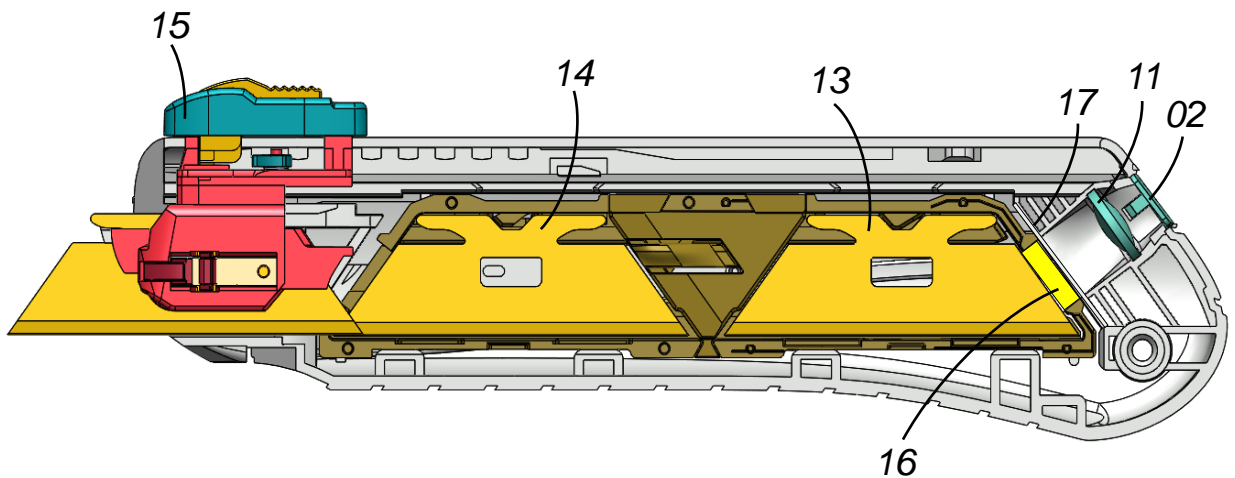
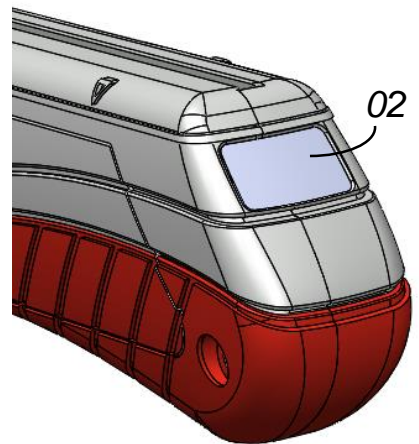
*When using Lens, and Optics Technology, manufactures of custom Lens and Optics design services **must be used** for this very sophisticated technology.*

*The following pages illustrate a number of lens and optics features.*

# *Viewing blades inside the knife from a window outside of knife*



Improved Carrier lifter 18



*Exterior window 02 for viewing new blade shape 13 through magnifying lens 11 in opening in carriage wall 16.*

*Fiber Optics lighting system 17 illuminates opening in carriage wall 16 to illuminate ends of blades 13.*

## *Exterior of Utility Knife*

*Repetto's unique patented window technology can view the blade status **inside** of a utility knife. This new window technology can also display the **inside** of the utility knife blade status in a window on the outside of the utility knife.*







*Competitive  
Utility Knives*

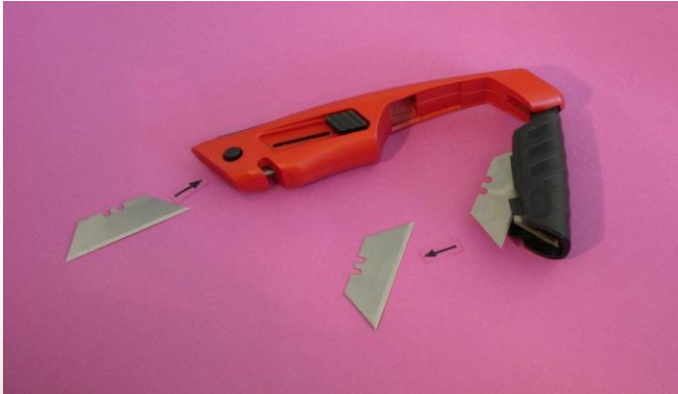
# ***Blade Changing Speed Sells Knives***

*None of the competitive knives below are capable of providing the speed they advertise*

**Speed Feed**-----Sheffield  
**Speed Pak**-----Claus  
**Instant Change**--Stanley  
**Quick Load**-----Williams  
**Quick Change**---Stanley  
**Quick Change**---Super Craft  
**Quick Change**---Black Rhino  
**Quick Change**---Klein  
**Quick Change**---Rapid Tool  
**Quick Change**---Gorilla Brand  
**Quick Change**---Morris Products  
**Quick Change**---Super Craft  
**Quick Change**---Rolling  
**Quick Change**---Uline H-2402  
**Quick Change**---Uline H-1469  
**Quick Change**---Master Mechanic  
**Rapid Change**---Master Force  
**Rapid Shark**-----Rapid Tool

**Auto Loading**---Pacific Handy Cutter  
**Fast Back Flip**---Milwaukee  
**Quick Blade**----Pacific Handy Cutter  
**Rapid Change**---KR Tools  
**Quick Change**---Westward  
**Quick Change**---Rolling Utility Knife  
**Quick Change**---Great Neck  
**Quick Change**---Lenox  
**Quick Change**---Pacific Handy Cutter  
**Quick Change**---Alltrade Squeeze knife  
**Quick Change**---Bessey  
**Lightening Fast**-Uline H 64B  
**Quick Change**---Performance W746  
**Quick Change**---Klein Tools 44107  
**Quick Change Blade**---Wiss  
**Quick Blade Change**---MasterMechanic  
**Quick Blade Change**---Gardner Bender

*All competitor knives require changing sharp blades with bare hands*



# *Gregory Fossella designer of all Repetto products & patents*

Internationally renowned industrial designer Gregory Fossella the Managing Partner and founder of Repetto LLC, is responsible for the creation and development of the Automatic Blade Loading Utility Knife. Mr. Fossella is an industrial designer holding a BFA in Industrial Design from the Rhode Island School of Design.

Mr. Fossella is also founded Gregory Fossella Associates, an international industrial design and marketing firm with over 60 employees, having corporate offices in Boston Massachusetts.

Former clients of Mr. Fossella: General Motors, Hughes Aircraft, Sharp Electronics, Enstrom Helicopter, Aerospatiale Helicopter-(France), Pezatel Helicopter-(Poland), Melex golf car-(Poland), Sheaffer Pen, GBC office products, Damon/EC, AS&E/Pfizer, American Optical, Boston Whaler-boat design, Weber Aircraft seating manufacturer for airlines worldwide, General Electric, Exxon, Black & Decker, Rockwell International, Ryobi Japan, Stanley, McDonald's "Big Mac" foam package, Leesona textile equipment, Exxon, Pennzoil oil container, Titleist golf clubs, Gillette, Colgate Palmolive, Sunbeam, Data Products, AMF, Armstrong, Ingersoll Rand, Grumman, MIT, Raytheon, Brunswick, Corning, Anchor Hocking, Braun North America, Texas Instruments, Proctor Silex, Bristol-Myers. Fossella has designed products in countries such as France, Japan, Hong Kong, Taiwan, Korea, Holland, Poland, & England.

Mr. Fossella is the recipient of numerous awards for design excellence, most notably, **FORTUNE MAGAZINE** cited Mr. Fossella for designing "**ONE OF THE TWENTY-FIVE BEST DESIGNED PRODUCTS IN AMERICA**" --The Enstrom Helicopter.

As a helicopter pilot Fossella would fly his helicopter to remote meeting locations. Mr. Fossella was formerly on the board of trustees of the Rhode Island School of Design.

Mr. Fossella was chosen by the country of Taiwan as one of eleven industrial designers worldwide to come to Taiwan to assist with its product development program.

Mr. Fossella holds over 35 U.S. & Foreign patents on a wide variety of products.

# *Blade Changing Demonstration*

## THE GAME CHANGER



The best way to appreciate the blade changing process of the Repetto new utility knife is to see it in action. Seeing is believing! Click the image above and then select “**Demonstration 2**” to see a short video of this revolutionary technology in action.