

JIM KEMPF'S

# SCORPION

CROSSBOWS



# TECHNOLOGY BEYOND EVOLUTION

US 7,328,693 B2

## WHAT IS REVERSE DRAW TECHNOLOGY?

Simply stated, Reverse Draw Technology is a combination of archery elements that places the riser near the center of the crossbow (better balance); the tips of the limbs go out away from you instead of back towards you; it utilizes an inverted style cam, where the string comes off the front of the cam instead of the back of the cam (increases power stroke by the diameter of the cam); and the string starts out in front of the riser when the bow is at rest, and is latched behind the riser when the bow is cocked (increases power stroke). OK, so that wasn't really a simple explanation, but it was a whole lot easier saying it than it was actually accomplishing what Reverse Draw Technology does!

The combination of all of these elements and uncompromising engineering, along with the Kempf-TEC trigger make Scorpyd's Patented Reverse Draw Crossbows the World's best shooting crossbow experience!

## BALANCE IS KEY

Weight distribution is key to how a weapon feels when you shoulder it and shoot it. Conventional crossbows have the riser at the very front of the crossbow, making the bow feel extremely nose heavy, and un-balanced. All Scorpyd Crossbows are center balanced, due to the riser being at the center of the crossbow. A typical Reverse Draw Crossbow weighs about 8# without accessories, while there are some crossbows that claim a weight of just over 6# without accessories. Due to the weight distribution and balance of Reverse Draw Technology, our 8# bow is perceived to be the lighter of the two.

## THE WORLD'S MOST EFFICIENT CROSSBOWS

Short and sweet. Numbers don't lie. When you compare our draw weights, speed, and KE, no conventional crossbow technology can even come close to the performance of Reverse Draw.



# MULTIPLE US PATENTS AT WORK

## Patented Trigger Assembly

The Kempf-TEC Trigger assembly is arguably the best production trigger made for a crossbow. In fact, Outdoor Life magazine stated in their 2012 crossbow Round-up "The best trigger we have ever tested in a crossbow..." and Scorpyd took top honors again in the 2014 roundup as well. (71) Applicant: James J. Kempf, Coralville

But this latch assembly didn't just happen. "I asked myself what are the most important attributes in a crossbow latch/trigger assembly?" First and foremost is safety. A safe design has many contributing elements, including seer surface engagement, an anti-dryfire device, and the safety itself. "One of the main reasons I chose to use a manual safety, instead of an auto-safety seen in some other brands is that a manual safety ALWAYS works." The placement of the safety bar and lever are also important to the ease of use by the hunter, as well as how the safety actually functions. Kempf-TEC places the safety bar directly under the seer lever. So long as the safety is on, it is impossible for the latch to release the string. The safety lever is placed just above the pistol grip of the stock, putting it in just the right place to disengage when ready for the shot. So long as the Kempf-TEC latch assembly is properly used, it will function with superb reliability.

A crossbow seer has to hold extreme forces equal to the draw weight of the bow, unlike a gun's seer that is only holding spring pressure. For this reason, the amount of seer surface overlap between the latch and seer lever must be greater than that of a gun. The Kempf-TEC trigger is like a rolling trigger, the trigger arm travels a short distance, then breaks like glass. At less than 2.75# (as low as 1.75# on 100# draw versions) Kempf-TEC rivals many custom rifle triggers. The smoothness and crispness are engineered into the design.

Finally, the Patented anti-dryfire (ADF) device is unlike any other. Unlike many of the other brands, which actually fire the string a short distance (and then have a lever catch it), the Kempf-TEC ADF actually prevents the latch from releasing the bowstring if there is no arrow present.

You have heard it said, a stopped clock is always right at least twice a day. You may get a crossbow from Brand X that shoots great, or you might not. Consistent accuracy doesn't just happen. It has to be engineered into the every element of the crossbow, and that engineering must be followed up with quality components.

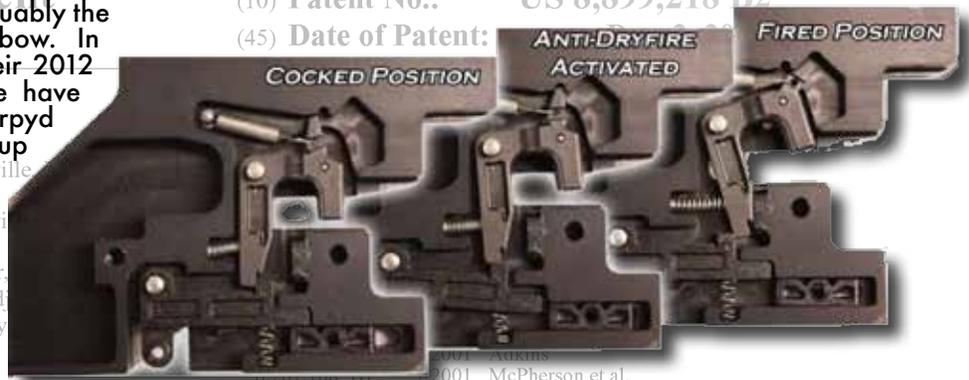
Accuracy and consistency from shot to shot are even designed into how the latch housing and trigger assembly are mounted into the barrel. Some companies use a single bolt or two to install the housing into the barrel, not Scorpyd. We use a full a 4 point mounting system that locks the housing into the barrel at the front, back, and both sides, making it rock solid.

## Scorpyd Crossbows Utilize Many of US Patents Technologies Own by James Kempf and Multiple US Patent Pending

- 8,899,218 Shooting bow
- 8,875,687 Tangent point arrow rest
- 8,770,178 Shooting bow
- 8,720,424 Dual stirrup crossbow
- 8,505,527 Archery quiver attachment
- 8,104,461 Crossbow cocking assembly
- 7,836,871 Powerstroke crossbow
- 7,708,001 Bow
- 7,363,921 Crossbow
- 7,328,693 Reverse draw technology archery
- 7,174,884 Trigger assembly
- 5,538,101 Adjustable, portable combination tree stand

(10) Patent No.: US 8,899,218 B2

(45) Date of Patent:



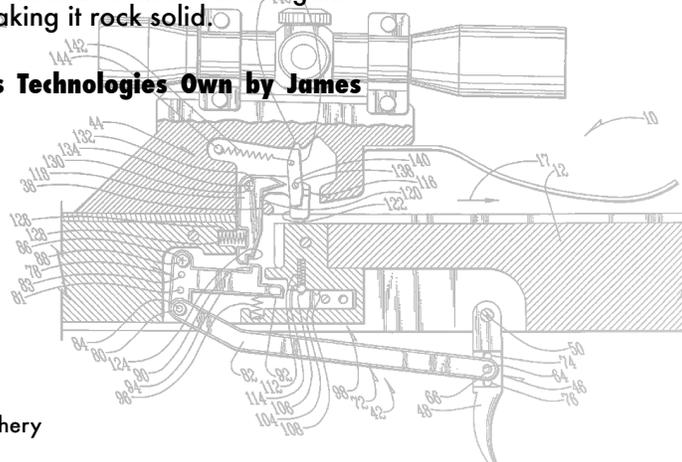
2001 McPherson et al.  
 6,460,528 B1 10/2002 Gallops, Jr.  
 2003 Powers  
 2004 Chang  
 2007 Kempf  
 2010 Pedermonite  
 2010 Karagias  
 2010 Yehle  
 2005 Schavone

Gene Kim  
 Assistant Examiner  
 Amir Klayman  
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## ABSTRACT

of a crossbow or other weapon system. The trigger assembly includes a trigger arm coupled between the seer lever and the trigger arm is not parallel to the line of travel of the trigger arm for increased mechanical advantage and a smoother, safer trigger pull. The trigger assembly incorporates various safety measures, including a dry fire mechanism to prevent unintentional damaging and potential release of the bowstring before an arrow is present in the crossbow. The trigger assembly allows for various adjustments to vary the trigger length and trigger pull force, smoothness and preventing the unintentional release of the bowstring.

5 Claims, 7 Drawing Sheets



# SCORPYD ADVANTAGES & APPLICATIONS

U.S. Patent

Apr. 29, 2008

Sheet 1 of 9

US 7,363,921 B2

## TITANIUM FASTENERS

Scorpyd Crossbows is the first in the archery industry to utilize Titanium Fasteners in a bow or crossbow. There are many benefits with the use of Titanium. First, Titanium is about half the weight of steel fasteners. Second, Titanium will never rust. How many times have you bought a brand new bow or crossbow, and have it look like crap in one year because all of the screws are rusted? Not only is it an eye sore, rust will cause problems for repairs, and affect the longevity of the weapon.

## ARROW RETAINER

Scorpyd uses a composite arrow retainer, instead of spring steel for several reasons. Composites are quieter, and the memory can be re-set several times.

## BARREL WITH BUILT IN FINGER GUARD

Some models of Scorpyd Crossbow utilize a finger guard that is built formed into the barrel extrusion. This greatly increases strength, and decreases noise found in finger guards that are bolted onto the barrel.

## Why Lighter isn't always better.

The trend for several years has been to try and make bows and crossbows lighter and lighter. Though this is just my opinion, one of the main reasons for the weight reduction is so manufacturers have something to brag about as being "new" for this year. The technology hasn't changed, the arrow doesn't go any faster, nor does the bow shoot any more accurately than before. Then when you shoot many of these "new" lighter bows, you soon realize that you have to add back a pound of rubber to make the bow feel good to shoot. Mass weight absorbs energy, and adds to stability of the bow. If you look at most precision high end target rifles, they have bull barrels and heavy stocks, Target bow have all kinds of stabilizers and vibration dampening contraptions bolted on. The reason for this is to make the weapon as smooth as possible when shot.

## FOREARM DESIGN

Countless hours were spent in the design of the forearm used on Scorpyd Crossbows. Most crossbow stocks have a forearm that you can only grip one way. That was not good enough for the World's leading crossbow innovator. The unique design of the Scorpyd forearm allows the user to grip the stock in the conventional manner of palm up, as well as palm down, cupping the stock, or using the "push-pull" method. "But we didn't stop there. Many hunters like to use a bi-pod, and we designed the forearm to allow the use of the Harris bi-pod. When folded up in the closed position, the legs of the bi-pod tuck into the forearm, and the feet of the bi-pod rest on the riser, allowing for full function without the bi-pod being in the way."

## WHY KEEP THE RAIL?

For a few years, some companies have declared that a rail-less crossbow was the only way to go. Yes, a rail-less crossbow has less center serving wear, but that is the only benefit. Without the rail, a crossbow will have the same tuning issues of a vertical bow. On a vertical bow, you have to worry about the up and down variable of the nock point of the string, known as nock travel, and this can be corrected by adjusting the cam timing in a twin cam bow. The other variable is the side to side movement of the bow string as the string travels forward when the bow is shot, this is often caused by cam lean, or parts being out of spec from one side to the other. When you combine both of these variables, you can quickly see how difficult it can be to tune a bow or crossbow. This is where the rail comes into play, and shows its' importance to the equation of extreme accuracy and ease of tuning. The rail removes one of the variables of string movement, keeping the string traveling at a constant level plain. Now the only tuning issue is "nock travel" which is easily checked by cam timing.

## TIMING MADE EASY, ACCURACY IS IN THE DETAILS

Following up on the timing issue, or nock travel. You can't get consistent shot placement without having top quality components, and attention to detail while using these components. Some crossbow companies have a variable in limb deflection from one side of the crossbow to the other by as much as 10#. Though this type of set up may "throw" arrows into a fist sized group at 20 yards, it will never produce the accuracy that we expect at Scorpyd. Scorpyd matches the deflection of our limbs to be exact from one side to the other. Not 10# off, not 5# off, not even 1# off... an exact match! This attention to detail is how Scorpyd Crossbows is able to achieve the out-of-the-box performance others can only dream of.



# ACCESSORIES

U.S. Patent

Aug. 13, 2013

Sheet 2 of

## Premium Accessories

We at Scorpud have sourced accessories that work best with our crossbows. These will enhance your experience while shooting our crossbows.

- Bow Case
- Vortex Scope
- Hawke Scope
- Gold Tip Laser III
- Black Eagle Executioner
- Firenock AeroBolt II
- Bow Sling
- AeroRest
- Short Sled Cocker
- Adjustable length Rope Cocker



Fig. 3



# EXTREME HUNTERS

U.S. Patent

Nov. 23, 2010

Sheet 10 of 10

US 7,836,871 B2

## Scorpyd ORION EXTREME

The ORION Extreme is the newest generation of Scorpyd's Patented Reverse draw Technology. Based on the tried and true Ventilator platform, the ORION Extreme features a non-folding butt stock. This new stock is nearly a half pound lighter than the folding stock on other Scorpyd Crossbow models. This new stock allows the use of the optional ACUdraw crank cocking device. This stock is also available with Hogue custom 1911 style grips, and optional butt pads, so you can really trick out your Scorpyd! Available in 175#, 160#, 135#, and 110# pull draw weights.



# 440 FPS

### Scorpyd Orion EXTREME Performance

175# Draw Weight Up To 440 FPS	172 ft lb KE
160# Draw Weight Up to 420 FPS	156 ft lb KE
135# Draw Weight Up to 390 FPS	135 ft lb KE
110# Draw Weight Up to 350 FPS	109 ft lb KE

### SCORPYD ORION CROSSBOW FEATURES

- 18 1/2" Power Stroke
- 12 7/8" Axle to Axle Cocked
- 19 5/8" Axle to Axle uncocked
- 34 1/2" long without optional butt pad
- 7.5# Mass Weight Without Accessories
- Non-Folding Stock
- Optional ACUdraw Crank Cocking Device
- Optional Butt Pads
- Optional 1911 Style Pistol Grips
- Patented Anti-Dryfire Device
- MIM Trigger Components
- Forged Riser
- Barnsdale Laminated Limbs
- Titanium Fasteners
- ViperX Strings and Cables
- Vented Barrel
- Vented Forearm
- MIL-SPEC Type III Anodizing
- Perfect Balance
- EXTREME VERSATILITY



FIG. 10

# WORLD FASTEST, with EXTREME ACCURACY

U.S. Patent

May 4, 2010

Scorpyd VENTILATOR EXTREME

US 7,708,001 B2

The VENTILATOR is the most popular version of Scorpyd's Patented Reverse Draw Technology Crossbows. Combining the unmatched balance, precision, smoothness, and versatility of Reverse Draw Technology with the Industry's Best Rated Trigger, Scorpyd Crossbows makes the World's Best Crossbow Shooting Experience! The folding stock allows for greater ease when cocking the crossbow, and for greater mobility in tighter situations. Available in 175#, 160#, 135#, and 110# pull draw weights.



**440 FPS**

### Scorpyd Ventilator EXTREME Performance

175# Draw Weight Up To 440 FPS	172 ft lb KE
160# Draw Weight Up to 420 FPS	156 ft lb KE
135# Draw Weight Up to 390 FPS	135 ft lb KE
110# Draw Weight Up to 350 FPS	109 ft lb KE

### SCORPYD VENTILATOR CROSSBOW FEATURES

- 18 1/2" Power Stroke
- 12 7/8" Axle to Axle Cocked
- 19 5/8" Axle to Axle uncocked
- 35 1/2" long
- 8.1# Mass Weight Without Accessories
- Folding Stock
- Patented Anti-Dryfire Device
- MIM Trigger Components
- Forged Riser
- Barnsdale Laminated Limbs
- Titanium Fasteners
- ViperX Strings and Cables
- Vented Barrel
- Vented Forearm
- MIL-SPEC Type III Anodizing
- Perfect Balance
- EXTREME HUNTER

### Scorpyd V-TEC EXTREME

The V-TEC is the ULTIMATE crossbow made for the target shooter that also likes to hunt. This version of Scorpyd's Patented Reverse Draw Technology Crossbows combines the naturally more forgiving, wider axle to axle width bow assembly with the shorter, more balanced stock of the Ventilator. With speeds up to 440 FPS! But for target shooters, it is not about the speed, it is about the over-all package. Accuracy and consistency are the most important requirements for a target shooter. Combining the unmatched balance, precision, smoothness, and versatility of Reverse Draw Technology with the Industry's Best Rated Trigger, Scorpyd Crossbows makes the World's Best Crossbow Shooting Experience! Though all Scorpyd Crossbows are capable of 1" groups at 100 yards, the V-TEC is a target shooters dream, but keep in mind, it also makes an extremely lethal hunting weapon. Choose the poundage and speed you need for where you are shooting, whether it be in the unlimited classes where speed is not limited, to the indoor leagues where you have to obey a speed limit, you can not beat a Scorpyd!



**440 FPS**

### Scorpyd V-TEC EXTREME Specifications

175# Draw Weight V-TEC	Up To 440 FPS	172 ft lb KE
160# Draw Weight V-TEC	Up to 420 FPS	156 ft lb KE
135# Draw Weight V-TEC	Up to 390 FPS	135 ft lb KE
110# Draw Weight V-TEC	Up to 350 FPS	109 ft lb KE

### SCORPYD V-TEC CROSSBOW FEATURES

- 18 1/2" Power Stroke
- 15 7/8" Axle to Axle Cocked
- 22 5/8" Axle to Axle uncocked
- 35 1/2" long
- 8.2# Mass Weight Without Accessories
- Folding Stock
- Patented Anti-Dryfire Device
- MIM Trigger Components
- Forged Riser
- Barnsdale Laminated Limbs
- Titanium Fasteners
- ViperX Strings and Cables
- Vented Barrel
- Vented Forearm
- MIL-SPEC Type III Anodizing
- Perfect Balance
- EXTREME accuracy

# JIM KEMPF'S SCORPYD CROSSBOWS



ORION  
EXTREME

VENTILATOR  
EXTREME

V-TEC  
EXTREME

	ORION EXTREME	VENTILATOR EXTREME	V-TEC EXTREME
Patented Reverse Draw Technology	YES	YES	YES
Patented Kempf-TEC Trigger	YES	YES	YES
Patented Reverse Cam	YES	YES	YES
Power Stroke	18 1/2"	18 1/2"	18 1/2"
Axle to Axle Cocked	12 7/8"	12 7/8"	15 7/8"
Axle to Axle uncocked	19 5/8"	19 5/8"	22 5/8"
Overall Length	34 1/2"	35 1/2"	35 1/2"
Mass Weight Without Accessories (lb)	7.5	8.1	8.2
Folding Stock	NO	YES	YES
Optional ACUdraw Crank Cocking Device	YES	NO	NO
Optional Butt Pads	YES	NO	NO
Optional 1911 Style Pistol Grips	YES	NO	NO
Patented Anti-Dryfire Device	YES	YES	YES
MIM Trigger Components	YES	YES	YES
Forged Riser	YES	YES	YES
Barnsdale Laminated Limbs	YES	YES	YES
Titanium Fasteners	YES	YES	YES
ViperX Strings and Cables	YES	YES	YES
Vented Barrel	YES	YES	YES
Vented Forearm	YES	YES	YES
MIL-SPEC Type III Anodizing	YES	YES	YES
Perfect Balance	YES	YES	YES
Draw Weight at 175# FPS/KE (ft lb)	N/A	440/172	440/172
Draw Weight at 160# FPS/KE (ft lb)	420/156	420/156	420/156
Draw Weight at 135# FPS/KE (ft lb)	390/135	390/135	390/135
Draw Weight at 110# FPS/KE (ft lb)	350/109	350/109	350/109

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