

美日專利扣件看板

U.S. & Japan Patented Fasteners Roundup

compiled by Fastener World
Source: USPTO; Japan Patent Office

Hardware Fastener with Movable Threaded Element and One or More Spring-like Members

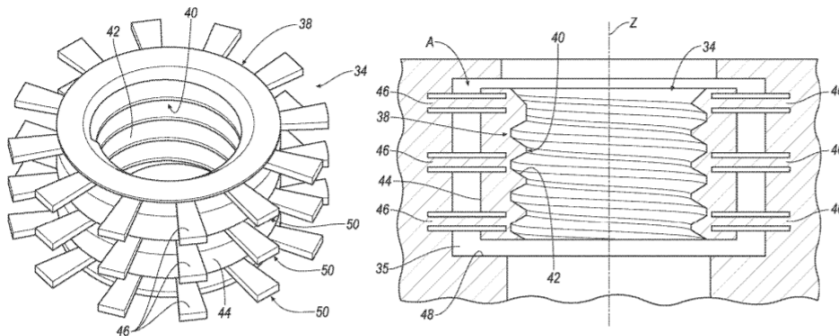
五金扣件，含有可移動的螺紋元件以及一個以上的彈簧元件

Issued date: October 19, 2021

Applicant: Kennametal Inc.

Description:

A hardware fastener with a movable threaded element suspended within a cavity formed in a body. The movable threaded element has an internal surface with threads for cooperating with a threaded fastener. The movable threaded element is suspended in the cavity by the one or more spring-like members such that an area of reduced stiffness is created in the cavity proximate the movable threaded element, thereby allowing the movable threaded element to move a predetermined distance within the cavity when torque is applied to the threaded fastener. The one or more spring-like members store elastic potential energy to prevent the loss of pretension of the threaded fastener that can be caused by heat or vibration. The invention also eliminates the need for a torque wrench when tightening the threaded fastener to a specified torque value.



Two-piece Blind Fastener

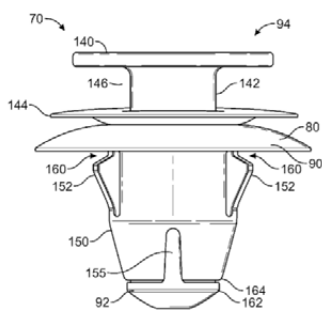
兩件式盲扣件

Issued date: October 12, 2021

Applicant: SPS Technologies, LLC

Description:

A blind fastener for connecting panels includes a bolt and nut. The bolt includes a shaft, bolt head, and lug. The bolt head is between the shaft and lug. The shaft defines external threads opposite the bolt head. The lug includes a first tool engagement portion and first frangible portion that connects the lug and bolt head. The nut includes a sleeve, nut head, and handling member. A central bore of the sleeve receives the shaft and defines internal threads mated with the external threads. The nut head is between the handling member and sleeve. The nut head extends radially from the sleeve and defines a recess that receives the bolt head. The handling member surrounds a portion of the lug. The handling member includes a second frangible portion and a second tool engagement portion. The second frangible portion couples the second tool engagement portion to the nut head.



Two-part Fastener

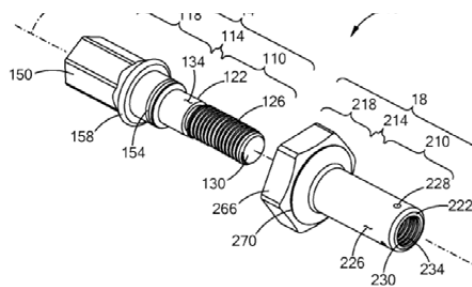
兩件式扣件

Issued date: September 28, 2021

Applicant: Illinois Tool Works Inc.

Description:

A fastener including a pin and a grommet. The pin is pre-engaged to the grommet with at least one flash connection, the pin is configured to be secured to the grommet at least by the flash connection being broken, and one of the pin or the grommet moves relative to the other of the pin or the grommet to break the at least one flash connection. Further, the pin is configured to engage and be secured to a first component and the grommet is configured to engage and be secured to a second component.



Threaded Fastener Having a Thread Crest Greater than Its Thread Root and V Angles on the Crest and Root

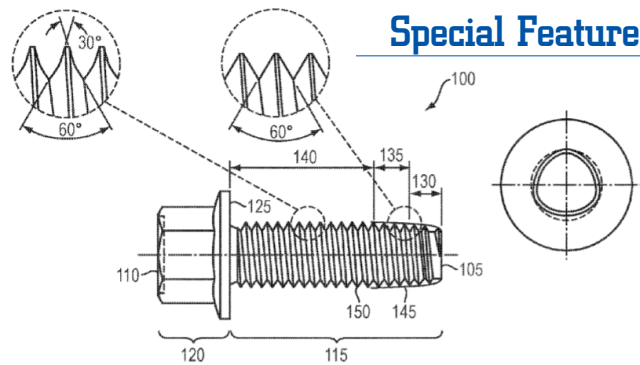
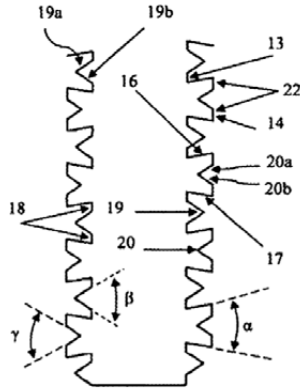
牙頂寬度大於牙底的含螺紋扣件，牙頂與牙底各含“V”形角

Issued date: September 7, 2021

Applicant: LOCK-N-STITCH, INC.

Description:

An interlocking thread with a tooth-cross-section that is wider at its crest than at its root and with "V" angles located both along the crest and the root which tightens into a tapped hole that has a similar thread cross-section.



Thread Forming and Thread Locking Fastener

滾牙防鬆扣件

Issued date: September 21, 2021

Applicant: Research Engineering & Manufacturing, Inc.

Description:

A combined thread forming and thread locking fastener is disclosed. A fastener includes three thread zones. A first thread zone utilizes a first thread forming thread profile with an increasing outer diameter. A second thread zone extends from the end of the first zone utilizing the first thread forming thread profile and continues with a constant diameter. The third thread zone utilizes a thread locking thread profile continuing along substantially the remainder of the shaft of a fastener.

Anti-burr Threaded Fastener

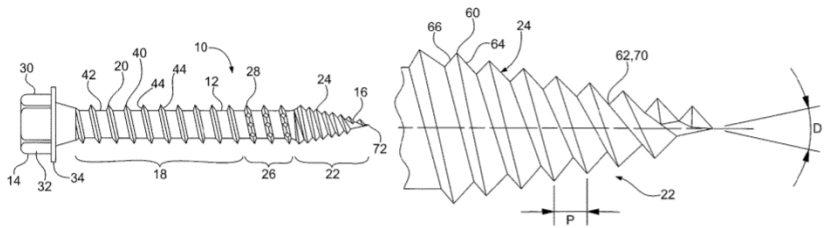
防毛邊的含螺紋扣件

Issued date: August 31, 2021

Applicant: Triangle Fastener Corporation

Description:

A threaded fastener includes an elongated body having a first end and a second end, a first portion comprising a first helical thread, with the first helical thread including a crest, a root, and flank portions, and a second, tapered portion including a second helical thread. The second helical thread includes a crest, a root, a leading flank portion, and trailing flank portion, with the leading flank portion positioned closer to the second end of the elongated body than the trailing flank portion. A thread angle of the second helical thread is larger than a thread angle of the first helical thread, and the root of the second helical thread includes a root apex formed by the intersection of the trailing flank portion and the leading flank portion.



Blind Fastener

盲扣件

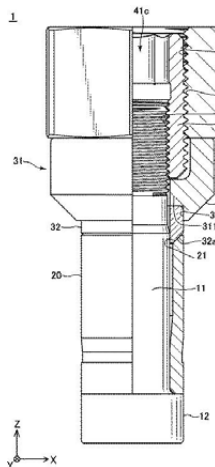
Issued Date: October 17, 2021

Applicant: Nippon Pop Rivets and Fasteners Ltd.

Description:

Frictional connection may not have enough force to fasten multiple materials and therefore requires increasing the fastening force. To increase the fastening force using frictional connection, one can think of increasing the bolt axial diameter to increase bolt axial force. However, this requires increasing the diameter of the hole on the fastened material for inserting the bolt. The potential consequence is an enlarged damage on the cross section of the fastened material and a weaker fastened material. For example, when inserting bolts into multiple rows and columns of fastening holes to conduct frictional connection, enlarged diameter of individual holes could result in a significant drop of strength for the fastened material.

This invention was created to solve this problem and provide a blind fastener to improve fastening multiple materials.



Tacking Fastener

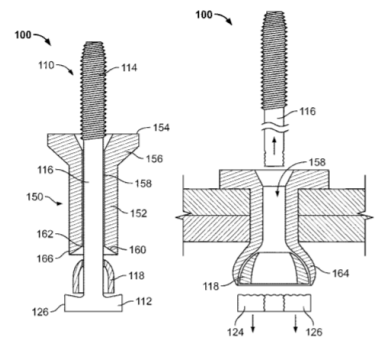
盲鉚釘

Issued date: August 24, 2021

Applicant: Allfast Fastening Systems

Description:

A blind tacking rivet includes a stem and a sleeve. The stem includes a body and a stem head. The stem head is removable from the body. The stem head deforms a portion of the sleeve during removal of the stem head. The stem head may be discarded or may be embedded within the sleeve.



Anti-rolling Screw

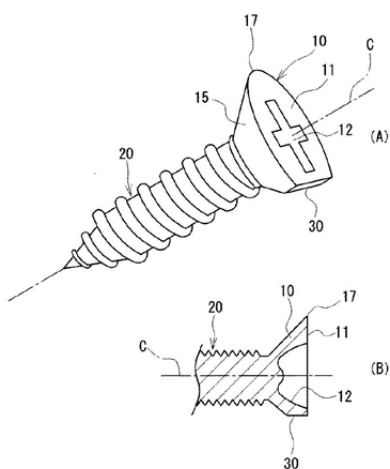
防滾動螺絲

Issued Date: July 8, 2021

Applicant: Kitamura Seiko Corporation

Description:

The screw head is a circular shape looked in the axial direction. When placed on a table, some degree of tilt, vibration or external force could roll over the screw and move it. It could be obstructive and stressful if the screw rolls when the operator has to pick them up one by one. If the screw falls from the table, they could go missing. This anti-rolling Screw was created to prevent rolling, improve operation and reduce the risk of losing screws.



Thread-insertion Type Anchor Bolt

螺紋嵌入式錨栓

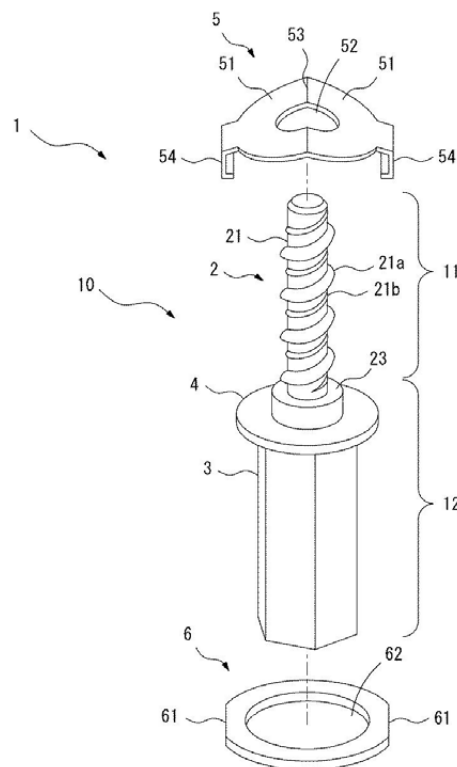
Issued Date: May 27, 2021

Applicant: N.PAT

Description:

After installing an anchor bolt to the ceiling, the operator has to check if the anchor bolt is secured. Usually the anchor bolt would have an indicator attached to its head. When the anchor bolt reaches a designated depth within the ceiling, the indicator will be pressed by the ceiling, break into pieces, separate from the anchor bolt, and fall on the ground, which will cause the trouble of cleaning. Furthermore, the operator has to calculate the number of broken pieces to check if the installation is correct, but it is difficult to collect all the scattered pieces.

This invention is to utilize the design of the thread-insertion type anchor bolt to check the status of installation with ease and improve the post-installation checks. ■



Screw Fastening Structure

螺絲鎖固結構

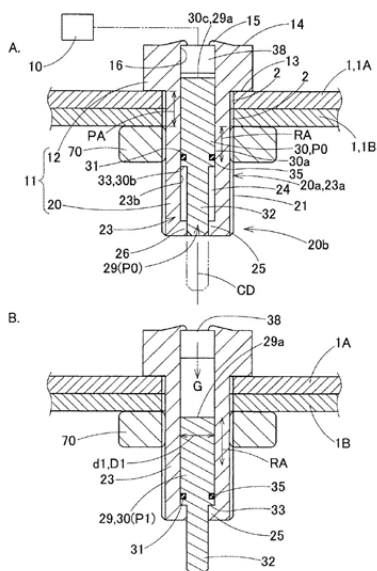
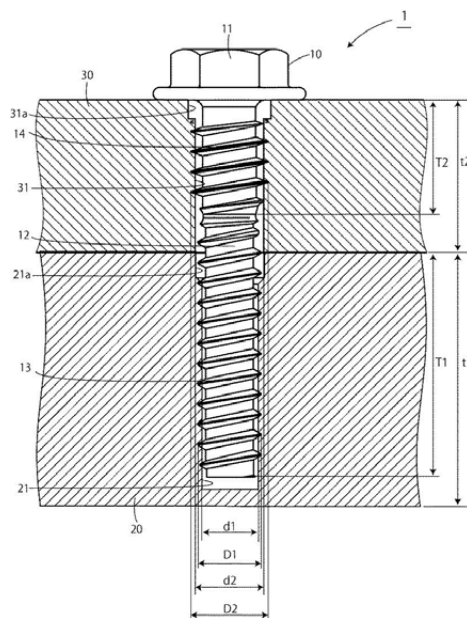
Issued Date: April 8, 2021

Applicant: Nitto Seiko Co., Ltd.

Description:

If the self-tapping screw is made of thermoplastic resin, the fastener or the fastened object could deform in a heated environment and cause the screw to wobble. This is the cause for screw loosening.

The structure of this invention can eliminate using insert nut or insert collar with the thermoplastic resin fastener and fastened object in a heated environment, while preventing wobbling and achieving lightweighting.



Bolt with Variable Strength

強度可變式螺絲

Issued Date: March 1, 2021

Applicant: TOYODA GOSEI CO., LTD.

Description:

This invention is used to fasten the structural materials and brackets on a car body. When cars collide, the strength of the bolt will decrease to release the fastened materials in order to alleviate the impact on the passenger in the car and the pedestrian outside the car.