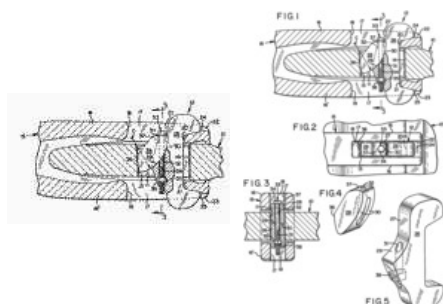
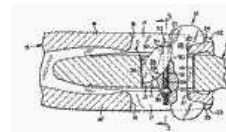


27 results for ((excava+ or digger or backhoe or bulldozer)/TI/AB/IW/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX AND (wedge)/TI/AB/IW/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX AND (C 5d clamp)/TI/AB/IW/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX AND (bolt)/TI/AB/IW/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX) AND (E02F)/IPC - Collection: FAMPAT

#	Title	Publication number	1st app. date	Applicant/Assignee	1st publ. date	Publ. date
1.	Wear assembly for a digging edge of an excavator	WO9717499	1995-11-06	ESCO* ESCROW	1997-05-15	1997-05-15
A wear assembly for attaching to a digging edge (12) of an excavator (14) includes a boss (24), a wear member (10) and a lock (26). The boss is fixed to the excavator and defines a T-shaped coupling structure. The wear member includes a rearwardly extending mounting leg (54) and a forwardly extending working end (56). The leg includes a T-shaped slot (62) adapted to be received over the T-shaped structure (32) of the boss. The wear member further includes an opening (76) for receiving a lock. The lock includes an adjustment assembly (92) for eliminating any looseness which may exist between the adapter and the boss.						
2.	Hydraulic locking mechanism for securing teeth and tooth carrying adapters to excavating buckets of excavating equipment	CA2714471	2010-09-08	BIERWITH ROBERT;BIERWITH ROBERT S.	2011-03-15	2011-03-15
A connection for firmly securing an adapter for detachably carrying a replaceable digging tooth at its front end to a lip of an excavating container of excavating equipment. The adapter has an upper leg and a lower leg located proximate respective upper and lower surfaces of the lip. The connection has substantially aligned openings in the legs and the lip, and engagement sections of the adapter legs traverse the opening in the lip proximate and forward of an aft end thereof. A pressure applying unit, such as a hydraulic actuator, is arranged inside the opening and generates a generally horizontally acting force which draws the adapter and the lip towards each other. A stress member, which can be a C-clamp, is operatively coupled to the hydraulic actuator and resiliently deforms relative to its relaxed shape when it is subjected to the horizontally acting force.						

A locking device for securing a straddle-type adapter to the lip of an excavator wherein the **C-clamp** and **wedge** have cooperating arcuate surfaces and are bolted together whereby tightening the **bolt** moves the **wedge** on the arcuate surface of the **C-clamp** to tighten the fit of the adapter on the lip.



4. Wear assembly

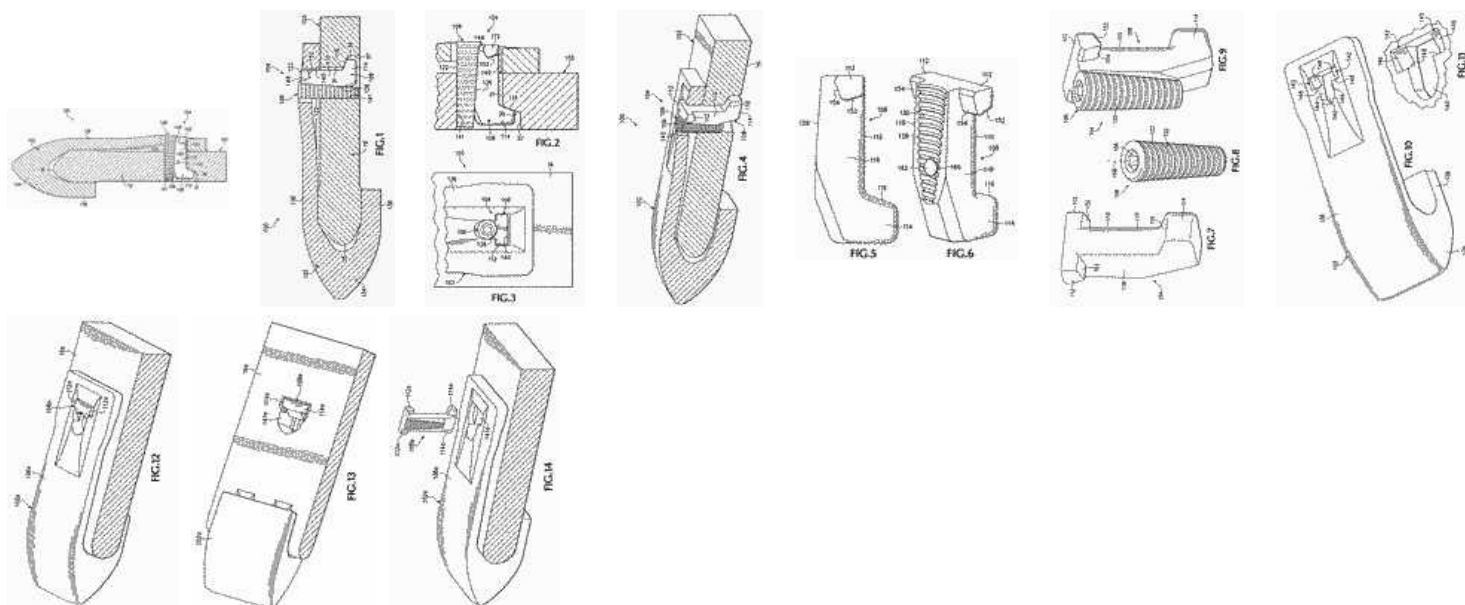
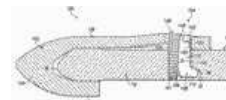
US20070137071

2006-11-28

ESCO*
ESCROW

2007-06-21 2007-06-21

In a wear assembly for securing wear members to excavating equipment, a spool is used with a **wedge** to hold the wear member in place. The spool is formed with at least one laterally extending arm at its upper end in lieu of an axial arm such as used in a conventional C-shaped spool. In this way, the spool can be easily supported in the assembly as the **wedge** is installed. The spool does not fall through the opening and no special care is needed to prevent it from falling. The spool also holds itself in place when the **wedge** is driven into the passage. As a result, installation of the wear assembly is easier and less hazardous. In addition, the lateral support reduces the risk that the spool will suffer spreading.



5. Wear resistant excavating apparatus

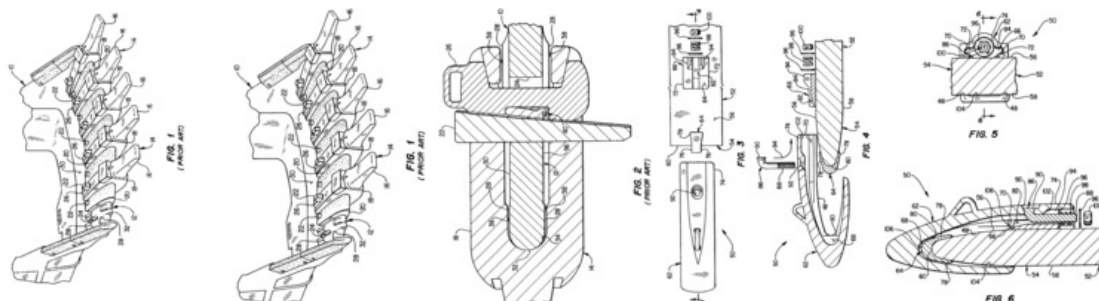
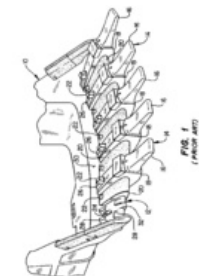
CA2199671

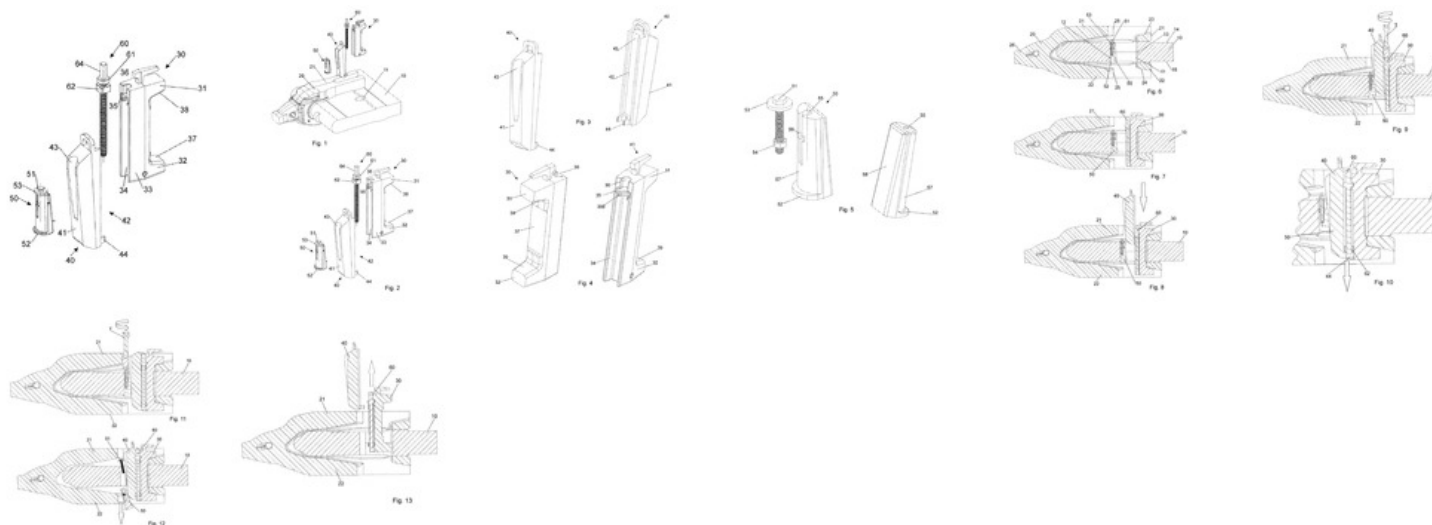
1996-03-12

HENSLEY INDUSTRIES*

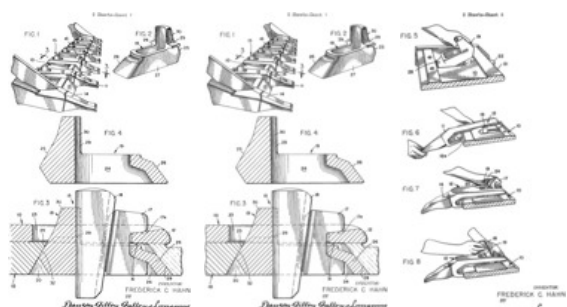
1997-09-12 1997-09-12

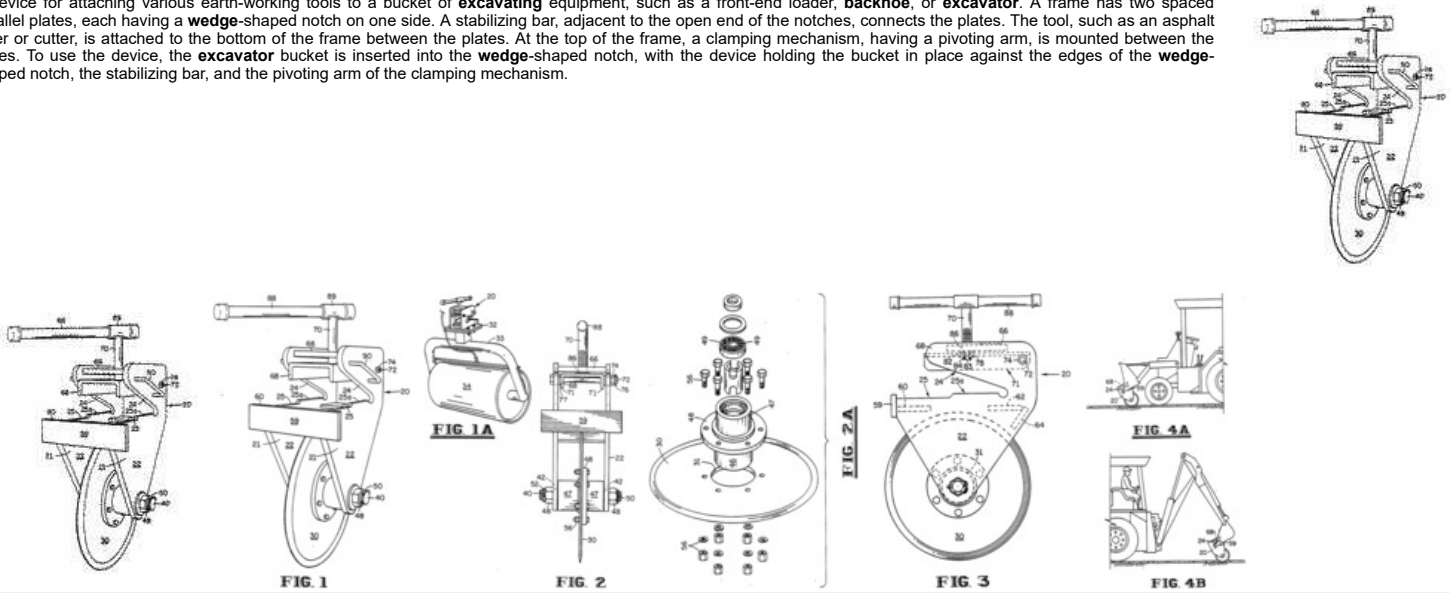
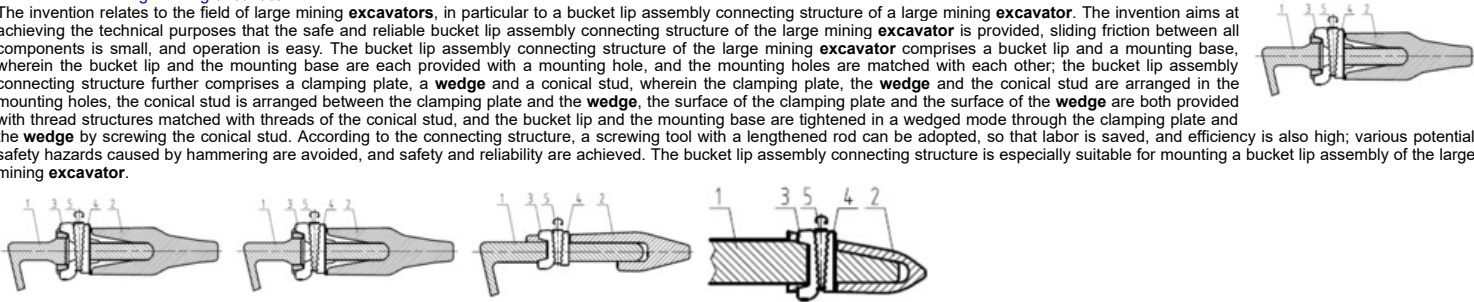
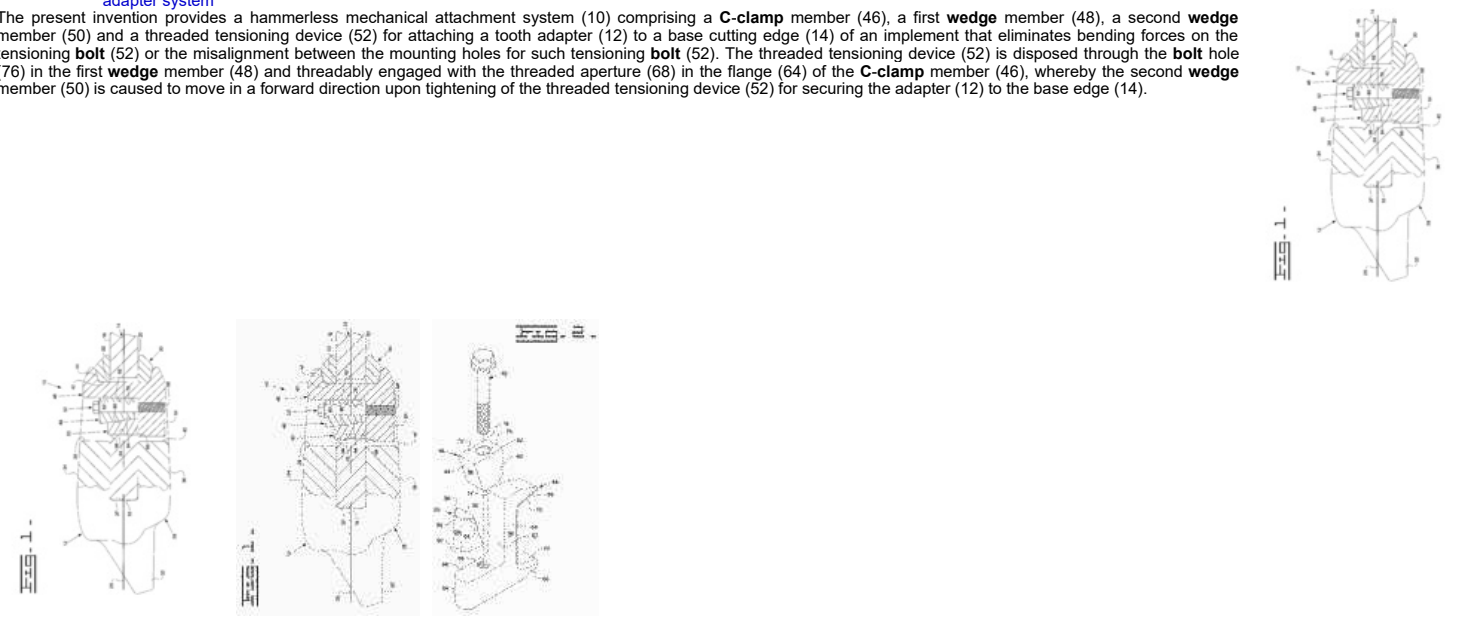
A wear resistant **excavating** apparatus provides reduced wear, resilient compensation for such wear, reduced time required for installation, maintenance, and repair, and reduced hazards of operation. In a preferred embodiment, a wear resistant **excavating** apparatus has a lip which penetrates the earth, a structure which overlaps the lip, a fastener which biases the overlapping structure to contact the lip, and a compression member which resiliently maintains the overlapping structure in contact with the lip.



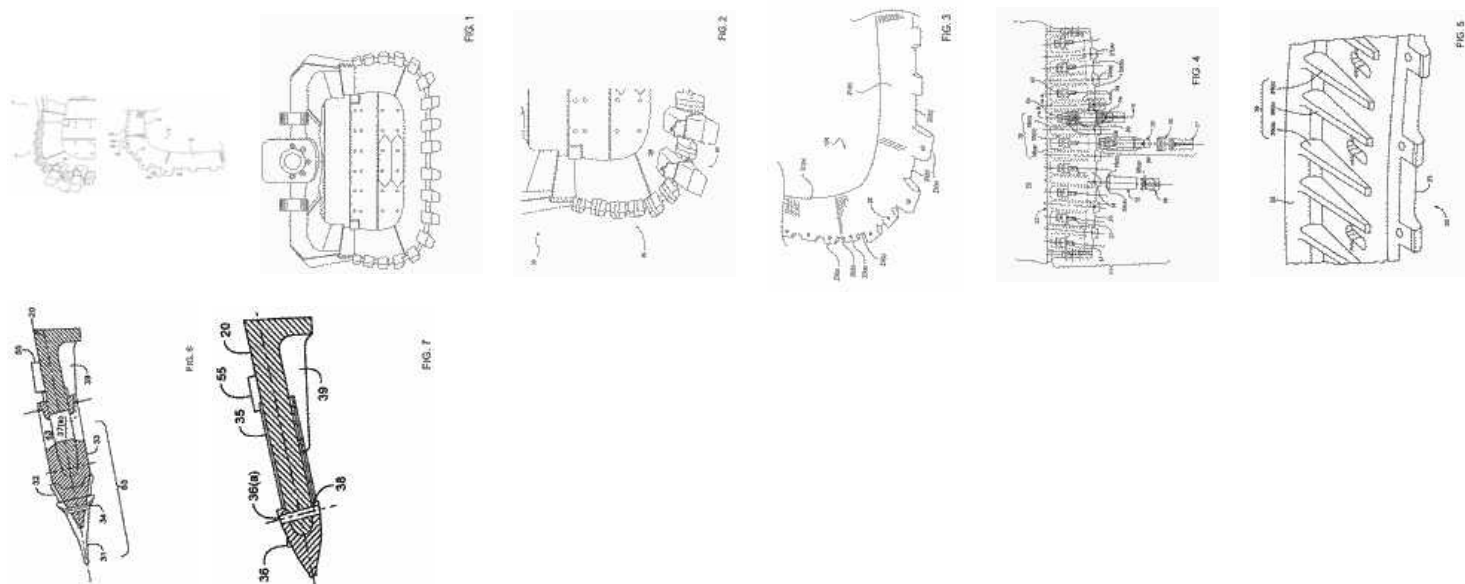
[illegible]

1972-05-23	1972-05-23
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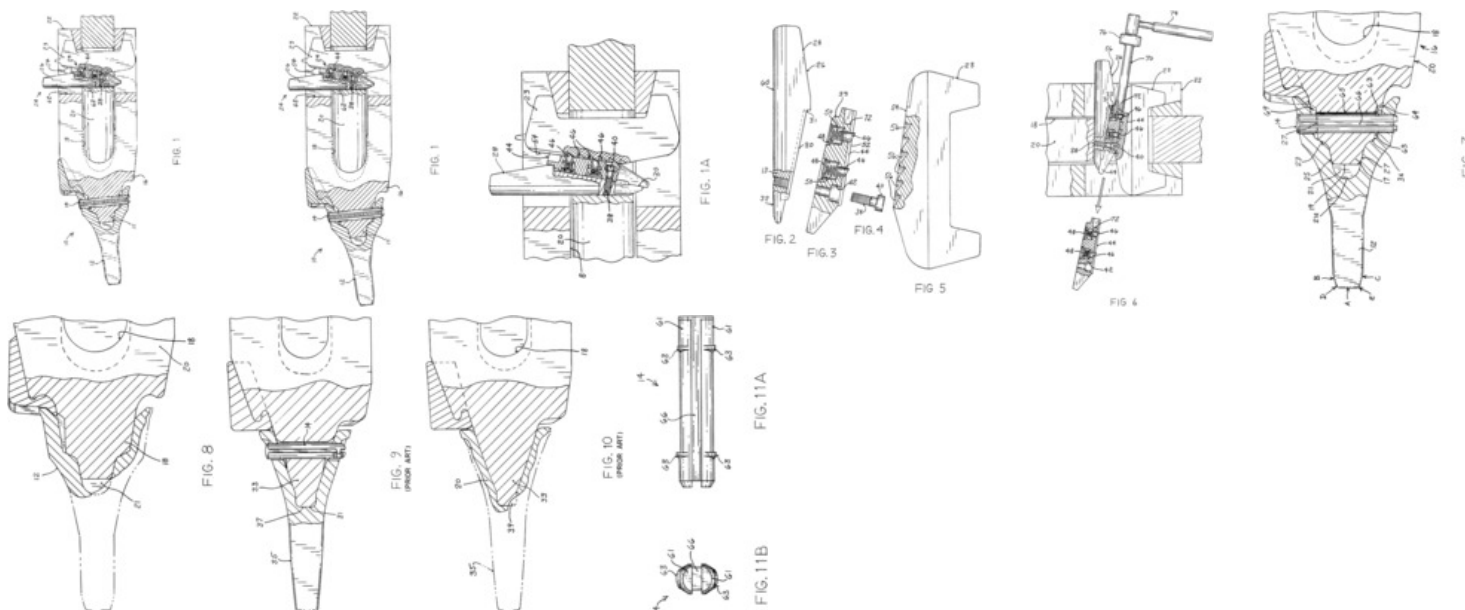


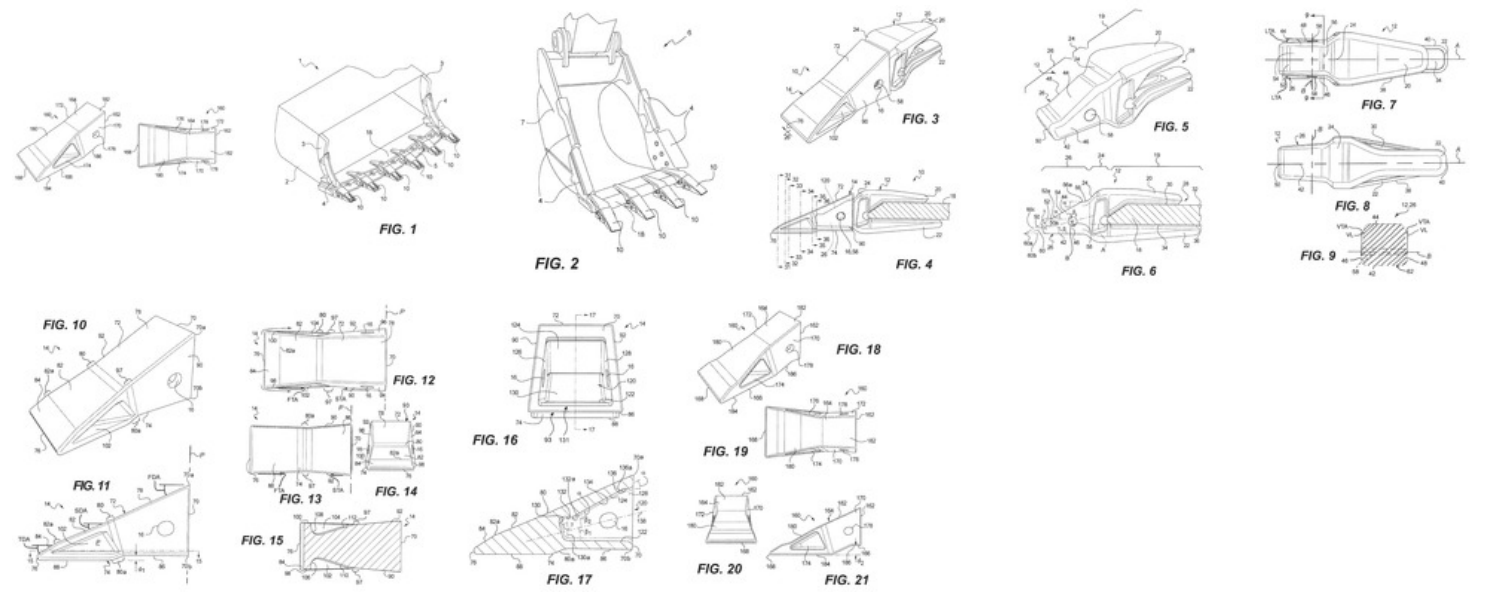
8.	Device for attaching earth-working tools to excavating equipment	US4910891	1988-06-20	YAMAMOTO CONSTRUCTION TECHNOLOGY*	1990-03-27	1990-03-27
A device for attaching various earth-working tools to a bucket of excavating equipment, such as a front-end loader, backhoe, or excavator. A frame has two spaced parallel plates, each having a wedge-shaped notch on one side. A stabilizing bar, adjacent to the open end of the notches, connects the plates. The tool, such as an asphalt roller or cutter, is attached to the bottom of the frame between the plates. At the top of the frame, a clamping mechanism, having a pivoting arm, is mounted between the plates. To use the device, the excavator bucket is inserted into the wedge-shaped notch, the stabilizing bar, and the pivoting arm of the clamping mechanism.						
9.	Bucket lip assembly connecting structure of large mining excavator	CN105569113	2015-12-17	SICHUAN & J INDUSTRIALS*	2016-05-11	2016-05-11
The invention relates to the field of large mining excavators, in particular to a bucket lip assembly connecting structure of a large mining excavator. The invention aims at achieving the technical purposes that the safe and reliable bucket lip assembly connecting structure of the large mining excavator is provided, sliding friction between all components is small, and operation is easy. The bucket lip assembly connecting structure of the large mining excavator comprises a bucket lip and a mounting base, wherein the bucket lip and the mounting base are each provided with a mounting hole, and the mounting holes are matched with each other; the bucket lip assembly connecting structure further comprises a clamping plate, a wedge and a conical stud, wherein the clamping plate, the wedge and the conical stud are arranged in the mounting holes, the conical stud is arranged between the clamping plate and the wedge, the surface of the clamping plate and the surface of the wedge are both provided with thread structures matched with threads of the conical stud, and the bucket lip and the mounting base are tightened in a wedged mode through the clamping plate and the wedge by screwing the conical stud. According to the connecting structure, a screwing tool with a lengthened rod can be adopted, so that labor is saved, and efficiency is also high; various potential safety hazards caused by hammering are avoided, and safety and reliability are achieved. The bucket lip assembly connecting structure is especially suitable for mounting a bucket lip assembly of the large mining excavator.						
10.	Hammerless mechanically attached adapter system	WO200125551	1999-10-01	CATERPILLAR*	2001-04-12	2001-04-12
The present invention provides a hammerless mechanical attachment system (10) comprising a C-clamp member (46), a first wedge member (48), a second wedge member (50) and a threaded tensioning device (52) for attaching a tooth adapter (12) to a base cutting edge (14) of an implement that eliminates bending forces on the tensioning bolt (52) or the misalignment between the mounting holes for such tensioning bolt (52). The threaded tensioning device (52) is disposed through the bolt hole (76) in the first wedge member (48) and threadably engaged with the threaded aperture (68) in the flange (64) of the C-clamp member (46), whereby the second wedge member (50) is caused to move in a forward direction upon tightening of the threaded tensioning device (52) for securing the adapter (12) to the base edge (14).						

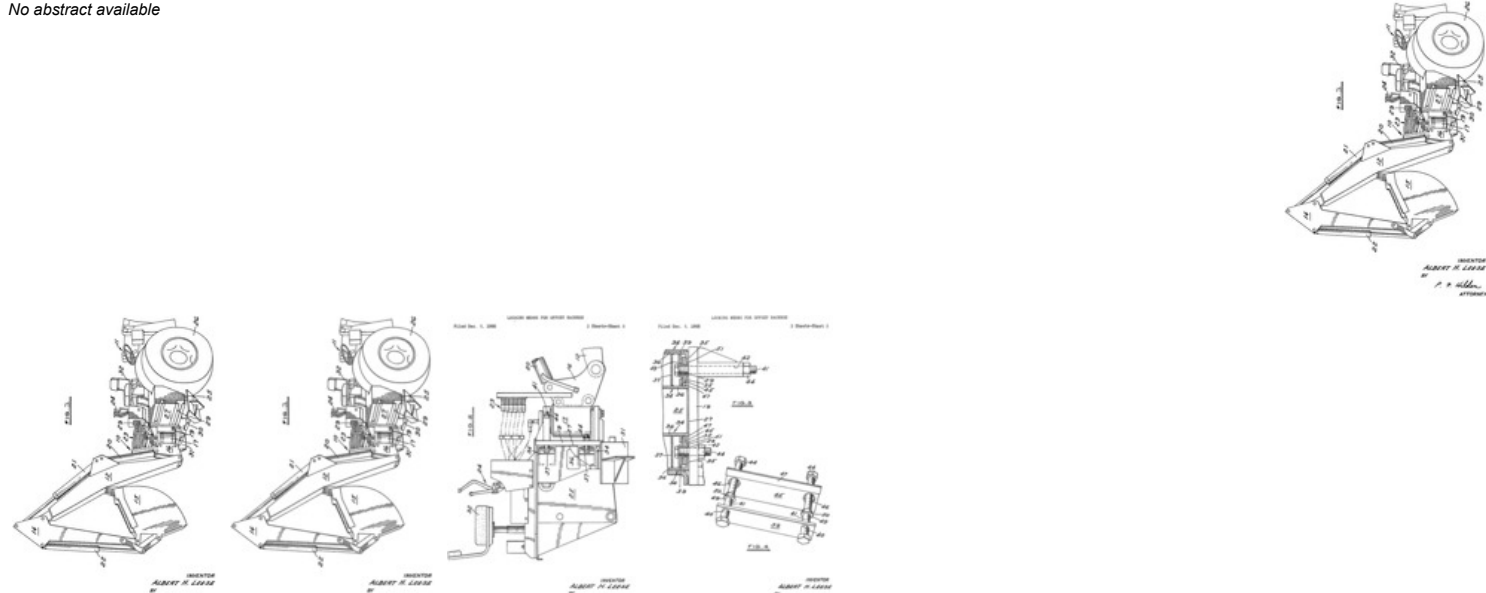
A lip assembly is disclosed and includes a lip having an upper surface, a lower surface, a front portion, a rear portion, a first side portion, a second side portion, and a plurality of holes disposed between the front portion and the rear portion and extending from the upper surface to the lower surface. The first and second side portions are on opposite sides of the front portion of the lip, and the front portion, the first side portion, and the second side portion include projections and valleys. Tooth assemblies extend away from at least the front portion of the lip and are respectively coupled to the lip via the plurality of holes.

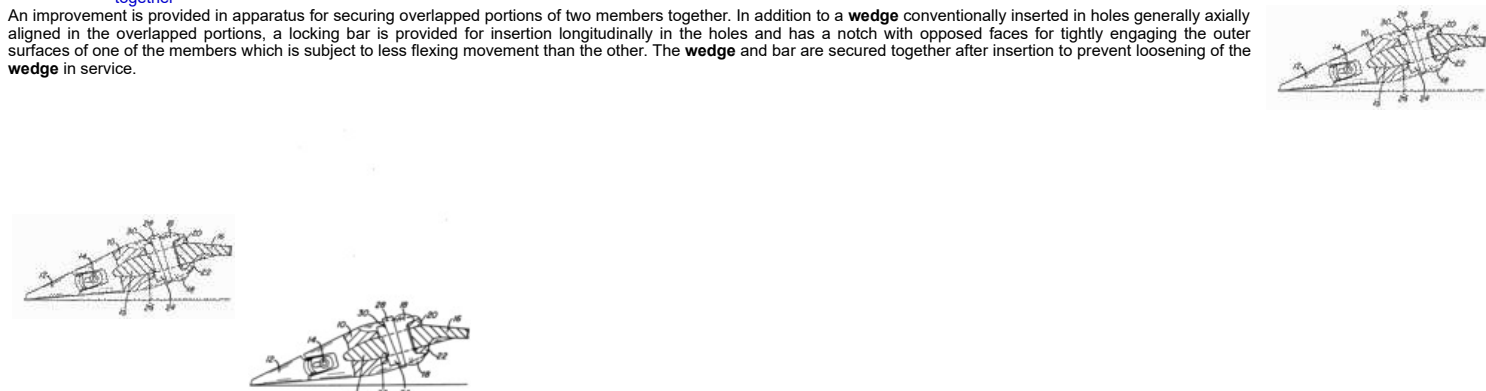


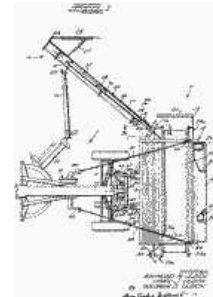
In an **excavation** bucket, the nose of an adapter has two surfaces to take the horizontal loads and four surfaces to take the vertical loads. A pin holds and locks a tooth to the adapter. Projections on the pin engage sloping surfaces of the nose. A recess placed ahead of the nose of the adapter will become visible as the tooth erodes due to wear. A recess at the nose of the adapter indicates that the tooth has worn too much and, unless the tooth is replaced, will commence to cause wear of the adapter and adjacent parts. To attach the adapter to the lip of the **excavation** bucket, **wedge** members are joined together near one end thereof to form a **wedge-shaped** block insertable into a **wedge-shaped** space formed by a **C-clamp** surface and a slot in the lip. The block is forced into the space, and spring biased teeth carried by the lock box progressively enter and leave the recesses in the outer surface of the **C-clamp**. When the **C-clamp** is tight enough in the gap, the installation of the lock box is complete. The lock box can be subjected to hammer blows so as to shear the **bolt** or cap screw so that the lock box can be removed from its operative position in the gap. Thus, the lock box can be used over and over again.



13.	Ground engaging tip of a tooth assembly	US20130086825	2012-10-04	CATERPILLAR*	2013-04-11	2013-04-11
A ground engaging tooth assembly (10) for a cutting edge of a ground engaging implement (1) may include an adapter (12) and a ground engaging tip (14, 160, 190). The adapter (12) may have a forward extending adapter nose (26) having an inverted or reverse keystone-shaped contour, with the ground engaging tip (14, 160, 190) having a nose cavity (120) for receiving the adapter nose (26) and exterior surfaces (72, 74, 90, 92, 162, 164, 170, 172, 192, 194, 200, 202) having complementary shapes to the adapter nose (26). The adapter nose (26) and an adapter cavity (120) of the tip (14, 160, 190) may also be configured with complimentary surfaces that increase retention between the adapter nose (26) and the tip (14) when downward forces are applied to the tip (14, 160, 190). In other embodiments, the surfaces of the tip (14, 160, 190) may include reliefs (102, 104, 174, 176, 204, 206) extending inwardly into the body of the tip (14, 160, 190) to reduce weight and facilitate penetration of the tip (14, 160, 190) into work material as wear material wears away from a front edge (76, 166, 196) of the tip (14, 160, 190).						
						

14.	Locking means for offset backhoe	US3407945	1966-12-07	FORD MOTOR*	1968-10-29	1968-10-29
No abstract available						
						

15.	Apparatus for securing overlapping portions of two digger tooth members together	US4357765	1981-07-08	USX & PRAXAIR TECHNOLOGY*	1982-11-09	1982-11-09
An improvement is provided in apparatus for securing overlapped portions of two members together. In addition to a wedge conventionally inserted in holes generally axially aligned in the overlapped portions, a locking bar is provided for insertion longitudinally in the holes and has a notch with opposed faces for tightly engaging the outer surfaces of one of the members which is subject to less flexing movement than the other. The wedge and bar are secured together after insertion to prevent loosening of the wedge in service.						
						



17.

Digging hardware signaling apparatus

CA2198304

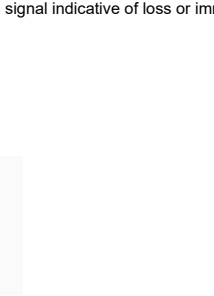
1997-02-21

H & L TOOTH*

1997-08-24

1997-08-24

An apparatus for providing a signal indicative of loss or imminent loss of digging hardware normally arranged in operable association with an earth working implement.
(From CA2198304 A1)



18.

Lip assembly

US20030093928

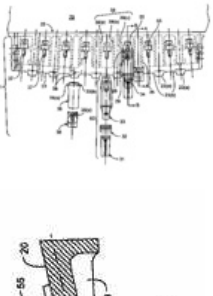
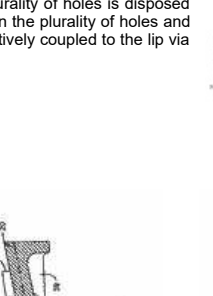
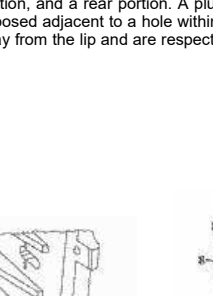
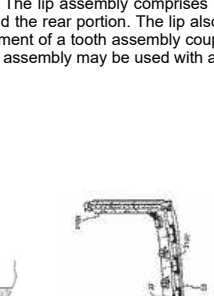
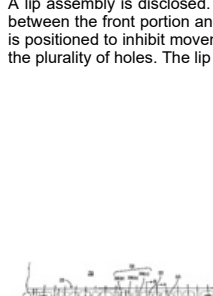
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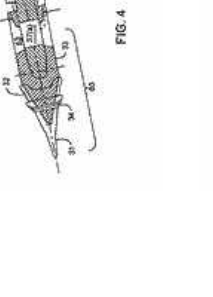
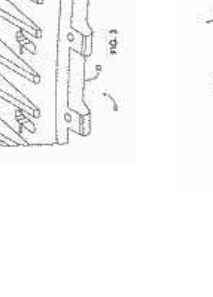
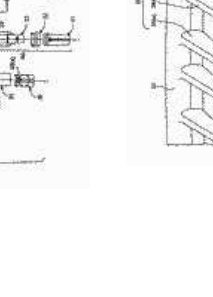
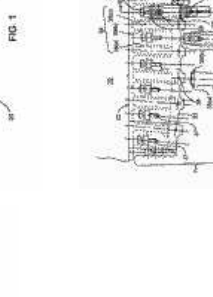
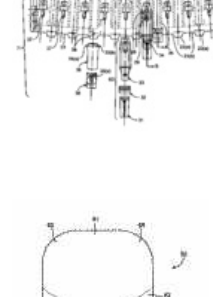
BIERWITH ROBERT S.

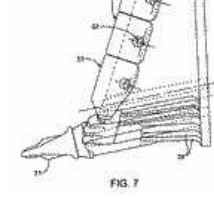
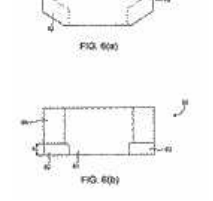
2003-05-22

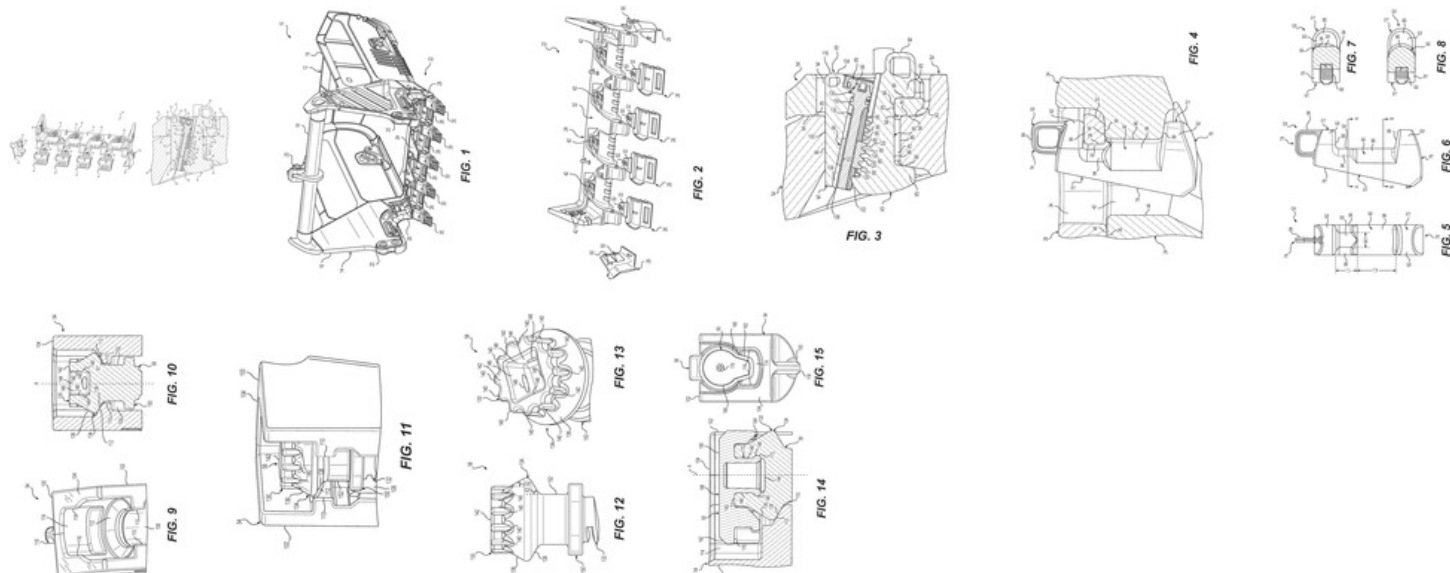
2003-05-22

A lip assembly is disclosed. The lip assembly comprises a lip having an upper surface, a lower surface, a front portion, and a rear portion. A plurality of holes is disposed between the front portion and the rear portion. The lip also includes support members. Each support member is disposed adjacent to a hole within the plurality of holes and is positioned to inhibit movement of a tooth assembly coupled to the hole. A plurality of tooth assemblies extend away from the lip and are respectively coupled to the lip via the plurality of holes. The lip assembly may be used with an **excavation** bucket body.

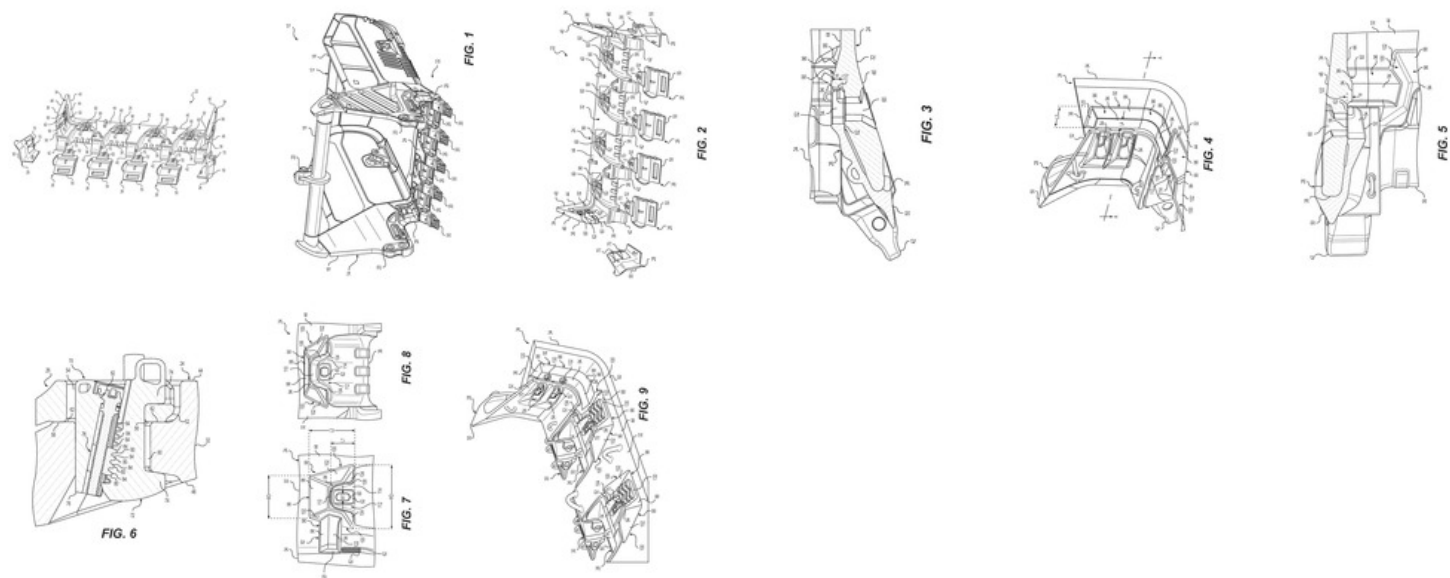




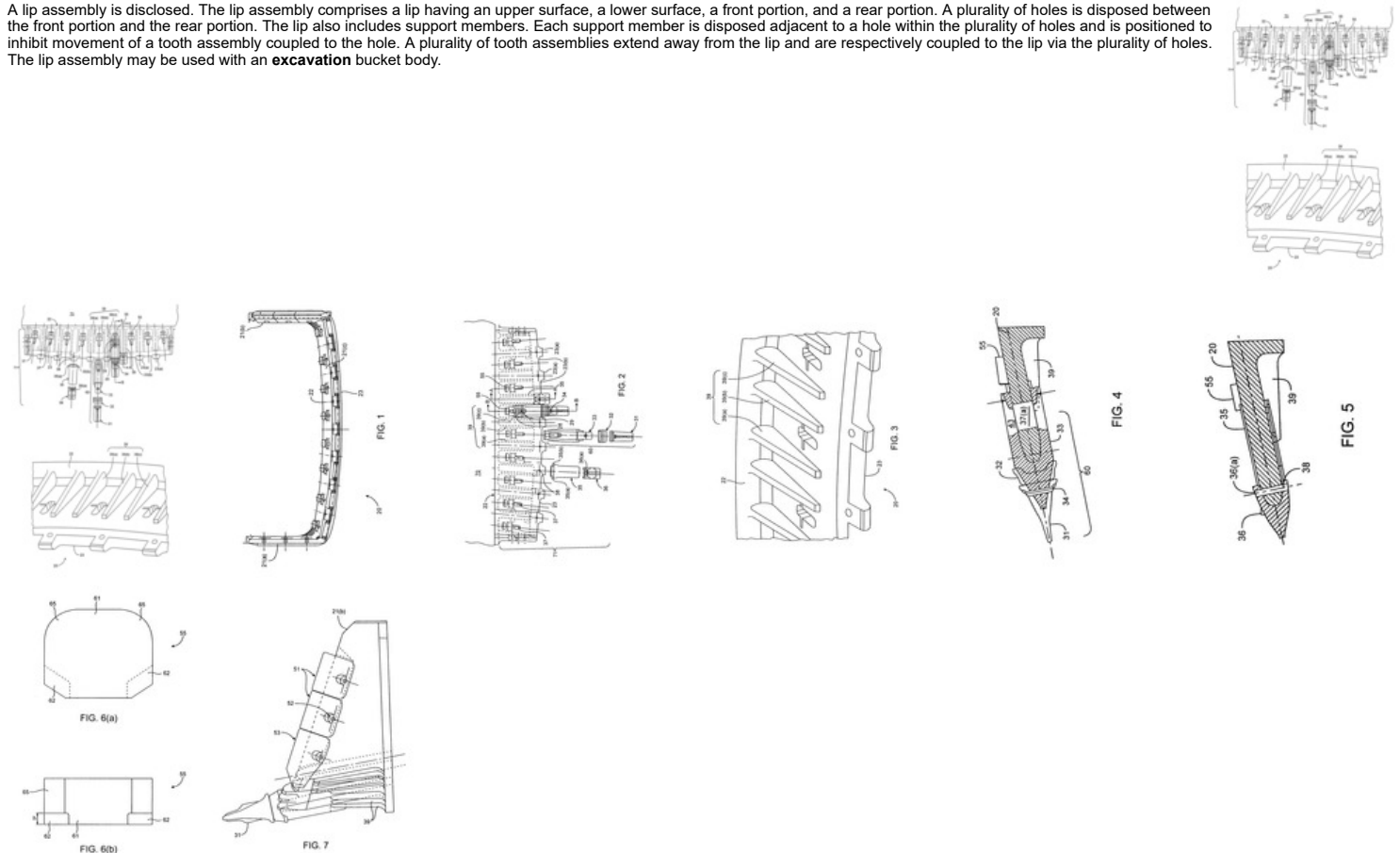




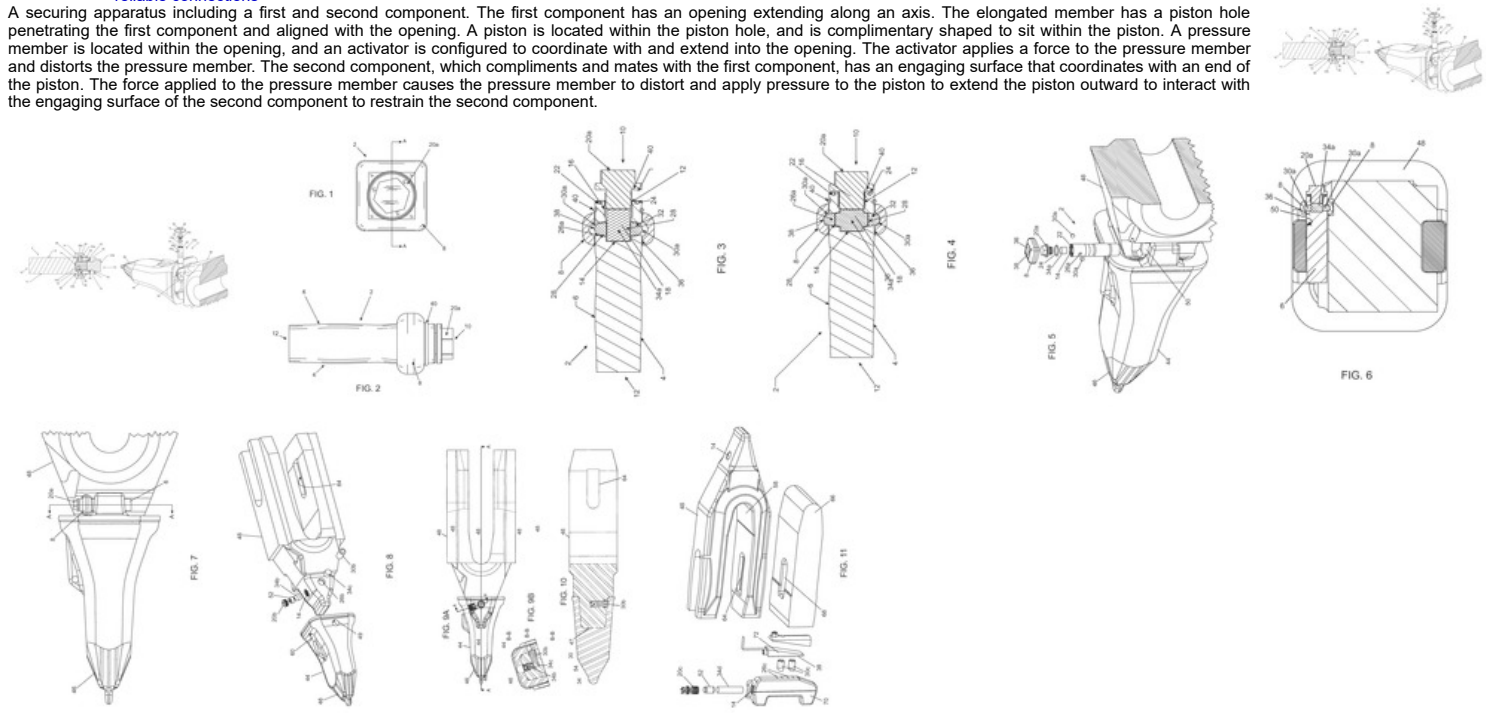
2016-10-20	2016-10-20
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A lip assembly is disclosed. The lip assembly comprises a lip having an upper surface, a lower surface, a front portion, and a rear portion. A plurality of holes is disposed between the front portion and the rear portion. The lip also includes support members. Each support member is disposed adjacent to a hole within the plurality of holes and is positioned to inhibit movement of a tooth assembly coupled to the hole. A plurality of tooth assemblies extend away from the lip and are respectively coupled to the lip via the plurality of holes. The lip assembly may be used with an **excavation** bucket body.



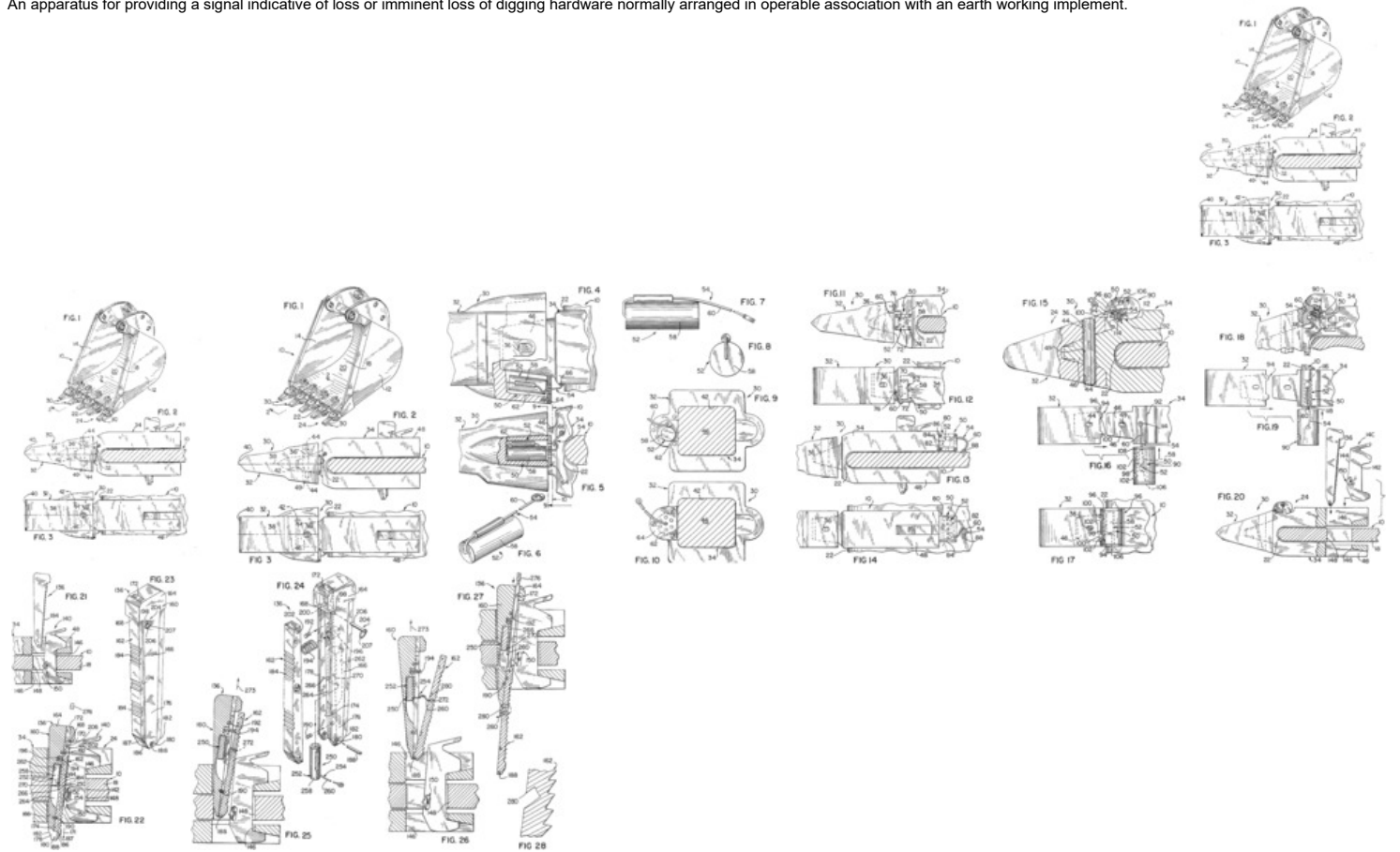
A securing apparatus including a first and second component. The first component has an opening extending along an axis. The elongated member has a piston hole penetrating the first component and aligned with the opening. A piston is located within the piston hole, and is complimentary shaped to sit within the piston. A pressure member is located within the opening, and an activator is configured to coordinate with and extend into the opening. The activator applies a force to the pressure member and distorts the pressure member. The second component, which compliments and mates with the first component, has an engaging surface that coordinates with an end of the piston. The force applied to the pressure member causes the pressure member to distort and apply pressure to the piston to extend the piston outward to interact with the engaging surface of the second component to restrain the second component.



No abstract available

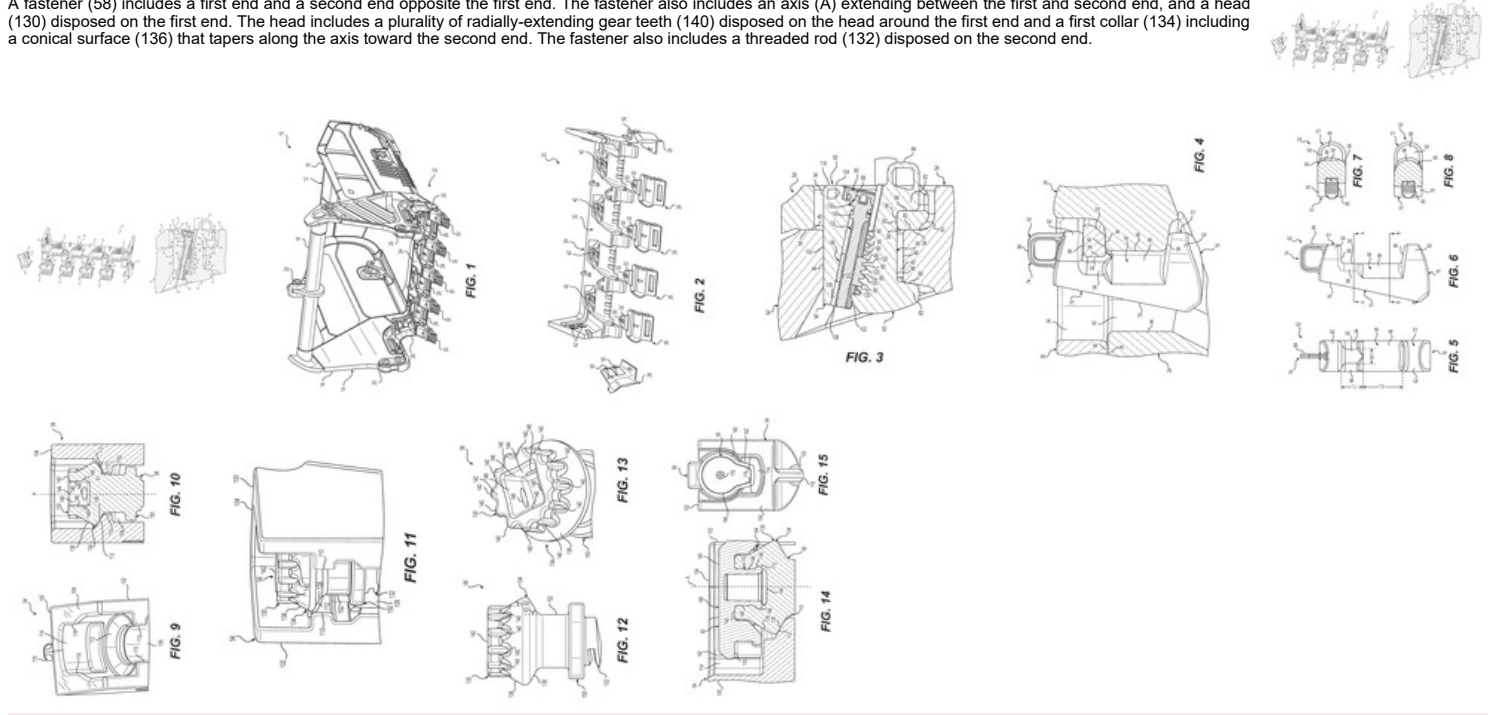
24. Digging hardware signaling apparatusUS57430311996-02-23H & L TOOTH*1998-04-281998-04-28

An apparatus for providing a signal indicative of loss or imminent loss of digging hardware normally arranged in operable association with an earth working implement.

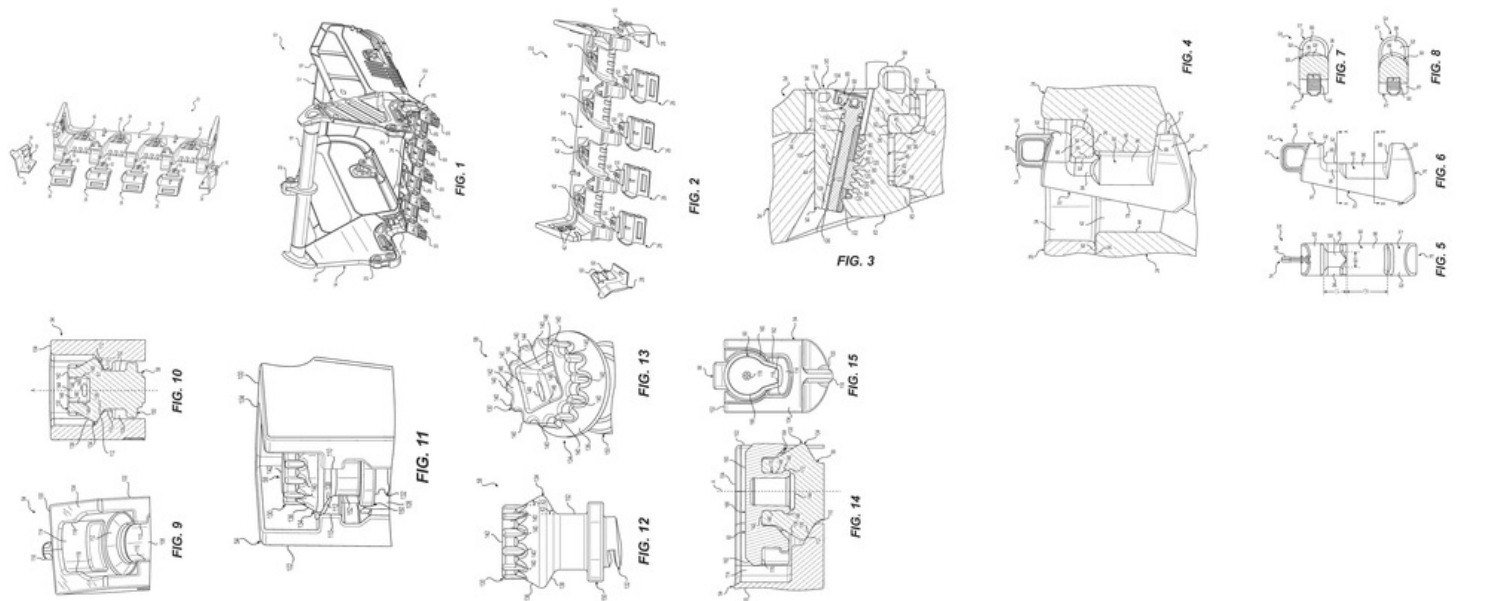


25. Tool retention systemUS201603050962016-03-22CATERPILLAR*2016-10-202016-10-20

A fastener (58) includes a first end and a second end opposite the first end. The fastener also includes an axis (A) extending between the first and second end, and a head (130) disposed on the first end. The head includes a plurality of radially-extending gear teeth (140) disposed on the head around the first end and a first collar (134) including a conical surface (136) that tapers along the axis toward the second end. The fastener also includes a threaded rod (132) disposed on the second end.



A **clamp** (52) for a retention system (50) is configured to **clamp** a tool (26, 28, 30) to a work implement (10). The **clamp** includes a first side (70) and a second side (72) opposite the first side. The second side includes a first clamping arm (82) extending from the second side, a second clamping arm (82) extending from the second side, and an intermediate surface (90) extending between the first clamping arm and the second clamping arm. The intermediate surface includes a generally flat surface (92) closer to the first clamping arm and a generally curved surface (96) being closer to the second clamping arm. The generally curved surface is curved with respect to an axis (A) that extends between a top end (104) and a bottom end (106) of the **clamp**.



27.	Cutting tooth assembly	CA2005449	1989-12-13	MAGUINA LARCO ALFREDO	1990-12-01	1990-12-01
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A cutting tooth assembly for heavy duty earth working machines has a replaceable cutting point (30) consisting of a length of metal bar of constant transverse cross-section, which is frictionally held on a shank (20) by a reusable holding **clasp** (32) and which is repositionable on the shank. As the point (30) wears, a used length of the metal bar (30) is welded to an unused length of metal bar or to another used length of metal bar, thus permitting the entire length of the cutting point material to be utilized, thus limiting discarded scrap.

