

Search history

Search 1: IC=(E02F) (Results 143970)
Search 2: 1 and (excavat* or digger or backhoe or bulldozer) (Results 44914)
Search 3: 2 and (clamp near C) (Results 83)
Search 4: 3 and wedge* (Results 50)
Search 5: 4 and PD<20140227 (Results 41)

Title: DIGGING HARDWARE SIGNALING APPARATUS

Abstract: 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.

Classifications:

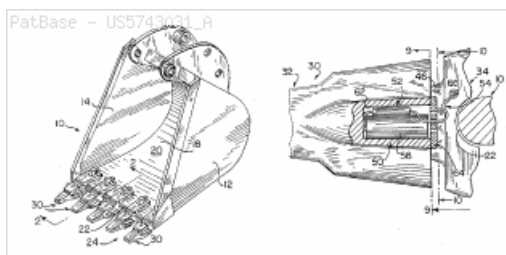
International (IPC 8-9): E02F9/26 E02F9/28 (Advanced/Invention);
E02F9/26 E02F9/28 (Core/Invention)

International (IPC 1-7): E02F9/28 E21C35/08 G08B5/40

CPC: Y10S37/906 E02F9/267 E02F9/2808

European: E02F9/26 E02F9/28A

US: 116/214 299/1.2 299/12 37/413 37/455 37/456 37/906 374/550



Family:

Publication number	Publication date	Application number	Application date
CL1997000326 A1	19971027	CL19970000326	19970221
US5743031 A	19980428	US19960606065	19960223

Priority:

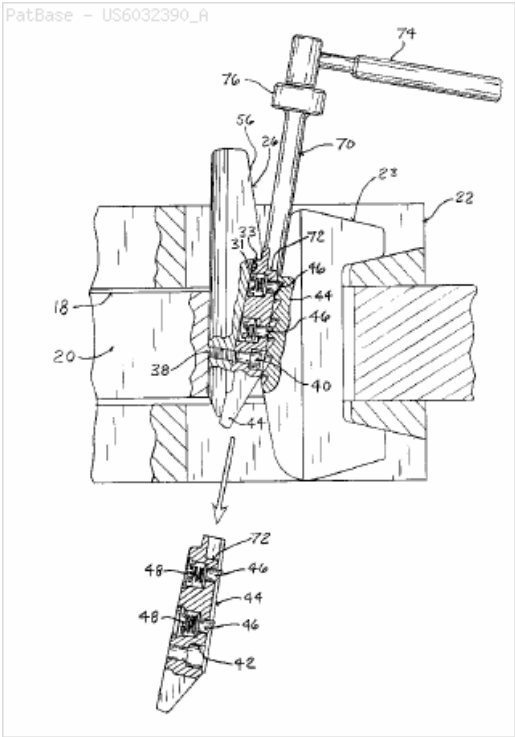
US19960606065 19960223

Probable Assignee: H AND L TOOTH CO
Assignee(s): (std): H AND L CO ; H AND L COMPANY
Assignee(s): H AND L TOOTH CO
Inventor(s): (std): LAUNDER BRIAN L ; FLAGG WILLIAM A
Agent(s): SARGENT

Title: TOOTH ASSEMBLY FOR **EXCAVATION** BUCKET

Abstract: 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.

Classifications:
International (IPC 8-9): E02F9/28 (Advanced/Invention); E02F9/28 (Core/Invention)
International (IPC 1-7): E02F9/28
CPC: E02F9/2825 E02F9/2841 E02F9/2891 Y10T403/559 Y10T403/585 Y10T403/7064 Y10T403/7086
European: E02F9/28A2B E02F9/28A2C2 E02F9/28L
US: 37/450 37/452 37/456 403/298 403/318 403/374.1 403/379.4



Family:

Publication number	Publication date	Application number	Application date
US6032390 A	20000307	US19950486116	19950607

Priority:
US19950486116 19950607

Probable Assignee: BIERWITH ROBERT
Assignee(s): BIERWITH ROBERT
Inventor(s): (std) BIERWITH ROBERT

Title: RETAINER PINS FOR DIPPER TEETH

Abstract: (Claim 1) 1. A retaining pin for separable parts of a dipper tooth or the like comprising a generally C-shaped member having an elongated shank and relatively short top and bottom extensions projecting forwardly from the shank and said recesses each having a forward wall, a wedge disposed between said extensions, said wedge having projections at the top and bottom thereof respectively fitting loosely in said recesses and adapted to abut the forward walls of the respective recesses so as to limit displacement of the wedge outwardly in a forward direction in respect of the C-shaped member, and resilient means interposed between the opposed faces of the C-shaped member and the wedge to normally urge the wedge outwardly toward its limit position.

Classifications:

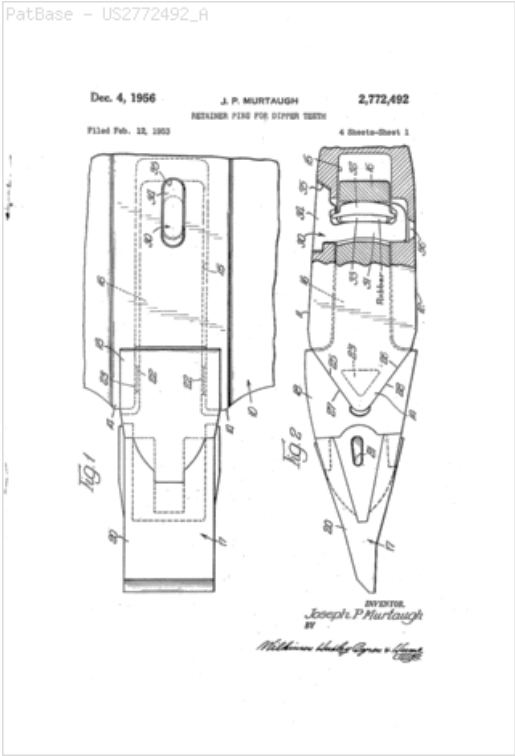
International (IPC 8-9): E02F9/28 (Advanced/Invention);
E02F9/28 (Core/Invention)

International (IPC 1-7): E02F9/28

CPC: E02F9/2841

European: E02F9/28A2C2

US: 37/457 411/512



Family:

Publication number	Publication date	Application number	Application date
US2772492 A	19561204	US19530336498	19530212

Priority:

US19530336498 19530212

Probable Assignee:

AMERICAN BRAKE SHOE CO

Assignee(s): (std):

AMERICAN BRAKE SHOE CO

Assignee(s):

AMERICAN BRAKE SHOE COMPANY

Inventor(s): (std):

MURTAUGH JOSEPH P

Title: CUTTING EDGE FOR **EXCAVATING** DEVICES

Abstract: ABSTRACT OF THE DISCLOSURE

An **excavating** device scoop wherein the lip is equipped with forwardly extending **excavating** teeth which additionally serve to confine wear shrouds.

Classifications:

International (IPC 8-9): E02F9/28 (Advanced/Invention);

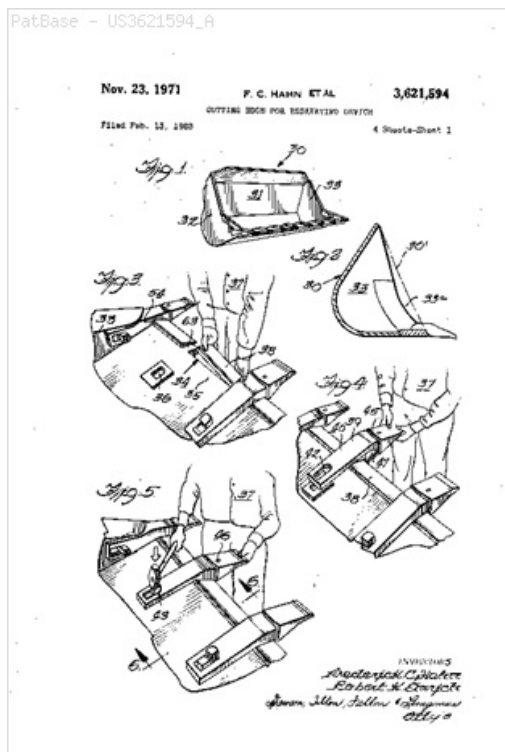
E02F9/28 (Core/Invention)

International (IPC 1-7): E02D E02F9/00 E02F9/28

CPC: E02F9/2808

European: E02F9/28A

US: 37/451 37/453 37/457



Family:

Publication number	Publication date	Application number	Application date
BE745621 A	19700716		00000000
BE745621 A1	19700716	BE19700745621	19700206
BR7016703 A0	19730605	BR19700216703	19700212
DE2006657 A1	19700903	DE19702006657	19700213
DE2006657 B2	19790111	DE19702006657	19700213
DE2006657 C3	19790906	DE19702006657	19700213
ES376518 A1	19720416	ES19700376518	19700212
FR2035317 A5	19701218	FR19700004857	19700211
GB1292795 A	19721011	GB19700003319	19700123
JP50002924 B4	19750130	JP19700012546	19700212
US3621594 A	19711123	US19690798953	19690213

Priority:

US19690798953 19690213

Probable Assignee: ESCO CORP

Assignee(s): (std): ESCO CORP

Assignee(s): ESCO CORP 2141 N W 25TH AVENUE PORTLAND OREGON E ; ESCO CORP 2141 N W 25TH AVENUE PORTLAND OREGON E U A ; ESCO CORP PORTLAND OREG V ST A

Inventor(s): (std): HAHN F C ; EMRICH R K ; KENT ROBERT ; HAHN FREDERICK CHARLES ; HAHN FREDERICK C ; HAHN F ; EMRICH ROBERT K ; EMRICH R

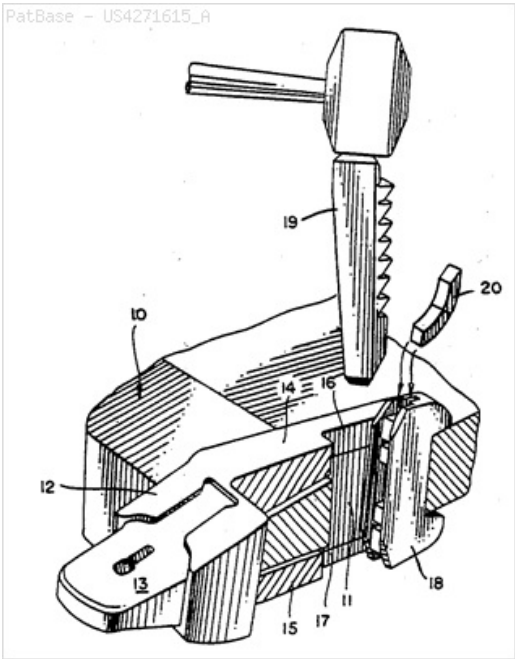
Inventor(s): FREDERICK C HAHN ; HAHN FREDERICK CHARLES BEAVERTON ; F C HAHN ; FC HAHN ; R K EMRICH ; RK EMRICH ; ROBERT K EMRICH ; KENT ROBERT PORTLAND

Title: LOCKING DEVICE FOR EXCAVATING EQUIPMENT

Abstract: A locking device for excavating equipment including a C-clamp member and a wedge member, the wedge member having ratchet-type teeth held in position against the C-clamp member by means of an arcuate lock which itself is resiliently mounted within the C-clamp member.

Classifications:

International (IPC 8-9): E02F9/28 (Advanced/Invention);
E02F9/28 (Core/Invention)
International (IPC 1-7): E02F3/40 E02F9/28
CPC: Y10T403/585 Y10T403/75 E02F9/2833
European: E02F9/28A2C
US: 299/109 37/142A 37/458 403/318 403/408.1 411/511



Family:

Publication number	Publication date	Application number	Application date
AU198064767 A1	19810730	AU19800064767	19801127
AU520365 B2	19820128	AU19800064767	19801127
US4271615 A	19810609	US19800115135	19800124

Priority:

US19800115135 19800124

Probable Assignee: ESCO CORP

Assignee(s): (std): ESCO CORP

Inventor(s): (std): JONES LARREN F ; JONES L F

Inventor(s): LF JONES ; L F JONES

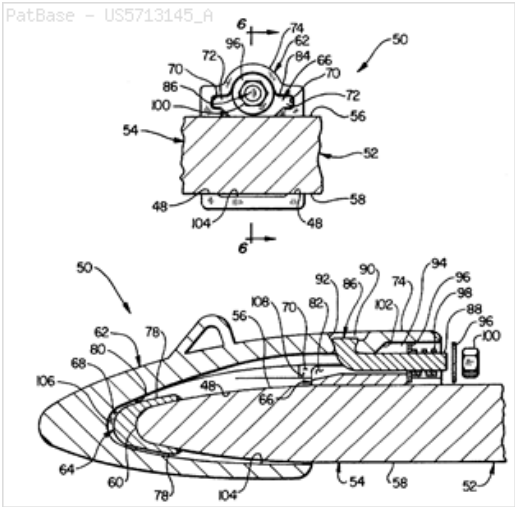
Agent(s): CALLINANS; FISHER ADAMS KELLY CALLINANS; SPRUSON AND FERGUSON

Title: Wear resistant **excavating** apparatus

Abstract: 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.

Classifications:

International (IPC 8-9): E02F3/80 E02F9/10 E02F9/28
F16B3/04 (Advanced/Invention);
E02F9/28 (Core/Invention)
International (IPC 1-7): E02F3/28 E02F3/36 E02F3/80 E02F9/28
CPC: E02F9/2833
European: E02F9/28A2C
US: 37/455 37/458



Family:

Publication number	Publication date	Application number	Application date
AU199716215 A1	19970918	AU19970016215	19970311
AU715552 B2	20000203	AU19970016215	19970311
AU715552 C	19970918	AU19970016215	19970311
CA2199671 AA	19970912	CA19972199671	19970311
CA2199671 C	20000502	CA19972199671	19970311
CL1997000464 A1	19971210	CL19970000464	19970311
CL45944 B	20091118	CL19970000464	19970311
US5713145 A	19980203	US19960622445	19960312

Priority:

US19960622445 19960312 CA19972199671 19970311

Probable Assignee: GH HENSLEY IND INC

Assignee(s): (std): HENSLEY G H IND INC

Assignee(s): RUVANG JOHN A ; GH HENSLEY IND ; GH HENSLEY IND INC ; GH HENSLEY INDUSTRIES INC

Inventor(s): (std): RUVANG JOHN A

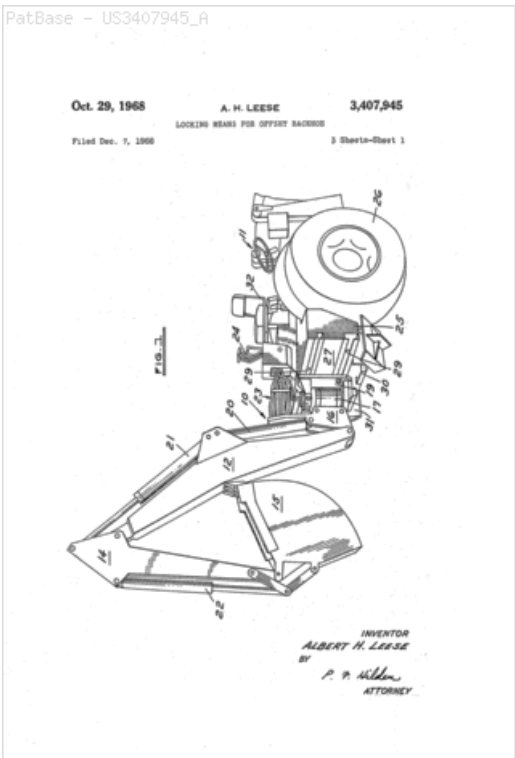
Inventor(s): JOHN A RUVANG

Agent(s): SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; GOWLING LAFLEUR HENDERSON LLP; SARGENT

Title: Locking means for offset **backhoe**

Abstract: ABSTRACT OF THE DISCLOSURE
A locking means for the carriage of an adjustable offset **backhoe** of the type including a transverse frame having a pair of C-shaped slots and expansible blocks within the slots for supporting the carriage and holding it against movement along the slots is actuated by tightening the bolts holding the carriage against the frame. Preferably, a cam surface on each of the blocks laterally expands the blocks upon tightening the bolts so that the blocks tightly engage opposing side walls of the C-shaped

Classifications:
International (IPC 8-9): E02F3/32 E02F3/38 (Advanced/Invention);
E02F3/28 E02F3/36 (Core/Invention)
International (IPC 1-7): E02F3/30
CPC: E02F3/386
European: E02F3/38B4
US: 414/695



Family:

Publication number	Publication date	Application number	Application date
US3407945 A	19681029	US19660599770	19661207

Priority:
US19660599770 19661207

Probable Assignee: FORD MOTOR CO
Assignee(s): (std): FORD MOTOR CO
Assignee(s): FORD MOTOR COMPANY
Inventor(s): (std): HAROLD LEESE ALBERT ; LEESE ALBERT HAROLD

Title: **EXCAVATING** TOOTH STRUCTURE

Abstract: (Claim 1) 1. In an **excavating** tooth structure, a base having a forwardly projecting point-mounting nose with forwardly convergent upper and lower faces and with a transverse passage opening at said faces, said passage having enlarged upper and lower ends forming clearance spaces, a tooth point having forwardly convergent upper and lower wall portions forming between them a rearwardly opening tapered socket in which said nose has a :Qing telescopic fit, said tooth point wall portions having respective recsses at their inner faces rcgistrable with the opposite ends of said nose passage, each tooth point recess presenting a forwardly facing rear shoulder, an elongated resilient retainer comprising a spring metal plate extending longitudinally in said nose passage and having rearwardly dciiectable opposite ends forming rearwardly curved spring tongues normally engaged in said tooth point recess to prevent inadvertent withdrawal of said tooth point Irom said nose, said retainer being frictionally engageable with the front and rear walls of said passage, said tongue-forming retainer ends being rearwardly and inwardly deflectable into the clearance spaces at the ends of said nose passage by cam action of the forwardly con~ vergent inner faces of said point socket on said retainer ends during relative displacement of said point over said nose into seating engagement with said nose.

Classifications:

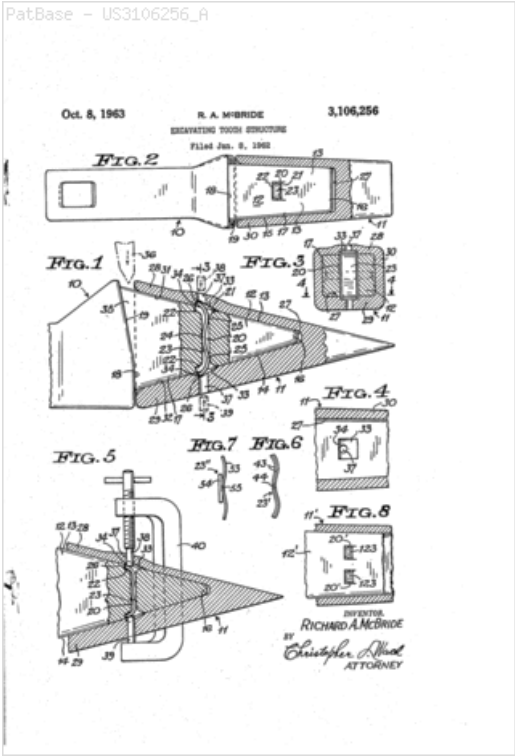
International (ipc 8-9): E02F9/28 F16B2/24 (Advanced/Invention); E02F9/28 F16B2/20 (Core/Invention)

International (ipc 1-7): A01B15/04 E02F9/28

CPC: E02F9/2891 F16B2/243

European: E02F9/28L F16B2/24B2

US: 172/750 37/458 411/352 411/516



Family:

Publication number	Publication date	Application number	Application date
US3106256 A	19631008	US19620164744	19620108

Priority:

US19620164744 19620108

Probable Assignee:

MCBRIDE RICHARD A

Assignee(s): (std):

MCBRIDE RICHARD A

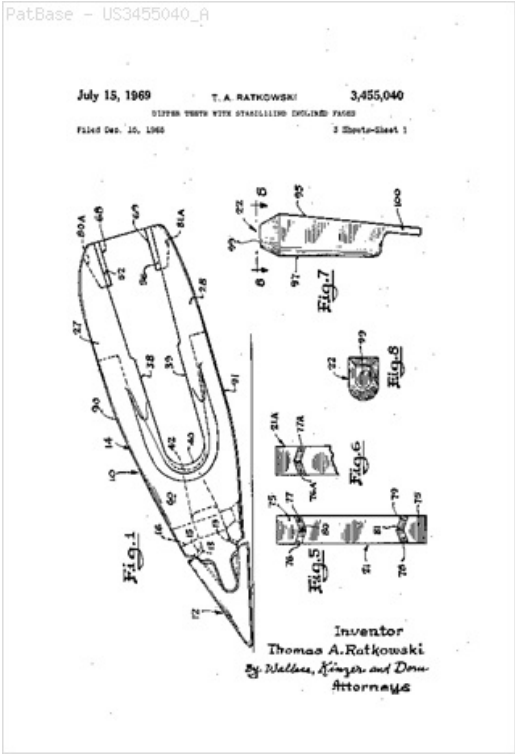
Inventor(s): (std):

MCBRIDE RICHARD A

Title: DIPPER TEETH WITH STABILIZING INCLINED FACES

Abstract: ABSTRACT OF THE DISCLOSURE
Excavating dipper including a lip and a removable tooth having bifurcated jaws, wherein the mating surfaces of said jaws and lip have inclined faces for stabilizing the tooth against lateral displacement.

Classifications:
International (IPC 8-9): E02F9/28 (Advanced/Invention)
International (IPC 1-7): E02F9/28
CPC: E02F9/28 E02F9/2833
European: E02F9/28 E02F9/28A2C
US: 37/456



Family:

Publication number	Publication date	Application number	Application date
FR1501440 A	19671110	FR19660084515	19661122
GB1115099 A	19680522	GB19660048939	19661101
US3455040 A	19690715	US19650514021	19651215

Priority:

US19650514021 19651215

Probable Assignee: ABEX CORP
Assignee(s): (std): ABEX CORP
Inventor(s): (std): RATKOWSKI THOMAS A
Inventor(s): THOMAS A RATKOWSKI

Title: LIP ASSEMBLY

Abstract: 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.

Classifications:**International (IPC 8-9):** E02F9/28 (Advanced/Invention)**International (IPC 1-7):** E02F1/00 E02F3/00 E02F3/36 E02F9/28**CPC:** E02F9/2816 E02F9/2825 E02F9/2858 E02F9/2883**European:** E02F9/28A2 E02F9/28A2B E02F9/28A6 E02F9/28F**US:** 37/195 37/446 37/450 37/455 37/455P 37/466 37/466P 374/460

PatBase - US2003093928_AH

U.S. Patent

Jan. 22, 2004 Sheet 1 of 7

US 6,751,897 B2

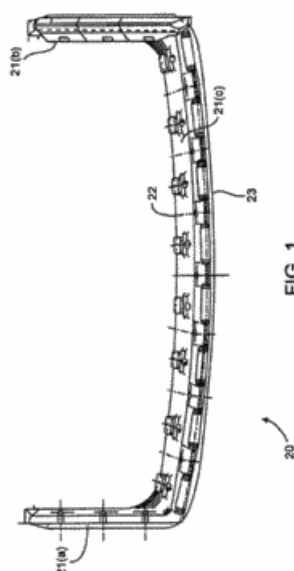


FIG. 1

Family:

Publication number	Publication date	Application number	Application date
US2003093928 AA	20030522	US20010054332	20011113
US2005241194 AA	20051103	US20050173490	20050630
US6751897 BB	20040622	US20010054332	20011113
US6952892 BA	20051011	US20030713233	20031113

Priority:US20000253356P 20001127
US20030713233 20031113US20010305977P 20010716
US20050173490 20050630

US20010054332 20011113

Probable Assignee:

BIERWITH ROBERT S

Assignee(s): (std):

BIERWITH ROBERT S

Inventor(s): (std):

BIERWITH ROBERT S

Inventor(s):

BIERWITH ROBERT

Agent(s):

TOWNSEND AND TOWNSEND AND CREW LLP