

[SS 12] /IC F16L35/00 or F16K35/06 or F16K35/10 or F16G11/04 or G05G5/08 or G09F3/03 or E05B67/00

Results in EPODOC 27.269

[SS 13] safety or lock

Results in EPODOC 1.611.043

[SS 14] 12 and 13

Results in EPODOC 4.564

[SS 15] seal and 14

Results in EPODOC 543

[SS 16] encapsulated and 15

Results in EPODOC 2

[SS 17] ..li



1/2 © EPODOC / EPO

PN - [WO2010135962](#) A1 20101202
PR - CN2009281176U 20090527
AP - WO2010CN72935 20100519
DT - *; Rep
CT - |CN| ISR (A1)
[CN201411981Y](#) Y 20100224
[XP] (CHENGDU HUOAN MEASURE
TECHNICAL CT);
[CN201142168Y](#) Y 20081029
[X] (AISHENG INC [CN]);
[CN101334947](#) A 20081231
[A] (BEIJING KAIRUICHEN
ELECTRONIC [CN]);
[CN201063223Y](#) Y 20080521
[A] (CHENGDU HUOAN MEASURE
TECHNICA [CN]);
[CN201130479Y](#) Y 20081008
[A] (BEIJING KAIRUICHEN
ELECTRONIC [CN]);
[US2006087431](#) A1 20060427
[A] (SHIEH YENG-BAO [TW], et al)
CCI - [G08B13/126](#) ; [G08B13/1454](#) ;

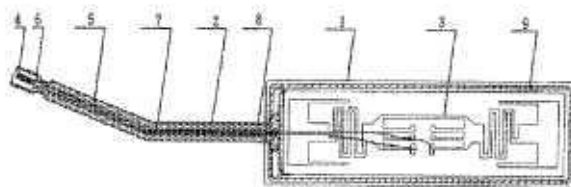


图 1 / Fig. 1

[G06K19/07749](#) ; [G06K19/07798](#)

- PA - CHENGDU HUOAN MEASURE
TECHNICAL CT [CN]; SUN
XIONGYUE [CN]; LIU TAO [CN]
- TI - ELECTRONIC SEALING **LOCK**
CAPABLE OF DETECTING
BREAKING OF **SEAL**
- AB - An electronic sealing **lock**
capable of detecting breaking of
the **seal** comprises an antenna
box body (1) and a **lock** rod (2)
coupled thereto. A tag antenna
(3) is **encapsulated** in the
antenna box body (1), an
electronic chip (4)
is **encapsulated** in the **lock** rod
(2), and the tag antenna (3) and
the electronic chip (4) are
connected via a lead (5). The
electronic sealing **lock** can detect
the breaking of the **seal** in real
time, thus realizing automation
in **seal** detection.

2/2 © EPODOC / EPO

- PN - [CN201514727U](#) U 20100623
- PR - CN2009225754U 20090522
- AP - CN2009225754U 20090522
- DT - I
- PA - ZIBO TAIBAO PREVENTING COUNTERFEIT PRODUCT CO LTD
- TI - RF electronic label **seal**
- AB - The utility model relates to an RF (radio frequency) electronic label **seal**, and is characterized in that an inner **lock** and an electronic label which are arranged in a label **seal** box are arranged in an engineering plastic casing through injection molding, and the inner **lock**, the electronic label and the engineering plastic casing are combined into a whole; a T-shaped hole is formed in the inner **lock**, a through hole for a label **seal** line 3 to pass is in the transverse direction of the T-shaped hole and a side hole used for enabling the short handle end of a **lock** handle to **lock** the label **seal** line is in the vertical direction of the T-shaped hole; and the electronic label is **encapsulated** in a mounting hole through sealing materials. The utility model has the advantages that the inner **lock** and the electronic label which are arranged in the label **seal** box are arranged in the engineering plastic casing through injection molding, and the inner **lock**, the electronic label and the engineering plastic casing are combined into a whole which cannot be dismounted integrally; after being locked, the label **seal** line cannot be opened integrally, and only can be destroyed to ensure disposable use; internal threads are formed in the side hole, and are matched with external threads formed at the short handle end of the **lock** handle; and after being locked on equipment or appliances, the

label **seal** line is tightly screwed by the **lock** handle along the threads from the side hole, the **lock** handle is broken at a preset tapered section with shrinkage diameter, and then incomplete opening of the label **seal** is ensured.

[SS 17] ..v

[EPODOC: SS 17] monolithic and 15

Results in EPODOC 0

[SS 18] acetate or polymer or polycarbonate

Results in EPODOC 1.079.914

[SS 19] 15 and 18

Results in EPODOC 1

[SS 20] .li

A command starts with 2 dots. [More info](#) ERROR(-104001)

[SS 20] ..li



1/1 © EPODOC / EPO

PN - [CN105551372](#) A 20160504

PR - CN20151811057 20151120

AP - CN20151811057 20151120

DT - I

CNOI - [G09F3/0291](#) ; [G09F3/0335](#)

PA - JIANGHAI ZONE BRANCH JIANGMEN HONGQIAO NEW MAT TECH CO LTD

TI - Plastic **lock seal** with PDI lithography diffraction anti-counterfeit label

AB - The invention discloses a plastic **lock seal** with a PDI lithography diffraction anti-counterfeit label. The plastic **lock seal** comprises a plastic shell and an insert which is inserted into the shell and cannot be pulled out backwards, wherein an anti-counterfeit label is stuck on the plastic shell; the PDI lithography diffraction anti-counterfeit label is arranged on the anti-counterfeit label; the PDI lithography diffraction anti-counterfeit label is a high-tech product, which is manufactured through a holographic lithography diffraction technique on the basis of an optical high **polymer** material; the PDI lithography diffraction anti-counterfeit label has unique first-class anti-counterfeit characteristics; the background color of the PDI lithography diffraction anti-counterfeit label is turned into green from original red as the viewing angle of the product is rotated, so that recognition can be achieved without the assistance of any tools; the anti-counterfeit label, with the adoption of an anti-transfer technique, can become damaged so as to indicate whether the product is unsealed or not or the label is used

twice or not when someone attempts to lift up the label, so that an excellent anti-counterfeit effect is achieved.

[SS 20] .v

A command starts with 2 dots. [More info](#) *ERROR(-104001)*

[SS 20] ..v

[EPODOC: SS 20] ic/ G09F3/03

Results in EPODOC 0

EPODOC: term 'IC/ G09F3/03' not found in index 'BI'. *WARNING(1)*

[SS 21] /ic G09F3/03

Results in EPODOC 10.133

[SS 22] 13 and 21

Results in EPODOC 788

[SS 23] 18 and 22

Results in EPODOC 1

[SS 24] ..li



1/1 © EPODOC / EPO

PN - [CN105551372](#) A 20160504

PR - CN20151811057 20151120

AP - CN20151811057 20151120

DT - I

CNOI - [G09F3/0291](#) ; [G09F3/0335](#)

PA - JIANGHAI ZONE BRANCH JIANGMEN HONGQIAO NEW MAT TECH CO LTD

TI - Plastic **lock** seal with PDI lithography diffraction anti-counterfeit label

AB - The invention discloses a plastic **lock** seal with a PDI lithography diffraction anti-counterfeit label. The plastic **lock** seal comprises a plastic shell and an insert which is inserted into the shell and cannot be pulled out backwards, wherein an anti-counterfeit label is stuck on the plastic shell; the PDI lithography diffraction anti-counterfeit label is arranged on the anti-counterfeit label; the PDI lithography diffraction anti-counterfeit label is a high-tech product, which is manufactured through a holographic lithography diffraction technique on the basis of an optical high **polymer** material; the PDI lithography diffraction anti-counterfeit label has unique first-class anti-counterfeit

characteristics; the background color of the PDI lithography diffraction anti-counterfeit label is turned into green from original red as the viewing angle of the product is rotated, so that recognition can be achieved without the assistance of any tools; the anti-counterfeit label, with the adoption of an anti-transfer technique, can become damaged so as to indicate whether the product is unsealed or not or the label is used twice or not when someone attempts to lift up the label, so that an excellent anti-counterfeit effect is achieved.

[SS 24] rotatable and 21

Results in EPODOC **63**

[SS 25] seal and 24

Results in EPODOC **41**

[SS 26] lock and 25

Results in EPODOC **17**

[SS 27] ..li



1/17 © EPODOC / EPO

PN - [CN206115871U](#) U 20170419

PR - CN20162905627U 20160820

AP - CN20162905627U 20160820

DT - I

PA - YONGJIA XINGHUI STRIP SEAL CO LTD

TI - Plastic security sealing

AB - The utility model relates to a lead sealing, especially a plastic security sealing. Head and **lock** chamber joint, **lock** chamber bottom be equipped with the spacing groove, the head top be equipped with with the contrary spacing tooth of preventing of spacing groove adaptation, be equipped with a pair of **seal** line hole on the **lock** body, be equipped with the **seal** line hole of answering with **lock** body **seal** line pore pair on the head, the **rotatable** setting of head is equipped with a turning handle at the **lock** intracavity on the head. The structure of preventing contrary spacing tooth and spacing groove is utilized to above -mentioned structure when using, make the head can only unidirectional rotating, and **seal** line inserts at both ends the **seal** line hole, rotates the head, just can let the **seal** line winding at the **seal** line intracavity, can not reversely release, just so can fine blockadeing, can not let **seal** line expose, convenient to use, the blockade stably, the structure after the locking is very compact.

2/17 © EPODOC / EPO

PN - [CN204680314U](#) U 20150930

PR - CN20152345253U 20150526

AP - CN20152345253U 20150526

DT - I

PA - ZHANG YOU MIAO

TI - **Rotatable** lead sealing

AB - The utility model relates to a **rotatable** lead sealing, including base and blocking, be equipped with the holding tank that is used for filling in the blocking in the middle of the base, the base both sides are equipped with first through -hole along the axial, seted up the second through -hole along the axial on the blocking, worked as the blocking is filled in in the holding tank, both sides first through -hole is with corresponding the second through -hole communicates with each other, the blocking upper end is provided with and is used for rotating the first arch of blocking, blocking bottom circumference is equipped with a plurality of arc pieces, holding tank bottom be provided with with a plurality of ratchets of arc piece complex when this kind of lead sealing is used, revolve and twist first arch, will **seal** the silk and be drawn into between base and the blocking, **seal** silk chucking base and blocking and make the blocking hardly take out from holding the inslot again to constitute the lead sealing **lock**, because a plurality of arc pieces match with a plurality of ratchets, make the rotation of lead sealing have the irreversibility, can prevent that other people from adopting certain means to reverse blocking and non -destructive with the possibility of blocking from holding the inslot and taking out.

3/17 © EPODOC / EPO

PN - [WO2015156996](#) A1 20151015

PR - US201461978303P 20140411

AP - WO2015US22191 20150324

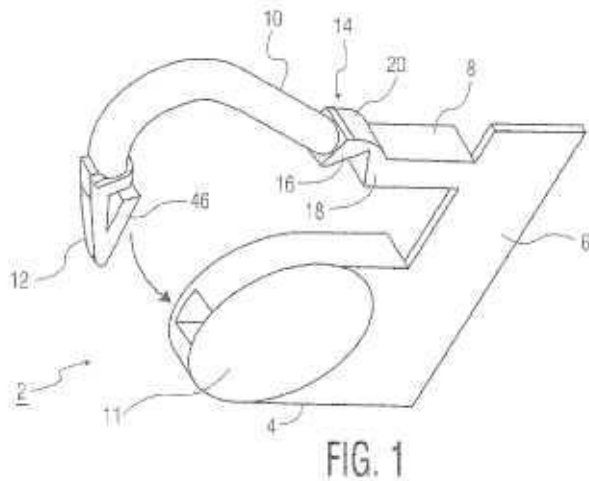
DT - *; Rep

CT - |EP| ISR (A1)
[US4319776](#) A 19820316
 [XDI] (MOBERG SIGURD M)
 [XD] 1,2,10,11
 * column 2, line 52 - column 3,
 line 22; figures 1-4 *
 [I] 3,4;
[DE10314940](#) A1 20041014
 [XI] (RUDOLF HELD GMBH & CO
 KG [DE])
 [X] 1,5-9,12
 * figures 1-9 *
 [I] 3,4

CCI - [G09F3/0347](#)

CUI - [E05B67/00](#) ; [E05B67/003](#) ;
[E05B67/006](#) ; [E05B73/00](#) ;
[E05B73/0029](#) ; [E05C19/08](#)

CCA - [Y10T292/509](#) ; [Y10T292/48](#) ;
[Y10T292/507](#) ; [Y10T292/491](#) ;
[Y10T70/483](#) ; [Y10T70/435](#) ;



Y10T70/485

- PA - BROOKS CO E J [US]
- TI - THERMOPLASTIC SECURITY **SEAL**
WITH COVERED LOCKING RECESS
- AB - A security **seal** includes a molded one piece body and a cover disc. The body has a cylindrical chamber for receiving the disc. A locking recess is formed in the body in communication with the chamber and defined in part by a locking shoulder. The cover is secured to the body in the chamber to enclose the locking recess. The disc is separated from the body when enclosing the chamber. A **rotatable** arm is attached to an extension member extending from the body via a hinge. The free end of the arm has an arrow shaped locking element attached that engages the recess locking shoulder when inserted into the recess. The locking element has a resilient tang member that is compressed by the locking shoulder and which tang member returns to its acquiescent state when fully inserted into the recess thereby locking the tang member in the recess. The cover has posts that extend through mating bores in the body, the protruding ends of the posts are deformed to preclude withdrawal of the posts from the bores to thereby **lock** the cover to the body.

4/17 © EPODOC / EPO

- PN - MY120593 A 20051130
- PR - US19980203980 19981202
- AP - MY1999PI05220 19991201
- DT - I
- CCI - G09F3/0352 ; G09F3/0364
- CCA - Y10T292/48 ; Y10T292/491
- PA - BROOKS CO E J [US]

TI - **ROTATABLE SEAL.**

AB - A THERMOPLASTIC HOUSING (4) HAS A CHAMBER (18) OPEN AT ONE END AND A BOTTOM WALL (22) AT THE OTHER END. A THERMOPLASTIC ROTOR (6) IS LOCKED AXIALLY IN THE CHAMBER (18) BY A SNAP FITTING RIDGE (34) AND GROOVE (26). A ONE OR MORE BORES ARE IN THE HOUSING BOTTOM WALL (22) IN COMMUNICATION WITH THE CHAMBER (18). THE ROTOR (6) HAS A CENTRAL BOSS (40) WITH ONE OR MORE BORES ALIGNED WITH THE HOUSING BORES IN AN INITIAL POSITION OF THE ROTOR (6) AND INCLUDES AN OUTER RING WITH AXIALLY DEPENDENT RADIALLY FLEXIBLE PAWLS (54) WHICH ENGAGE HOUSING RATCHET TEETH (24) IN THE CHAMBER (18). THE PAWLS (54) AND TEETH (24) ROTATIONALLY **LOCK** THE ROTOR (6) RELATIVE TO THE HOUSING (4) IN ONE DIRECTION WHILE **SEAL** FILAMENT SEGMENTS (8) INSERTED IN THE ALIGNED BORES ARE TWISTED ABOUT EACH OTHER OR ABOUT A POST IN THE CAVITY (60). THE ROTOR (6) IS ROTATED RELATIVE TO THE HOUSING (4) MANUALLY BY FINGER GRIPPED-FLANGES ATTACHED TO THE ROTOR (6) AND TO THE HOUSING (4). THE ROTOR RING AND BOSS (49) ARE SPACED BY A WEAKENING GROOVE (50) WHICH CAUSES THE BOSS (40) TO PERMANENTLY SEPARATE FROM THE RING (46) WHEN THE FILAMENT (8) IS PULLED IN AN ATTEMPT TO DEFEAT THE **SEAL** (2). FIGURE 4.

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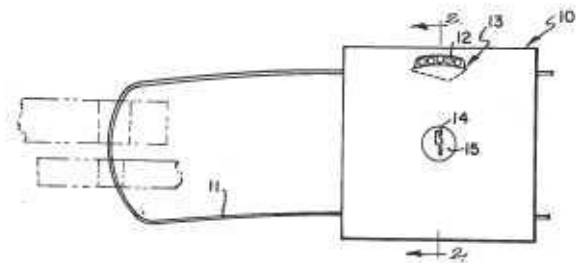
PN - [US4118057](#) A 19781003

PR - US19780880924 19780224

AP - US19780880924 19780224

DT - *; Rep

CT - || STSE (A)
[US102696](#) A 18700503 [];
[US341502](#) A 18860511 [];
[US421951](#) A 18900225 [];
[US721926](#) A 19030303 [] (TYDEN EMIL [US]);
[US851644](#) A 19070430 [] (BOAL AYRES [US])



CCI - [G09F3/0394](#)

CCA - [Y10T292/48](#) ; [Y10T70/8243](#)

PA - USENERGY

TI - Reusable, tamper-indicating **seal**

AB - A reusable, tamper-indicating **seal** comprises a drum confined within a fixed body and **rotatable** in one direction therewithin, the top of the drum constituting a tray carrying a large number of small balls of several different colors. The fixed body contains parallel holes for looping a **seal** wire therethrough. The base of the

drums carries cams adapted to coact with cam followers to **lock** the wire within the **seal** at one angular position of the drum. A channel in the fixed body - visible from outside the **seal** - adjacent the tray constitutes a segregated location for a small plurality of the colored balls. A spring in the tray forces colored balls into the segregated location at one angular position of the drum, further rotation securing the balls in position and the wires in the **seal**. A wedge-shaped plough removes the balls from the segregated location, at a different angular position of the drum, the wire being unlocked at the same position. A new pattern of colored balls will appear in the segregated location when the **seal** is relocked.

PN - [US5647620](#) A 19970715

PR - US19960590188
19960123; US19940362843
19941222

AP - US19960590188 19960123

DT - *; Rep

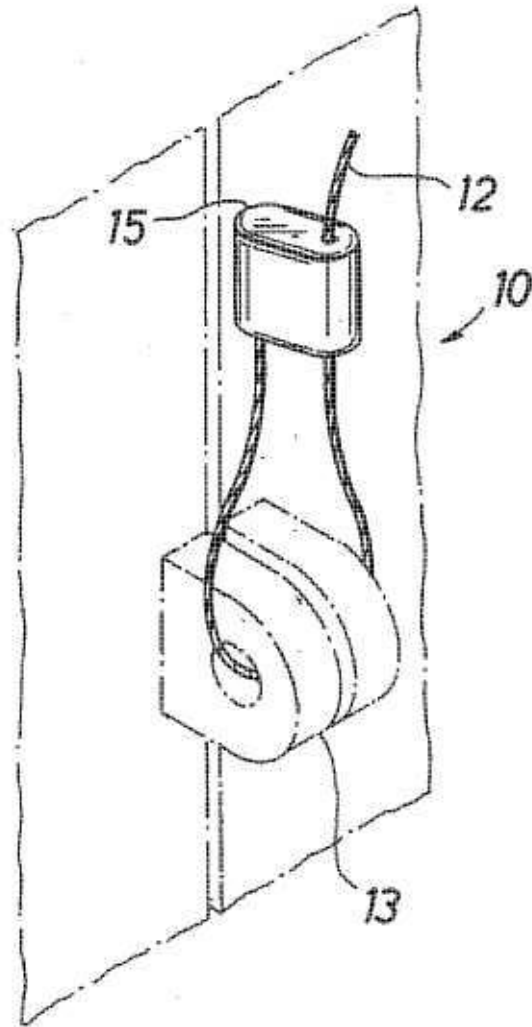
CT - || STSE (A)
[US3770307](#) A 19731106 [
] (BRAMMALL INC);
[US4049303](#) A 19770920 [
] (BRAMMALL INC);
[US4342477](#) A 19820803 [
] (DICKY MANUFACTURING
COMPANY);
[US4747631](#) A 19880531 [
] (BRAMMALL INC [US]);
[US5092641](#) A 19920303 [
] (BRAMMAL INC [US]);
[US5222776](#) A 19930629 [
] (BROOKS CO E J [US]);
[US5352003](#) A 19941004 [
] (BRAMMALL INC [US]);
[EP0417022](#) A1 19910313 [
] (FORTIN JEAN [FR])

CCI - [B65D55/06](#) ; [G09F3/0352](#)

CCA - [Y10T292/48](#) ; [Y10T292/494](#) ;
[Y10T292/502](#)

TI - Cable **lock** and **seal** device
incorporating self locking feature

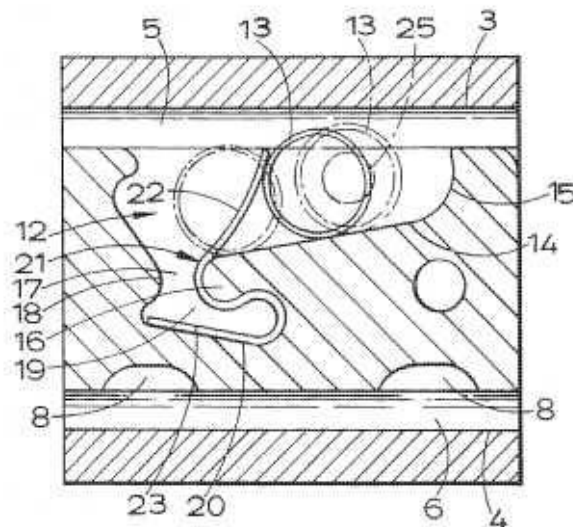
AB - A cable **lock** device is set forth. In
one embodiment, a soft metal
housing is constructed having an
internal cavity for locking on the
dead end of the cable. The cable
is extended from the housing in a
bight and the free end of the
cable is inserted through a pair
of aligned openings in said
housing. The free end of the
cable is immediately adjacent to
a locking surface and is forced
against that surface by a spring
loaded **rotatable** disk. The
locking surface incorporates a
pair of parallel sharp edges
wherein said edges are jammed
against the cable, and/or



deformed because the cable is made of harder material. In another aspect, the cable on insertion, dislodges a sacrificial U-shaped bracket to enable the cable to get past the disk. A relatively strong spring bears against the cable to enable firm backing, and the spring force is sufficiently strong that disk movement is assisted by the bracket to enable initial cable insertion.

7/17 © EPODOC / EPO

- PN - [US5538300](#) A 19960723
- PR - GB19920005565
19920313; GB19920014385
19920707; WO1993GB00515
19930311
- AP - US19940302860 19941219
- DT - **
- CT - || STSE (A)
[US1218752](#) A 19170313 [
] (FARR ARTHUR W [US]);
[US1628744](#) A 19270517 [
] (WILLIAM ROSE);
[US2401418](#) A 19460604 [
] (EVERLEY PAULS);
[US2606350](#) A 19520812 [
] (HUMBOLDT FRENCH);
[US3239255](#) A 19660308 [
] (MURCOTT CHARLES E);
[US4640538](#) A 19870203 [
] (BRAMMALL TERRENCE N [US]);
[US4707891](#) A 19871124 [
] (CHIDESTER DOUGLAS A [US]);
[US4747631](#) A 19880531 [
] (LOYNES LESLIE M [US], et al);
[US4878269](#) A 19891107 [
] (ANSCHER JOSEPH A [US], et al);
[US5222776](#) A 19930629 [
] (GEORGOPOULOS GEORGE [US],
et al);
[US5352003](#) A 19941004 [
] (BYSTRY JERRY A [US]);
[FR2388114](#) A1 19781117 [
] (BRAMMALL INC [US])



CCI - [F16G11/02](#) ; [F16G11/106](#) ;
[F16G11/14](#) ; [G09F3/0352](#)

CCA - [Y10T24/3976](#) ; [Y10T292/48](#) ;
[Y10T292/502](#)

PA - BLAIR SECURITY PROD [GB]

TI - Cable **lock** and **seal** device

AB - PCT No. PCT/GB93/00515 Sec.
371 Date Dec. 19, 1994 Sec. 102
(e) Date Dec. 19, 1994 PCT Filed
Mar. 11, 1993 PCT Pub. No.
WO93/18316 PCT Pub. Date Sep.
16, 1993In a cable **lock** and **seal**
device a roller is **rotatable** about
a single axis normal to the axis
of an inextensible member and
with respect to a ramp which, in
turn, is inclined with respect to
the axis of the inextensible
member. The roller is moveable
up and down the ramp between a
retracted position in which the
member can be drawn through a
passage in which the device and
a locking position in which the
roller rolls up the ramp to clamp
the member against movement in
the opposite direction with the
member trapped between the
roller and the opposite face of
the passage. A spring acts on the
roller to urge it up the ramp at
all times.

8/17 © EPODOC / EPO

PN - [US6007121](#) A 19991228

PR - US19980203980 19981202

AP - US19980203980 19981202

DT - *; Rep

CT - || STSE (A)
[US421951](#) A 18900225 [];
[US1054436](#) A 19130225 [] (THOMAS E MURRAY [US]);
[US1826033](#) A 19311006 [] (WEBSTER RICHARD H);
[US1911060](#) A 19330523 [] (GREELY CLARK EGBERT);
[US1977301](#) A 19341016 [] (BRADFORD ANDREW O);
[US2587876](#) A 19520304 [] (FRANKLIN MOORE ROBERT);
[US4978026](#) A 19901218 [] (BROOKS CO E J [US]);
[US5180200](#) A 19930119 [] (BROOKS E J [US]);

[US5402958](#) A 19950404 [] (INNER TITE CORP [US]);
[US5419599](#) A 19950530 [] (BROOKS CO E J [US])

CCI - [G09F3/0352](#) ; [G09F3/0364](#)
CCA - [Y10T292/48](#) ; [Y10T292/491](#)
PA - BROOKS CO E J [US]
TI - **Rotatable seal**
AB - A thermoplastic housing has a chamber open at one end and a bottom wall at the other end. A thermoplastic rotor is locked axially in the chamber by a snap fitting ridge and groove. A one or more bores are in the housing bottom wall in communication with the chamber. The rotor has a central boss with one or more bores aligned with the housing bores in an initial position of the rotor and includes an outer ring with axially depending radially flexible pawls which engage housing ratchet teeth in the chamber. The pawls and teeth rotationally **lock** the rotor relative to the housing in one direction while **seal** filament segments inserted in the aligned bores are twisted about each other or about a post in the cavity. The rotor is rotated relative to the housing manually by finger gripped-flanges attached to the rotor and to the housing. The rotor ring and boss are spaced by a weakening groove which causes the boss to permanently separate from the ring when the filament is pulled in an attempt to defeat the **seal**.

9/17 © EPODOC / EPO

PN - [WO0033283](#) A2 20000608
PNFP - WO0033283 A3 20011220
PR - US19980203980 19981202
AP - WO1999US27415 19991118
DT - **
CT - |EP| ISR (A3)
[US2587876](#) A 19520304 [XY] (FRANKLIN MOORE ROBERT)
[X] 1-3,14,23
* column 1, line 41 - column 3, line 2; figures 1-8 *
[Y] 20-22;
[US5402958](#) A 19950404 [YDA] (MAHANAY JOHN C [US])
[YD] 20-22
* column 3 - column 4; figures 1,4-8 *
[A] 4,5,10,11,13,15-19

CCI - [G09F3/0352](#) ; [G09F3/0364](#)
CCA - [Y10T292/48](#) ; [Y10T292/491](#)
PA - (A2 A3)
BROOKS CO E J [US]
TI - (A2 A3)
ROTATABLE SEAL
AB - (A2 A3)
A thermoplastic housing has a chamber open at one end and a bottom wall at the other end. A thermoplastic rotor is locked axially in the chamber by a snap fitting ridge and groove. A one or more bores are in the housing bottom wall in communication with the chamber. The rotor has a central boss with one or more bores aligned with the housing

10/17 © EPODOC / EPO

PN - [WO9957702](#) A1 19991111

PNFP - WO9957702 A8 20010215

PR - US19980070055 19980430

AP - WO1999US07397 19990423

DT - *, Rep

CT - |EP| ISR (A1)
[FR2678328](#) A1 19921231
[X] (ITW DE FRANCE [FR])
[X] 1,16
* the whole document *;
[US5402958](#) A 19950404
[DXA] (MAHANEY JOHN C [US])
[DX] 1,16
* the whole document *
[A] 2-15,17-20;
[US5419599](#) A 19950530
[DA] (GEORGOPOULOS GEORGE
[US])
[DA] 1-20
* the whole document *;
[EP0423831](#) A2 19910424
[A] (BROOKS CO E J [US])
[A] 1,16
* column 9, lines 2-27; figures
10-12 *;
[US1826033](#) A 19311006
[DA] (WEBSTER RICHARD H)

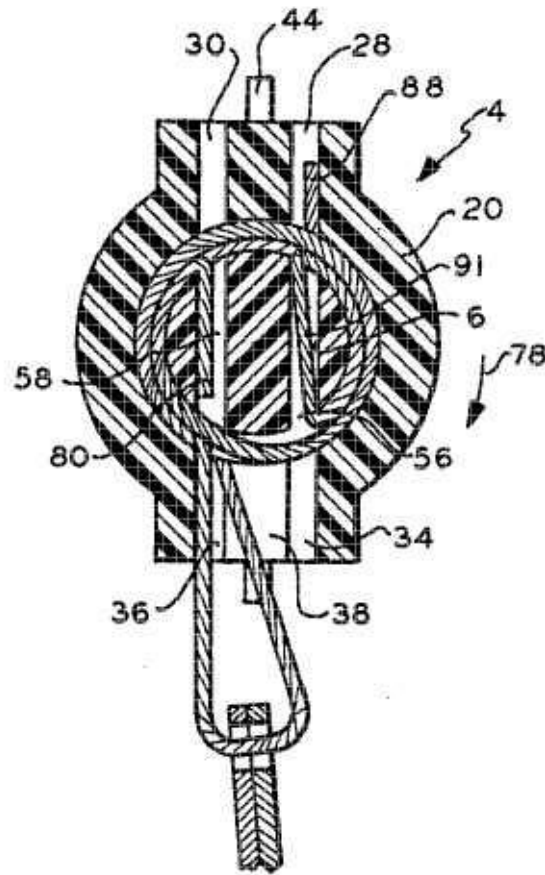
CCI - [G09F3/0352](#) ; [G09F3/0364](#)

CCA - [Y10S24/909](#) ; [Y10T292/48](#) ;
[Y10T292/491](#) ; [Y10T292/506](#)

PA - (A1 A8)
E J BROOKS INC [US]

TI - (A1 A8)
ROTATABLE SEAL

AB - (A1 A8)
A thermoplastic housing has a



chamber open at one end and a thermoplastic rotor is locked axially in the chamber by snap fit ridges and grooves. Two pairs of bores on opposite sides of the chamber are aligned, with one pair connected by a transverse slot. The rotor has two bores aligned with the housing bores and includes flexible pawl teeth which engage ratchet teeth in the chamber. The teeth rotationally **lock** the rotor relative to the housing in one direction while a **seal** filament inserted in the bores is wrapped about the rotor as the rotor is rotated in the other direction. The slot permits the filament to be fixed to the rotor when the rotor is rotated 180 DEG causing the filament to traverse the slot and permit the remaining adjacent bores in the same plane as the fixed filament to be aligned and free to receive the filament free end. The rotor is rotated relative to the housing manually by finger gripped flanges attached to the rotor and to the housing with the filament inserted to wrap and **lock** the filament to the rotor. The rotor and housing define a channel for receiving multiple turns of filament to enhance the locking action.

PN - [US5419599](#) A 19950530

PR - US19930082680 19930701

AP - US19930082680 19930701

DT - *; Rep

CT - || STSE (A)
[US421951](#) A 18900225 [];
[US1826033](#) A 19311006 [] (WEBSTER RICHARD H);
[US4978026](#) A 19901218 [] (BROOKS CO E J [US]);
[US5180200](#) A 19930119 [] (BROOKS E J [US]);
[JPH028310](#) A 19900111 [] (NIPPON KOKAN KK)

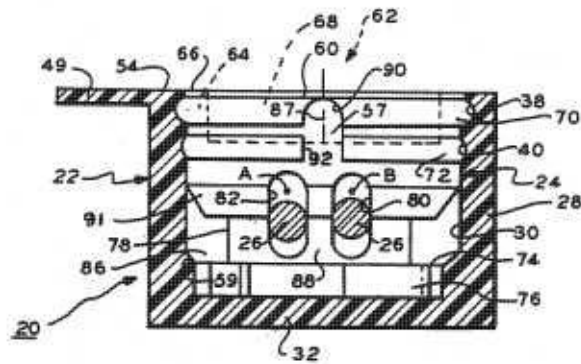
CCI - [G09F3/0364](#)

CCA - [Y10T292/491](#) ; [Y10T292/506](#)

PA - BROOKS CO E J [US]

TI - **Rotatable seal**

AB - A thermoplastic housing has a chamber open at one end and a thermoplastic rotor inserted in the chamber. The housing wall contains bores aligned across the chamber and two annular grooves in the chamber adjacent the chamber entrance. Tabs are formed adjacent the chamber entrance. The rotor has a bore and two annular ridges near its top. The ridges are relieved complementarily to the tabs. The rotor is inserted and locked axially in the housing by snapping the ridges into the grooves. The tabs are located in the relieved areas to align all of the bores so that a **seal** wire may thereafter be inserted through the bores. The rotor includes flexible spiral-like co-planar pawl teeth which engage ratchet teeth formed on the housing in the chamber. The ratchet and pawl teeth rotationally **lock** the rotor relative to the housing while permitting the rotor to bend a **seal** wire inserted in the



bores during rotation which rotation in one direction locks the rotor. The ratchet and pawl teeth may also be used align the bores for insertion. The rotor is rotated manually by a hand-operated tool such as a screwdriver. With a **seal** wire inserted, the rotor and housing are relatively rotated to wrap the wire about the rotor. Each ridge snaps into one groove when the rotor is inserted into a corresponding housing.

12/17 © EPODOC / EPO

PN - [US6000736](#) A 19991214

PR - US19980070055 19980430

AP - US19980070055 19980430

DT - **

CT - || STSE (A)
[US4978026](#) A 19901218 [] (BROOKS CO E J [US]);
[US5180200](#) A 19930119 [] (BROOKS E J [US]);
[US5402958](#) A 19950404 [] (INNER TITE CORP [US]);
[US5419599](#) A 19950530 [] (BROOKS CO E J [US])

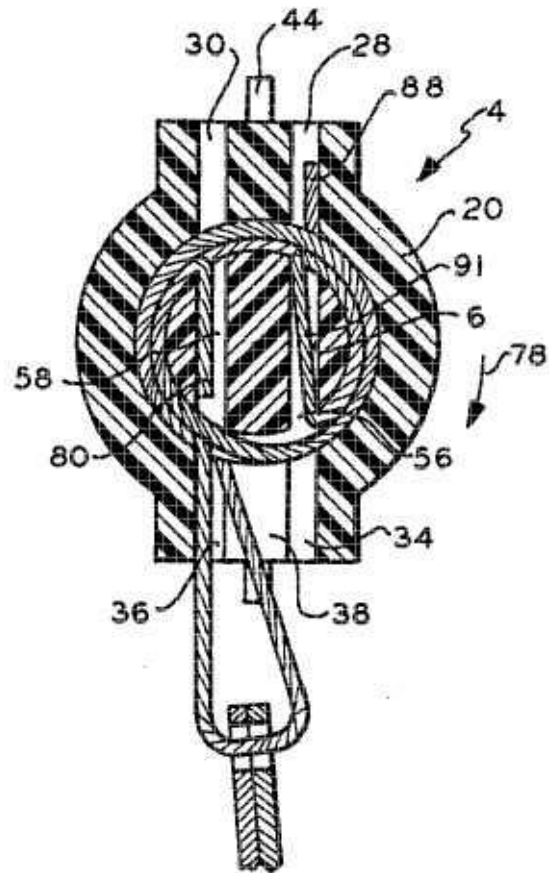
CCI - [G09F3/0352](#) ; [G09F3/0364](#)

CCA - [Y10S24/909](#) ; [Y10T292/48](#) ;
[Y10T292/491](#) ; [Y10T292/506](#)

PA - BROOKS CO E J [US]

TI - **Rotatable seal**

AB - A thermoplastic housing has a chamber open at one end and a thermoplastic rotor is locked axially in the chamber by snap fit ridges and grooves. Two pairs of bores on opposite sides; of the chamber are aligned, with one pair connected by a transverse slot. The rotor has two bores aligned with the housing bores and includes flexible pawl teeth which engage ratchet teeth in the chamber. The teeth



rotationally **lock** the rotor relative to the housing in one direction while a **seal** filament inserted in the bores is wrapped about the rotor as the rotor is rotated in the other direction. The slot permits the filament to be fixed to the rotor when the rotor is rotated 180 DEG causing the filament to traverse the slot and permit the remaining adjacent bores in the same plane as the fixed filament to be aligned and free to receive the filament free end. The rotor is rotated relative to the housing manually by finger gripped flanges attached to the rotor and to the housing with the filament inserted to wrap and **lock** the filament to the rotor. The rotor and housing define a channel for receiving multiple turns of filament to enhance the locking action.

13/17 © EPODOC / EPO

PN - [TW425367B](#) B 20010311

PR - US19980203980 19981202

AP - TW19990119656 19991110

DT - I

CCI - [G09F3/0352](#) ; [G09F3/0364](#)

CCA - [Y10T292/48](#) ; [Y10T292/491](#)

PA - BROOKS CO E J [US]

TI - **Rotatable seal**

AB - A thermoplastic housing has a chamber open at one end and a bottom wall at the other end. A thermoplastic rotor is locked axially in the chamber by a snap fitting ridge and groove. A one or more bores are in the housing bottom wall in communication with the chamber. The rotor has a central boss with one or more bores aligned with the housing bores in an initial position of the rotor and includes an outer ring with axially depending radially flexible pawls which engage housing ratchet teeth in the chamber. The pawls and teeth rotationally **lock** the rotor relative to the housing in one direction while **seal** filament segments inserted in the aligned bores are twisted about each other or about a post in the cavity. The rotor is rotated relative to the housing manually by finger gripped flanges attached to the rotor and to the housing. The rotor ring and boss are spaced by a weakening groove which causes the boss to permanently separate from the ring when the filament is pulled in an attempt to defeat the **seal**.

14/17 © EPODOC / EPO

PN - [WO9318316](#) A1 19930916

PR - GB19920005565
19920313; GB19920014385
19920707

AP - WO1993GB00515 19930311

DT - *; Rep

CT - |EP| ISR (A1)
[US830565](#) A 00000000 [A];
[FR2388114](#) A1 19781117
[X] (BRAMMALL INC [US]);
[US1628744](#) A 19270517
[X] (WILLIAM ROSE);
[US2401418](#) A 19460604
[A] (EVERLEY PAULS);
[US4640538](#) A 19870203
[A] (BRAMMALL TERRENCE N [US])

CTNP - |EP| ISR (A1)
[A] - US Patent and Trademark
Office, Official Gazette, 11
September 1906, see page 366,
no. 830565, & US,A,830565
(BROWN) (cited in the
application),

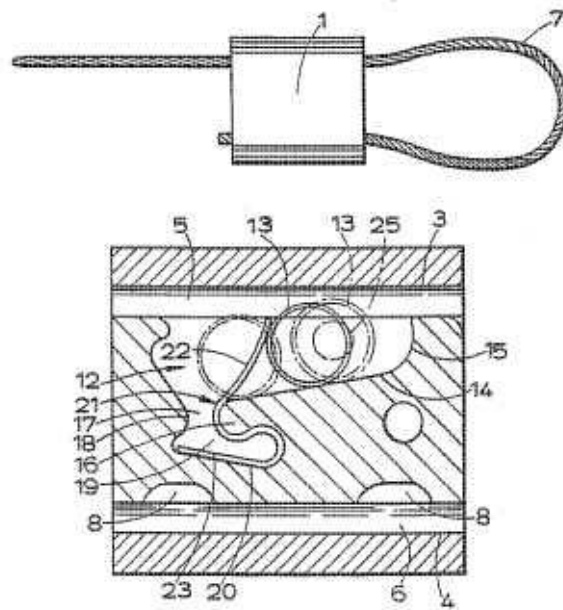
CCI - [F16G11/02](#) ; [F16G11/106](#) ;
[F16G11/14](#) ; [G09F3/0352](#)

CCA - [Y10T24/3976](#) ; [Y10T292/48](#) ;
[Y10T292/502](#)

PA - BLAIR SECURITY PROD [GB]

TI - CABLE **LOCK** AND **SEAL** DEVICE

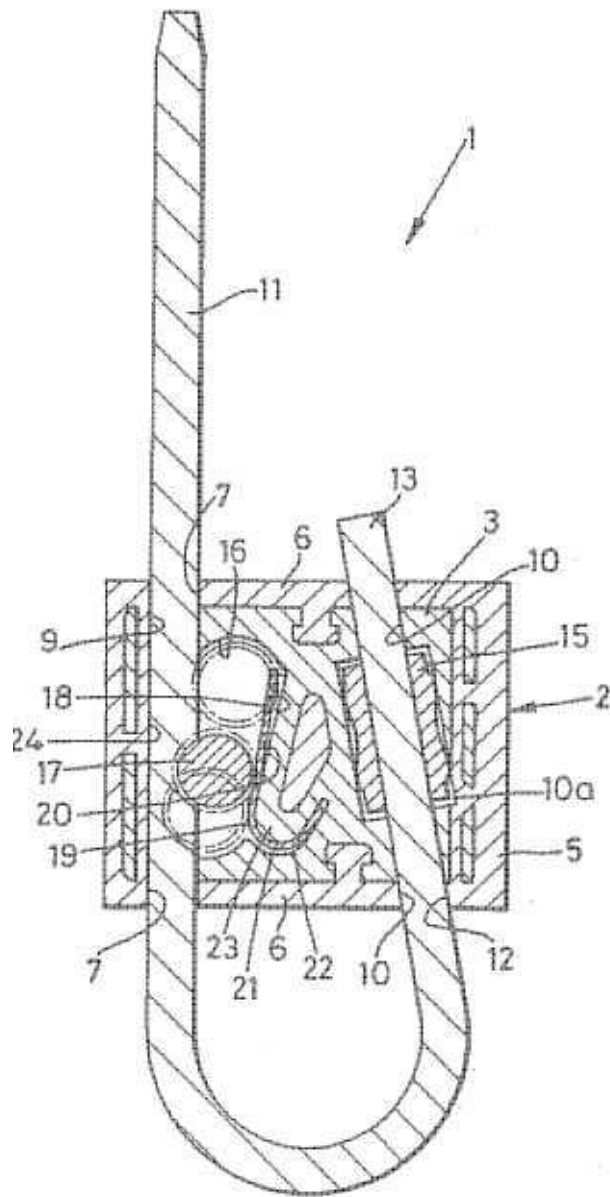
AB - In a cable **lock** and a **seal** device
a roller (13) is **rotatable** about a
single axis normal to the axis of
an inextensible member (7) and
with respect to a ramp (14)
which, in turn, is inclined with
respect to the axis of the
inextensible member (7). The
roller (13) is moveable up and
down the ramp (14) between a
retracted position in which the
member (7) can be drawn
through a passage (5) in the
device and a locking position in
which the roller (13) rolls up the



ramp to clamp the member against movement in the opposite direction with the member (7) trapped between the roller (13) and the opposite face of the passage (5). A spring (21) acts on the roller (13) to urge it up the ramp (14) at all times.

15/17 © EPODOC / EPO

- PN - [WO0138756](#) A1 20010531
- PR - GB19990027870 19991126
- AP - WO2000GB04462 20001124
- DT - *; Rep
- CT - |EP| ISR (A1)
[US5538300](#) A 19960723
 [DA] (BROWN CLIVE A [GB])
 [DA] 1
 * the whole document *;
[US4074916](#) A 19780221
 [A] (SCHINDLER ROBERT)
 [A] 1
 * the whole document *;
[US4747631](#) A 19880531
 [A] (LOYNES LESLIE M [US], et al)
 [A] 1
 * the whole document *;
[US5222776](#) A 19930629
 [A] (GEORGOPOULOS GEORGE [US], et al);
[US830565](#) A 19060911
 [DA] (BROWN LEWIS A [US])
- CCI - [F16G11/02](#) ; [F16G11/108](#) ;
[F16G11/14](#) ; [G09F3/0352](#) ;
[G09F3/0358](#)
- PA - BLOXWICH ENG [GB]; BROWN CLIVE ALBERT [GB]
- TI - CABLE **LOCK** AND **SEAL** DEVICE
- AB - A cable **lock** and **seal** device comprises a body (2) having a passage (9) therethrough and an elongate flexible inextensible member such as a cable (11) having one end (13) attached to the body, the opposite end being adapted to pass through the passage so that such cable



engages a friction roller enclosed by the body, and **rotatable** about an axis normal to the axis of the passage. The roller (17) is movable upwardly along a surface (20) of a ramp which is inclined with respect to the axis of the passage (9) thereby to reduce the dimension of the passage available for accommodating the cable. A spring (19) is arranged to bias the roller (17) against the cable (11) when the latter is inserted into the passage (9), whereby, on attempted withdrawal of the cable from that passage, frictional engagement between the roller (17) and the cable (11) tends to draw the roller (17) upwardly along the ramp surface (20) to cause a jam fit with the cable (11) to resist further withdrawal. The spring (19) is arranged to bias the ramp surface (20) towards the axis of the passage (9), and that ramp surface (20) may be constituted by a surface of the spring (19).

16/17 © EPODOC / EPO

PN - [CA1314387](#) C 19930316

PR - CA19880585495 19881209

AP - CA19880585495 19881209

DT - *; Rep

CCI - [F16G11/106](#) ; [F16G11/14](#) ; [G09F3/0352](#)

PA - TRITTON LTEE LES ENTREPRISES [CA]

TI - CABLE **LOCK SEAL**

AB - This invention provides a sealing device comprising: an outer hollow housing comprising top, bottom, front and rear walls and having opposed open sides; the outer housing is adapted to at least partially enclose an inner housing which comprises front, rear and opposed side walls with an open top and bottom. The front, rear and side walls of the inner housing are adapted to project at least partially beyond the front and rear walls of the outer housing in an assembled condition to form a pair of opposed, spaced apart, cable receiving channels extending from the top to the bottom of the inner housing. A length of high strength cable means having opposed free ends

which free ends have at least a portion thereof of a deformable nature are also provided. Cable engaging and locking means adapted to fit within the inner housing and comprising an obliquely extending cam receiving surface are provided in the sealing device, with the cam receiving surface having a recessed area and an opposed surface having a pair of spaced apart projections thereon, forming a cable receiving land portion between the spaced-apart projections. The cable engaging and locking means have a top portion of a width greater than a bottom portion thereof. **Rotatable** cable engaging cam means are adapted to ride on the cam receiving surface of the cable engaging and locking means and in use to engage the recessed area of the cam receiving surface. Stop means extend from the cable engaging and locking means, the stop means preventing downward vertical movement of the cam means beyond a predetermined point in the inner housing.

17/17 © EPODOC / EPO

PN - [CA1314386](#) C 19930316

PR - CA19860526213 19861223

AP - CA19860526213 19861223

DT - *; Rep

CCI - [F16G11/106](#) ; [F16G11/14](#) ; [G09F3/0352](#)

PA - TRITTON LTEE TRITTON ENTERPRIS [CA]

TI - CABLE **LOCK** AND **SEAL** DEVICE

AB - This invention provides a sealing device comprising: an outer hollow housing at least partially enclosing an inner housing. The inner housing projects at least partially beyond the front and rear walls of the outer housing in an assembled condition to form a pair of opposed, spaced-apart, cable receiving channels extending from the top to the bottom of the inner housing for receiving opposed free ends of a length of high strength cable, the free ends having at least a portion thereof of a deformable nature. Cable engaging and locking means are provided within the inner housing comprising an obliquely extending cam receiving surface and an opposed surface having a pair of spaced apart projections thereon, forming a cable receiving land portion between the spaced-apart projections. The cable engaging and locking means have a top portion of a width greater than a bottom portion thereof. **Rotatable** cable engaging cam means are adapted to ride on the cam receiving surface of the cable engaging and locking means opposite the cable receiving land portion; and stop means extend from the cable engaging and locking means. The stop means prevent vertical movement of the cam means beyond a predetermined point in the inner housing. The **seal** of this invention employs fewer components while providing a high degree of security.

[SS 27] ..v

[EPODOC: SS 27]