



New connection on: : 15-09-2017 : 23:12:47 - Last disconnection on: : 15-09-2017 : 22:41:53

V 4.0.0.43847(LP,U,linux) (Rev:41675 2016-01-15 13:33:59 +0100#(D201710)) (RPM D201710)

Welcome to EPOQUE Rebuild under the Production Environment

[EPODOC: SS 6] jacket and optic+ and polyethylene

Results in EPODOC **178**

[SS 7] 6 and core

Results in EPODOC **76**

[SS 8] 7 and cable

Results in EPODOC **66**

[SS 9] 8 and density

Results in EPODOC **23**

[SS 10] ..li



1/23 © EPODOC / EPO

PN - [CN205282166U](#) U 20160601

PR - CN201521012201U 20151209

AP - CN201521012201U 20151209

DT - I

PA - JIANGSU ZHONGTIAN TECH CO LTD

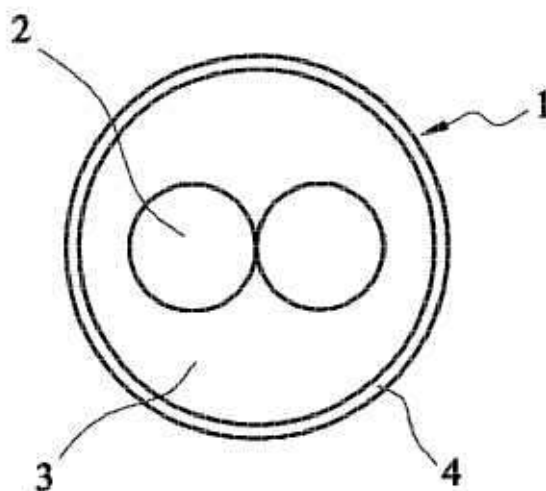
TI - Floated optoelectrical composite **cable** under water

AB - The utility model discloses a floated optoelectrical composite **cable** under water, including **cable core** and interior sheath, enhancement layer, outer **jacket**, the **cable core** comprises light unit, transmission of electricity copper line unit and the central reinforcement transposition that is located light unit, transmission of electricity copper line unit central authorities, and the light unit be 1 or 2, and transmission of electricity copper line unit is 2, and interior sheath and outer **jacket** wrap up in proper order on the **cable core**, are equipped with the enhancement layer between interior sheath and the outer **jacket**, and interior sheath, outer **jacket** are low **density polyethylene**, and the enhancement layer is the triumphant husband dimension of towing, the utility model discloses rational in infrastructure, the **cable core** adopts 1 light unit and 2

transmission of electricity copper line units or 2 light units to form with the transposition of 2 transmission of electricity copper line units, can reduce the size of central reinforcement, makes the **cable core** transposition compacter, reduces the dead weight of **cable core**, and the electrical property and mechanical properties index of optoelectrical composite **cable** have been guaranteed in the design of interior outer **jacket**, and the tensile that the design of enhancement layer had remedied central reinforcement is not enough, and reduction optoelectrical composite **cable** is conducted oneself with dignity, has guaranteed electric property, **optical** property.

2/23 © EPODOC / EPO

PN - [EP3073305](#) A1 20160928
 PNFP - EP3073305 B1 20170802
 PR - GB20020018624
 20020810; GB20020022256
 20020926; GB20030013018
 20030606; EP20050019312
 20030626; EP20030784229
 20030626
 AP - EP20160164550 20030626
 DT - **
 CT - || STSE (A1)
[US5761361](#) A 19980602
 [X] (PFANDL WALTER [DE], et al)
 [X] 1-11
 * abstract *
 * column 6, line 41 - line 49 *
 * column 7, line 33 - line 67 *
 * column 8, line 7 - line 23 *;
[US5557703](#) A 19960917
 [A] (BARKER PHILIP A [GB], et al)
 [A] 1-11
 * abstract *;
[EP0296836](#) A1 19881228
 [A] (BICC PLC [GB], et al)
 [A] 3,4
 * abstract *
 * page 1, line 2 - line 9 *;
[US6334015](#) B2 20011225
 [A] (JAMET PATRICK [FR])
 [A] 1-11
 * abstract *
 * column 3, line 5 - line 16 *
 * column 4, line 47 - line 67 *;
[US6389204](#) B1 20020514
 [A] (HURLEY WILLIAM C [US])
 [A] 1-11
 * abstract *;
[US6035087](#) A 20000307



[A] (BONICEL JEAN-PIERRE [FR], et al)

[A] 2

* abstract *

* column 2, line 6 - column 4, line 67 *;

[US4687294](#) A 19870818

[A] (ANGELES PURITA R [US])

[A] 1

* abstract *

* column 5, line 56 - column 6, line 51 *;

[EP0405851](#) A1 19910102

[A] (AMERICAN TELEPHONE & TELEGRAPH [US])

[A] 1-11

* abstract *;

[JPS6057304](#) A 19850403

[A] (FURUKAWA ELECTRIC CO LTD)

[A] 1

* abstract *;

[DE3144182](#) A1 19830519

[A] (SIEMENS AG [DE])

[A] 1

* abstract *;

[DE19520978](#) A1 19961212

[A] (SIEMENS AG [DE])

[A] 1-11

* abstract *;

[US4952021](#) A 19900828

[A] (AOKI TETSUJI [JP], et al)

[A] 1-11

* abstract *;

[US4000936](#) A 19770104

[A] (GLOGE DETLEF CHRISTOPH)

[A] 1-11

* abstract *

CCI - [G02B6/443](#) ; [G02B6/4438](#)

CCA - [G02B6/4403](#)

PA - (A1 B1)
EMTELLE UK LTD [GB]

TI - (A1 B1)
CABLE ASSEMBLY FOR
TRANSMITTING **OPTICAL** SIGNALS

AB - (A1)
A fibre **optic cable** 1 includes
a **core** of primary coated **optical**
fibres 2 embedded in an inner

layer 3 of acrylate material, having sufficient tensile strength when cured to lock at least the outermost fibres 2 in place and still allow the fibres to be easily broken out of the assembly for termination and splicing purposes. The hardness of the acrylate layer 3 is such that at least the outermost fibres 2 of the bundle are restricted from moving axially relative to the inner layer 3. The inner layer 3 is then surrounded by a loose thin **jacket** 4 formed from a mixture of high **density polyethylene** having a Shore hardness greater than or equal to 60 and a generally uniformly distributed slip agent, including a polyether modified poly (dimethylsiloxane) material such as polyether modified hydroxy functional poly (dimethylsiloxane) material. The mixture from which the outer layer 4 is formed is compacted by means of heat and pressure. The outer layer 4 may also contain a mineral filler, such as calcium carbonate and/or titanium dioxide, in order to improve the stability of the dimensions of the outer layer 4 as the temperature changes.

3/23 © EPODOC / EPO

PN - [CN203037908U](#) U 20130703

PR - CN2013204527U 20130106

AP - CN2013204527U 20130106

DT - I

PA - JIANGSU NANFANG TIANHONG COMM SCIENCE LTD CORP

TI - Double-layer composite filling rope

AB - The utility model discloses a double-layer composite filling rope, and belongs to the technical field of **optical** cables. The double-layer composite filling rope is characterized by being provided with an inner **core** and an outer **jacket**, wherein the inner **core** is prepared from medium-**density polyethylene** or polypropylene; the

outer **jacket** is prepared from polybutylene terephthalate or modified polypropylene; and the outer **jacket** is extruded on the inner **core**. The cross section of the double-layer composited filling rope is round or 8-shaped or fan-shaped. The fan shape comprises a convex circular arc and two concave circular arcs. The double-layer composite filling rope can be used for solving the problem that a **jacket** armor layer and the filling rope are bound during **optical cable** construction, can be stripped more conveniently, can be used for improving the working efficiency, is smooth in surface, and can be used for reducing the twisting and guide pulley abrasion in cabling equipment, and ensuring the equipment precision and the service life of the equipment. The double-layer composite filling rope is simple and reasonable in structure, easy to manufacture, ideal in rigidity, good in compressive strength, less in breakage possibility, smooth in surface, low in cost, good in effect and favorable in market prospect.

4/23 © EPODOC / EPO

- PN - [CN103048756](#) A 20130417
- PR - CN2013103332 20130106
- AP - CN2013103332 20130106
- DT - I
- CT - || STSE (A)
[CN202305946U](#) U 20120704 [X] (CHANGFEI OPTICAL FIBER OPTICAL CABLE SICHUAN CO LTD)
[X] 1-8
说明书具体实施方式,图1
[CN201449808U](#) U 20100505 [X] (JIANGSU HENG TONG PHOTOELECTRIC STOCK CO LTD)
[X] 1
说明书具体实施方式,图2
[CN203037908U](#) U 20130703 [R] (JIANGSU NANFANG TIANHONG COMM SCIENCE LTD CORP)
[R] 1-3
权利要求1-3
- PA - JIANGSU NANFANG TIANHONG COMM SCIENCE LTD CORP
- TI - Double-layer compound filling rope and preparation method thereof
- AB - The invention provides a double-layer compound filling rope and a preparation method thereof and belongs to the technical field of **optical** cables. The double-layer compound filling rope is characterized by being provided with an inner **core** and an outer **jacket**, wherein the outer **jacket** is extruded on the inner **core**; the inner **core** is prepared from medium-**density polyethylene** or polypropylene; the outer **jacket** is prepared from polybutylene terephthalate or modified polypropylene; and the cross section of the double-layer compound filling rope is round or 8-shaped or fan-shaped. The double-layer compound filling rope can be used for solving the problem that a **jacket** armor layer and the filling rope are bound during **optical cable** construction, can be stripped more conveniently, can be used for improving the working efficiency, is smooth in surface, and can be used for reducing the twisting and guide pulley abrasion in cabling equipment, and ensuring the equipment precision and the service life of the equipment. The double-layer compound filling rope is simple and reasonable in structure, easy to manufacture, ideal in rigidity, good in compressive strength, less in breakage possibility, smooth in surface, low in cost, good in effect and favorable in market

prospect.

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PN - [JP2011150201](#) A 20110804

PNFP - JP5091957B B2 20121205

PR - JP20100012384 20100122

AP - JP20100012384 20100122

DT - I

CT - (A)
[JP2009251358](#) A [
]; [WO2008090880](#) A1 [
]; [JP2009025425](#) A [
]; [JP2008286940](#) A [
]

FI - G02B6/44&361; G02B6/44&381

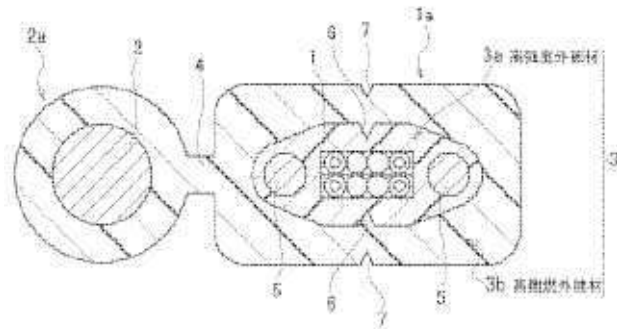
FT - 2H001/BB16; 2H001/DD06;
2H001/DD08; 2H001/DD11;
2H001/DD23; 2H001/DD32;
2H001/HH02

PA - (A)
FUJIKURA LTD; NIPPON
TELEGRAPH & TELEPHONE

TI - (A)
OPTICAL FIBER CABLE

AB - (A)
PROBLEM TO BE SOLVED: To
provide an **optical fiber cable**
having sufficient flame retarding
characteristics, capable of
passing a vertical tray
combustion test, while having
a **jacket** which is hardly pierced
by the ovipositor of
Cryptotympana facialis and can
sufficiently protect an **optical**
fiber **core** wire.

- SOLUTION: The **optical fiber core**
wire 1 is covered with an inner
layer **core** part 3a, and the inner
layer **core** part 3a is covered
with an outer layer part 3b. The
material of the inner layer **core**
part 3a includes high-**density**
polyethylene in a base material,
and contains ≥ 15 wt.% and ≤ 40
wt.% of at least one flame
retardant of magnesium



hydroxide, aluminum hydroxide and red phosphorus. The material of the outer layer part 3b includes at least one of EVA, EEA and low-**density polyethylene** in a base material, and contains ≥ 50 wt.% of at least one flame retardant of magnesium hydroxide, aluminum hydroxide and red phosphorus. The ratio of the outer layer part 3b to the overall **jacket 3** is ≥ 50 vol.%.
 - COPYRIGHT: (C)2011,JPO&INPIT

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PN - [USRE41388E](#) E 20100622
 PR - GB20020018624 20020810; GB20020022256 20020926; GB20030013018 20030606; WO2003GB02762 20030626
 AP - US20030105859 20030626
 DT - **
 CT - || STSE (E)
 [US4515435](#) A 19850507 [] (ANDERSON GENE S [US]);
 [US5751879](#) A 19980512 [] (GRAHAM LIONELL [US], et al);
 [US6912347](#) B2 20050628 [] (ROSSI MICHAEL T [US], et al)
 CCI - [G02B6/443](#) ; [G02B6/4438](#)
 CCA - [G02B6/4403](#)
 PA - EMTELLE UK LTD [GB]
 TI - Signal transmitting **cable**
 AB - A fibre **optic cable** includes a **core** of primary coated **optical** fibres embedded in an inner layer of acrylate material, having sufficient tensile strength when cured to lock at least the outermost fibres in place and still allow the fibres to be easily broken out of the assembly for termination and splicing purposes. The hardness of the acrylate layer is such that at least the outermost fibres of the bundle are restricted from moving axially relative to the inner layer. The inner layer is then surrounded by a loose thin **jacket** formed from a mixture of high **density polyethylene** having a Shore hardness greater than or equal to 60 and a generally uniformly distributed slip agent, including a polyether modified poly (dimethylsiloxane) material such as polyether modified hydroxy functional poly (dimethylsiloxane) material. The mixture from which the outer layer is formed is compacted by means of heat and pressure. The outer layer may also contain a mineral filler, such as calcium carbonate and/or titanium dioxide, in order to improve the stability of the dimensions of the outer layer as the temperature changes.

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PN - [JP2009294456](#) A 20091217

PR - JP20080148254 20080605

AP - JP20080148254 20080605

DT - I

CT - || STSE (A)
[JP2006195109](#) A 20060727 [
] (NIPPON TELEGRAPH &
 TELEPHONE)

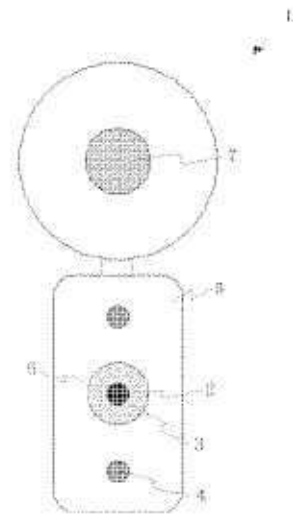
FI - G02B6/02&451; G02B6/44&316;
 G02B6/44&381

FT - 2H001/DD06; 2H001/DD24;
 2H001/HH02; 2H001/KK07;
 2H001/KK17; 2H001/KK22;
 2H150/AB03; 2H150/AB32;
 2H150/AF23; 2H150/AH36;
 2H150/BB02; 2H150/BB03;
 2H150/BB10; 2H150/BB14;
 2H150/BB33; 2H150/BB35;
 2H150/BC03; 2H150/BC18;
 2H150/BD00

PA - TONICHI KYOSAN CABLE LTD

TI - **OPTICAL DROP CABLE**

AB - PROBLEM TO BE SOLVED: To
 provide an **optical drop cable**
 capable of preventing an **optical**
 fiber from being damaged due to
 the oviposition of a bear cicada.
 - SOLUTION: This **optical**
 drop **cable** is composed of
 an **optical fiber core** wire using a
 single mode fiber or a holey fiber
 having resistance to bending, an
 up **jacket** constituted by covering
 the **optical fiber core** wire with
 urethane or nylon or ultraviolet
 curing resin, a tension member
 passing through above and
 below the up **jacket**, an outer
 cover covering the up **jacket** and
 the tension member with
 low **density polyethylene**, and a
 supporting wire for suspending
 the outer cover to protect
 the **optical fiber core** wire from
 the oviposition of a bear cicada.
 - COPYRIGHT: (C)2010,JPO&INPIT



8/23 © EPODOC / EPO

PN - [US2005018983](#) A1 20050127

PNFP - US7136556 B2 20061114

PR - GB20020018624
20020810; GB20020022256
20020926; GB20030013018
20030606; WO2003GB02762
20030626

AP - US20040486674 20040921

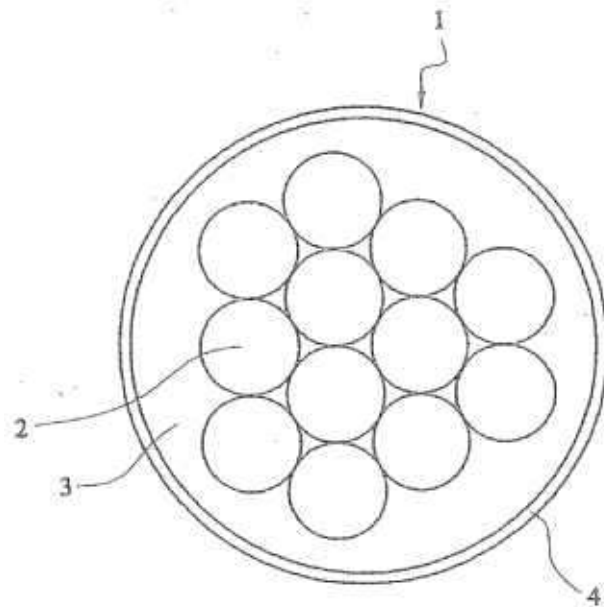
DT - **

CT - || STSE (B2)
[US4687294](#) A 19870818 [] (COOPER IND INC [US])
[US4946237](#) A 19900807 [] (AT & T BELL LAB [US])
[US4976519](#) A 19901211 [] (BICC PLC [GB], et al)
[US5557703](#) A 19960917 [] (BRITISH TELECOMM [GB])
[US6035087](#) A 20000307 [] (CIT ALCATEL [FR])
[US6046302](#) A 20000404 [] (DSM NV [NL])
[US6334015](#) B2 20011225 [] (SAGEM [US])
- || R141 (A1)
[US5487126](#) A [];
[US6035087](#) A [];
[US4740053](#) A [];
[US5621842](#) A [];
[US6046302](#) A [];
[US6374023](#) B1 [];
[US5208890](#) A [];
[US3814499](#) A [];
[US4673516](#) A [];
[US5761361](#) A [];
[US5787217](#) A [];
[US4687294](#) A [];
[US4946237](#) A [];
[US4952021](#) A [];
[US5557703](#) A [];
[US4781433](#) A [];
[US4976519](#) A [];
[US6334015](#) B2 []

CCI - [G02B6/443](#) ; [G02B6/4438](#)

CCA - [G02B6/4403](#)

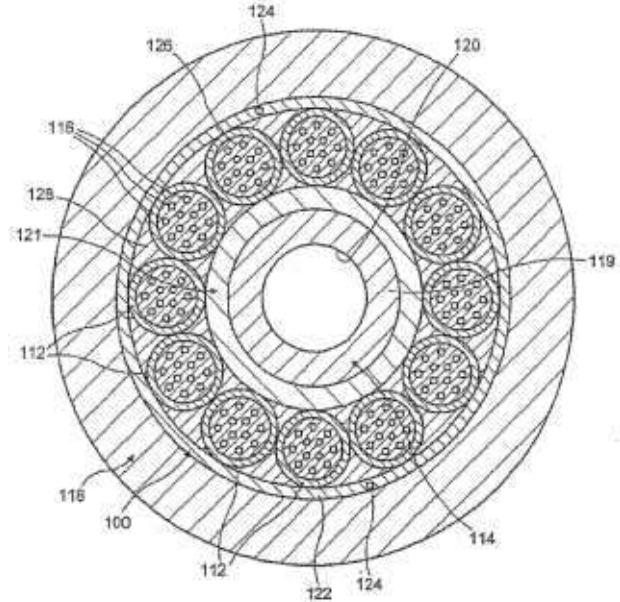
PA - (B2)



- TI - (A1 B2)
Signal transmitting **cable**
- AB - (A1 B2)
A fibre **optic cable** includes a **core** of primary coated **optical** fibres embedded in an inner layer of acrylate material, having sufficient tensile strength when cured to lock at least the outermost fibres in place and still allow the fibres to be easily broken out of the assembly for termination and splicing purposes. The hardness of the acrylate layer is such that at least the outermost fibres of the bundle are restricted from moving axially relative to the inner layer. The inner layer is then surrounded by a loose thin **jacket** formed from a mixture of high **density polyethylene** having a Shore hardness greater than or equal to 60 and a generally uniformly distributed slip agent, including a polyether modified poly (dimethylsiloxane) material such as polyether modified hydroxy functional poly (dimethylsiloxane) material. The mixture from which the outer layer is formed is compacted by means of heat and pressure. The outer layer may also contain a mineral filler, such as calcium carbonate and/or titanium dioxide, in order to improve the stability of the dimensions of the outer layer as the temperature changes.

PN - [US2004037522](#) A1 20040226
 PNFP - US6876800 B2 20050405
 PR - EP20000306704
 20000807; WO2001GB03343
 20010725
 AP - US20030343907 20030805
 DT - **
 CT - || STSE (B2)
[US5369720](#) A 19941129 [
] (PARRY MARK J [GB], et al)
[US2004033036](#) A1 20040219 [
] (PARK HOON-SOO [US], et al)
 - || R141 (A1)
[US6195487](#) B1 [];
[US2004033036](#) A1 [];
[US6101304](#) A [];
[US5046815](#) A [];
[US4550976](#) A [];
[US5369720](#) A [

 CCI - [G02B6/4429](#) ; [G02B6/4494](#)
 CCA - [G02B6/4464](#) ; [G02B6/447](#)
 PA - (B2)
 PIRELLI GENERAL PLC [GB]
 TI - (A1)
Optical fibre cable
 - (B2)
Optical fiber cable
 AB - (A1)
 An **optical fibre cable** for blown
 installation has a tubular
 central strength member (114)
 about which tubes (112) loosely
 housing **optical** fibres (116) are
 stranded. The **jacket** (118) is
 preferably formed from a
 high **density polyethylene**
 material and is extruded over
 the **core** (100) on which rip cords
 (124) are positioned. Water
 blocking compound (126) is
 provided in each tube (112) in
 any spaces therein which would
 otherwise be void. Also a water
 blocking material (128) is
 provided between the sheath
 (121) and the layer defined by



the helically wound wrapping tape (122) or binding yarn in any spaces between the tubes (112) which would otherwise be void.

- (B2)

An **optical** fiber **cable** for blown installation has a tubular central strength member about which tubes loosely housing **optical** fibers are stranded. The **jacket** is preferably formed from a high **density polyethylene** material and is extruded over the **core** on which rip cords are positioned. A water blocking compound is provided in each tube in any spaces therein which would otherwise be void. Also a water blocking material is provided between the sheath and the layer defined by the helically wound wrapping tape or binding yarn in any spaces between the tubes which would otherwise be void.

PN - [US2004071416](#) A1 20040415

PR - US20020271023 20021015

AP - US20020271023 20021015

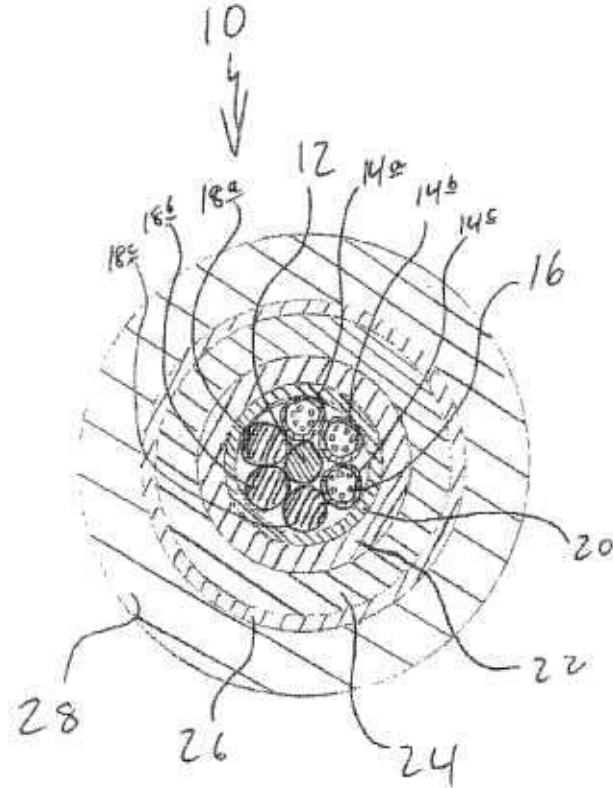
DT - *; Rep

CT - || R141 (A1)
[US5178797](#) A [];
[US6344614](#) B1 [];
[US2003035635](#) A1 [];
[US4384944](#) A [];
[US5112918](#) A [];
[US5526457](#) A [];
[US5761362](#) A [];
[US5031996](#) A [];
[US5230034](#) A [];
[US6118079](#) A [];
[US6479590](#) B1 []

CCI - [G02B6/4419](#)

TI - **Optical cable** having an increased resistance to dry band arcing and method for its manufacture

AB - An **optical cable** includes an outer **jacket** comprised of a cross-linked medium **density polyethylene** having at least 10% of an inorganic filler therein. The filler preferably comprises at least 75% by weight MgO. In particular embodiments, the ATH content of the filler is less than 1% by weight. Also disclosed is a method for manufacturing the **cable** in which a **jacket** of thermoplastic MDPE is extruded onto a **cable core** and subsequently cross-linked. Moisture activated cross-linking processes are specifically disclosed.



PN - [SG136841](#) A1 20071129

PR - GB20020018624
20020810; GB20020022256
20020926; GB20030013018
20030606

AP - SG20060030043 20030626

DT - I

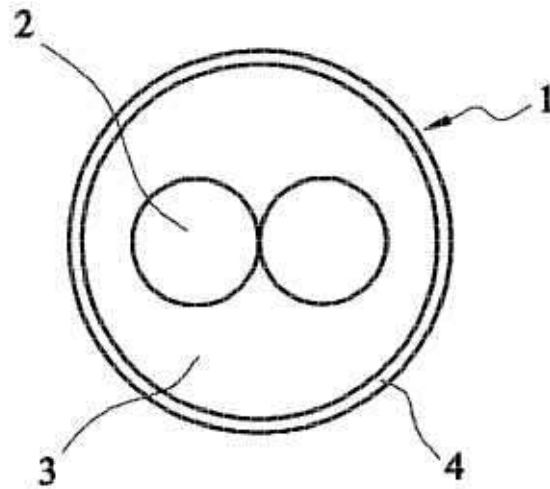
CCI - [G02B6/443](#) ; [G02B6/4438](#)

CCA - [G02B6/4403](#)

PA - EMTELLE UK LTD

TI - SIGNAL TRANSMITTING **CABLE**

AB - A fibre **optic cable 1** includes a **core** of primary coated **optical fibres 2** embedded in an inner layer 3 of acrylate material, having sufficient tensile strength when cured to lock at least the outermost fibres 2 in place and still allow the fibres to be easily broken out of the assembly for termination and splicing purposes. The hardness of the acrylate layer 3 is such that at least the outermost fibres 2 of the bundle are restricted from moving axially relative to the inner layer 3. The inner layer 3 is then surrounded by a loose thin **jacket 4** formed from a mixture of high **density polyethylene** having a Shore hardness greater than or equal to 60 and a generally uniformly distributed slip agent, including a polyether modified poly (dimethylsiloxane) material such as polyether modified hydroxy functional poly (dimethylsiloxane) material. The mixture from which the outer layer 4 is formed is compacted by means of heat and pressure. The outer layer 4 may also contain a mineral filler, such as calcium carbonate and/or titanium dioxide, in order to improve the stability of the



dimensions of the outer layer 4
as the temperature changes.

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PN - [SG136840](#) A1 20071129

PR - GB20020018624
20020810; GB20020022256
20020926; GB20030013018
20030606

AP - SG20060029995 20030626

DT - I

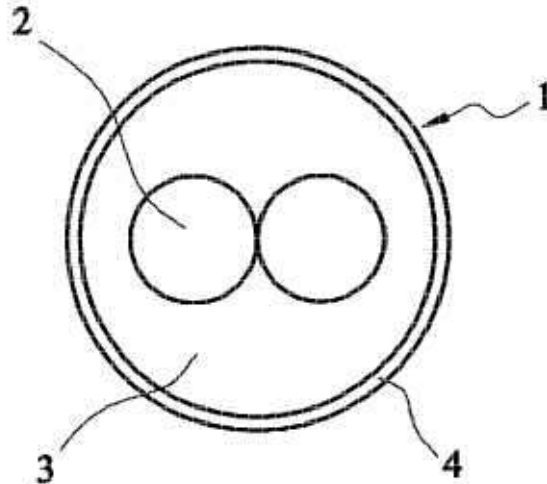
CCI - [G02B6/443](#) ; [G02B6/4438](#)

CCA - [G02B6/4403](#)

PA - EMTELLE UK LTD

TI - SIGNAL TRANSMITTING **CABLE**

AB - A fibre **optic cable** 1 includes a **core** of primary coated **optical** fibres 2 embedded in an inner layer 3 of acrylate material, having sufficient tensile strength when cured to lock at least the outermost fibres 2 in place and still allow the fibres to be easily broken out of the assembly for termination and splicing purposes. The hardness of the acrylate layer 3 is such that at least the outermost fibres 2 of the bundle are restricted from moving axially relative to the inner layer 3. The inner layer 3 is then surrounded by a loose thin **jacket** 4 formed from a mixture of high **density polyethylene** having a Shore hardness greater than or equal to 60 and a generally uniformly distributed slip agent, including a polyether modified poly (dimethylsiloxane) material such as polyether modified hydroxy functional poly (dimethylsiloxane) material. The mixture from which the outer layer 4 is formed is compacted by means of heat and pressure. The outer layer 4 may also



contain a mineral filler, such as calcium carbonate and/or titanium dioxide, in order to improve the stability of the dimensions of the outer layer 4 as the temperature changes.

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PN - [KR20070116692](#) A 20071210

PNFP - KR100894073B B1 20090421

PR - GB20020018624
20020810; GB20020022256
20020926; GB20030013018
20030606

AP - KR20077025904 20071107

DT - I

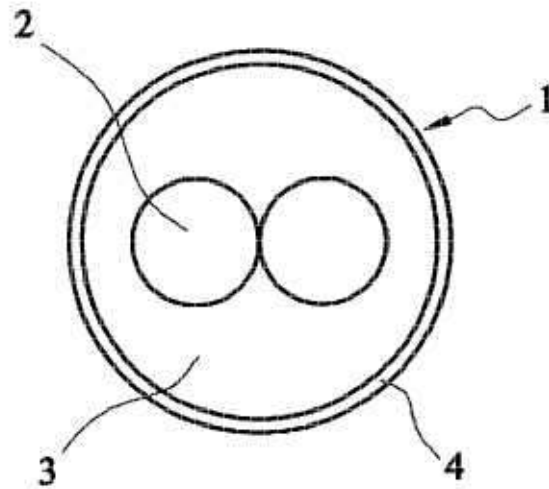
CCI - [G02B6/443](#) ; [G02B6/4438](#)

CCA - [G02B6/4403](#)

PA - (A)
EMTELLE UK LTD [GB]

TI - (A)
SIGNAL TRANSMITTING **CABLE**
- (B1)
Signal transmitting **cable**

AB - (A)
A fibre **optic cable** (1) includes a **core** of primary coated **optical** fibres (2) embedded in an inner layer (3) of acrylate material, having sufficient tensile strength when cured to lock at least the outermost fibres (2) in place and still allow the fibres to be easily broken out of the assembly for termination and splicing purposes. The hardness of the acrylate layer (3) is such that at least the outermost fibres (2) of the bundle are restricted from moving axially relative to the inner layer (3). The inner layer (3) is then surrounded by a loose thin **jacket** (4) formed from a mixture of high **density polyethylene** having a Shore hardness greater than or equal



to 60 and a generally uniformly distributed slip agent, including a polyether modified poly (dimethylsiloxane) material such as polyether modified hydroxy functional poly (dimethylsiloxane) material. The mixture from which the outer layer (4) is formed is compacted by means of heat and pressure. The outer layer (4) may also contain a mineral filler, such as calcium carbonate and/or titanium dioxide, in order to improve the stability of the dimensions of the outer layer (4) as the temperature changes.

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PN - [KR20050037571](#) A 20050422

PR - GB20020018624
20020810; GB20020022256
20020926; GB20030013018
20030606

AP - KR20057002202 20050205

DT - I

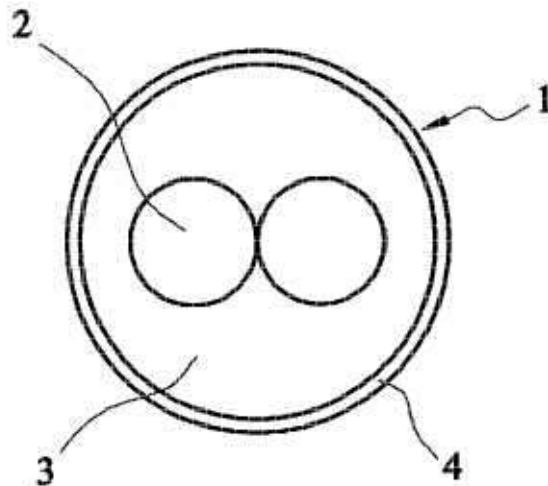
CCI - [G02B6/443](#) ; [G02B6/4438](#)

CCA - [G02B6/4403](#)

PA - EMTELLE UK LTD [GB]

TI - SIGNAL TRANSMITTING **CABLE**

AB - A fibre **optic cable** (1) includes a **core** of primary coated **optical** fibres (2) embedded in an inner layer (3) of acrylate material, having sufficient tensile strength when cured to lock at least the outermost fibres (2) in place and still allow the fibres to be easily broken out of the assembly for termination and splicing purposes. The hardness of the acrylate layer (3) is such that at least the outermost fibres (2) of the bundle are restricted from moving axially relative to the inner layer (3). The inner layer (3) is then surrounded by a loose



thin **jacket** (4) formed from a mixture of high **density polyethylene** having a Shore hardness greater than or equal to 60 and a generally uniformly distributed slip agent, including a polyether modified poly (dimethylsiloxane) material such as polyether modified hydroxy functional poly (dimethylsiloxane) material. The mixture from which the outer layer (4) is formed is compacted by means of heat and pressure. The outer layer (4) may also contain a mineral filler, such as calcium carbonate and/or titanium dioxide, in order to improve the stability of the dimensions of the outer layer (4) as the temperature changes.

15/23 © EPODOC / EPO

PN - [GB2409909](#) A 20050713

PNFP - GB2409909 B 20051019

- GB2409909 C 20100208

PR - GB20040015890
20030626; GB20030013018
20030606; GB20020018624
20020810; GB20020022256
20020926

AP - GB20050004492 20030626

DT - **

CT - (A B)
[GB2086607](#) A []; [GB2214652](#) A [];
[EP0296836](#) A1 []; [EP0442308](#)
A2 [];
[JPS6033519](#) A []; [WO0060393](#)
A1 []

CCI - [G02B6/4438](#)

CCA - [G02B6/4485](#)

PA - (A B C)
EMTELLE UK LTD [GB]

TI - (A B C)
Signal transmitting **cable**

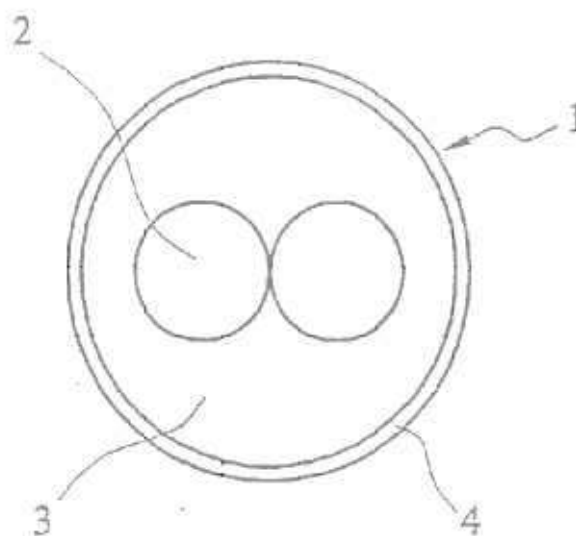


FIG. 1A

AB

- (A)

A fibre **optic cable** 1 includes a **core** of e.g. primary coated **optical** fibres 2 embedded in an inner layer 3 of e.g. acrylate material, to lock at least the outermost fibres 2 in place and preferably still allow the fibres to be easily broken out of the assembly for termination and splicing purposes. The layer 3 is such that at least the outermost fibres 2 of the bundle are restricted from moving axially relative to the inner layer 3. The inner layer 3 is then surrounded by a continuous thermoplastic polymer **jacket** 4 formed e.g. from a mixture of high **density polyethylene** having a Shore hardness greater than or equal to 60 and a generally uniformly distributed slip agent, including a polyether modified poly (dimethylsiloxane) material such as polyether modified hydroxy functional poly (dimethylsiloxane) material. The mixture from which the outer layer 4 is formed maybe compacted by means of heat and pressure. The outer layer 4 may also contain a mineral filler, such as calcium carbonate and/or titanium dioxide, in order to improve the stability of the dimensions of the outer layer 4 as the temperature changes. Layer 4 is adapted to be removed from layer 3 by sliding.

PN - [GB2409908](#) A 20050713
 PNFP - GB2409908 B 20051130
 - GB2409908 C 20110713
 PR - GB20030013018
 20030606; GB20020018624
 20020810; GB20020022256
 20020926; GB20040015890
 20030626
 AP - GB20050004489 20030626
 DT - *
 CT - (A B)
[GB2086607](#) A []; [GB2145841](#) A [];
[EP0296836](#) A1 []; [EP0442308](#)
 A2 [];
[JPS6033519](#) A []; [WO0060393](#)
 A1 []
 CCI - [G02B6/4438](#)
 CCA - [G02B6/4485](#)
 PA - (A B C)
 EMTELLE UK LTD [GB]
 TI - (A B C)
 Signal transmitting **cable**
 AB - (A)
 A fibre **optic cable** 1 includes
 a **core** of e.g. primary
 coated **optical** fibres 2 embedded
 in an inner layer 3 of e.g.
 acrylate material, to lock at least
 the outermost fibres 2 in place
 and preferably still allow the
 fibres to be easily broken out of
 the assembly for termination
 and splicing purposes. The layer
 3 is such that at least the
 outermost fibres 2 of the bundle
 are restricted from moving
 axially relative to the inner layer
 3. The inner layer 3 is then
 surrounded by a **jacket** 4 having
 a thickness of less than 400
 microns, preferably formed from
 a mixture of high **density**
polyethylene having a Shore
 hardness greater than or equal
 to 60 and a generally uniformly
 distributed slip agent, including

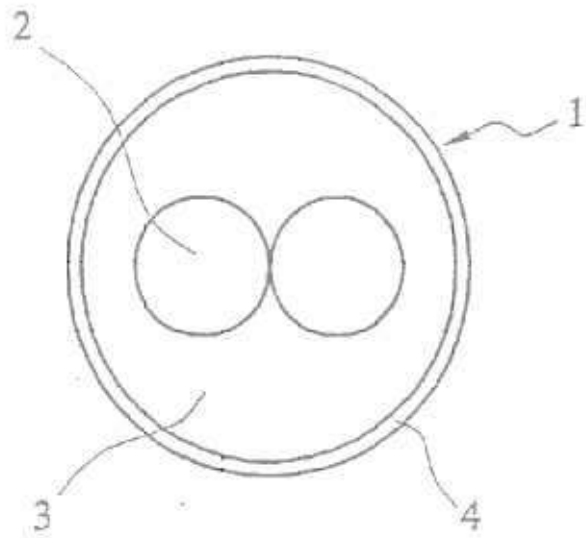


FIG. 1A

a polyether modified poly (dimethylsiloxane) material such as polyether modified hydroxy functional poly (dimethylsiloxane) material. The mixture from which the outer layer 4 is formed may be compacted by means of heat and pressure. The outer layer 4 may also contain a mineral filler, such as calcium carbonate and/or titanium dioxide, in order to improve the stability of the dimensions of the outer layer 4 as the temperature changes.

17/23 © EPODOC / EPO

PN - [GB2400921](#) A 20041027

PNFP - GB2400921 B 20051012

- GB2400921 C 20080317

PR - GB20020022256

20020926; GB20050004492

20030626; GB20030013018

20030606; GB20020018624

20020810; GB20050004489

20030626; WO2003GB02762

20030626

AP - GB20040015890 20030626

DT - **

CT - (A)

[GB2065324](#) A []; [GB2086607](#) A [];

[GB2145841](#) A []; [GB2214652](#) A [];

[EP0296836](#) A1 []; [JPS6033519](#) A [];

[WO0060393](#) A1 []

- (B)

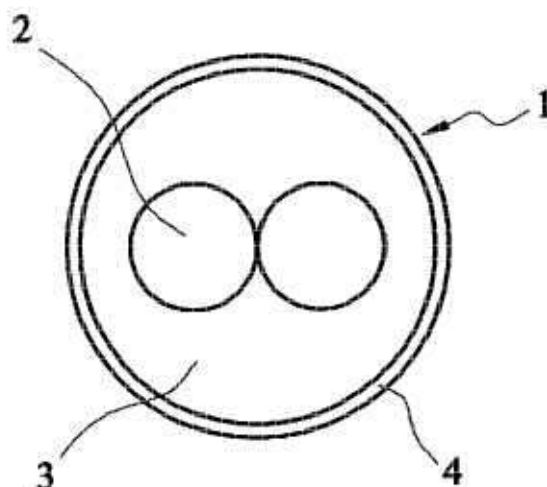
[GB2065324](#) A []; [GB2086607](#) A [];

[GB2145841](#) A []; [GB2214652](#) A [];

[EP0296836](#) A1 []; [EP0442308](#) A2 [];

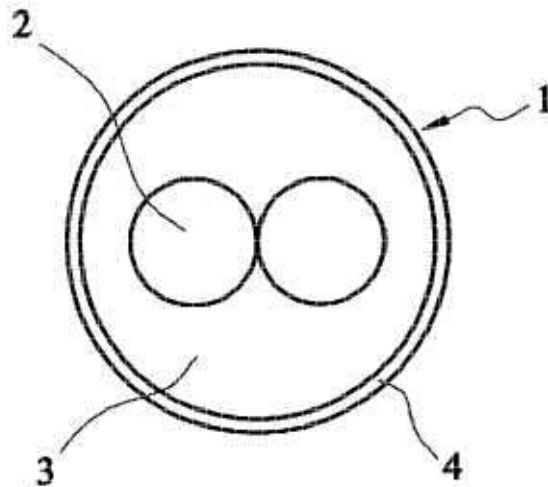
[JPS6033519](#) A []; [WO0060393](#) A1 []

CCI - [G02B6/4438](#) ; [G02B6/443](#)



CCA	- G02B6/4403
PA	- (A B C) EMTELLE UK LTD [GB]
TI	- (A B C) Signal transmitting cable
AB	- (A) A fibre optic cable (1) includes a core of primary coated optical fibres (2) embedded in an inner layer (3) of acrylate material, having sufficient tensile strength when cured to lock at least the outermost fibres (2) in place and still allow the fibres to be easily broken out of the assembly for termination and splicing purposes. The hardness of the acrylate layer (3) is such that at least the outermost fibres (2) of the bundle are restricted from moving axially relative to the inner layer (3). The inner layer (3) is then surrounded by a loose thin jacket (4) formed from a mixture of high density polyethylene having a Shore hardness greater than or equal to 60 and a generally uniformly distributed slip agent, including a polyether modified poly (dimethylsiloxane) material such as polyether modified hydroxy functional poly (dimethylsiloxane) material. The mixture from which the outer layer (4) is formed is compacted by means of heat and pressure. The outer layer (4) may also contain a mineral filler, such as calcium carbonate and/or titanium dioxide, in order to improve the stability of the dimensions of the outer layer (4) as the temperature changes.

PN - [WO2004015475](#) A2 20040219
 PNFP - WO2004015475 A3 20040923
 PR - GB20020018624
 20020810; GB20020022256
 20020926; GB20030013018
 20030606
 AP - WO2003GB02762 20030626
 DT - *; Rep
 CT - |EP| ISR (A3)
[US6035087](#) A 20000307
 [X] (BONICEL JEAN-PIERRE [FR], et al)
 [X] 1-4,9,16
 * abstract *
 * column 2, line 6 - column 4, line 67 *;
[US4687294](#) A 19870818
 [X] (ANGELES PURITA R [US])
 [X] 1,2,16
 * abstract *
 * column 5, line 56 - column 6, line 51 *;
[EP0296836](#) A1 19881228
 [X] (BICC PLC [GB], et al)
 [X] 1,2
 * abstract *
 * page 1, line 2 - line 9 *;
[US5761361](#) A 19980602
 [X] (PFANDL WALTER [DE], et al)
 [X] 9
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 * column 6, line 41 - line 49 *
 * column 7, line 33 - line 67 *
 * column 8, line 7 - line 23 *;
[US5557703](#) A 19960917
 [A] (BARKER PHILIP A [GB], et al)
 [A] 1-27
 * abstract *;
[US6334015](#) B2 20011225
 [A] (JAMET PATRICK [FR])
 [A] 1-8
 * abstract *
 * column 3, line 5 - line 16 *
 * column 4, line 47 - line 67 *;
[EP0405851](#) A1 19910102
 [A] (AMERICAN TELEPHONE & TELEGRAPH [US])
 [A] 1-8



* abstract *;
[JPS6057304](#) A 00000000 [A];
[DE3144182](#) A1 19830519
 [A] (SIEMENS AG [DE])
 [A] 1
 * page 6; figure 1 *;
[DE19520978](#) A1 19961212
 [A] (SIEMENS AG [DE])
 [A] 1-27
 * abstract *
 * column 2, line 64 - column 3,
 line 11 *;
[US4952021](#) A 19900828
 [A] (AOKI TETSUJI [JP], et al)
 [A] 1-27
 * abstract *
 * column 1, line 32 - column 4,
 line 26 *;
[US6389204](#) B1 20020514
 [A] (HURLEY WILLIAM C [US])
 [A] 1-27
 * abstract *;
[US4000936](#) A 19770104
 [A] (GLOGE DETLEF CHRISTOPH)
 [A] 1-27
 * abstract *

CTNP - |EP| ISR (A3)
 [A] - PATENT ABSTRACTS OF
 JAPAN, (19850802), vol. 009, no.
 186, Database accession no. (P -
 377),
 [A] 1
 * abstract *

CCI - [G02B6/443](#) ; [G02B6/4438](#)

CCA - [G02B6/4403](#)

PA - (A2 A3)
 EMTELLE UK LTD [GB]; BROWN
 GEORGE HENRY PLATT [GB];
 STOCKTON DAVID JOHN [GB];
 MCILWRAITH GREIG IAIN [GB]

TI - (A2)
 SIGNAL TRANSMITTING **CABLE**
 - (A3)
OPTICAL CABLE FOR
 INSTALLATION BY BLOWING

AB - (A2 A3)
 A fibre **optic cable** (1) includes
 a **core** of primary coated **optical**

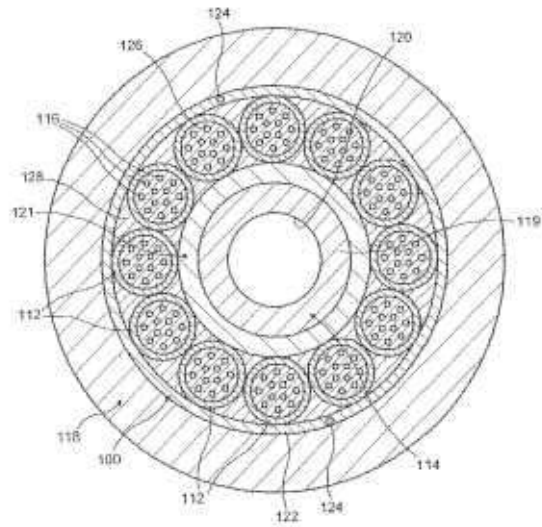
fibres (2) embedded in an inner layer (3) of acrylate material, having sufficient tensile strength when cured to lock at least the outermost fibres (2) in place and still allow the fibres to be easily broken out of the assembly for termination and splicing purposes. The hardness of the acrylate layer (3) is such that at least the outermost fibres (2) of the bundle are restricted from moving axially relative to the inner layer (3). The inner layer (3) is then surrounded by a loose thin **jacket** (4) formed from a mixture of high **density polyethylene** having a Shore hardness greater than or equal to 60 and a generally uniformly distributed slip agent, including a polyether modified poly (dimethylsiloxane) material such as polyether modified hydroxy functional poly (dimethylsiloxane) material. The mixture from which the outer layer (4) is formed is compacted by means of heat and pressure. The outer layer (4) may also contain a mineral filler, such as calcium carbonate and/or titanium dioxide, in order to improve the stability of the dimensions of the outer layer (4) as the temperature changes.

PN - [WO0212943](#) A1 20020214
 PR - EP20000306704 20000807
 AP - WO2001GB03343 20010725
 DT - *; Rep
 CT - |EP| ISR (A1)
[US6101304](#) A 20000808
 [EA] (QUISTORFF KEITH [US], et al)
 [E] 1,5,6
 * figure -; claim - *
 [A] 2,3;
[EP1004914](#) A1 20000531
 [A] (PINACL COMMUNICATION
 SYSTEMS L [GB])
 [A] 1
 * figure -; claim - *;
[EP0969302](#) A1 20000105
 [A] (PIRELLI CABLE CORP [US])
 [A] 1
 * figure -; claim - *;
[EP0456909](#) A2 19911121
 [A] (CORNING INC [US])
 [A] 1
 * figure -; claim - *

CCI - [G02B6/4429](#) ; [G02B6/4494](#)
 CCA - [G02B6/4464](#) ; [G02B6/447](#)
 PA - PIRELLI GENERAL PLC [GB];
 SUTEHALL RALPH [GB]; PEDDER
 JASON [GB]; LANG IAN DEWI [GB];
 TODD MATTHEW JOHN [GB]

TI - **OPTICAL FIBRE CABLE**

AB - An **optical** fibre **cable** for blown
 installation has a tubular
 central strength member (114)
 about which tubes (112) loosely
 housing **optical** fibres (116) are
 stranded. The **jacket** (118) is
 preferably formed from a
 high **density polyethylene**
 material and is extruded over
 the **core** (100) on which rip cords
 (124) are positioned. Water
 blocking compound (126) is
 provided in each tube (112) in
 any spaces therein which would
 otherwise be void. Also a water
 blocking material (128) is
 provided between the sheath



(121) and the layer defined by the helically wound wrapping tape (122) or binding yarn in any spaces between the tubes (112) which would otherwise be void.

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- PN - [FR2435051](#) A1 19800328
- PR - FR19780025115 19780831
- AP - FR19780025115 19780831
- DT - *; Rep
- CT - || STSE (A1)
[DE2551210](#) A1 19770526 [] (SIEMENS AG);
[DE2556786](#) A1 19760701 [] (BICC LTD);
[FR2305748](#) A1 19761022 [] (SIEMENS AG [DE]);
[DE2512006](#) A1 19760205 [] (PIRELLI GENERAL CABLE WORKS);
[FR2280911](#) A1 19760227 [] (PIRELLI [IT]);
[FR2352315](#) A1 19771216 [] (CABLES DE LYON GEOFFROY DELORE [FR])
- CCI - [G02B6/4427](#) ; [G02B6/4479](#)
- PA - CABLES DE LYON GEOFFROY DELORE
- TI - Liq. filled cables - for trans:oceanic undersea **optical** fibre communications protect **optical** cables around a steel **core cable** from hydrostatic crushing
- AB - Undersea telecommunications **cable** using **optical** signal fibres is made by grouping the **optical** fibres in an annular array around a **core cable** made of high tensile steel cables and enclosed in a tight-fitting sleeve of high electrical conductivity (cu). The **optical** fibres are contained in an oversize **jacket** of an impermeable thermoplastic material (**polyethylene**) in which the interstitial space is filled with a dielectric liq. having a **density** similar to that of water. Repeater units' have terminals which secure the **core cable** and the sheath of the signal **cable** and admit the signal cables via seals which can exclude the dielectric fluid filling the **cable**. Used for submarine cables requiring sufficient tensile strength for deep sea laying, sufficient compressive strength to resist the hydrostatic pressure and which can incorporate repeater units to boost the signal and to localise the position of any faults or breaks in the **cable**.

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PN - [EP1821124](#) A1 20070822
 PNFP - EP1821124 B1 20140226
 PR - EP20050019312
 20030626; EP20030784229
 20030626; GB20030013018
 20030606; GB20020022256
 20020926; GB20020018624
 20020810
 AP - EP20070005533 20030626
 DT - **
 CT - || STSE (A1)
[US5557703](#) A 19960917
 [X] (BARKER PHILIP A [GB], et al)
 [X] 1-11
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[US5761361](#) A 19980602
 [XA] (PFANDL WALTER [DE], et al)
 [X] 1
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 * column 6, line 41 - line 49 *
 * column 7, line 33 - line 67 *
 * column 8, line 7 - line 23 *
 [A] 6,7;
[EP0296836](#) A1 19881228
 [A] (BICC PLC [GB], et al)
 [A] 3,4
 * abstract *
 * page 1, line 2 - line 9 *;
[US6334015](#) B2 20011225
 [A] (JAMET PATRICK [FR])
 [A] 1-11
 * abstract *
 * column 3, line 5 - line 16 *
 * column 4, line 47 - line 67 *;
[US6389204](#) B1 20020514
 [A] (HURLEY WILLIAM C [US])
 [A] 1
 * abstract *;
[US6035087](#) A 20000307
 [A] (BONICEL JEAN-PIERRE [FR], et al)
 [A] 3,4
 * abstract *
 * column 2, line 6 - column 4, line 67 *;
[US4687294](#) A 19870818
 [A] (ANGELES PURITA R [US])
 [A] 3,4

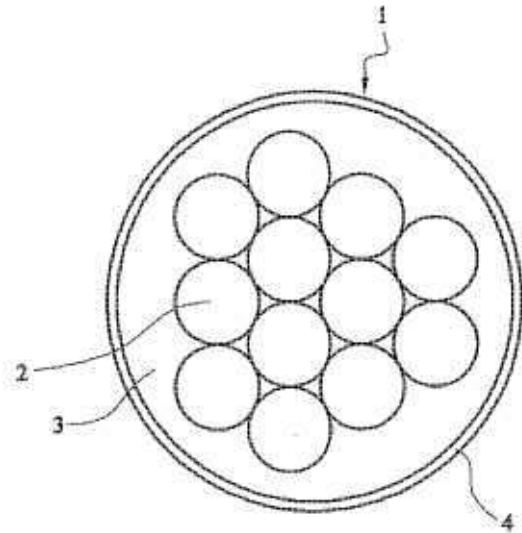


FIG. 1B

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[JPS6057304](#) A 00000000 [A];
[US4952021](#) A 19900828
 [A] (AOKI TETSUJI [JP], et al)
 [A] 1-11
 * abstract *
 * column 1, line 32 - column 4,
 line 26 *;
[US4673516](#) A 19870616
 [A] (BERRY JOHNNY D [US])
 [A] 1-11
 * abstract *;
[US4072398](#) A 19780207
 [A] (LARSEN HERBERT, et al)
 [A] 1-11
 * column 2, lines 42-51 *;
[US5358011](#) A 19941025
 [A] (STOCKTON DAVID J [GB], et
 al)
 [A] 1-11
 * abstract *

CTNP - || STSE (A1)
 [A] - PATENT ABSTRACTS OF
 JAPAN, (19850802), vol. 009, no.
 186, Database accession no. (P -
 377),
 [A] 3,4
 * abstract *

CCI - [G02B6/443](#) ; [G02B6/4438](#)

CCA - [G02B6/4403](#)

PA - (A1 B1)
 EMTELLE UK LTD [GB]

TI - (A1 B1)
 Protective covering for **optical**
 fiber **cable**

AB - (A1)
 A fibre **optic cable** 1 includes
 a **core** of primary coated **optical**
 fibres 2 embedded in an inner
 layer 3 of acrylate material,
 having sufficient tensile strength
 when cured to lock at least the
 outermost fibres 2 in place and
 still allow the fibres to be easily
 broken out of the assembly for
 termination and splicing

purposes. The hardness of the acrylate layer 3 is such that at least the outermost fibres 2 of the bundle are restricted from moving axially relative to the inner layer 3. The inner layer 3 is then surrounded by a loose thin **jacket 4** formed from a mixture of high **density polyethylene** having a Shore hardness greater than or equal to 60 and a generally uniformly distributed slip agent, including a polyether modified poly (dimethylsiloxane) material such as polyether modified hydroxy functional poly (dimethylsiloxane) material. The mixture from which the outer layer 4 is formed is compacted by means of heat and pressure. The outer layer 4 may also contain a mineral filler, such as calcium carbonate and/or titanium dioxide, in order to improve the stability of the dimensions of the outer layer 4 as the temperature changes.

PN - [EP1600801](#) A2 20051130
 PNFP - EP1600801 A3 20060531
 - EP1600801 B1 20160413
 PR - EP20030784229
 20030626; GB20030013018
 20030606; GB20020022256
 20020926; GB20020018624
 20020810
 AP - EP20050019312 20030626
 DT - **
 CT - || STSE (A3)
[US5557703](#) A 19960917
 [X] (BARKER PHILIP A [GB], et al)
 [X] 1-18
 * abstract *;
[EP0296836](#) A1 19881228
 [A] (BICC PLC [GB], et al)
 [A] 4,5
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 * page 1, line 2 - line 9 *;
[US5761361](#) A 19980602
 [XA] (PFANDL WALTER [DE], et al)
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 [A] 6,7;
[US6334015](#) B2 20011225
 [A] (JAMET PATRICK [FR])
 [A] 1-18
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[US6389204](#) B1 20020514
 [A] (HURLEY WILLIAM C [US])
 [A] 1-18
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[US6035087](#) A 20000307
 [A] (BONICEL JEAN-PIERRE [FR], et al)
 [A] 6,7
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[US4687294](#) A 19870818
 [A] (ANGELES PURITA R [US])
 [A] 1,8

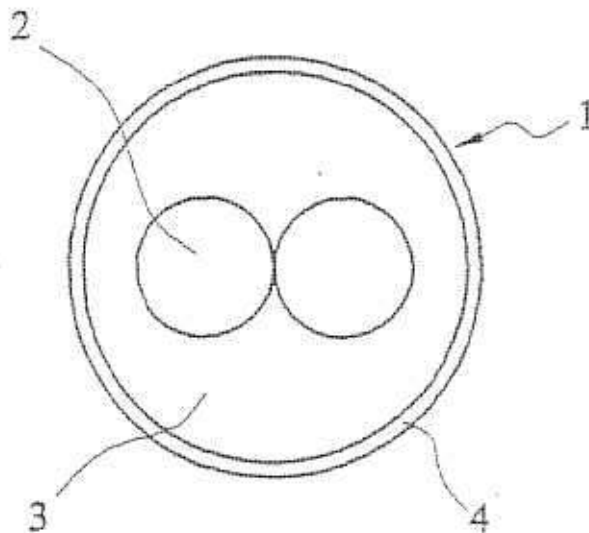


FIG. 1A

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[EP0405851](#) A1 19910102
 [A] (AMERICAN TELEPHONE &
 TELEGRAPH [US])
 [A] 1-18
 * abstract *;
[JPS6057304](#) A 00000000 [A];
[DE3144182](#) A1 19830519
 [A] (SIEMENS AG [DE])
 [A] 1
 * page 6; figure 1 *;
[DE19520978](#) A1 19961212
 [A] (SIEMENS AG [DE])
 [A] 1-18
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 * column 2, line 64 - column 3,
 line 11 *;
[US4952021](#) A 19900828
 [A] (AOKI TETSUJI [JP], et al)
 [A] 1-18
 * abstract *
 * column 1, line 32 - column 4,
 line 26 *;
[US4000936](#) A 19770104
 [A] (GLOGE DETLEF CHRISTOPH)
 [A] 1-18
 * abstract *

CTNP - || STSE (A3)
 [A] - PATENT ABSTRACTS OF
 JAPAN, (19850802), vol. 009, no.
 186, Database accession no. (P -
 377),
 [A] 1
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CCI - [G02B6/443](#) ; [G02B6/4438](#)

CCA - [G02B6/4403](#)

PA - (A2 A3 B1)
 EMTELLE UK LTD [GB]

TI - (A2 B1)
Cable assembly with **optical**
 fibres for blowing installation
 - (A3)
 Protective covering for **optical**
 fiber **cable**

AB - (A2)
 A fibre **optic cable** 1 includes

a **core** of primary coated **optical** fibres 2 embedded in an inner layer 3 of acrylate material, having sufficient tensile strength when cured to lock at least the outermost fibres 2 in place and still allow the fibres to be easily broken out of the assembly for termination and splicing purposes. The hardness of the acrylate layer 3 is such that at least the outermost fibres 2 of the bundle are restricted from moving axially relative to the inner layer 3. The inner layer 3 is then surrounded by a loose thin **jacket** 4 formed from a mixture of high **density polyethylene** having a Shore hardness greater than or equal to 60 and a generally uniformly distributed slip agent, including a polyether modified poly (dimethylsiloxane) material such as polyether modified hydroxy functional poly (dimethylsiloxane) material. The mixture from which the outer layer 4 is formed is compacted by means of heat and pressure. The outer layer 4 may also contain a mineral filler, such as calcium carbonate and/or titanium dioxide, in order to improve the stability of the dimensions of the outer layer 4 as the temperature changes.

PN - [CA2453885](#) A1 20040210

PR - WO2003GB02762
20030626; GB20020022256
20020926; GB20020018624
20020810; GB20030013018
20030606

AP - CA20032453885 20030626

DT - I

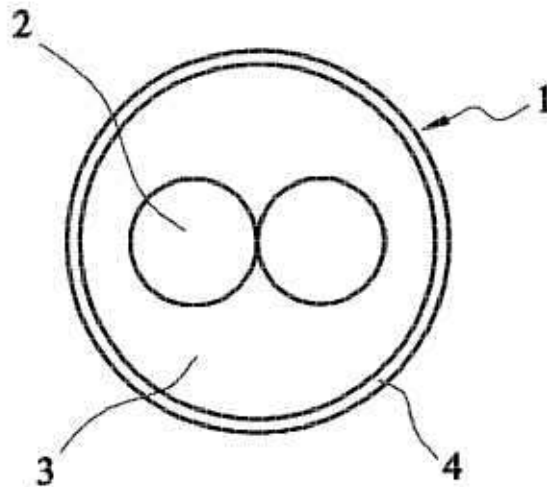
CCI - [G02B6/4438](#) ; [G02B6/443](#)

CCA - [G02B6/4403](#)

PA - EMTELLE UK LTD [GB]

TI - SIGNAL TRANSMITTING **CABLE**

AB - A fibre **optic cable 1** includes a **core** of primary coated **optical** fibres 2 embedded in an inner layer 3 of acrylate material, having sufficient tensile strength when cured to lock at least the outermost fibres 2 in place and still allow the fibres to be easily broken out of the assembly for termination and splicing purposes. The hardness of the acrylate layer 3 is such that at least the outermost fibres 2 of the bundle are restricted from moving axially relative to the inner layer 3. The inner layer 3 is then surrounded by a loose thin **jacket 4** formed from a mixture of high **density polyethylene** having a Shore hardness greater than or equal to 60 and a generally uniformly distributed slip agent, including a polyether modified poly (dimethylsiloxane) material such as polyether modified hydroxy functional poly (dimethylsiloxane) material. The mixture from which the outer layer 4 is formed is compacted by means of heat and pressure. The outer layer 4 may also contain a mineral filler, such as calcium carbonate and/or titanium dioxide, in order to



improve the stability of the
dimensions of the outer layer 4
as the temperature changes.

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