

D07B

ROPES OR CABLES IN GENERAL (joining ropes or cables to one another or to other objects B65H69/00, F16G11/00; [N: mountaineering ropes A63B29/02]; mechanical finishing or dressing of ropes D02J; [N: braiding D04C]; decorative ropes or cords D04D; suspension cables for bridges E01D19/16; specially adapted for driving, or for being driven by, pulleys or other gearing elements F16G9/00; electric cables or joints insofar as electrical aspects are essential H01B, H01R)

Definition statement

This subclass/group covers:

Ropes and cables and the associated machines and methods for their manufacturing. The main focus of ropes and cables must be to bear tensile loads.

References relevant to classification in this subclass

This subclass/group does not cover:

Umbilicals [H01B 7/046](#), [H01B 7/0072](#), [F16L 9/00](#), [F16L 11/00](#), [E21B](#).

Hoses [F16L 11/00](#).

Cables for bridge construction filled with concrete [E01D 19/16](#).

Electrical cables for electricity transport [H01B](#) (except if several wires do not serve to conduct electricity but are designed to cope with tensile load [D07B 1/147](#)).

Yarns and threads [D02G 3/00](#).

Shoe laces [A43C 1/00](#) and [A43C 9/00](#).

The use of cables and ropes (e.g. Cable fixed in a special manner to an elevator cage [B66B 7/00](#), the lying of cables or ropes in a tire [B60C 9/00](#)).

Roundsling [B66C 1/12](#).

Belts [B66B 7/062](#), [F16G 1/12](#).

Special rules of classification within this subclass

This classification scheme is principally subdivided in four parts, each part having a distinct function:

- the invention information (i.e. inventive concept and problem to be solved) as it is described in the application is classified in [D07B 1/00](#) to

[D07B 9/00](#);

- additional information or sub-inventions, which could be relevant for search purposes, are classified with the Indexing Codes [D07B 1/00](#) to [D07B 9/00](#);
- additional information completing the invention information, for which no specific (sub-)group is foreseen in the indexing range [D07B 1/00](#) - [D07B 9/00](#), is classified with the Indexing Codes [D07B 2201/00](#) to [D07B 2501/00](#) and lower hierarchy, if applicable;
- linked Indexing Codes [D07B 2801/00](#) to [D07B 2801/90](#) to specify the structural function (i.e. wire, filament, fibre or yarn; strand; core; filler etc.), to distinguish between devices and methods or to indicate general knowledge. For example, materials used in cables or ropes are classified in [D07B 2205/00](#). The linked Indexing Code [D07B 2801/10](#) in combination with [D07B 2205/00](#) or lower hierarchy indicates that the specific material is used in the smallest filamentary entity of the rope or cable (i.e. wire, filament, fibre or yarn). The linked Indexing Code [D07B 2801/18](#) indicates that the specific material is used as coating. Further details can be found in the indexing scheme relating to ropes or cables in general.

Documents not classified in the subclass [D07B](#) can be allocated the Indexing Codes [D07B 1/00](#) to [D07B 9/00](#) and/or [D07B 2201/00](#) to [D07B 2501/00](#) to identify aspects which can be used for ropes or cables.

Examples:

The invention is directed to a rope wherein a liquid lubricant is used to reduce the internal wear. In order to avoid that the liquid disappears during use, the rope is covered with a jacket. This is claimed in the independent claim. The description and dependent claims further mention that the rope comprises a wire for conducting electricity without defining special constructions. Aramid filaments are preferred as the load bearing entity. HMPE can also be used. The embodiments relate to braided ropes used for fishing nets. To be classified in [D07B 1/162](#), [D07B 1/142](#), [D07B 1/025](#), [D07B 1/147](#), [D07B 2201/1096](#), [D07B 2205/205](#) linked with [D07B 2801/10](#), [D07B 2205/2014](#) linked with [D07B 2801/10](#), [D07B 2205/502](#), [D07B 2401/207](#), [D07B 2501/2038](#).

The invention is directed to an aramid rope wherein a special (i.e. regarding the chemical composition) liquid lubricant is used to reduce the internal wear. The description mentions that the rope is covered with a jacket. It is however clear from the description that the inventive concept relates to the chemical composition of the lubricant which is specially adapted for aramid ropes. To be classified in [D07B 1/142](#), [D07B 1/025](#), [D07B 1/162](#), [D07B 2205/205](#) linked with [D07B 2801/10](#), [D07B 2205/50](#), [D07B 2205/502](#).

The invention is directed to a strand like tire cord having a (m+n) structure, wherein m may be 2 to 5. The outer wires of the strands are coated with an adhesion promoting agent made of a special brass composition. Moreover, it

is indicated in the description that such strands may be twisted in a rope like structure to obtain an open structure. To be classified in [D07B 1/062](#), [D07B 1/0666](#), [D07B 1/0626](#) , [D07B 1/0613](#), [D07B 2201/1076](#), [D07B 2201/2011](#), [D07B 2205/3089](#) linked with [D07B 2801/18](#), [D07B 2401/2095](#), [D07B 2501/2046](#).

The invention is directed to a wire being coated with a special brass usable for tire cord manufacturing. No information is given to the purpose of this coating. In the embodiment the wire is used to manufacture a 3+8 strand. Alternatively to coating the wire, the entire strand may be coated. The latter is only mentioned as an obvious alternative. To be classified in [D07B 1/0666](#), [D07B 1/0626](#), [D07B 2201/2011](#), [D07B 2201/2043](#) , [D07B 2205/3089](#) linked with [D07B 2801/18](#), [D07B 2501/2046](#).

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Ropes and cables	Flexible elongate entities manufactured respectively from fibres/filaments and wires. They can only cope with tensile loads. They cannot bear shear, compressive or torsion forces. Cables may be strand like or rope like. A cable has normally the following structure: wire - strand - rope/cable. Fibrous ropes are always rope like. A fibrous rope has normally the following structure: filament / textile yarn / rope yarn - strand - rope. Fibrous ropes often have a construction different from a laid rope, e.g. a parallel yarn rope, a Kernmantle rope or a braided rope.
------------------	---

D07B 1/00

Constructional features of ropes or cables

Definition statement

This subclass/group covers:
constructional features of ropes and cables.

D07B 1/005

[N: Composite ropes, i.e. ropes built-up from fibrous or filamentary material and metal wires]

Definition statement

This subclass/group covers:

ropes built-up from fibrous or filamentary material and metal in which both have a tensile strength functionality.

References relevant to classification in this group

This subclass/group does not cover:

Ropes built-up from fibrous or filamentary material and metal in which only one of them has a tensile strength functionality	D07B 1/0686
--	-----------------------------

Informative references

Attention is drawn to the following places, which may be of interest for search:

Reinforcing cords having a rope configuration and a special fibrous core design to carry loads	D07B 1/0613
--	-----------------------------

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Built-up	the material providing tensile strength, normally within a strand
----------	---

D07B 1/02

Ropes built-up from fibrous or filamentary material, e.g. of vegetable origin, of animal origin, regenerated cellulose, plastics

Definition statement

This subclass/group covers:

only artificial filamentary material including treated natural materials (e.g.

viscose).

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fishing lines	A01K 91/00
Mountain guy-ropes or accessories	A63B 29/02

Special rules of classification within this group

Ropes or cables made respectively from natural fibres and natural staple fibres are classified in [D07B 5/02](#) and [D07B 5/06](#).

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Fibrous material	considered to have a limited length whereas filamentary material has an indefinite length.
------------------	--

D07B 1/025

[N: comprising high modulus, or high tenacity, polymer filaments or fibres, e.g. liquid-crystal polymers]

References relevant to classification in this group

This subclass/group does not cover:

Ropes built-up from glass fibres	D07B 1/02 with the additional Indexing Code D07B 2205/3003
Ropes built-up from carbon fibres	D07B 1/02 with the additional Indexing Code D07B 2205/3007

Special rules of classification within this group

high modulus or high tenacity polymer filaments include for example para-aramid, high modulus polyethylene, high modulus polyester,

polybenzazole or PIPD.

D07B 1/0606

[N: Reinforcing cords for rubber or plastic articles]

Informative references

Attention is drawn to the following places, which may be of interest for search:

Reinforcements or ply arrangement of pneumatic tyres	B60C 9/00
Textile tyre cords	D02G 3/48
Tyre cords	D07B 1/06&A (Japanese FI-class)
Driving belts with metal reinforcement bonded by the rubber	F16G 1/12

Special rules of classification within this group

Hybrid cords (i.e. comprising wires and filaments within the same rope or strand) have to be classified in both [D02G 3/48](#) and [D07B 1/0606](#) or lower hierarchy.

D07B 1/062

[N: the reinforcing cords being characterised by the strand configuration]

Special rules of classification within this group

Strands comprising preformed wires are classified only in [D07B 1/0646](#) and lower hierarchy. However, strands normally classified in [D07B 1/0626](#) or [D07B 1/0633](#) should be given the respective class in combination with [D07B 1/0646](#) and lower hierarchy.

D07B 1/0646

[N: comprising longitudinally preformed wires]

Special rules of classification within this group

If a strand like cord is claimed with preformed wires, then [D07B 1/0646](#) or lower hierarchy is given and not additionally [D07B 1/062](#). However, [D07B](#)

[1/0626](#) or [D07B 1/0633](#) may be given.

If a preformed wire is used in the context of a rope like cord, then the document has to be classified in both [D07B 1/0646](#) or lower hierarchy and [D07B 1/0613](#).

D07B 1/0666

[N: the wires being characterised by an anti-corrosive or adhesion promoting coating]

Informative references

Attention is drawn to the following places, which may be of interest for search:

Manufacture of coated wire or bars	B21C 37/042
Layered products with all layers being exclusively metallic	B32B 15/01
Alloys based on copper with zinc as the next major constituent	C22C 9/04
Electroplating baths containing more than 50% by weight zinc	C25D 3/565
Electroplating baths containing more than 50% by weight copper	C25D 3/58

D07B 1/068

[N: characterised by the strand design]

Informative references

Attention is drawn to the following places, which may be of interest for search:

Pre-stressed concrete (PC) steel strands for concrete reinforcement	E04C
---	----------------------

D07B 1/141

[N: comprising liquid, pasty or powder agents, e.g. lubricants or anti-corrosive oils or greases]

Informative references

Attention is drawn to the following places, which may be of interest for search:

Ropes or cables with an enveloping sheathing or inlays of rubber or plastics	D07B 1/16
--	---------------------------

D07B 1/142

[N: for ropes or rope components built-up from fibrous or filamentary material]

Special rules of classification within this group

Lubricants are classified according to the destination of the lubricant, e.g. a wire rope having the lubricant in a hemp core to lubricate the wires is classified in [D07B 1/144](#), whereas a wire rope having the lubricant in an aramid core to lubricate the aramid is classified in [D07B 1/142](#).

D07B 1/144

[N: for cables or cable components built-up from metal wires]

Special rules of classification within this group

Lubricants are classified according to the destination of the lubricant, e.g. a wire rope having the lubricant in a hemp core to lubricate the wires is classified in [D07B 1/144](#), whereas a wire rope having the lubricant in an aramid core to lubricate the aramid is classified in [D07B 1/142](#).

D07B 1/145

[N: comprising elements for indicating or detecting the rope or cable status]

Definition statement

This subclass/group covers:

e.g. elements for indicating or detecting wear or elongation by raising temperature.

Informative references

Attention is drawn to the following places, which may be of interest for search:

Apparatus or methods for measuring tension in ropes, cables, wires,	G01L 5/04
---	---------------------------

threads, belts, bands or like flexible members	
--	--

Special rules of classification within this group

Additionally to be classified in [D07B 1/148](#) when the indicating or detecting element is a mark or luminous element.

D07B 1/147

[N: comprising electric conductors or elements for information transfer (D07B1/145 takes precedence)]

Definition statement

This subclass/group covers:

electric conductors or elements for signal and information transfer in general from one end to the other end.

References relevant to classification in this group

This subclass/group does not cover:

ropes or cables comprising elements for indicating or detecting the rope or cable status e.g. electric wire to detect breakage within the rope [D07B 1/145](#).

Informative references

Attention is drawn to the following places, which may be of interest for search:

Insulated conductors or cables with protection against damage caused by wear, mechanical forces or pressure	H01B 7/18
---	---------------------------

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Tether	a connection rope in the field of renewable wind-energy
--------	---

D07B 1/148

[N: comprising marks or luminous elements]

Informative references

Attention is drawn to the following places, which may be of interest for search:

Marking devices	B21C 51/005
-----------------	-----------------------------

Special rules of classification within this group

Additionally to be classified in [D07B 1/145](#) when the marks or luminous elements are used for indicating or detecting the rope or cable status.

D07B 1/16

Ropes or cables with an enveloping sheathing or inlays of rubber or plastics (D07B1/04, D07B1/10 take precedence)

Informative references

Attention is drawn to the following places, which may be of interest for search:

Making ropes or cables from natural or artificial staple fibres agglutinated by adhesives	D07B 5/08
---	---------------------------

Special rules of classification within this group

Documents directed to ropes or cables comprising two layers, one acting as a filler and one extending beyond the perimeter of the rope or cable, are classified in [D07B 1/165](#) or lower hierarchy and [D07B 1/162](#) and not in [D07B 1/16](#).

Documents directed to ropes or cables comprising a single rubber or plastic material, acting as a filler (=penetrating nearly to the centre) and extending beyond the perimeter of the rope or cable, are classified in [D07B 1/16](#) only.

Documents directed to belts or elevator belts comprising an extruded jacket in general without any specific emphasis on the jacket are, in addition to their relevant classes in other fields, classified in Indexing Code [D07B 2201/2087](#). These documents are not classified in [D07B 1/16](#) or lower hierarchy.

Coated or filled strands, even in ropes or cables, are classified respectively in the indexing scheme [D07B 2201/2042](#) and [D07B 2201/2046](#) and not in [D07B 1/16](#) or lower hierarchy.

D07B 1/162

[N: characterised by a plastic or rubber enveloping sheathing]

Definition statement

This subclass/group covers:

sheathings extending beyond the perimeter of the tension members of the rope or cable.

Synonyms and Keywords

In patent documents the expression/word "coating" is often used with the meaning of "sheathing the rope or cable".

D07B 1/165

[N: characterised by a plastic or rubber inlay]

Definition statement

This subclass/group covers:

inlays situated inside the perimeter of the tension members of the rope or cable.

Synonyms and Keywords

In patent documents the expression/words "filler" is often used with the meaning "plastic or rubber inlay of the cable or rope".

D07B 1/18

Grommets [N: (slings B66C1/12)]

References relevant to classification in this group

This subclass/group does not cover:

Roundslings	B66C 1/12
-------------	---------------------------

Informative references

Attention is drawn to the following places, which may be of interest for search:

Splicing in general	B65H 69/06
---------------------	----------------------------

Methods of forming roundslings or grommets	D07B 7/027
--	----------------------------

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Grommet	a sling with an eye
---------	---------------------

D07B 1/20

Buoyant ropes, e.g. with air-filled cellular cores; Accessories therefor

Informative references

Attention is drawn to the following places, which may be of interest for search:

Life saving ropes	A62B 1/16
Ropes for fishing nets	A01K 75/00

D07B 1/22

Flat or flat-sided ropes; Sets of ropes consisting of a series of parallel ropes

Informative references

Attention is drawn to the following places, which may be of interest for search:

Elevator belts	B66B 7/062
Production of belts	B29D 29/00
Belts with metal reinforcement in rubber	F16G 1/12

Special rules of classification within this group

Belts having a flat surface, a "high" aspect ratio and are commonly covered over the entire length by an extruded jacket are classified in the Indexing Code [D07B 1/22](#) if they are of interest and the relevant classes in the other fields.

Elevator belts are additionally classified in the Indexing Code [D07B 2501/2007](#).

D07B 3/00

General-purpose machines or apparatus for producing twisted ropes or cables from component strands of the same or different material

Definition statement

This subclass/group covers:

general purpose machines and methods for producing twisted ropes or cables from component strands of the same or different material.

D07B 3/10

with provision for imparting more than one complete twist to the ropes or cables for each revolution of the take-up reel [N: or of the guide member]

Informative references

Attention is drawn to the following places, which may be of interest for search:

Spinning or twisting machines for imparting multiple twist, e.g. two-for-one twisting	D01H 1/10
Two-twist systems	3B153/DD10 (Japanese F-term)

D07B 3/103

[N: characterised by the bow construction]

Informative references

Attention is drawn to the following places, which may be of interest for search:

Flyers	3B153/DD37 (Japanese F-term)
--------	------------------------------

D07B 5/00

Making ropes or cables from special materials or of particular form

Definition statement

This subclass/group covers:

ropes or cables (i.e. products) from special materials or of a particular form.

D07B 5/002

[N: Making parallel wire strands]

Informative references

Attention is drawn to the following places, which may be of interest for search:

Suspension cables, cable clamps for suspension cables	E01D 19/16
---	----------------------------

D07B 5/005

[N: characterised by their outer shape or surface properties]

Informative references

Attention is drawn to the following places, which may be of interest for search:

Fairings in marine applications	B63B 21/663
Sheaths comprising grooves as protection against damage caused by wear, mechanical force or pressure in insulated conductors or cables	H01B 7/184

D07B 5/007

[N: comprising postformed and thereby radially plastically deformed elements]

Special rules of classification within this group

Postformed strands are additionally classified in Indexing Code [D07B 2201/2019](#).

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Postformed	radial plastic deformation via compression
------------	--

D07B 5/02

from straw or like vegetable material

Definition statement

This subclass/group covers:

all types of natural fibres and filaments e.g. cotton, hemp, paper, animal hair or silk.

References relevant to classification in this group

This subclass/group does not cover:

Making of ropes or cables from natural or artificial staple fibres	D07B 5/06
--	---------------------------

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Fibrous material	considered to have a limited length whereas filamentary material has an indefinite length
------------------	---

D07B 5/06

from natural or artificial staple fibres

References relevant to classification in this group

This subclass/group does not cover:

making of ropes or cables from all types of natural fibres and filaments not in staple form [D07B 5/02](#).

D07B 5/10

from strands of non-circular cross-section

Special rules of classification within this group

Ropes or cables having strands of non-circular cross section obtained by postforming are additionally classified in [D07B 5/007](#).

D07B 7/00

Details of, or auxiliary devices incorporated in, rope- or cable-making machines; Auxiliary apparatus associated with such machines

Definition statement

This subclass/group covers:

details of, or auxiliary devices incorporated in rope- or cable-making machines.

D07B 7/025

[N: Preforming the wires or strands prior to closing]

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Preforming	relates to the plastic deformation to deviate the central axis from being a straight line
------------	---

D07B 7/027

[N: Postforming of ropes or strands]

Special rules of classification within this group

In case the rope components have to be untwisted for splicing, additionally classification in [D07B 7/18](#) is allocated. Ropes or cables are classified in [D07B 5/007](#).

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Postforming	a radial plastic deformation via compression
-------------	--

D07B 7/10

Devices for taking-up or winding the finished rope or cable

Informative references

Attention is drawn to the following places, which may be of interest for search:

Devices for guiding or positioning the winding material on the winding form	H01F 41/0633
Winding and traversing material on to reels, bobbins, tubes, or like package cores or formers	B65H 54/02

D07B 7/12

for softening, lubricating or impregnating ropes, cables, or component strands thereof

Informative references

Attention is drawn to the following places, which may be of interest for search:

Auxiliary devices incorporated in rope- or cable-making machines for coating or filling-up interstices in ropes, cables with rubber or plastic	D07B 7/145
--	----------------------------

D07B 7/145

[N: Coating or filling-up interstices]

Informative references

Attention is drawn to the following places, which may be of interest for search:

Extrusion moulding for covering cores	B29C 47/28C
---------------------------------------	-----------------------------

Simultaneous coating of more than one article in extrusion moulding	B29C 47/027
Auxiliary devices incorporated in rope- or cable-making machines for lubricating ropes, cables or component strands thereof	D07B 7/12

D07B 7/16

Auxiliary apparatus

Definition statement

This subclass/group covers:

Apparatuses, i.e. entire functional entities, which are associated to general purpose machines of [D07B 3/00](#) and lower hierarchy or special rope/cable making machines, which are not covered by the classes [D07B 3/00](#) and lower hierarchy.

Glossary of terms

In this subclass/group, the following terms (or expressions) are used with the meaning indicated:

Auxiliary apparatuses	include for example bobbin change over devices
-----------------------	--

D07B 7/165

[N: Apparatus for making slings]

Informative references

Attention is drawn to the following places, which may be of interest for search:

Slings comprising ropes	B66C 1/12
-------------------------	---------------------------

Special rules of classification within this group

Methods are classified in [B66C 1/12](#) with the additional Indexing Code [D07B 7/165](#).

D07B 7/167

[N: Apparatus for joining rope components]

Informative references

Attention is drawn to the following places, which may be of interest for search:

Methods of, or devices for interconnecting successive lengths of material by splicing	B65H 69/06
---	----------------------------

Special rules of classification within this group

Methods are classified in the Indexing Code [D07B 7/167](#).

D07B 9/00

Binding or sealing ends, e.g. to prevent unravelling

Definition statement

This subclass/group covers:

methods and apparatuses for binding or sealing the ends of ropes or cables.