Understanding patent claims

(c) Material for a synthetic lawn

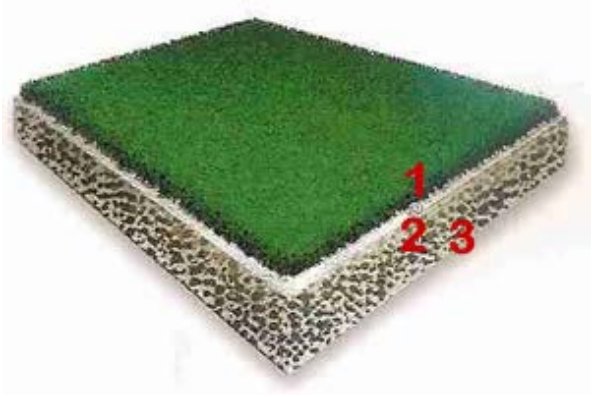


Compaction material for a synthetic lawn

This new synthetic lawn is a highly durable material and is designed according to FIFA's specifications.

It replaces a natural lawn in the best possible way as it endures all weather conditions and keeps its colour for years. It is shock-proof and has dewatering capabilities, so it is ideal for use even during or after rain. It is soft and thus protects the joints of the players' legs and due to its high shock absorption it softens and reduces the damage which said players can suffer if they fall down during sports activities.

Unlike real grass it doesn't need any maintenance, so it can be constantly used. It is also ideal for mini soccer fields (5x5), hockey or golf, as well as recreation facilities and playgrounds.



1. Synthetic lawn with quartz sand and rubber particles
2. Backing layer
3. Underlying substrate

The invention

The invention is a new compaction material for a synthetic lawn which has a reduced skin abrasiveness and is waterproof, ozone-resistant and stable to UV rays so as to ensure the sports ground a long lifetime. It is shock-proof and has dewatering capabilities. It is ecological, i.e. it can be recycled and is environmentally friendly and non-allergenic.

How can you protect it from imitation?

- Reduced abrasiveness, water-resistance, ozone-resistance, UV-stability, shock-resistance and environmental friendliness are all technical characteristics that may lead to a patent.
- Protection could be sought for the final product (the lawn) or for its (innovative) components (the compaction material).
- A patent for the components would also protect them for different uses $\rightarrow$ broader protection!

How to patent this invention: claim it!

~~Patent Claim: "compaction material for synthetic lawn that results in a lawn having a reduced skin abrasiveness, that is waterproof, ozone-resistant and stable to UV rays so as to ensure the sports ground a long lifetime."~~

Making a material "waterproof, ozone-resistant and less abrasive" is a technical problem. Problems cannot be patented – only solutions. What are the **technical features** that give the lawn these characteristics?

~~Patent Claim: "A compaction material for synthetic lawn characterised in that the material is a styrene block thermoplastic elastomer."~~

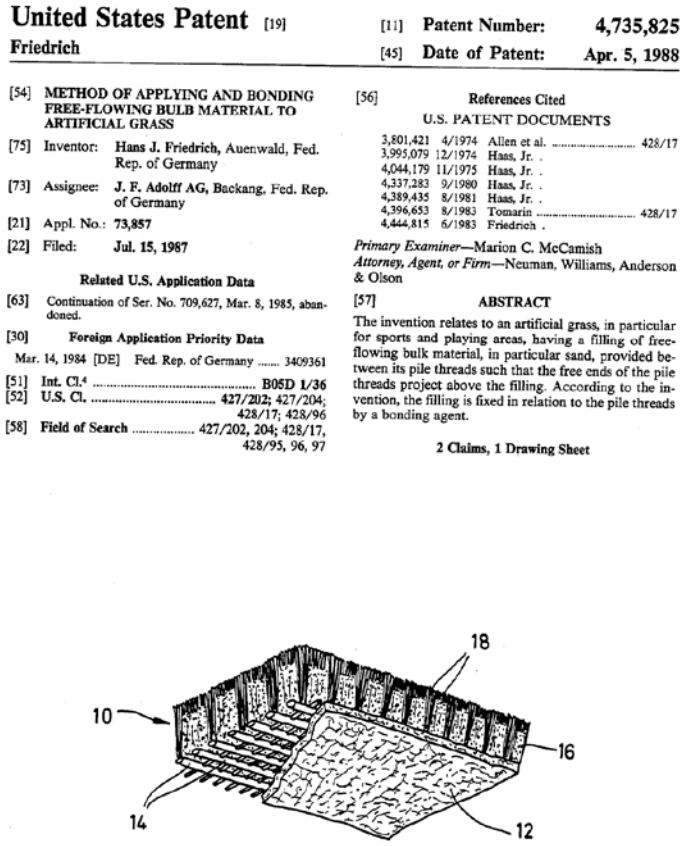
You don't want anyone circumventing the patent by replacing the **preferred material** with something similar.

Patent Claim: "Compaction material for synthetic lawn, characterised in that said material comprises at least a thermoplastic elastomer."

A prior art search will show whether the invention
– as claimed – is actually **new**.

Result of the prior art search

The prior art search found US 4,735,825, “Method of applying and bonding free-flowing bulb material to artificial grass”, which discloses a similar invention.



United States Patent [19]
Friedrich

[11] **Patent Number: 4,735,825**
[45] **Date of Patent: Apr. 5, 1988**

[54] **METHOD OF APPLYING AND BONDING FREE-FLOWING BULB MATERIAL TO ARTIFICIAL GRASS**

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[21] Appl. No.: **73,857**

[22] Filed: **Jul. 15, 1987**

Related U.S. Application Data

[63] Continuation of Ser. No. 709,627, Mar. 8, 1985, abandoned.

[30] **Foreign Application Priority Data**

Mar. 14, 1984 [DE] Fed. Rep. of Germany 3409361

[51] Int. Cl.[4] **B05D 1/36**
[52] U.S. Cl. **427/202**; 427/204; 428/17; 428/96
[58] Field of Search 427/202, 204; 428/17, 428/95, 96, 97

[56] **References Cited**
U.S. PATENT DOCUMENTS

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Primary Examiner—Marion C. McCamish
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[57] **ABSTRACT**

The invention relates to an artificial grass, in particular for sports and playing areas, having a filling of free-flowing bulk material, in particular sand, provided between its pile threads such that the free ends of the pile threads project above the filling. According to the invention, the filling is fixed in relation to the pile threads by a bonding agent.

2 Claims, 1 Drawing Sheet

“Furthermore, various free-flowing bulk materials, such as cork, granulated rubber material, including thermoplastic rubber, cork-like granulated plastics material, fibrous or powdery rubber material, including thermoplastic rubber or textile fibre elements, may be used for a "sand-filled" grass or turf, according to the invention, in addition to or instead of sand, in particular dry sand.” (c. 2, l. 45-50)

Comparison of the two inventions

The invention as claimed	US 4735825
"Compaction material for synthetic lawn characterised in that said material comprises at least a thermoplastic elastomer."	Claim 1: "A method of producing ... artificial grass including the steps of: (a) mixing a free-flowing bulk material with a bonding agent, (b) distributing the resulting mixture ... between the upwardly projecting pile threads of a base mat ... and (c) subjecting said curable bonding agent, mat and filling to a curing condition ..." C. 2, l. 45-50: "Furthermore, various free-flowing bulk materials, such as ... granulated rubber material, including thermoplastic rubber ..."

Not new

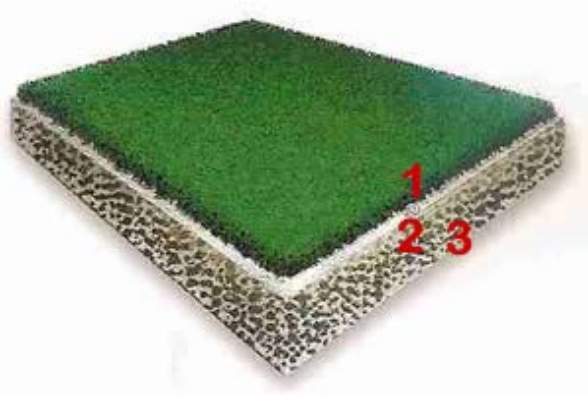
"… chosen from among **block styrene elastomers**."

- New (block styrene elastomers are not mentioned in US 4735825 and constitute a particular type of "thermoplastic elastomer")
- Possibly also inventive (the inventor has shown that these materials are not allergenic and improve drainage as compared with other rubbers)

Claim to protect the invention

Claim to be filed:

"Compaction material for synthetic lawn, characterised in that said material comprises at least a thermoplastic elastomer chosen from among block styrene elastomers."



Use of dependent claims to improve protection

Patents should include both **broad** and **specific** claims.

A broad claim prevents the patent from being circumvented.

Specific claims are tailored to fit exactly to potential infringing products.



Application filed with the EPO

Claim 1:

"Compaction material for synthetic lawn, characterised in that said material comprises at least a thermoplastic elastomer chosen from among block styrene elastomers."

Claim 2: "Material according to claim 1, characterised in that said block styrene elastomers are hydrogenated."

Claim 3: "Material according to claim 2, characterised in that said block styrene elastomer is chosen from the group:
Styrene-Ethylene-Butylene-Styrene, (SEBS);
Styrene-Ethylene-Propylene-Styrene, (SEPS);
Styrene-Ethylene-Ethylene-Styrene, (SEEPS)."

The EPO will perform its own prior art search and then consider whether the invention AS CLAIMED is new and non-obvious.

Additional prior art found by the EPO

Claim 6 of EP 0845498:
"A thermoplastic elastomeric resin composition comprising
(a) 100 parts by weight of a block copolymer consisting of at least two polymeric blocks (A) composed mainly of a vinyl aromatic compound and at least one polymeric block (B) composed mainly of a conjugated diene compound, and/or a hydrogenated block copolymer obtained by hydrogenating said block copolymer,
(c) 5 to 150 parts by weight of polyethylene or a copolymer composed mainly of ethylene, and
(d) 5 to 80 parts by weight of polypropylene or a copolymer composed mainly of propylene ..."



(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 0 845 498 A1

(12) EUROPEAN PATENT APPLICATION

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(51) Int Cl.[6]: C08L 53/02, C08L 23/04, C08L 23/10, C08L 91/00, C08K 3/00

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(30) Priority: 29.11.1996 JP 334855/96
13.03.1997 JP 76706/97

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(54) Thermoplastic elastomeric resin composition and a process for the preparation thereof

The opinion of the EPO

EP 0845498

Applicant's claim:

"Compaction material for synthetic lawn, characterised in that said material comprises at least a thermoplastic elastomer chosen from among block styrene elastomers."

"... block copolymer consisting of at least two polymeric blocks (A) composed mainly of a vinyl aromatic compound and at least one polymeric block (B) composed mainly of a conjugated diene compound, and/or a hydrogenated block copolymer obtained by hydrogenating said block copolymer ..."

This is already disclosed in EP 0845498

EPO response:
Please amend your claims if you want your invention protected!

Further analysis

Check the material revealed in the prior art searches:

- Does the invention have any feature NOT disclosed in the prior art?
- What are the advantages of the invention compared with the prior art?

How can the claims be amended to reflect the invention in such a way that it is new (consdering all the prior art)?

Did the EPO overlook any important features of the invention?

Applicant's reply: amendments to the application, explanation of the relationship between the invention and the prior art.

Comparison of the invention with the prior art

	US 4735825	EP 0845498
Technical features of the invention		
Compaction elastomeric material	✓	✓
Block copolymer of styrene	No	✓
Synthetic lawn	✓	No
Advantages/technical result		
Not allergenic	No	No
Drains fast	No	No

Result of the analysis

Although the individual elements of the invention are known, the **combination is not** and it produces a **new, unexpected effect**.

It is not obvious to combine the elements known from the prior art to achieve these new effects → the inventive step requirement is fulfilled.

The claim must be changed to distinguish it from EP 0845498:

"Surface for sports activities comprising a synthetic lawn, characterised in that said surface comprises among the fibres constituting the synthetic lawn a compaction material that comprises at least a thermoplastic elastomer chosen from among block styrene elastomers so as to form a layer."

The original description filed with the EPO supports the amendments to the claims

In practice, ... the applicant has improved a method for giving elasticity to synthetic lawns comprising an inorganic material, such as for instance silica sand or quartz sand ..., which provides for a step consisting in introducing directly among the fibres constituting the synthetic grass of a lawn the thermoplastic elastomer *[block copolymer of styrene]* according to the present invention.

...

The elastomeric material according to the present invention has the peculiar characteristics of an elastic material that justify its use for compacting synthetic lawns: deformability, recovery of strains, shock absorbing power, rebounding properties, draining properties and holding by surface friction. Moreover, the elastomeric material according to the present invention has a high degree of elasticity and of shock absorbing power so as to be skin-friendly or anyway not irritating in case of skin contact - also violent - and anallergic.

Supports inventive step: different technical result

Different to patent EP0845

Different to patent US4735

The patent is finally granted

Response from EPO: granted!

(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 386 944 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
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C08L 53/02 *(2006.01)* ***A63C 19/04*** *(2006.01)*
E01C 13/08 *(2006.01)*

(21) Application number: **02425754.5**

(22) Date of filing: **06.12.2002**

(54) **Compaction material for synthetic lawn, process for its production and use**

Verdichtungsmaterial für künstliches Gras, Herstellungsverfahren und Verwendung

Material de compactage pour gazon artificiel, sa production et son utilisation