

SPRUNG BEDDING ELEMENT

The present invention relates to sprung bedding
5 elements, especially sprung mattresses or possibly
sprung divan bases.

More particularly, the invention relates to a bedding
element comprising at least one horizontal support face
10 supported by a sheet of metal springs.

Known bedding elements of this type comprise steel
springs and have the drawback of being heavy, so that
they are difficult to handle by their users, for
15 example when it is necessary to turn a sprung mattress
upside down at a change of season. It is in particular
an object of the present invention to overcome this
drawback.

20 For this purpose, according to the invention, a bedding
element of the kind in question is essentially
characterized in that the springs are made of an
aluminum alloy.

25 By virtue of these arrangements, a bedding element is
obtained which is appreciably lighter than in the prior
art: the weight saving thus achieved may easily be up
to 25 to 30% when the bedding element is a mattress.

30 Moreover, surprisingly, the bedding element according
to the invention is as comfortable as a bedding element
with steel springs of the prior art, and this being so
despite the relatively low elastic modulus of aluminum
alloys compared with steels.

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In addition, the aluminum alloy springs of the bedding
element according to the invention can be more easily

recycled than the steel springs of the bedding elements of the prior art.

Finally, the aluminum alloy springs of the bedding
5 element according to the invention are nonmagnetic, so
that these springs cannot be the site of induction
phenomena which in some cases can increase the ambient
magnetic fields, and especially the magnetic fields due
to the presence of electrical cables, electronic
10 variators or other electrical appliances under the
bedding element. The fact of avoiding these phenomena
of increasing the ambient magnetic fields may have a
beneficial effect on the health of the users of the
bedding element.

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In preferred embodiments of the invention, these may
possibly also have one or more of the following
arrangements:

- the bedding element is a mattress;
- 20 - said aluminum alloy has approximately the
following composition, in percentages by weight:

	Si:	0.8% approximately
	Fe:	0.7% approximately
25	Cu:	4.5% approximately
	Mn:	1% approximately
	Mg:	1% approximately
	Cr:	0.1% approximately
	Zn:	0.25% approximately
30	Ti:	0.25% approximately
	Al:	91.4% approximately;

- the mattress has an overall density of less than
48 kg/m³;
- the mattress has an outer cover comprising at
35 least one layer of an electrically conducting
material, thereby preventing or reducing possible
static electricity phenomena;
- said conducting material comprises carbon fibers;

- the sheet of springs is bordered by a rigid frame made of aluminum alloy, at least close to the face for supporting the bedding element.

- 5 Further features and advantages of the invention will become apparent during the following description of one of its embodiments, given by way of nonlimiting example, with reference to the appended drawing.
- 10 In the drawing, the single figure is a perspective cutaway view of a mattress according to one embodiment of the invention.

This mattress 1 comprises:

- 15 - an outer cover 2 formed by one or more layers of strong fabric, especially an electrically conducting fabric based on carbon fibers, which prevents or limits the static electricity phenomena;
- 20 - a layer of foam 3, or other soft material, placed beneath the cover 2;
- a sheet 4 of juxtaposed and stapled metal springs 5, which springs work in compression in the thickness direction of the mattress between the
- 25 two horizontal faces 6 of said mattress, these springs being preferably individually enclosed in permeable bags 7; and
- two metal frames 8 which border the sheet 4 of springs near each horizontal face 6 of the
- 30 mattress.

According to the invention, the springs 5 and the frames 2 are made of aluminum alloy, especially an aluminum alloy such as that sold by PECHINEY AVIATUBE

35 (France) under the trademark "AVIA SPIRAL".

This aluminum alloy is of the standardized "aeronautical type 2017A" grade and comprises approximately (in percentages by weight):

	Si:	0.8%
	Fe:	0.7%
	Cu:	4.5%
	Mn:	1%
5	Mg:	1%
	Cr:	0.1%
	Zn:	0.25%
	Ti:	0.25%
	Al:	91.4%.

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Optionally, an aluminum alloy of the standardized "5019" type could also be used.

Thus, a mattress is obtained which is lightweight
15 (having a mass of less than or equal to 30 kg for a
mattress 140 cm in width, i.e. an overall density of
less than or equal to 48 kg/m³) and which is at the
same time comfortable, insensitive to static
electricity and electromagnetic induction phenomena and
20 easily recyclable.

CLAIMS

- 5 1. A bedding element comprises at least one horizontal support face (6) supported by a sheet (4) of metal springs (5), characterized in that the springs (5) are made of an aluminum alloy.
- 10 2. The bedding element as claimed in claim 1, constituting a mattress (1).
- 15 3. The bedding element as claimed in claim 1 or claim 2, wherein said aluminum alloy is an aluminum alloy having approximately the following composition, in percentages by weight:
- | | |
|--------|----------------------|
| Si: | 0.8% approximately |
| Fe: | 0.7% approximately |
| 20 Cu: | 4.5% approximately |
| Mn: | 1% approximately |
| Mg: | 1% approximately |
| Cr: | 0.1% approximately |
| Zn: | 0.25% approximately |
| 25 Ti: | 0.25% approximately |
| Al: | 91.4% approximately. |
4. The bedding element as claimed in any one of the preceding claims, wherein the mattress has an
- 30 overall density of less than 48 kg/m³.
5. The bedding element as claimed in any one of the preceding claims, wherein the mattress has an outer cover (2) comprising at least one layer of
- 35 electrically conducting material.
6. The bedding element as claimed in claim 5, wherein said conducting material comprises carbon fibers.



- 5 7. The bedding element as claimed in any one of the preceding claims, wherein the sheet (4) of springs is bordered by a rigid frame (8) made of aluminum alloy, at least close to the support face (6) of the bedding element.