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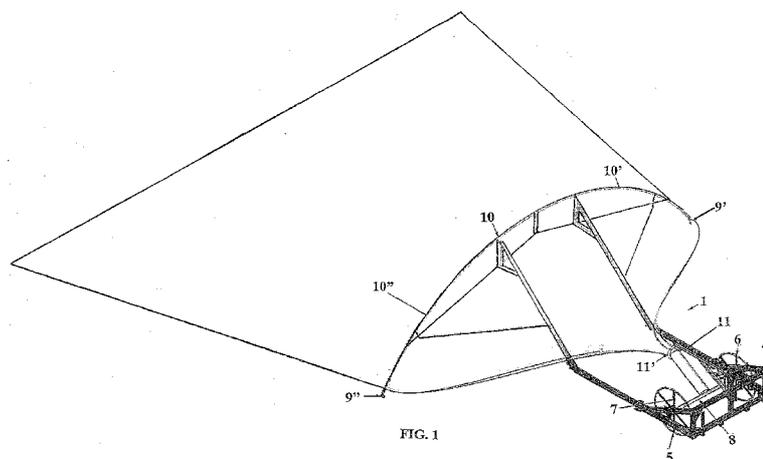
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NL, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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(54) **Title:** APPARATUS FOR PLACEMENT AND PICKING UP OF A FABRIC TO OR FROM A PLANTATION FIELD



(57) **Abstract:** Apparatus (1) for placement of a fabric on a plantation field (3) and for picking up of a fabric (2) from a plantation field (3), comprising a frame (4), which frame (4) is provided with a storage reel (7) for the fabric (2) and a bow (10) mounted on the frame (4), which bow (10) is constructed to support during use the fabric (2) being placed on the plantation field (3) or being picked up from the plantation field (3) and to guide the fabric (2) between the storage reel (7) and the plantation field (3), which bow (10) extends beyond sides of the frame (4) to a breadth approximating a width of a plantation bed or beds from the plantation field (3), wherein a swivable or oscillating arm (11) is provided, which arm (11) supports a ring (11') positioned between the storage reel (7) and the bow (10), and through which ring (11') the fabric (2) can be guided for evenly taking up the fabric (2) from the storage reel (7) or for supplying the fabric to the storage reel (7).



Apparatus for placement and picking up of a fabric to or from a plantation field

5 The invention relates to an apparatus for placement of a fabric on a plantation field and picking up of said fabric from a plantation field, apparatus comprises a frame that is provided with a storage reel for the fabric and a guiding organ or organs to guide the fabric between the storage reel and the plantation field. During use the apparatus is mounted
10 on the front or the rear of a tractor.

W098/56235 (also published as US-B-6, 290, 163) discloses an apparatus which is (merely) suited for picking up fabrics from plantation fields, which comprises a frontally
mounted capturing device, through which a spread out fabric
15 may be pulled in, thus forming a narrow strand. The strand is stored on a reel which is mounted on the apparatus. The apparatus is further provided with hollow cylinders for guiding the strand of fabric in a gathered state to the reel, wherein there is further an oscillating arm for evenly distributing
20 the strand of fabric onto the reel. The apparatus is neither suited nor intended for placement of a fabric onto a plantation field. Although this known apparatus is marketed as a huge commercial success for its laboursaving and speed of working considering that it clears one hectare in 15 minutes,
25 a notable disadvantage is that the apparatus is only suited to collect the fabric from the plantation field. There remains a necessity in the prior art to employ as much as six man for placement of said fabric on the plantation field. Needless to say that this is very costly and time-consuming.

30 From EP-A-1 249 158 an apparatus is known for placement of a fabric on a plantation field and picking up of such fabric from a plantation field, comprising a frame, which frame is provided with a storage reel for the fabric and a bow mounted on the frame to guide the fabric between the storage
35 reel and the plantation field, and which bow is construed to support during use the fabric being placed on the plantation field or being picked up from the plantation field, wherein said bow extends beyond sides of the frame to a breadth approximating a width of a plantation bed or beds from the plan-

tation field.

The construction of the apparatus of W098/56235 and the construction of the apparatus of EP-A-1 249 158 are mutually incompatible alternatives in as far as it concerns equipment for picking up fabric from a plantation field, not to mention that only the device of EP-A-1 249 158 is equipped to both place fabric on a plantation field and pick such fabric up from the plantation field. The apparatus of W098/56235 is not suited for that dual purpose.

It is an object of the invention to provide an alternative for the prior art apparatus known from EP-A-1 249 158 which is suited to not only pick up fabric from a plantation field, but also to place a fabric on a plantation field.

It is a further object of the invention to provide an apparatus of simpler construction which is easier to maintain.

It is still a further object of the invention to provide an apparatus which enables a reduction of manpower that is required to place a fabric on a plantation field, or that is required to pick the fabric up from the plantation field.

These and other objects and advantages of the invention are provided by an apparatus according to one or more of the appended claims.

In a first aspect of the invention an apparatus for placement of a fabric on a plantation field and picking up of a fabric from a plantation field is proposed, comprising a frame provided with a storage reel for the fabric and a bow mounted on the frame, which bow is construed to support during use the fabric being placed on or being picked up from the plantation field and to guide the fabric between the storage reel and the plantation field, which bow extends beyond sides of the frame to a breadth approximating a width of a plantation bed or beds from the plantation field, and wherein a swivable or oscillating arm is provided to the apparatus, which arm supports a ring positioned between the storage reel and the bow, and through which ring the fabric can be guided for evenly taking up the fabric from the storage reel or supplying the fabric to the storage reel.

The apparatus of the invention has proven to be a very effective and reliable tool to accurately convert the

fabric from being a strand to being spread out to a breadth capable of covering a plantation bed or beds of a plantation field, or to convert the fabric from that breadth back to being a strand. The breadth of the fabric on the plantation field can be for instance 15 m, corresponding to the breadth of 10 plantation beds including the walking paths between those beds. Other dimensions are however just as feasible, for instance 18 m or 19 m. When stored on the reel of the apparatus of the invention the fabric will occupy a breadth of approximately 2 m.

Advantageously the bow comprises a left bow part and a right bow part, wherein said left bow part and said right bow part are swivably mounted on the frame. This provides the advantage that the apparatus is easily movable when not in use for placement or collection of the fabric. The ease of movability of the apparatus comes particularly in reach when the left bow part and the right bow part are swiveled to a position approximately in line with the sides of the frame between which the storage reel takes up the fabric.

Beneficially the storage reel is embodied with a rotatable axle of the frame mounted between wheels for restraining the fabric on the axle. The just mentioned left bow part and right bow part can be swiveled to a position next to these wheels to bring them in line with the sides of the frame between which the storage reel takes up the fabric.

It is preferred that the bow is positioned at a distance of the storage reel which arranges that a path that the fabric has to travel from the storage reel to the bow is shorter at the bow's sides than at the bow's middle. This assists that the fabric will not run off the bow yet move over it stably and reliably.

The invention will hereinafter be further elucidated with reference to the drawing of an exemplary embodiment of an apparatus according to the invention that is not limiting as to the appended claims.

In the drawing:

-figure 1 shows an apparatus according to the invention in use;

-figure 2 shows the apparatus of figure 1 when not in

use for placement or collection of a fabric; and

-figure 3 provides a schematic rear view of the apparatus of figure 1.

Whenever in the figures the same reference numerals
5 are applied, these numerals refer to the same parts.

Making first reference to figure 1, the apparatus 1
of the invention is shown which is usable for both placement
and for picking up of a fabric 2 to or from a plantation field
3.

10 The apparatus 1 comprises a frame 4 which is provided
with a storage reel 7 for the fabric 2 which storage reel 7 is
embodied by a rotatable axle 8 of the frame 4 provided with
wheels 5, 6 to restrain the fabric 2 on the axle 8.

15 The frame 4 is further provided with a guiding organ
or organs 9', 9'', 11 to guide the fabric 2 between the stor-
age reel 7 and the plantation field 3, wherein the guiding or-
gan or organs 9', 9'' comprise a bow 10 mounted on the frame
4, which bow 10 is construed to support during use the fabric
2 being placed on or picked up from the plantation field 3.

20 Figure 1 shows further that the bow 10 extends beyond sides of
the frame 4 to a breadth which for all practical purposes
preferably approximates a width of a plantation bed or beds
from the plantation field 3. The guiding organ or organs 9',
9'', 11 also comprise a swivable or oscillating arm 11 that is
25 provided with a ring 11' through which the fabric 2 can be
guided for evenly taking up the fabric from the storage reel 7
or for supplying the fabric to the storage reel 7.

30 It is further remarked that a preferable feature of
the apparatus of the invention is that the bow 10 is posi-
tioned at a distance of the storage reel 7 which arranges that
a path that the fabric 2 has to travel from the storage reel 7
to the bow 10 is shorter at the bow's sides than at the bow's
middle .

35 The following aspect of the apparatus of the inven-
tion is better explained with reference to figure 2. Figure 2
shows that the bow 10 comprises a left bow part 10' and a
right bow part 10''. Said left bow part 10' and said right bow
part 10'' are swivably mounted on the frame, so as to enable
that - as figure 2 shows -the left bow part 10' and the right

bow part 10' ' can be swiveled to a position approximately in line with the sides of the frame between which the storage reel 7 takes up the fabric 2. In practice these sides correspond to the wheels 5, 6 of the frame 4. In this position transportation of the apparatus 1 of the invention when not in use **for** placement or collection of fabrics can be easily accomplished.

Although the invention has been discussed in the foregoing with reference to an exemplary embodiment of the apparatus of the invention, the invention is not restricted to this particular embodiment which can be varied in many ways without departing from the invention. The discussed exemplary embodiment shall therefore not be used to construe the appended claims strictly in accordance therewith. On the contrary the embodiment is merely intended to explain the wording of the appended claims without intent to limit the claims to this exemplary embodiment. The scope of protection of the invention shall therefore be construed in accordance with the appended claims only, wherein a possible ambiguity in the wording of the claims shall be resolved using this exemplary embodiment.

CLAIMS

1. Apparatus (1) for placement of a fabric on a plantation field (3) and for picking up of a fabric (2) from a plantation field (3), comprising a frame (4), which frame (4) is provided with a storage reel (7) for the fabric (2) and a bow (10) mounted on the frame (4), which bow (10) is construed to support during use the fabric (2) being placed on the plantation field (3) or being picked up from the plantation field (3) and to guide the fabric (2) between the storage reel (7) and the plantation field (3), which bow (10) extends beyond sides of the frame (4) to a breadth approximating a width of a plantation bed or beds from the plantation field (3), **characterized in that** a swivable or oscillating arm (11) is provided, which arm (11) supports a ring (11') positioned between the storage reel (7) and the bow (10), and through which ring (11') the fabric (2) can be guided for evenly taking up the fabric (2) from the storage reel (7) or for supplying the fabric to the storage reel (7).

2. Apparatus (1) according to claim 1, **characterized in that** the bow (10) comprises a left bow part (10') and a right bow part (10''), wherein said left bow part (10') and said right bow part (10'') are swivably mounted on the frame (4).

3. Apparatus (1) according to claim 2, **characterized in that** the left bow part (10') and the right bow part (10'') are swivable to a position approximately in line with the sides of the frame between which the storage reel (7) takes up the fabric (2).

4. Apparatus (1) according to any one of the previous claims 1 - 3, **characterized in that** the storage reel (7) is embodied with a rotatable axle (8) of the frame (4) mounted between wheels (5, 6) for restraining the fabric (2) on the axle (8).

5. Apparatus (1) according to any one of the previous claims 1 - 4, **characterized in that** the bow (10) is positioned at a distance of the storage reel (7) which arranges that a path that the fabric (2) has to travel from the storage reel

(7) to the bow (10) is shorter at the bow's sides than at the bow's middle .

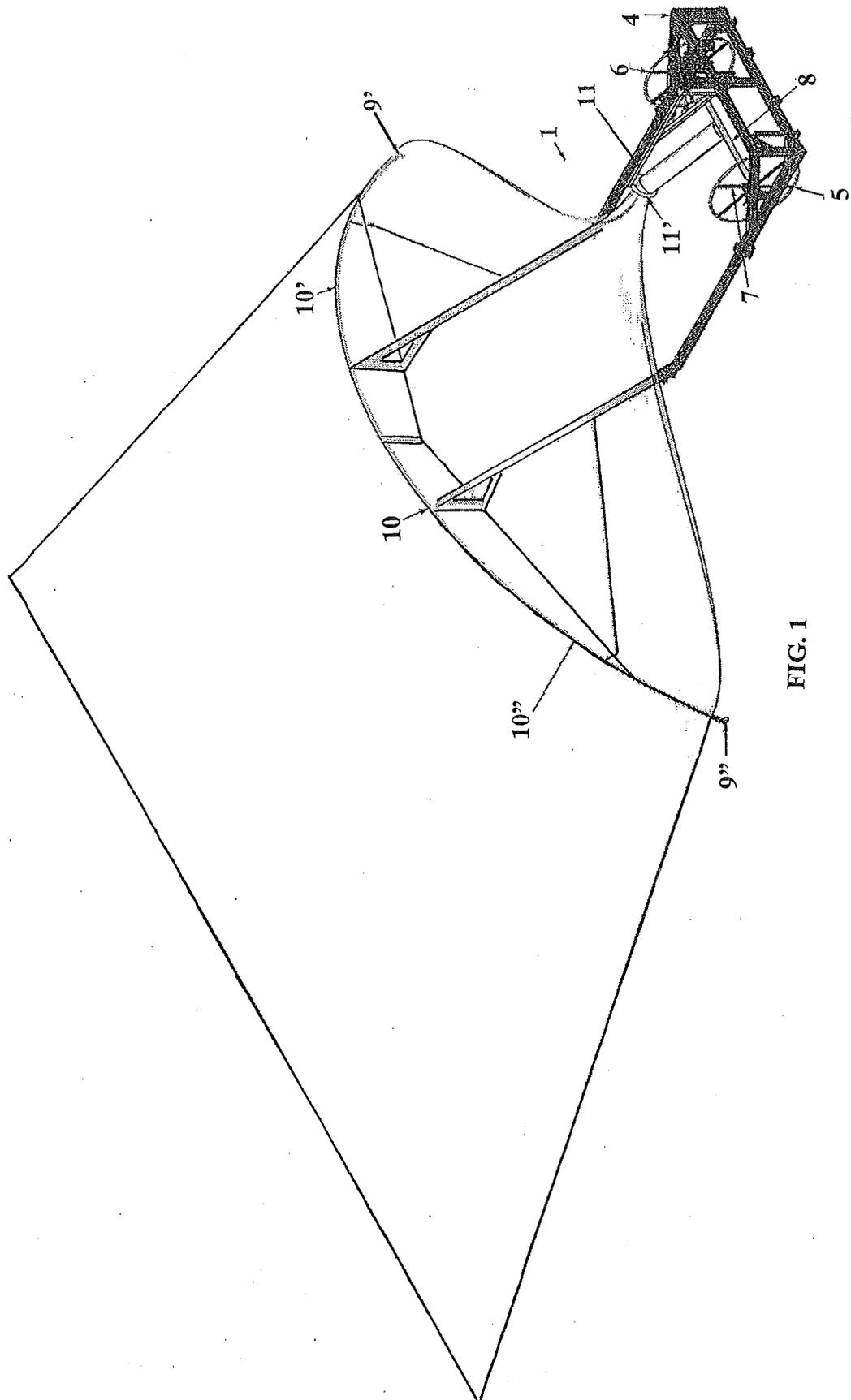


FIG. 1

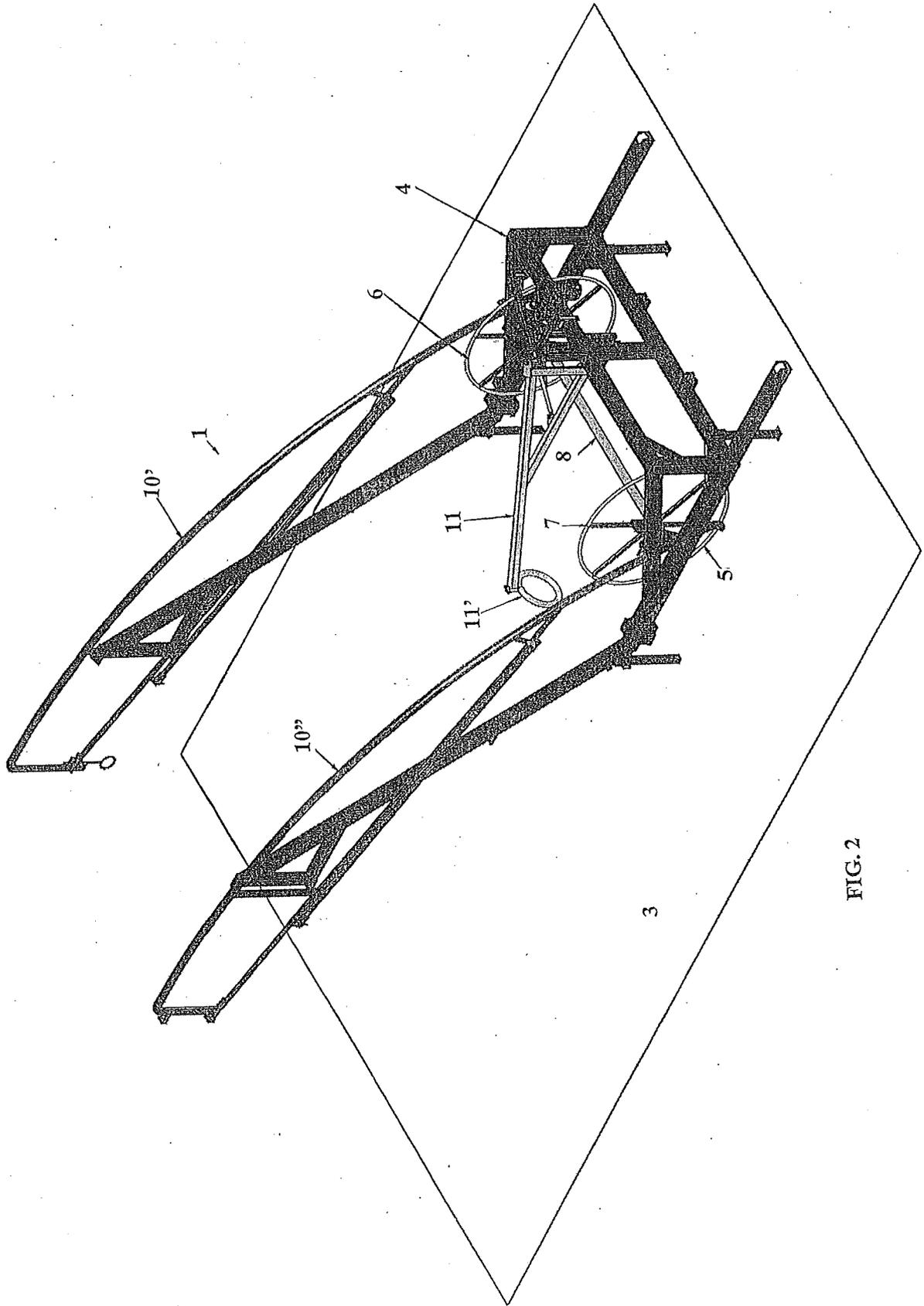


FIG. 2

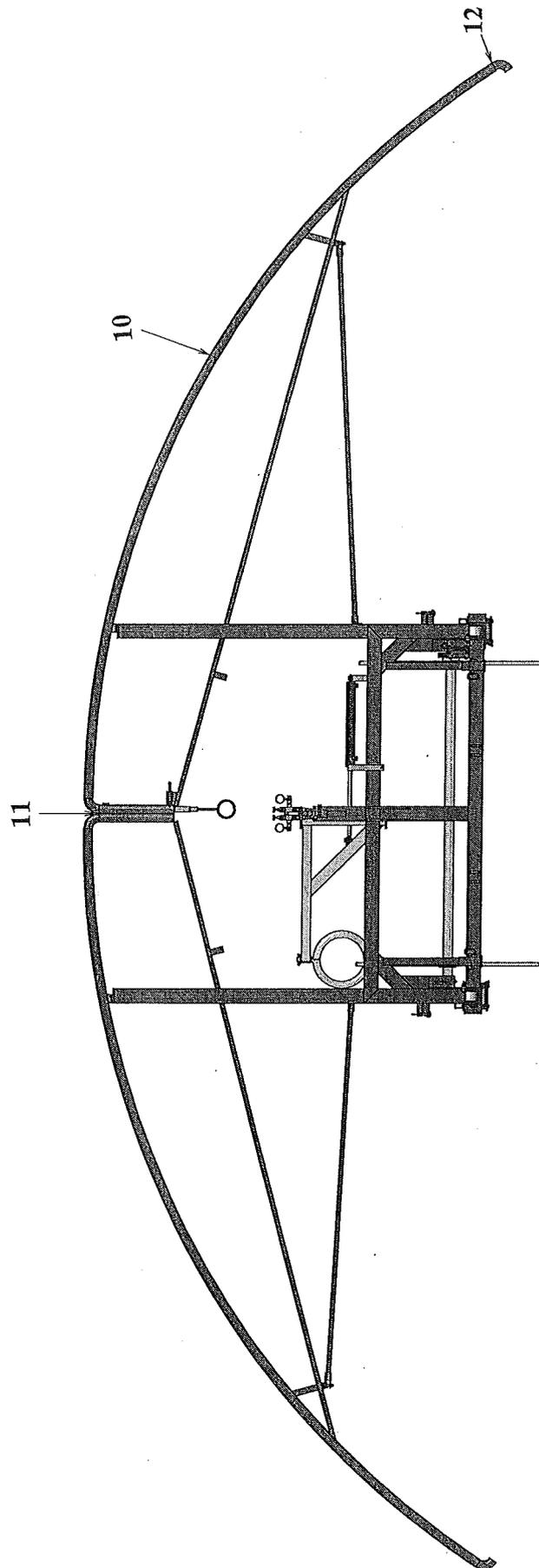


FIG. 3

INTERNATIONAL SEARCH REPORT

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| International application No PCT/NL2016/050 157 |
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A. CLASSIFICATION OF SUBJECT MATTER
 INV. A91G 13/ 00 A01G13/02
 ADD .
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 A01G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 EPO- Internal , WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| A | wo 98/56235 AI (FROESOE TRAEDGAARD AB [SE] ; MOBERG JAN [SE]) 17 December 1998 (1998- 12- 17) cited in the appl icati on the whol e document ----- | 1- 5 |
| A | EP 1 249 158 AI (AGRIWEB SA [FR]) 16 October 2002 (2002 - 10- 16) the whol e document ----- | 1- 5 |
| A | DE 100 06 054 AI (EBERT REINHARD [DE]) 17 August 2000 (2000-08- 17) abstract ; figure 11 Note element 27 as "beugel " ----- -/-- | 1- 5 |

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents :

| | |
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INTERNATIONAL SEARCH REPORT

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|--|
| International application No PCT/NL2016/050 157 |
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| C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|--|-----------------------|
| Category" | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| A | DE 93 17 150 UI (HERMELER LEO [DE]) 27 January 1994 (1994-01 -27) Note element 6 as "beuge l"; figures 1,3 ----- | 1-5 |
| A | FR 2 620 592 AI (BEAUMIER LOUIS [FR]) 24 March 1989 (1989 -03 -24) abstract ; figure 5 Note element 13 as "beugel " ----- | 1-5 |
| A | GB 2 239 154 A (COBBOLD TREVOR CHARLES) 26 June 1991 (1991-06-26) abstract ; figures 1-5 Note element 11 as "beugel " ----- | 1-5 |
| A | US 6 299 094 BI (JAMES JR FORREST HOOD [US]) 9 October 2001 (2001- 10 -09) abstract ; figures 4,6b,8 Note element 41 as "beugel " ----- | 1-5 |
| A | GB 1 504 967 A (PEARSON L; WARING P LTD; WARING P) 22 March 1978 (1978 -03 -22) Note element 62; figure 7 ----- | 1-5 |
| A | EP 0 304 899 AI (KIMBERLY CLARK co [US]) 1 March 1989 (1989 -03 -01) Note element 28 as "beugel " ----- | 1-5 |

INTERNATIONAL SEARCH REPORT

Information on patent Family members

| |
|---|
| International application No PCT/NL2016/050157 |
|---|

| Patent document cited in search report | Publication date | Publication date | Patent family member(s) | Publication date |
|--|------------------|------------------|-------------------------|------------------|
| WO 9856235 | A1 | 17-12-1998 | AU 728033 B2 | 04-01-2001 |
| | | | AU 8044998 A | 30-12-1998 |
| | | | CA 2292704 A1 | 17-12-1998 |
| | | | EP 0987934 A1 | 29-03-2000 |
| | | | JP 2002503107 A | 29-01-2002 |
| | | | NZ 501497 A | 27-04-2001 |
| | | | PL 337502 A1 | 28-08-2000 |
| | | | SE 508942 C2 | 16-11-1998 |
| | | | US 6290163 B1 | 18-09-2001 |
| | | | WO 9856235 A1 | 17-12-1998 |
| ----- | | | | |
| EP 1249158 | A1 | 16-10-2002 | AT 384430 T | 15-02-2008 |
| | | | EP 1249158 A1 | 16-10-2002 |
| | | | FR 2823062 A1 | 11-10-2002 |
| ----- | | | | |
| DE 10006054 | A1 | 17-08-2000 | NONE | |
| ----- | | | | |
| DE 9317150 | U1 | 27-01-1994 | NONE | |
| ----- | | | | |
| FR 2620592 | A1 | 24-03-1989 | NONE | |
| ----- | | | | |
| GB 2239154 | A | 26-06-1991 | NONE | |
| ----- | | | | |
| US 6299094 | B1 | 09-10-2001 | NONE | |
| ----- | | | | |
| GB 1504967 | A | 22-03-1978 | NONE | |
| ----- | | | | |
| EP 0304899 | A1 | 01-03-1989 | CA 1292413 C | 26-11-1991 |
| | | | EP 0304899 A1 | 01-03-1989 |
| | | | US 4818585 A | 04-04-1989 |
| ----- | | | | |