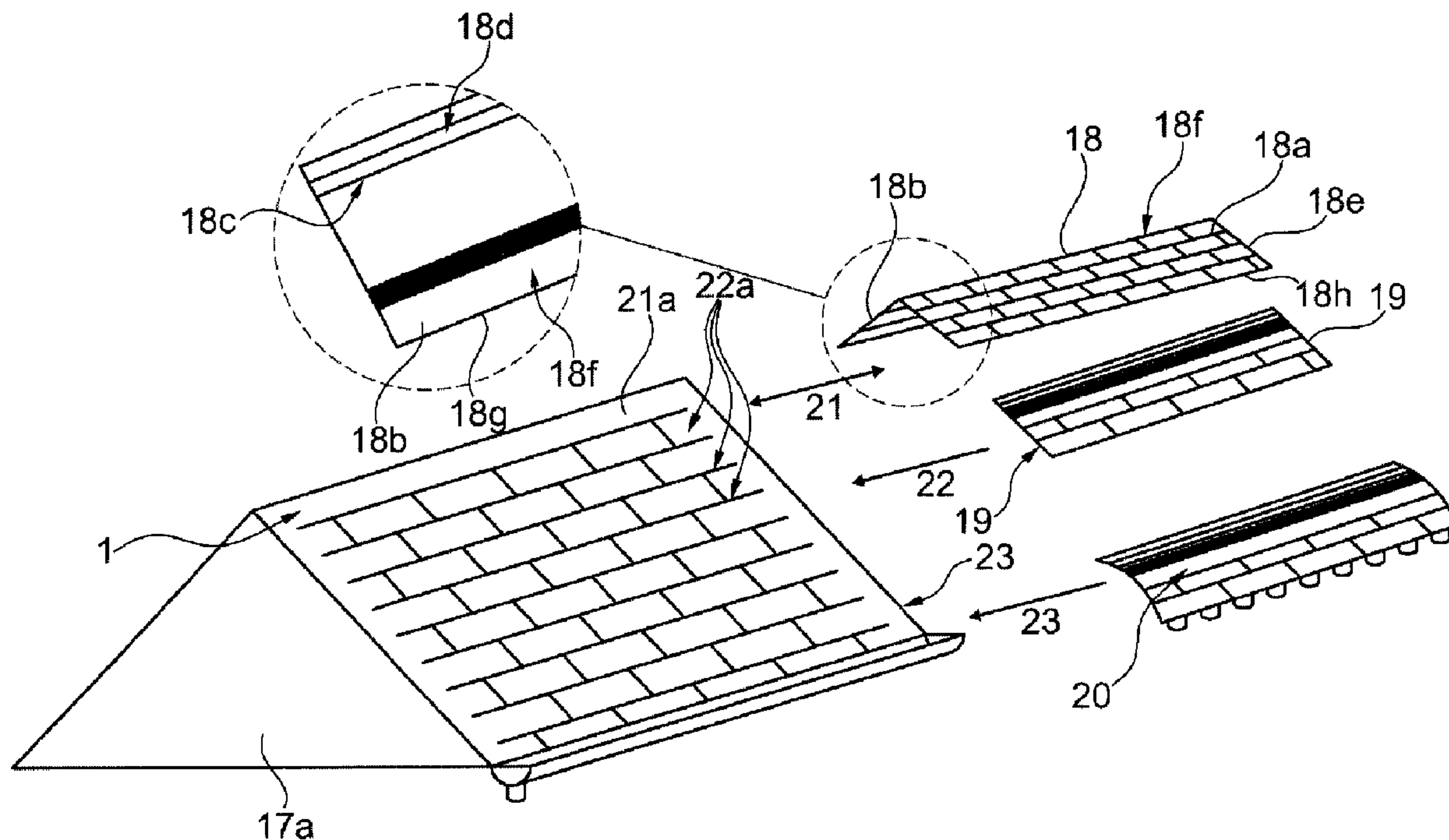




(22) Date de dépôt/Filing Date: 2013/11/18
(41) Mise à la disp. pub./Open to Public Insp.: 2015/05/18

(51) Cl.Int./Int.Cl. *E04D 5/14* (2006.01),
E04D 5/06 (2006.01), *E04D 5/08* (2006.01)
(71) Demandeur/Applicant:
RENSCH, MICHAEL, CA
(72) Inventeur/Inventor:
RENSCH, MICHAEL, CA
(74) Agent: CLARKE, GORDON S.

(54) Titre : SYSTEME DE REVETEMENT DE TOITURE TEMPORAIRE
(54) Title: TEMPORARY ROOFING COVER SYSTEM



(57) Abrégé/Abstract:
The invention provides a temporary roofing cover system for sloped roofs typically found in residential construction.

TITLE: TEMPORARY ROOFING COVER SYSTEM

ABSTRACT

The invention provides a temporary roofing cover system for sloped roofs typically found in residential construction.

TITLE: TEMPORARY ROOFING COVER SYSTEM

FIELD OF INVENTION

The field of the invention is temporary roofing covers for residential structures.

10 PRIOR ART

Sloped residential roofing is commonplace in all climates. Such roofing is fully exposed to all manner of inclement and damaging conditions, including weather conditions which rapidly and radically alter the utility and lifespan of the roofing material itself. This can be particularly adverse when the owner is not present for
15 long periods of time and the building is left to the elements un-managed and unheated or only minimally heated. An example, is the typical cottage or camp which may lie unoccupied for much of the year and, particularly for long periods of inclement winter weather where snow, ice and rain tend to accumulate and may build up upon collections of debris in or on eaves or in gutters and trip further debris in the
20 process.

It is known among some cottagers to actually cover roofing systems for the winter with tarpaulin sheets. These are thrown over all or part of the roof and are held down by gravity with the assistance of ropes and weights, most often by weights off the roof edge. In most instances these tarpaulins are subject to such weather abuse,
25 and particularly high winds, UV and driving precipitation that they are unlikely to remain in use for more than 1 season, often less. Often their presence in a damaged condition adds to the deterioration of the building itself, its roof and associated gutters, trim etc. Adding and improving the quality of the tarpaulins used might seem to have benefit but the extra cost and sheer mass involved have been found to
30 be prohibitive.

Some of these matters are discussed in PCT patent application PCT/AR/2009/000685

published on December 10, 2009 and also published as Canadian application 2,726,321 (herein CA'321), now abandoned. CA'321 seeks to present a solution to the problem of adhering adjoining strips from a working position while on the roof and working
35 with heavy rolls by forming a conjoined sheet of strips cut to fit using the ground as the work surface, dragging this sheet over the entire roof and then heat shrinking the result to achieve a secure engagement between the complete structure and the sheet.

And again in US Published Pending Patent Application 2005/0217202 published
40 October 6, 2005 on the application of Crook (herein USPPA'202). USPPA'202 discussed a roof cover or protection system directed at high wind situations. As far as understood Crook asserts the use of heat shrinkable material to envelop the entire roof in strips which are heat shrunk in to their cover configuration. The individual strips may be taped down to the roofing material. As can be seen USPPA'202 does
45 not have specific provision for rain, snow and ice. It discusses a one-time solution which is directed at ease of installation of large and heavy rolls of protective material. A solution to a gabled roof is to wrap the entire roof with a strip in a spiral configuration and then shrink it in to shape. This is not known to provide a useful and reusable result.

50 Another complete coverage discussion is found in USP 6,425,201 to Lachapelle issued July 30, 2002. In this the protective layer is provided in strips which are sticky and stretchable. On the roof the strips are up and over and are then sealably attached to the wall layers.

OBJECTS OF THE INVENTION

- 55 Objects of the invention include provision of a temporary and reusable roofing cover:
- which may be installed, removed and re-installed with a minimum of skilled labour or a home owner in a safe and secure manner, and,

- is adapted to resist water, snow and ice and particularly built up snow and ice, ice dams and resultant water intrusion into the building, and,
- 60 • which may be easily and inexpensively fabricated on site without complex fabrication steps on the roof itself, and,
- which may be installed with a minimum of manipulation of large rolls of material on the roof itself.

STATEMENT OF INVENTION

65 The invention provides a temporary roofing cover for residential buildings with sloped roofs having 2 or more roof decks with a plurality of overlapping highly elongated body strips of waterproof material, each adapted to extend horizontally across a single roof deck, a highly elongated ridge cap strip adapted to extend between an adjacent pair of roof decks along their ridge joint and overlap one of said body strips

70 on each roof deck, and fastening means along at least each elongated edge of each of said strips adapted to secure each edge to an adjacent strip in said overlapping relationship along said elongated edge and a method of fabrication and installation at a remote work site.

LIST OF DRAWINGS

75 Figure 1 shows a cross-sectional elevation of a typical roof structure during winter months with an ice dam build up.

Figure 2 is partial close-up view of the roof structure of Figure 1 with a larger ice dam build up.

80 Figure 3 is a perspective view of the complete roof of Figures 1 and 2 pre-winter with the ridge cap strip of the invention installed.

Figure 4 is a further perspective view of the roof of Figure 3 showing installation of protective cover strips of the preferred embodiment.

Figure 5 is a partial perspective view of the upper surface of a middle protective strip

of the preferred embodiment.

85 Figure 6 is a partial perspective view of the upper surface of the lower or edge protective strip of the preferred embodiment.

Figure 7 is a plan view of the protective strips of the preferred embodiment of the invention wherein:

Figure 7a is a bottom view of the ridge cap,

90 Figure 7b is a top view of a middle strip adjacent to the ridge cap of Figure 7a,

Figure 7c is a top view of a middle strip adjacent to the middle strip of Figure 7b,

Figure 7d is a bottom view of the middle strips of Figures 7a and 7b, and

Figure 7e is a top view of a bottom strip adjacent to the gutter.

95 Figure 8 is a partial perspective view of the gutter of the preferred embodiment.

Figure 9 is an exploded perspective view of another preferred embodiment on a hip roof.

Figure 10 is a perspective assembly drawing of the hip roof embodiment.

100 Figure 11 is a perspective view of the mobile fabrication facility suitable to custom fabricate the temporary roofing cover of the invention on site.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In Figure 1 is shown a partial cross-section of a typical roof structure 1 during winter conditions with a snow load 7 and an ice dam build up 9. Typically roof structure 1 includes a plurality of roof plates or surfaces with deck supports or trusses 2 and roof
105 decks 3 which may be plywood sheathing. Further typically, the roof deck 3 is covered by rows of individual shingles 4 installed in overlapping position, upper layers over the lower layers, from the lowermost edge 3a at gutter 8 upwards along direction 16 to ridge line 1a.

In typical winter conditions a snow and ice load 7 may build up significantly. In some

110 climates this can amount to an extra roof loading of tons. During periods of freeze and thaw or with freezing rain the roof gutter structure 8 is not capable of handling run off and an ice dam 9 may form along the roof edge above and including gutter 8 further adding to the roof loading. Further run off then backs up into a pool 10 of melt water and mixed ice crystals which accumulates on the roof 1.

115 Pooled water 10 does not drain away and starts to penetrate, as at 11, the roof shingles 4 and the deck 3 to accumulate further as water or water and ice 12 in attic space 5. Pooled water 12 then drains from attic space 5 into the ceiling joints 6 and interior drywall 13 to cause water damage to the drywall as at 14.

As shown in Figure 2, a preferred roofing structure includes a permanently installed
120 ice and water shield 15 along the lower edge 3a of the roof sheathing 3 adjacent gutter 8 and lowermost shingle 4a. Most typically this ice shield 15 is a single continuous strip in the order of 30 inches in width and prevents water entry as at 11 in Figure 1.

As further shown in Figure 2, snow load 7 can build up to such an extent that ice dam
125 9 can extend up the roof deck 3 a considerable distance as at 9a, effectively dividing the snow load into an upper portion 7a and lower portion 7b which may be incorporated into the ice dam 9. This is particularly so in locations where the subject building is not fully occupied or heated during the winter months. In these cases the actual load 7 may be significantly increased from that of Figure 1 and
130 provide for pooling 10 higher up the roof deck 3 along direction 16.

In Figure 3 is shown a perspective view of a simple residential building with a square profile and end gables 17a and 17b respectively. The roof structure 1 In Figure 3 includes an adjacent pair of roof decks 3a and 3b covered by lateral rows of individual shingles. The exposed shingles are not shown for ease of illustration.

135 In accordance with the preferred embodiment of the temporary roofing cover of the invention a highly elongated protective strip of waterproof material, the ridge cap 18, is first applied along and parallel to the ridge line 1a with equal depending portions

18e and 18f, on the front and back side respectively, extending down roof 1 in direction 16 to line 21a and from gable 17a to gable 17b. Strip 18 may be imprinted
140 with a shingle pattern on its uppermost surface as shown at 18a.

Ridge cap 18 is installed to roof 1 overlapping ridge line 1a in direction 21 along line 21a in Figure 4. The underside of cap 18, referred to as 18b in Figure 4, includes a full width zipper-type fastener 18c, and, preferably, a full width hook and loop fastener 18d, referred to as a velcro-type fastener, along each of its lower edges 18g
145 and 18h respectively. Further preferably, zipper fasteners 18c are immediately adjacent each of lower edges 18g and 18h respectively and hook and loop fasteners 18d are adjacent and just inside the zipper fasteners.

A plurality of protective main highly elongated body strips 19 are installed to roof 1 downwardly from ridge line 1a along direction 16 and from gable 17a to gable 17b in
150 direction 22. Main body strips 19 form parallel lines 22a across the roof 1.

As shown in Figure 5 each of main body strips 19 include a preferably continuous hook and loop fastener 19b along its upper edge and a preferably continuous zipper fastener 19a immediately adjacent the hook and loop fastener. The upper face of strip 19 may be printed with a shingle pattern 19c.

155 Similarly, a lower protective strip 20 is installed to roof 1 adjacent the gutter 8 along line 23.

As shown in Figure 6 the lower strip 20 includes a preferably continuous hook and loop fastener 20b along its upper edge and a preferably continuous zipper fastener 20a immediately adjacent the hook and loop fastener. The lower edge of strip 20 is
160 fitted with a series of snap fasteners 20d extending from its lower surface. The upper face of strip 19 may be printed with a shingle pattern 20c.

Figure 7, in parts 7a through 7e, depicts the preferred embodiment as fully installed to roof 1 in corresponding plan views.

Figure 7a shows the back side of the ridge cap 18 with its fold line 18i which
165 corresponds to the roof ridge line 1a upon installation. Pairs of zipper fasteners 18c

are adjacent the lower edges 18e and 18f and corresponding pairs of velcro-type fasteners 18d adjacent each of the zipper fasteners 18c.

Upon installation, the ridge cap 18 is rotated about its long axis 18i so that zipper fasteners 18c and velcro-type fasteners 18d correspond with mating zipper fasteners
170 19a and velcro-type fasteners 19b, respectively, on the first middle strip installed.

Figure 7b shows the top side of the first middle strip 19 which is installed to the roof 1 immediately adjacent ridge cap 18. With installation the mating velcro-type fasteners 18d and 19b are joined along their respective lengths to hold strips 18 and 19 together in place while zipper fasteners 18c and 19a are joined for complete
175 closure of the uppermost joint.

Figure 7d shows the underside 29 of the middle strip 18 with its zipper fastener 29a and its corresponding velcro-type strip 29b.

Figure 7c shows the top side of the 2nd middle strip 24 which is joined to the first middle strip 19 along its entire length by sliding under middle strip 19 from position
180 27 to position 28 in direction 26, upwards along the roof 1. Mating velcro-type fasteners 24b and 29b are joined along their respective lengths to hold strips 19 and 24 together in place while zipper fasteners 24a and 29a are joined for complete closure of the second and subsequent middle joints.

Figure 7e shows the top side of the last and lowermost highly elongated strip 40 in
185 plan view. From the top strip 40 is preferably the same as main body strips 19 and 24 shown in Figures 7b and 7c respectively. The underside of strip 40 is preferably clear of velcro-type and zipper fasteners as are shown in Figure 7d in favour of a series of snap connectors 43a aligned with gutter 8.

Figure 8 shows an expanded perspective view of the gutter 8 of the preferred
190 embodiment including a series of snap connectors 43b which correspond to connectors 43a on lowermost strip 40 so as to receive and secure strip 40 firmly to roof 1 upon completion of installation. Additional snaps 44 may preferably be secured to the distal ends of the roof structure 1 to secure distal ends of the body strips 18, 19, 24

and 29.

195 In Figure 9 a hip roof embodiment of the invention is shown adapted to a hip roof with main roof plates 45 and 46 which include the roof structure 1 shown in Figure 1 and the corresponding main ridge line 1a. Roof structure 1 also includes hip ends or plates 47 and 48 which are separated from main roof plates 45 and 46 by hip ridges 49 and 50, and by 51 and 52 respectively. In this embodiment the ridge cap 18 is
200 extended at both ends 31 and 32 by hip extensions 33, 34, 35 and 36 permanently affixed to ridge cap 18, each corresponding to an individual hip ridge 51, 52, 49 and 50 respectively.

Each of hip extensions includes a fold line 33i, 34i, 35i and 36i, respectively, along its central longitudinal axis which corresponds directly to and overlies hip ridges 51, 52,
205 49 and 50, respectively, upon installation to hip roof 45. As with ridge cap 18 each of the hip extensions, as with extension 33, includes an outermost zipper-type fastener, as at 33c, on the underside adjacent each outer edge and an inner velcro-type fastener, as at 33d, inboard of each outer zipper both along the full length of the respective extension 33. Similarly, extensions 34 through 36 include both zipper and
210 velcro-type fasteners on their undersides, as at 34c and 34d, 35c and 35d, and 36c and 36d.

In the Figure 9 embodiment the distal ends of extensions 33, 34, 35 and 36 are preferably closed and attached by means of end caps 56. End caps 56 each include a zipper fastener 56a and a velcro-type fastener 56b on their respective upper surfaces,
215 in the fashion of the main body strips 19 and 24 shown in Figure 7b and 7c, each adapted to attach to corresponding transverse fasteners on the underside of extension 33, 34, 36 and 36.

In Figure 10 main body strips (number 19 and 24 in Figures 7) are numbered 37 with zipper and velcro-type fasteners 37a and 37b respectively corresponding to 19a and
220 19b. Strip 37 includes distal horizontal ends 38 and 39 each of which include a velcro-type fastener, 38b and 39b, adjacent the outer edges 38 and 39 and an inboard zipper fastener, 38a and 39a, inboard of the velcro-type 38b and 39b for attachment

directly to extensions 33 and 36 respectively.

225 The lowermost strip 40 as shown in the Figure 10 hip roof embodiment corresponds to the lowermost strip also identified as 40 and shown in Figure 7e. In Figure 10 strip 40 includes distal ends 41 and 42, each of includes corresponding zipper fasteners 41a and 42a inboard of outer velcro-type fastener strips 41b and 42b, respectively for direct attachment at each end to extensions 33 and 36.

230 In Figure 11 a mobile fabrication facility 50 is shown mounted to a trailer 51 of traditional configuration. The strips of the temporary roofing cover of the invention may be cut on site from a large supply roll 52 of waterproof material, preferably a multi-layer waterproof tarp material. The individual strips, singly or in groups, are then completed with the edge fasteners of velcro-type and zippers, b and a respectively, along the outside edges 53 and 54 for a totally contained mobile
235 fabrication facility of low cost, ready transportation and ease of use.

The invention herein are not limited to the specific embodiments disclosed and that modifications and other embodiments are intended to be included within the scope of the appended claims.

WHAT I CLAIM IS:

1. A temporary roofing cover for residential buildings with sloped roofs having 2 or more roof decks comprising:
 - (a) a plurality of overlapping highly elongated body strips of waterproof material, each adapted to extend horizontally across a single roof deck,
 - (b) a highly elongated ridge cap strip adapted to extend between an adjacent pair of roof decks along their ridge joint and overlap one of said body strips on each roof deck,
 - (c) fastening means along at least each elongated edge of each of said strips adapted to secure each edge to an adjacent strip in said overlapping relationship along said elongated edge.
2. A temporary roofing cover as claimed in claim 1 wherein each of said strips is adapted to cover a portion of said roof deck at least the width of 2 rows of installed shingles and no more than 10 such rows.
3. A temporary roofing cover as claimed in claim 2 with no more than 7 such rows.
4. A temporary roofing cover as claimed in claim 1 wherein each strip is sufficiently elongated so as to be manageable by a single workman.
5. A temporary roofing cover as claimed in claim 3 wherein each strip is sufficiently elongated so as to be manageable by a single workman.
6. A temporary roofing cover as claimed in claim 1 or 5 wherein said fastening means on each of said body strips includes a top side fastening means and a bottom side fastening means.
7. A temporary roofing cover as claimed in claim 6 wherein each said fastening means comprises a hook and loop fastening strip and a zipper-type fastening strip aligned along a respective edge.
8. A temporary roofing cover as claimed in claim 7 wherein said fastening strips are secured on the top and bottom sides respectively of each of said plurality of body strips.

9. A temporary roofing cover as claimed in claim 8 wherein said fastening strips are secured on the bottom side of said ridge cap strip.
10. A temporary roofing cover as claimed in claim 9 wherein said bottom side fastening means include said zipper-type strip adjacent the outer edge and the hook and look strip immediately adjacent the said zipper-type strip.
11. A temporary roofing cover as claimed in claim 1 wherein said ridge cap strip includes a main ridge cap strip and at least one hip ridge cap strip extending downwards from said main ridge cap strip between an adjacent pair of roof decks along their hip ridge joint.
12. A temporary roofing cover as claimed in claim 1 wherein said fastening means comprises a fastening strip along elongated edge of each of said strips adapted to secure each respective edge to an adjacent strip, to said main ridge cap strip and said hip ridge cap strip in an overlapping relationship along each respective said edge.
13. A temporary roofing cover as claimed in claim 12 wherein each of said strips is adapted to cover a portion of said roof deck at least the width of 2 rows of installed shingles and no more than 7 such rows.
14. A temporary roofing cover as claimed in claim 13 wherein said fastening means on each of said body strips includes a top side fastening means and a bottom side fastening means.
15. A temporary roofing cover as claimed in claim 14 wherein each said fastening means comprises a hook and loop fastening strip and a zipper-type fastening strip aligned along a respective edge.
16. A temporary roofing cover as claimed in claim 15 wherein said fastening strips are secured on the top and bottom sides respectively of each of said plurality of body strips.
17. A temporary roofing cover as claimed in claim 16 wherein said fastening strips are secured on the bottom side of said ridge cap strip.
18. A temporary roofing cover as claimed in claim 17 wherein said bottom side fastening means include said zipper-type strip adjacent the outer edge and the hook and look

strip immediately adjacent the said zipper-type strip.

19. A method of fabrication of a temporary roofing cover for residential buildings with sloped roofs having 2 or more roof decks comprising delivery of rolled waterproof material to the job site, severing elongated body strips from said rolled material each adapted to extend horizontally in overlapping relationship across a single roof deck, severing a ridge cap strip adapted to extend along the main roof ridge between an adjacent pair of roof decks and overlap one of said body strips on each roof deck, securing fastening means along at least each elongated edge of said body strip, transporting individual strips to the roof, aligning the main ridge cap strip along said main ridge, successively securing each body strip under the strip above it in overlapping relationship by means of said fastening strips, and securing the remaining edges to the building.
20. A method of fabrication of a temporary roofing cover for residential buildings as claimed in claim 19 further comprising severing a hip ridge cap strip and securing it to said ridge cap strip so as to align with a hip ridge.

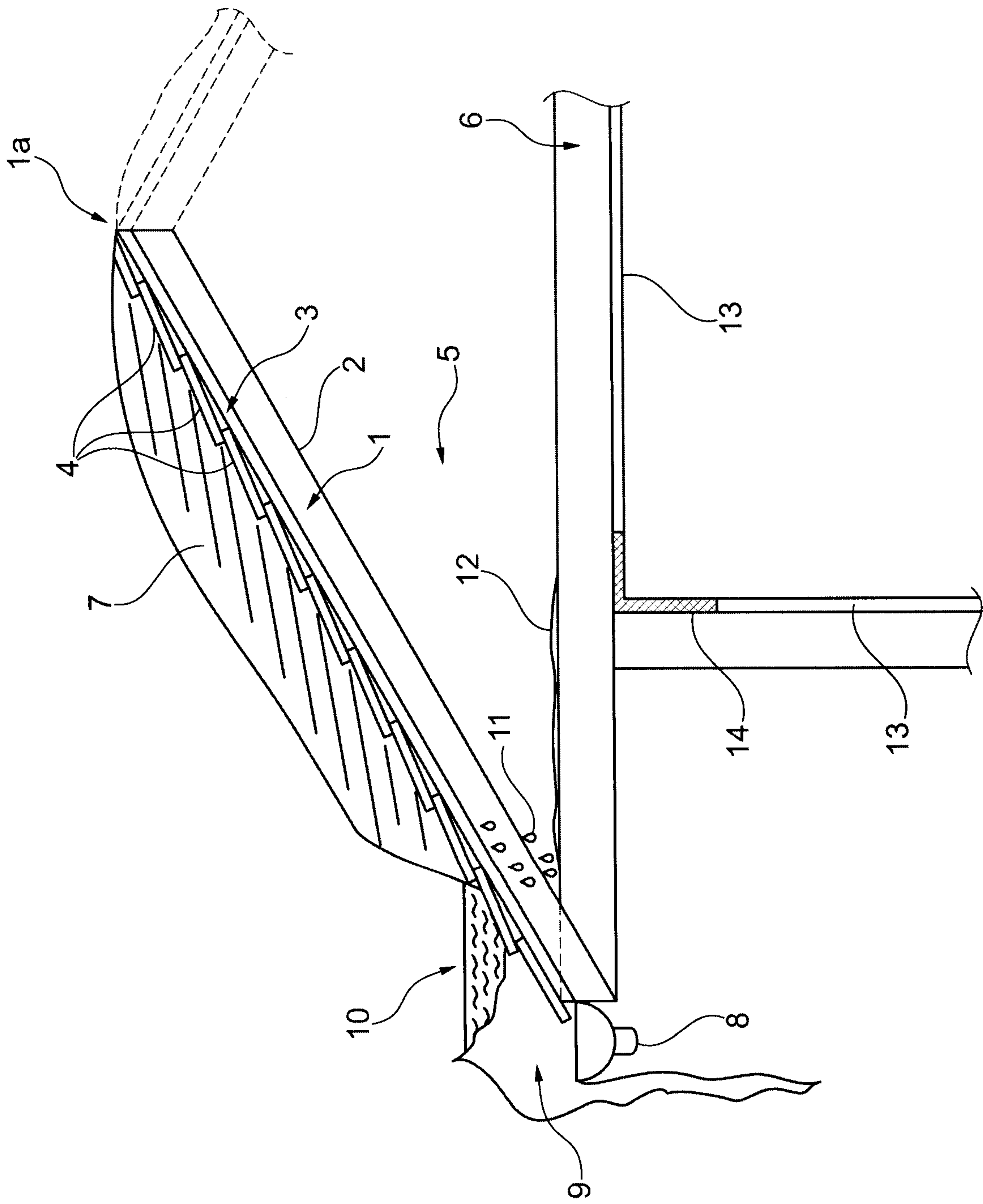


Fig. 1

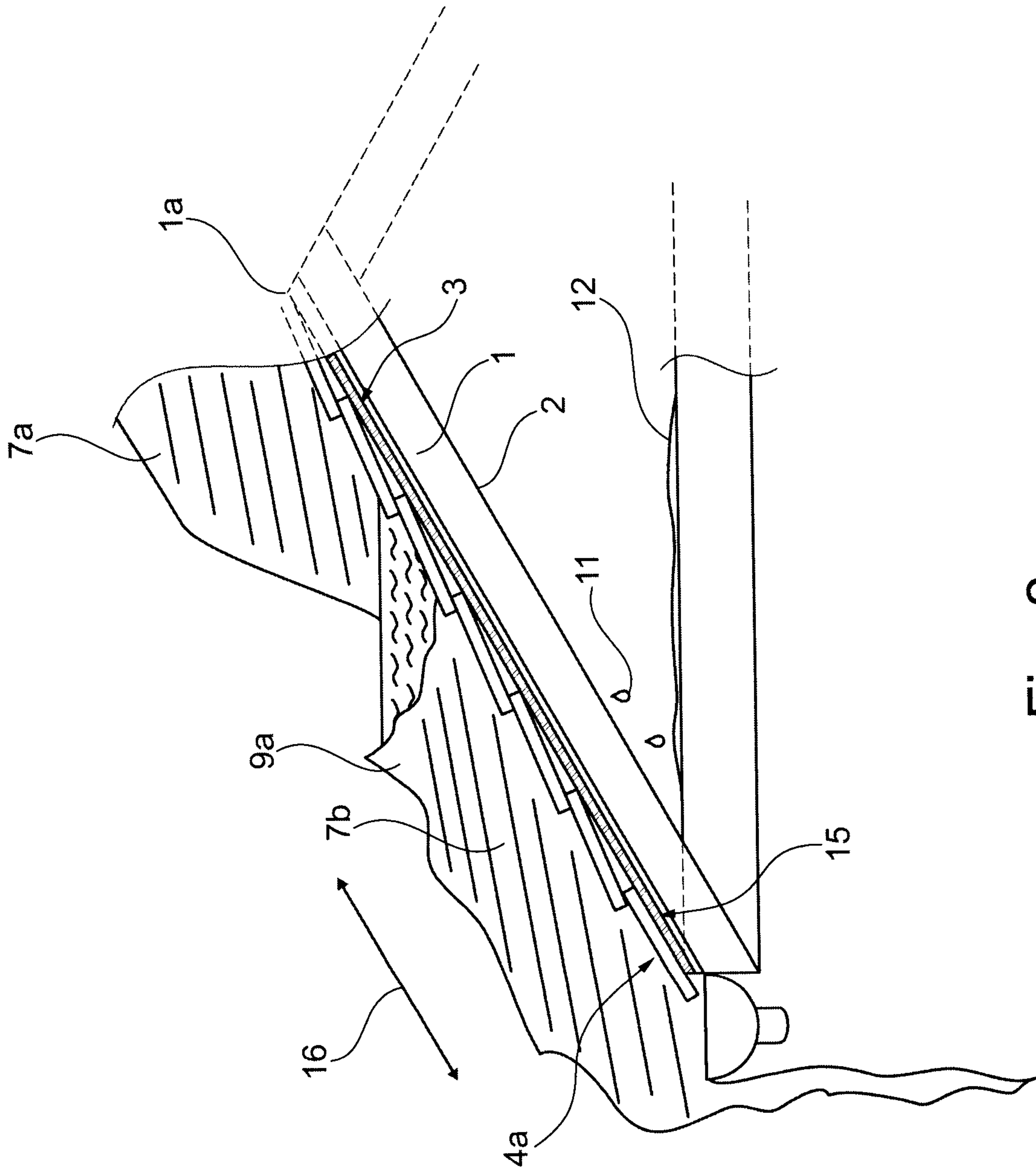


Fig. 2

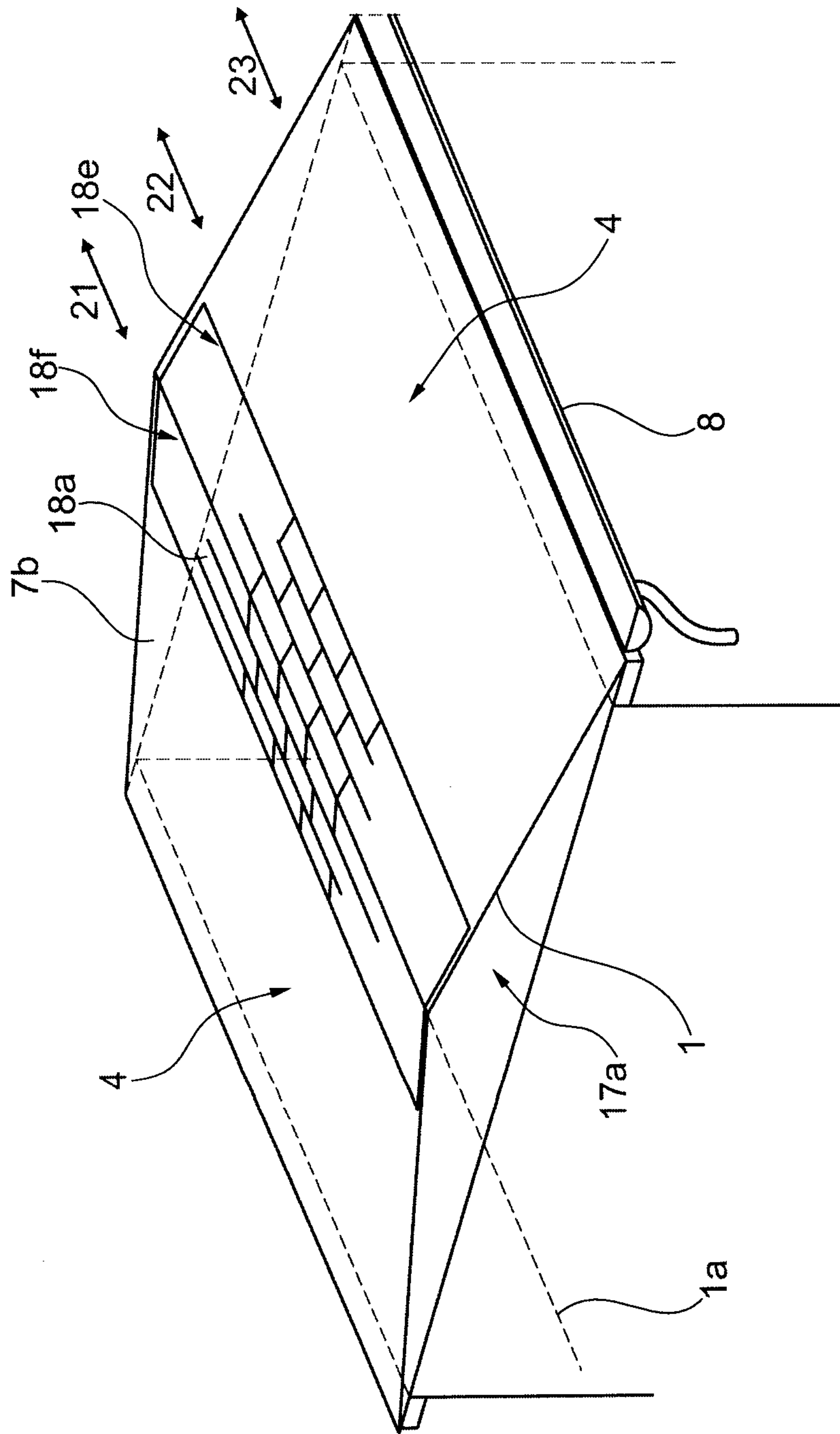


Fig. 3

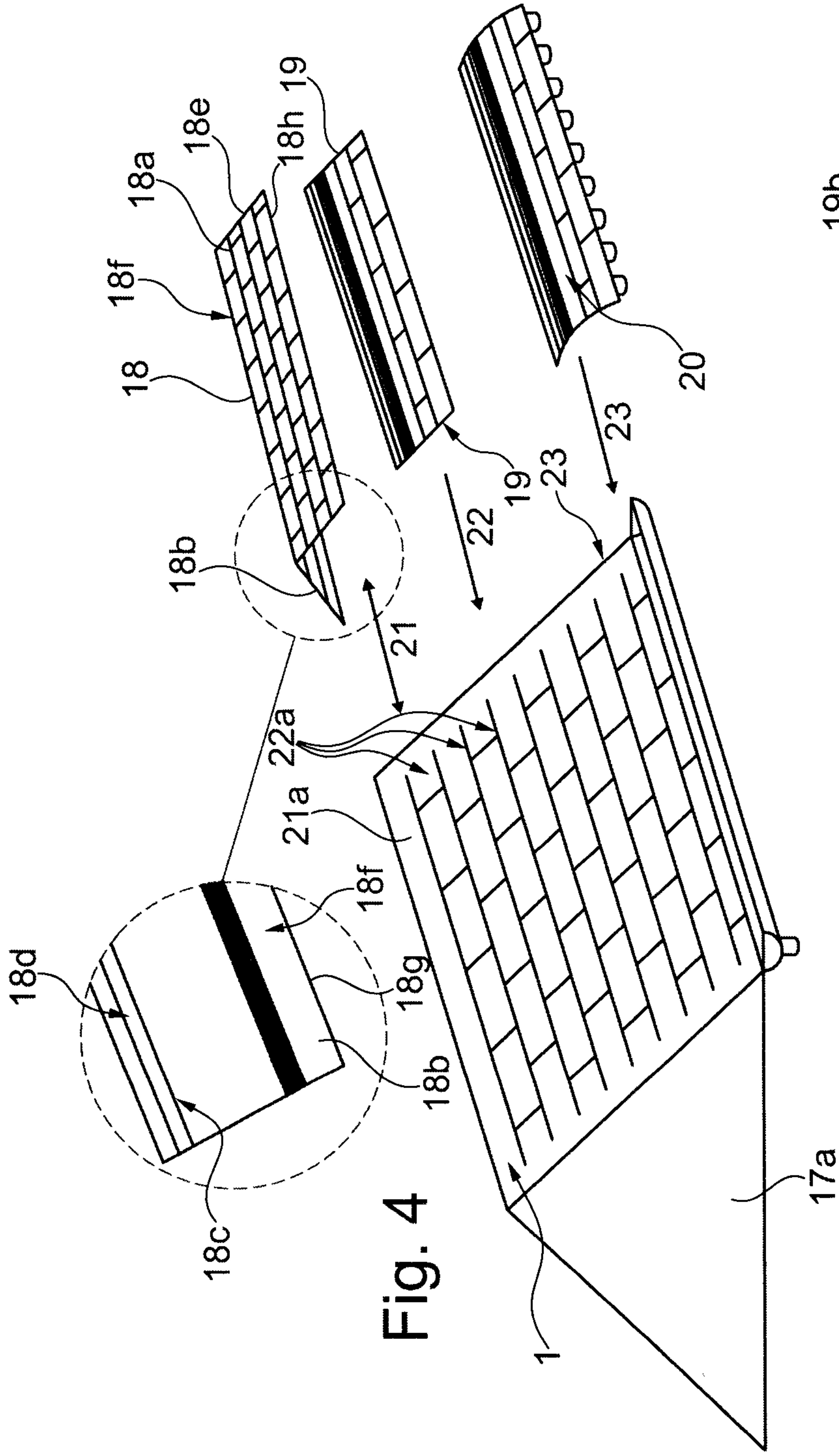


Fig. 4

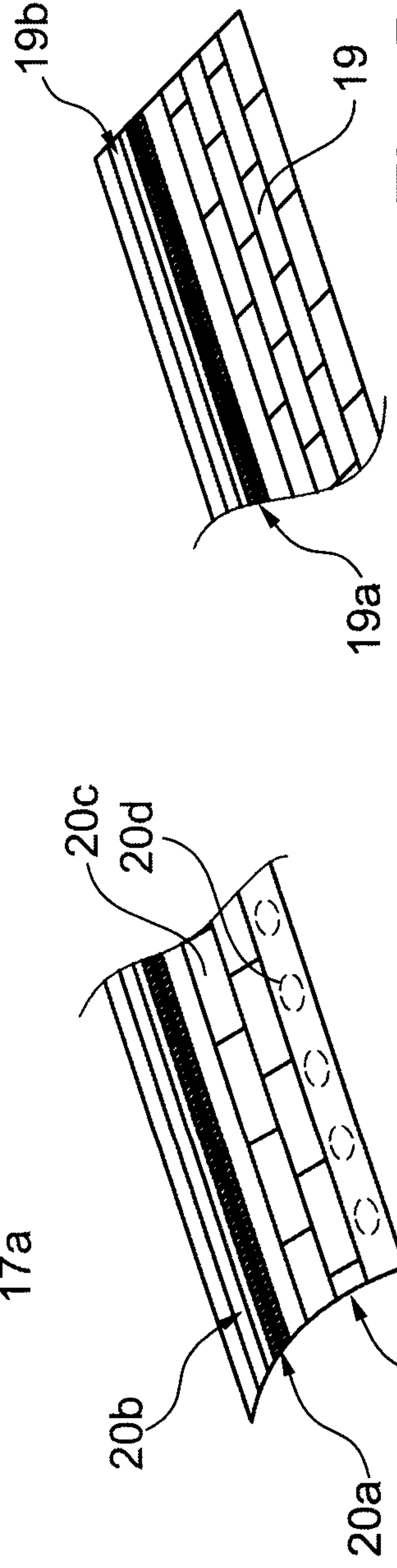


Fig. 5

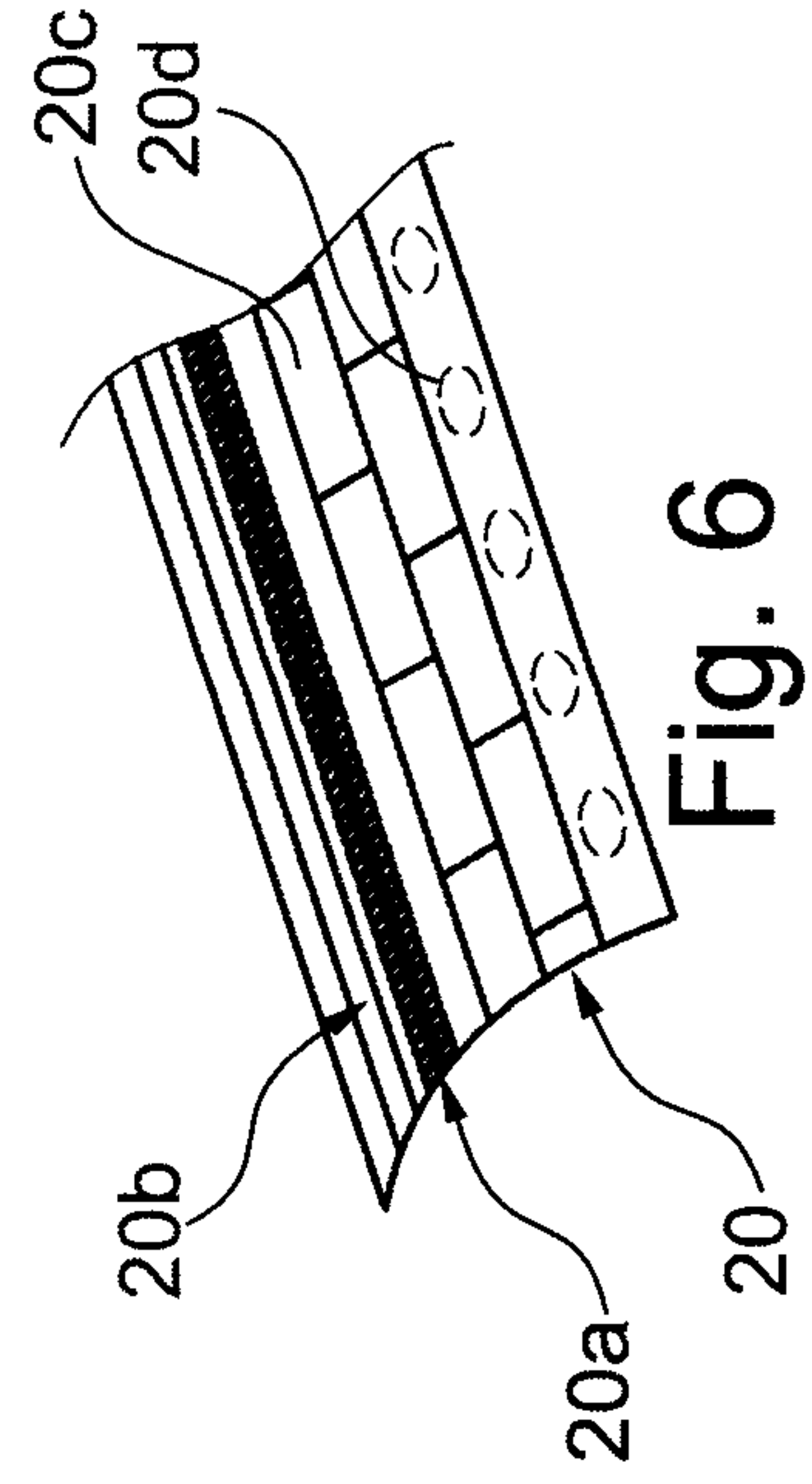


Fig. 6

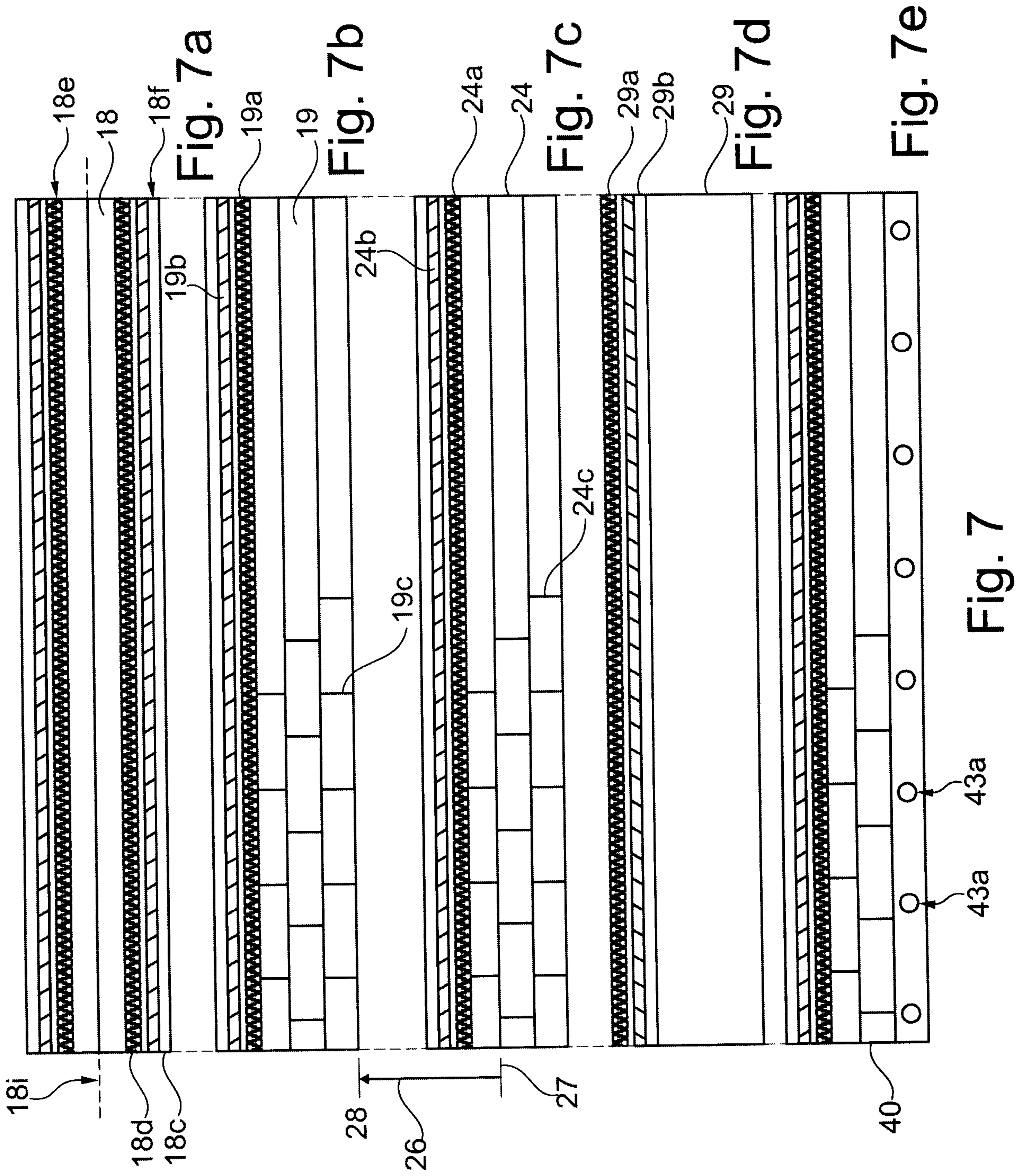


Fig. 7

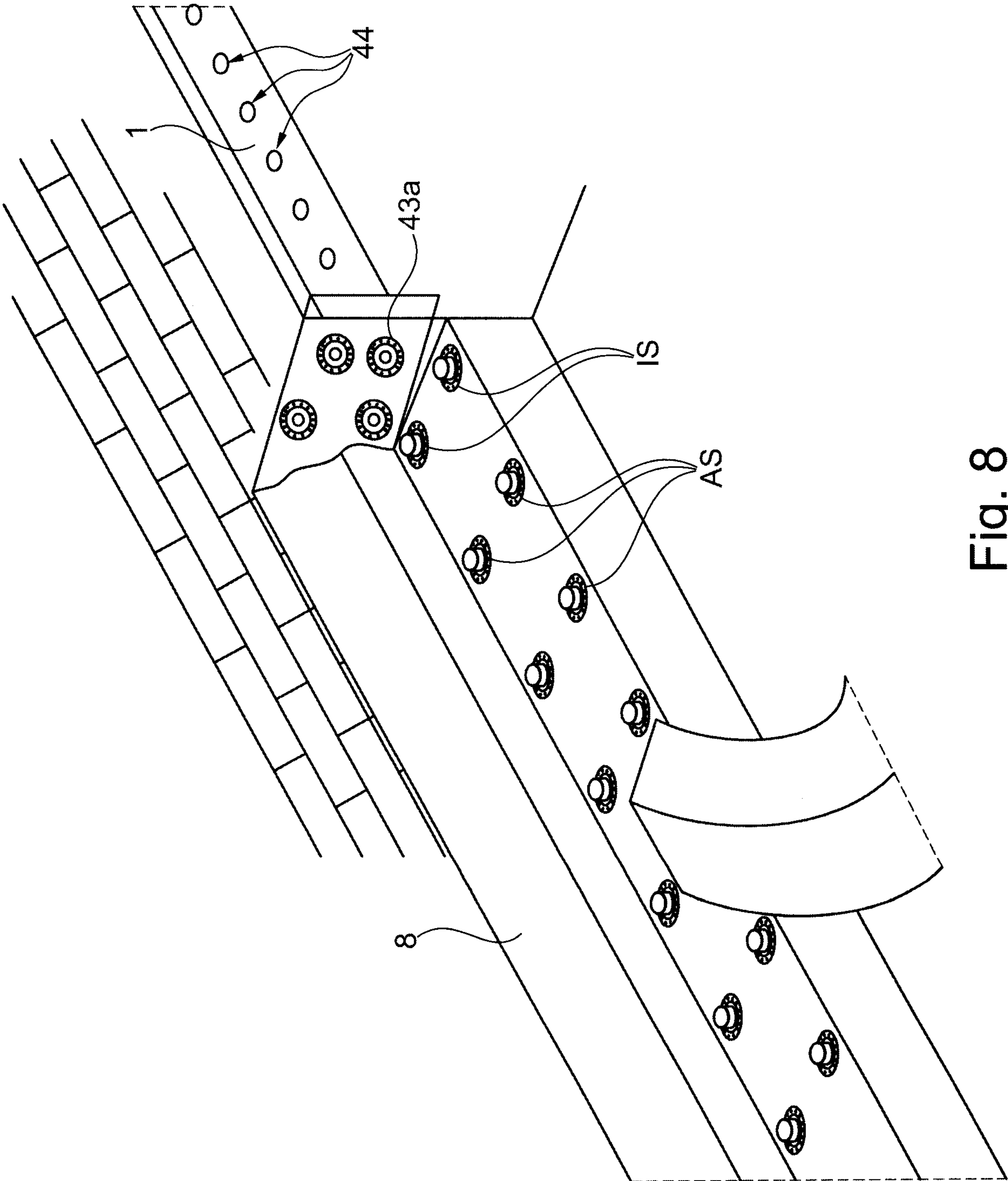


Fig. 8

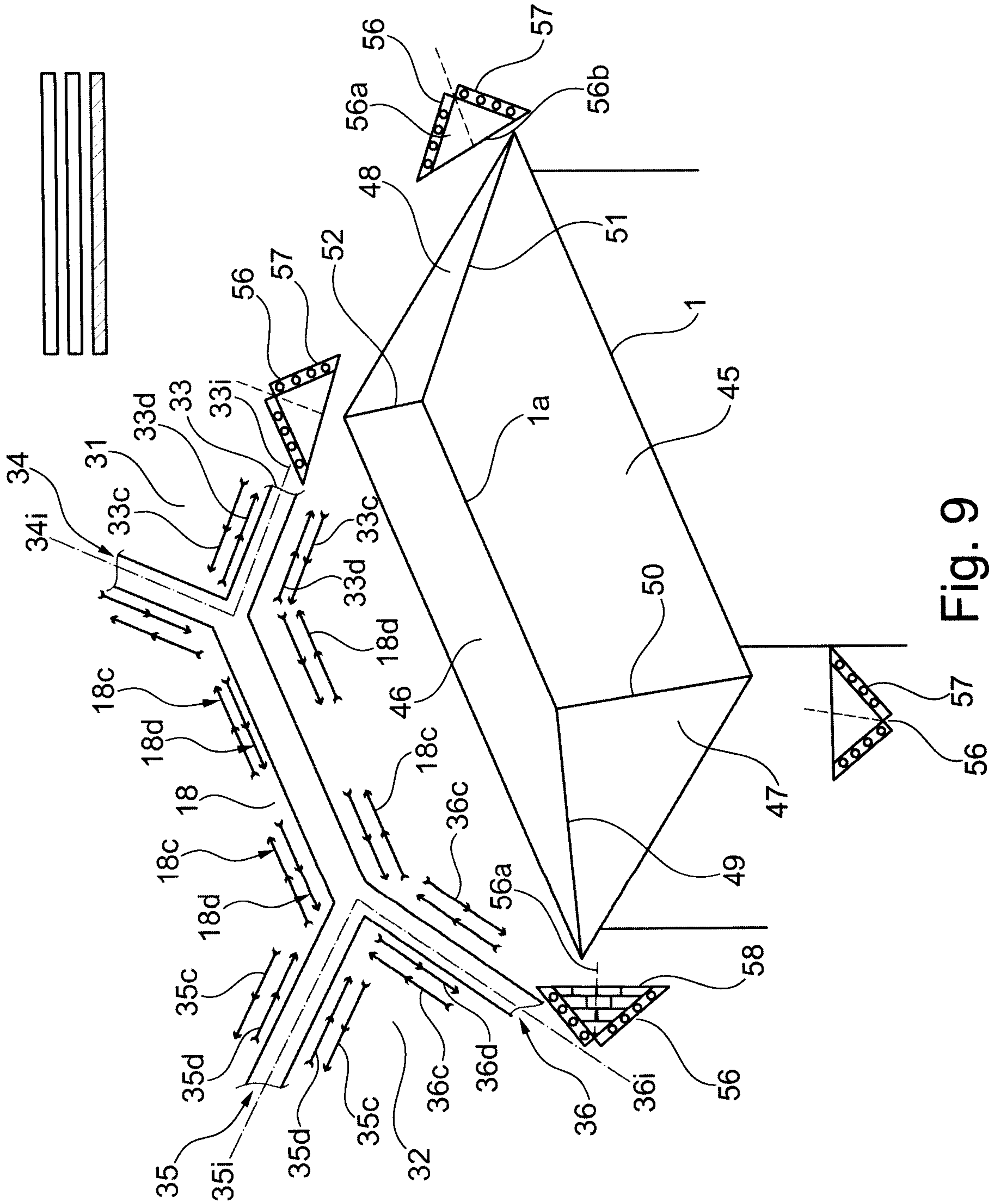


Fig. 9

8/9

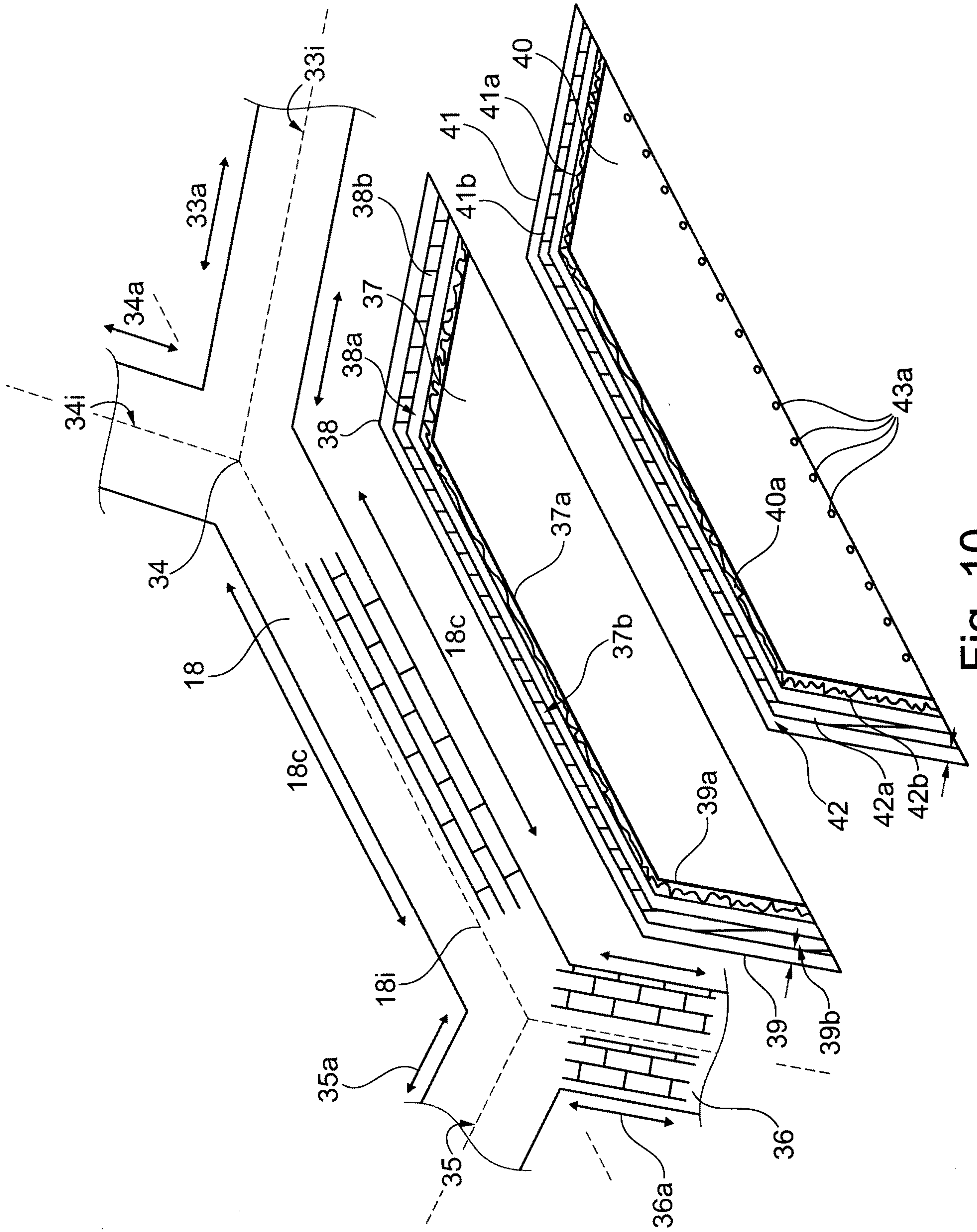


Fig. 10

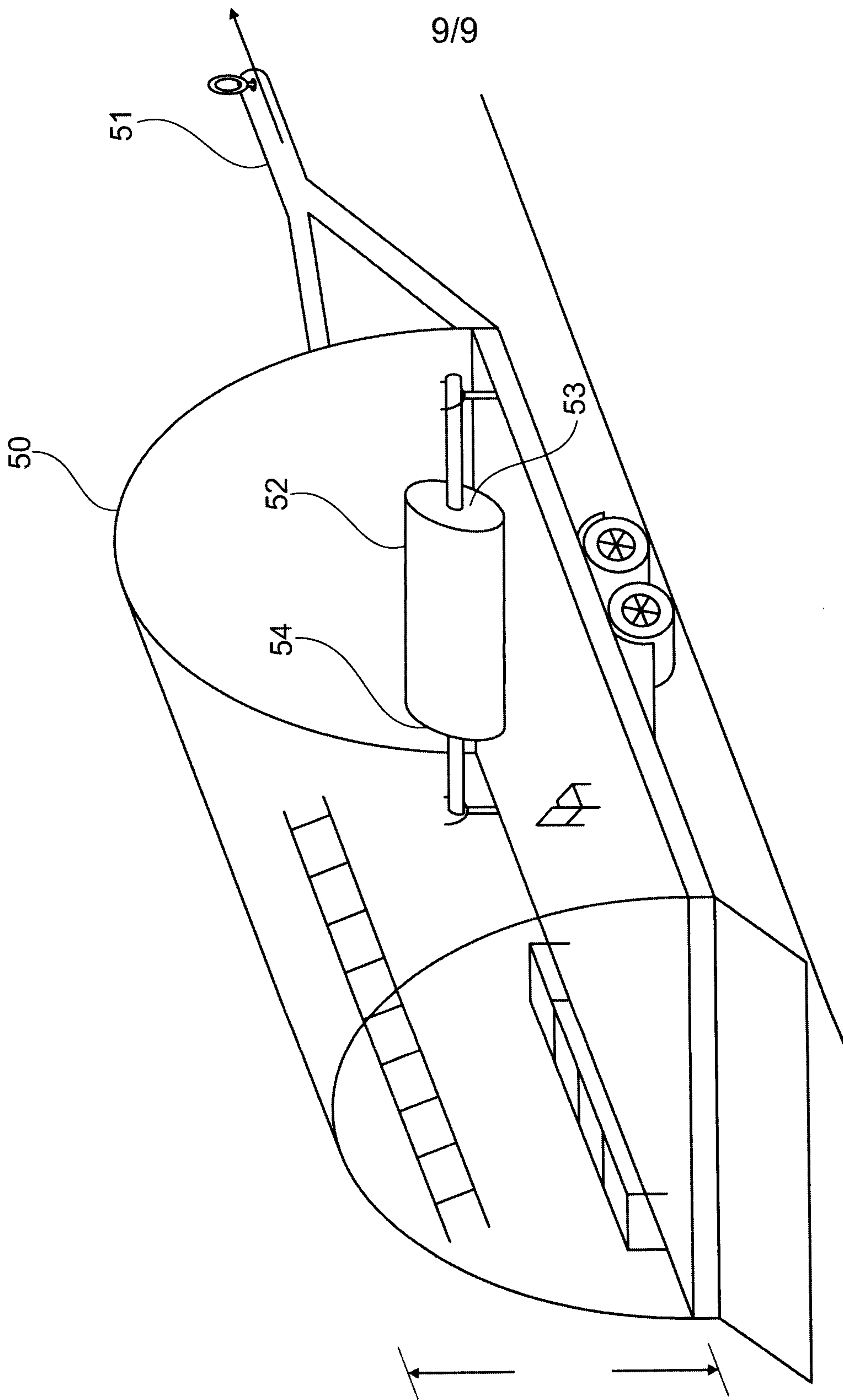


Fig. 11

