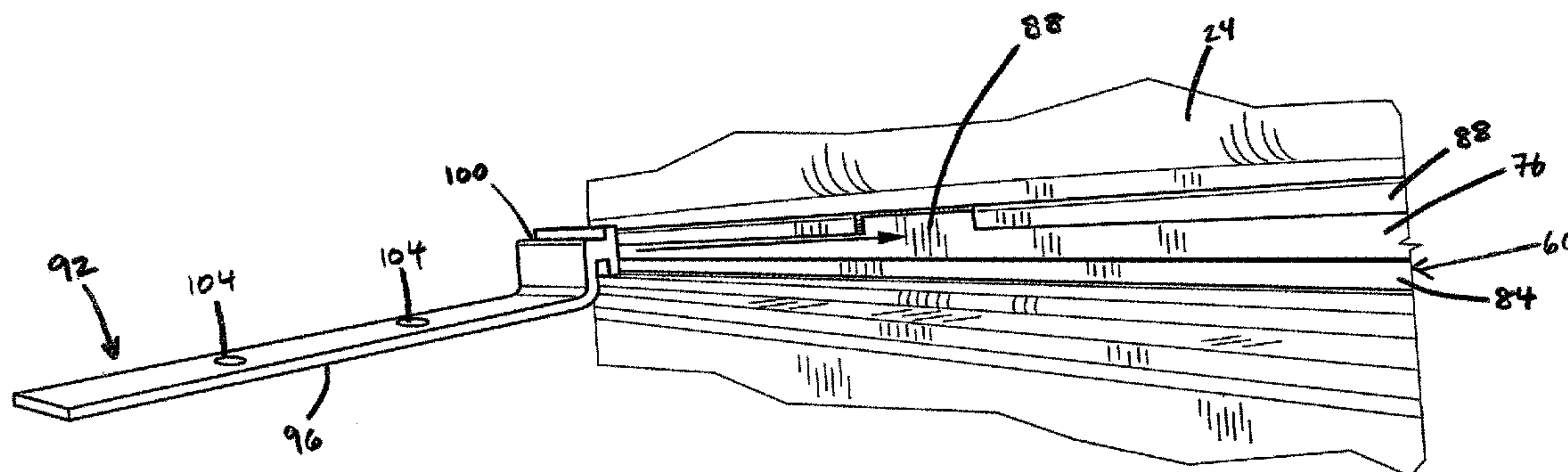




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(54) Titre : SYSTEME DE COUVRE-HABITACLE DESTINE A ETRE UTILISE AVEC UNE CAMIONNETTE  
 (54) Title: TONNEAU SYSTEM FOR USE WITH A PICKUP TRUCK



**FIG. 3a**

(57) **Abrégé/Abstract:**

A tonneau system for use with a pickup truck is provided. The tonneau system includes a tonneau cover, a first bracket, and a second bracket. The tonneau cover includes a front cross-member, a primary tonneau section hingedly coupled to the front cross-member, and at least one secondary tonneau section hingedly coupled in series to the first tonneau section. The first bracket extends from the front cross-member proximal to a first end thereof for securing the first end of the front cross-member to a first side wall of a cargo box of a pickup truck when the front cross-member is positioned atop a bulkhead of the cargo box. The second bracket extends from the front cross-member proximal to a second end thereof opposite the first end for securing the second end of the front cross-member to a second side wall of the cargo box of the pickup truck when the front cross-member is positioned atop the bulkhead of the cargo box.

## ABSTRACT

A tonneau system for use with a pickup truck is provided. The tonneau system includes a tonneau cover, a first bracket, and a second bracket. The tonneau cover includes a front cross-member, a primary tonneau section hingedly coupled to the front cross-member, and at least one secondary tonneau section hingedly coupled in series to the first tonneau section. The first bracket extends from the front cross-member proximal to a first end thereof for securing the first end of the front cross-member to a first side wall of a cargo box of a pickup truck when the front cross-member is positioned atop a bulkhead of the cargo box. The second bracket extends from the front cross-member proximal to a second end thereof opposite the first end for securing the second end of the front cross-member to a second side wall of the cargo box of the pickup truck when the front cross-member is positioned atop the bulkhead of the cargo box.

1                                    TONNEAU SYSTEM FOR USE WITH A PICKUP TRUCK

2    TECHNICAL FIELD

3    [0001] The following relates generally to tonneaus. In particular, the following relates to a tonneau  
4    system for use with a pickup truck.

5    SUMMARY

6    [0002] In one aspect, a tonneau system for use with a pickup truck is provided, comprising: a  
7    tonneau cover, comprising: a front cross-member; a primary tonneau section hingedly coupled to  
8    the front cross-member; and at least one secondary tonneau section hingedly coupled in series to  
9    the first tonneau section; a first bracket extending from the front cross-member proximal to a first  
10   end thereof for securing the first end of the front cross-member to a first side wall of a cargo box of  
11   a pickup truck when the front cross-member is positioned atop a bulkhead of the cargo box; and a  
12   second bracket extending from the front cross-member proximal to a second end thereof opposite  
13   the first end for securing the second end of the front cross-member to a second side wall of the  
14   cargo box of the pickup truck when the front cross-member is positioned atop the bulkhead of the  
15   cargo box.

16   [0003] The front cross-member of the tonneau cover can be only secured to the pickup truck via  
17   the first bracket and the second bracket.

18   [0004] The front cross-member of the tonneau cover can be unsecured to the bulkhead of the  
19   cargo box.

20   [0005] The front cross-member of the tonneau cover can be clear of the main opening of the cargo  
21   box when the front cross-member is secured to the pickup truck via the first bracket and the  
22   second bracket.

23   [0006] The tonneau system can further comprise: a first side rail being securable to the first side  
24   wall of the pickup truck, the first bracket being securable to the first side rail; and a second side rail  
25   being securable to the second side wall of the pickup truck, the second bracket being securable to  
26   the second side rail.

27   [0007] The front cross-member can comprise: at least one channel for receiving and securely  
28   retaining an end portion of the brackets.

29   [0008] The front cross-member can further comprise: a lip partially enclosing the channel.

1 [0009] The front cross-member can comprise: a gap in the lip to permit engagement of the bracket  
2 with the channel.

3 [0010] These and other aspects are contemplated and described herein. It will be appreciated that  
4 the foregoing summary sets out representative aspects of a tonneau system for use with a pickup  
5 truck to assist skilled readers in understanding the following detailed description.

#### 6 BRIEF DESCRIPTION OF THE DRAWINGS

7 [0011] A greater understanding of the embodiments will be had with reference to the Figures, in  
8 which:

9 [0012] Figure 1 is a partial rear perspective view of a tonneau cover being positioned atop of a  
10 bulkhead of a cargo box of a pickup truck in accordance with one embodiment thereof;

11 [0013] Figure 2 is a partial rear perspective view of the tonneau cover of Figure 1 having been  
12 placed atop of the bulkhead of the cargo box of the pickup truck;

13 [0014] Figure 3a is a detailed side perspective view of a bracket being aligned for insertion into a  
14 channel of a front cross-member of the tonneau cover of Figure 2;

15 [0015] Figure 3b is a detailed side perspective view of the bracket being inserted into the channel  
16 of the front cross-member of Figure 3a;

17 [0016] Figure 3c is a detailed side perspective view of the bracket having been inserted into the  
18 channel of the front cross-member of Figure 3a;

19 [0017] Figure 3d is a detailed side perspective view of the bracket having been moved partially  
20 along the channel of the front cross-member of Figure 3a;

21 [0018] Figure 4a shows a section view of the bracket inserted into the channel of the front cross-  
22 member of Figure 3c;

23 [0019] Figure 4b shows a section view of the bracket having been moved partially along the  
24 channel of the front cross-member of Figure 3d;

25 [0020] Figure 5a shows a partial rear perspective view of the tonneau cover atop of the bulkhead  
26 of the cargo box of the pickup truck wherein the bracket is being aligned along the channel of the  
27 front cross-member with a side rail, and a prop rod connected to the side rail is being aligned with a  
28 connection knob of the tonneau cover; and

1 [0021] Figure 5b shows a partial rear perspective view of the tonneau cover atop of the bulkhead  
2 of the cargo box of the pickup truck wherein the bracket is being secured to the side rail and the  
3 prop rod is connected to the connection knob of the tonneau cover.

#### 4 DETAILED DESCRIPTION

5 [0022] For simplicity and clarity of illustration, where considered appropriate, reference numerals  
6 may be repeated among the Figures to indicate corresponding or analogous elements. In addition,  
7 numerous specific details are set forth in order to provide a thorough understanding of the  
8 embodiments described herein. However, it will be understood by those of ordinary skill in the art  
9 that the embodiments described herein may be practiced without these specific details. In other  
10 instances, well-known methods, procedures and components have not been described in detail so  
11 as not to obscure the embodiments described herein. Also, the description is not to be considered  
12 as limiting the scope of the embodiments described herein.

13 [0023] Various terms used throughout the present description may be read and understood as  
14 follows, unless the context indicates otherwise: "or" as used throughout is inclusive, as though  
15 written "and/or"; singular articles and pronouns as used throughout include their plural forms, and  
16 vice versa; similarly, gendered pronouns include their counterpart pronouns so that pronouns  
17 should not be understood as limiting anything described herein to use, implementation,  
18 performance, etc. by a single gender; "exemplary" should be understood as "illustrative" or  
19 "exemplifying" and not necessarily as "preferred" over other embodiments. Further definitions for  
20 terms may be set out herein; these may apply to prior and subsequent instances of those terms, as  
21 will be understood from a reading of the present description.

22 [0024] The following provides a tonneau system for use with a pickup truck. The described  
23 tonneau system includes a tonneau cover having a front cross-member, a primary tonneau section  
24 hingedly coupled to the front cross-member, and at least one secondary tonneau section hingedly  
25 coupled in series to the first tonneau section, a first bracket securable to the front cross-member  
26 proximal to a first end thereof for securing the first end of the front cross-member to a first side wall  
27 of a cargo box of a pickup truck when the front cross-member is positioned atop a bulkhead of the  
28 cargo box, and a second bracket securable to the front cross-member proximal to a second end  
29 thereof opposite the first end for securing the second end of the front cross-member to a second  
30 side wall of the cargo box of the pickup truck when the front cross-member is positioned atop the  
31 bulkhead of the cargo box.

1 [0025] By securing the front cross-member of the tonneau cover to the side walls of the cargo box,  
2 the front cross member of the tonneau cover can be placed atop of the bulkhead, instead of inside  
3 the cargo box at the front thereof. This reduces damage done to the pickup truck and the tonneau  
4 cover when cargo inside the cargo box of the pickup truck shifts forward, such as, for example,  
5 during heavy braking. By not placing the front cross-member inside the cargo box and, instead,  
6 atop of the bulkhead, the shifting cargo collides with the front of the cargo box, which is generally  
7 better suited to withstand such impacts. Further, as the front cross-member of the tonneau cover  
8 is clear of a main opening of the cargo box, it does not impede access to the contents of the cargo  
9 box. Still further, installation is simplified as the tonneau cover does not need to be secured to the  
10 bulkhead of the cargo box in its position on top of it.

11 [0026] A tonneau cover 20 of a tonneau system for use with a pickup truck is shown in Figure 1.  
12 The tonneau cover 20 includes a cover membrane 24 that spans a frame 28. Cover membrane 24  
13 can be made of a rigid or flexible material, such as plastic, aluminum, vinyl, etc. Frame 28 includes  
14 tonneau section frame members 32 and hinge spacers 36 that are hingedly connected to permit  
15 sections of tonneau cover 20 defined by tonneau section frame members 32 to nestedly stack, as  
16 shown. Hinge spacers 36 space the stacked tonneau sections to permit nesting of other tonneau  
17 sections therebetween. Tonneau cover 28 can have a plurality of sections, but in the illustrated  
18 example, has four tonneau sections.

19 [0027] Rubber weather stripping 40 is placed on an underside of tonneau section frame  
20 members 32 and hinge spacers 36 so that it forms a continuous weather-resistant seal around a  
21 bottom periphery of tonneau cover 20 when deployed over a cargo box 44 of the pickup truck. A  
22 pair of slam latchbolts 48 are shown positioned along a medial cross-member 52 proximal to a  
23 corresponding pair of tonneau section frame members 32 that medial cross-member 52 spans.  
24 Slam latchbolts 48 can be opened via a latch cable 56 coupled to both of slam latchbolts 48. A  
25 rear-most section of tonneau cover 20 includes another pair of slam latchbolts and a latch cable for  
26 locking tonneau cover 20 over cargo box 44.

27 [0028] Tonneau cover 28 can be unfurled from the nested stacked state shown in Figure 1 to an  
28 expanded state, in which it is deployed over and covers cargo box 44. In the expanded state, slam  
29 latchbolts 48 and those of the rear-most section of tonneau cover 20 engage catches to lock  
30 tonneau cover 20 atop of cargo box 44. Release of slam latchbolts 48 via pulling on latch cables  
31 56 enables nested stacking of tonneau cover 20.

32 [0029] The two forward-most tonneau section frame members 32 defining a first tonneau section  
33 are hingedly coupled to a front cross-member 60 (hidden behind a fold of cover membrane 24).

1 The remaining three tonneau sections are hingedly coupled to the first tonneau section. Front  
2 cross-member 60 also has rubber weather stripping along a bottom surface. Two connection  
3 knobs 64 project inwardly from tonneau section frame members 32.

4 [0030] During installation, the nested stacked tonneau cover 20 is oriented vertically as shown so  
5 that front cross-member 60 is at a lower end thereof. Tonneau cover 20 is then lowered onto an  
6 upper surface of a bulkhead 68 of cargo box 44, with its corners being aligned with a pair of  
7 positions 72a, 72b on the upper surface of bulkhead 68.

8 [0031] Figure 2 shows tonneau cover 20 resting atop of bulkhead 68 after being lowered. A lower  
9 fold of cover membrane 24 is lifted, exposing a back side of front cross-member 60.

10 [0032] Figure 3a shows a central portion of a back side of front cross-member 60 in greater detail.  
11 As shown, front cross-member 60 has a channel 76 running lengthwise along its back side.  
12 Channel 76 has a lower lip 80 and an upper lip 84 that partially enclose channel 76. A gap 88 is  
13 centrally located in upper lip 84.

14 [0033] A bracket 92 is shown being aligned with gap 88. Bracket 92 has a flat portion 96 and an  
15 end portion 100 at one end of flat portion 96. End portion 100 has a horizontal T-shaped cross-  
16 section corresponding generally to the cross-section of channel 76. A pair of holes 104 is provided  
17 along flat portion 96.

18 [0034] Figure 3b shows end portion 100 of bracket 92 being inserted into channel 76 via gap 88.  
19 The bottom portion of the T-shaped cross-section of end portion 100 is raised over and past lower  
20 lip 80. The top portion of the T-shaped cross-section of end portion 100 is aligned with gap 88 in  
21 upper lip 84 as the bottom portion of the T-shaped cross-section of end portion 100 is placed  
22 behind lower lip 80 in channel 76.

23 [0035] Figure 3c shows end portion 100 of bracket 92 inserted fully into channel 76. Once end  
24 portion 100 of bracket 92 is placed in channel 76, it is slid along channel 76 left or right towards an  
25 end of front cross-member 60. As end portion 100 is slid laterally, the top portion of the T-shaped  
26 cross-section of end portion 100 engages upper lip 84 to prohibit perpendicular exit of end portion  
27 100 from channel 76.

28 [0036] Figure 3d shows bracket 92 having been slid to the left of gap 88 wherein end portion 100  
29 engages lower lip 80 and upper lip 84 of channel 76. As shown, bracket 92 extends backwardly  
30 from front cross-member 60.

1 [0037] Upon insertion and sliding of one bracket 92 to a side of gap 88 towards a first end of front  
2 cross-member 60, a second bracket 92 is inserted into channel 76 in the same manner and slid to  
3 the other side of gap 88 towards a second end of front cross-member 60 opposite the first end.

4 [0038] Figure 4a shows a sectional view along line 4a—4a in Figure 3c. As shown, end portion  
5 100 is inserted into channel 76, with the bottom portion of the T-shaped cross-section of end  
6 portion 100 being engaged by lower lip 80, and the top portion of the T-shaped cross-section of  
7 end portion 100 being in gap 88.

8 [0039] Figure 4b shows a sectional view along line 4b—4b in Figure 3d. As shown, end portion  
9 100 is inserted into channel 76, with the bottom portion of the T-shaped cross-section of end  
10 portion 100 being engaged by lower lip 80, and the top portion of the T-shaped cross-section of  
11 end portion 100 being engaged by upper lip 84, thereby securing bracket 92 from perpendicular  
12 exit from channel 76.

13 [0040] Figure 5a shows bracket 92 having been inserted into channel 76 of front cross-member 60  
14 and slid towards a longitudinal end of front cross-member 60. A side rail 108 is shown secured to  
15 a side wall 112 of cargo box 44 via a clamp 116. A second side rail 108 is secured to an opposite  
16 side wall 112 of cargo box 44. Side rails 108 generally have an inverted L-shaped cross-section  
17 providing a top wall and a side wall. The side wall of each side rail 108 is clamped to one of the  
18 side walls 112 of the cargo box 44 of the pickup truck such that the top surface of the top wall is  
19 generally flush with the top of the side wall 112 of the cargo box 44. A pair of holes 120 passes  
20 through the top wall of each side rail 108 near a front longitudinal end. Side rails 108 include  
21 catches for engaging slam latchbolts 48 when tonneau cover 20 is in an expanded state atop of  
22 cargo box 44.

23 [0041] A connection knob 124 of each side rail 108 projects into cargo box 44 below the top  
24 surface of the side rail 108. A prop rod 128 is snap fit onto each connection knob 124 at a lower  
25 end 132 to form a ball-and-socket joint, and is aligned at an upper end 136 with corresponding  
26 connection knob 64 of tonneau cover 20 when it is desired to support tonneau cover 20 in an  
27 upright position, as shown.

28 [0042] Each bracket 92 is slid along towards one of side rails 108 to align holes 104 with holes 120  
29 of side rail 108. The securing of brackets 92 in the channel 76 permits their positioning to be  
30 adjusted to employ the tonneau system with pickup trucks having a variety of cargo box widths.

31 [0043] Figure 5b shows one of brackets 92 having been slid along channel 76 to align holes 104  
32 with holes 120 of side rail 108. In this position, bolts 140 are inserted through holes 104 and 120,



1 and are secured via nuts 144. In this way, brackets 92 secure tonneau cover 20 to side rails 108  
2 that are secured to side walls 112 of the cargo box 44, thus securing tonneau cover 20 to side  
3 walls 112 of cargo box 44.

4 [0044] Upper ends 136 of prop rods 128 are snap fit atop of connection knobs 64 of tonneau cover  
5 20 as shown to support tonneau cover 20 in an upright position, as shown. They then can be  
6 unsnapped and lowered into cargo box 44 when it is desired to deploy tonneau cover 20 across  
7 the top of cargo box 44 and over the main opening of cargo box 44 to protect the contents of cargo  
8 box 44 from the elements, theft, and accidental loss during operation of the pickup truck.

9 [0045] By securing front cross-member 60 of tonneau cover 20 atop of bulkhead 68 of cargo box  
10 44 such that front cross-member 60 is clear of the main opening of cargo box 44, the extraction of  
11 the contents of cargo box 44 is not impeded by tonneau cover 20 at the front of cargo box 44.  
12 Further, cargo in the cargo box 44 that shifts forward during deceleration of the pickup truck  
13 collides with the front of cargo box 44 and not with a cross-member 60, thus preventing damage to  
14 tonneau cover 20 and the pickup truck.

15 [0046] Further, by securing front cross-member 60 of tonneau cover 20 to the side walls of cargo  
16 box 44, its installation can be facilitated.

17 [0047] While, in the above-described embodiments, the brackets are described as separate  
18 elements that are secured to the front cross-member by inserting them in a channel of the front  
19 cross-member, those skilled in the art will appreciate that the brackets can be secured to the front  
20 cross-member in other ways. For example, they may be secured to the front cross-member via  
21 fasteners. Further, the brackets can be made integrally with the front cross-member.

22 [0048] Still further, the brackets may be secured directly to the side walls of the pickup truck. For  
23 example, the brackets can include clamps or clampable elements that can be clamped to the side  
24 walls of the cargo box of a pickup truck. In another alternative embodiment, the brackets can be  
25 fastened via fasteners such as bolts or the like to the side walls of the cargo box.

26 [0049] The front cross-member can have more than one channel for receiving brackets. Further  
27 various configurations of connectors for connecting the brackets to the front cross-member can be  
28 used.

29 [0050] Instead of employing a peripheral frame, the tonneau cover can be made of rigid panels  
30 and spacer members hingedly coupled along their joints.

1 [0051] Although the invention has been described with reference to certain specific embodiments,  
2 various modifications thereof will be apparent to those skilled in the art. The scope of the claims  
3 should not be limited by the preferred embodiments, but should be given the broadest  
4 interpretation consistent with the description as a whole.

## CLAIMS

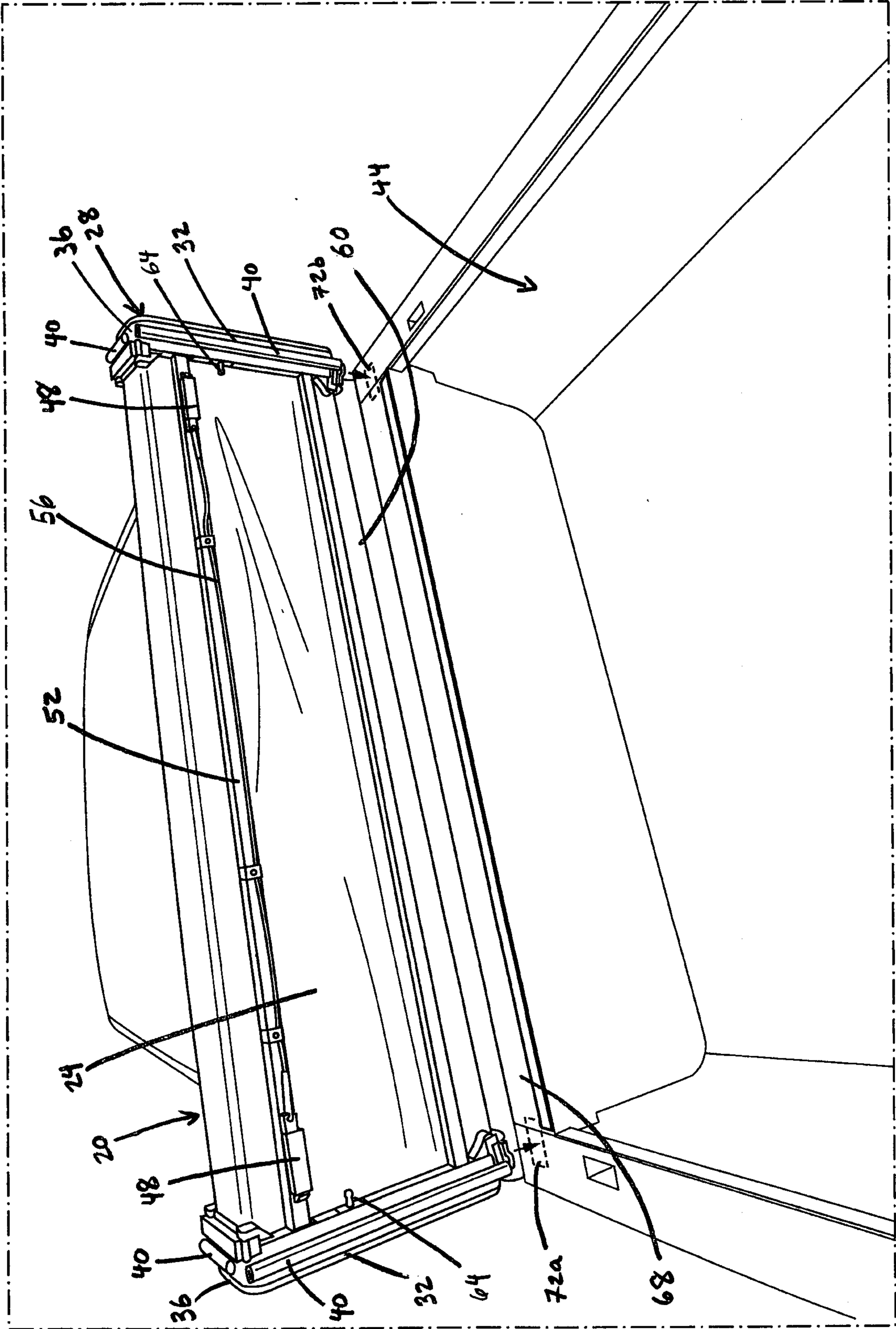
1. A tonneau system for use with a pickup truck, comprising:
  - a tonneau cover, comprising:
    - a front cross-member;
    - a primary tonneau section hingedly coupled to the front cross-member; and
    - at least one secondary tonneau section hingedly coupled in series to the first tonneau section;
  - a first bracket extending from the front cross-member proximal to a first end thereof for securing the first end of the front cross-member to a first side wall of a cargo box of a pickup truck when the front cross-member is positioned atop a bulkhead of the cargo box; and
  - a second bracket extending from the front cross-member proximal to a second end thereof opposite the first end for securing the second end of the front cross-member to a second side wall of the cargo box of the pickup truck when the front cross-member is positioned atop the bulkhead of the cargo box.
2. The tonneau system of claim 1, wherein the front cross-member of the tonneau cover is solely secured to the pickup truck via the first bracket and the second bracket.
3. The tonneau system of claim 1, wherein the front cross-member of the tonneau cover is unsecured to the bulkhead of the cargo box.
4. The tonneau system of claim 1, wherein the front cross-member of the tonneau cover is clear of the main opening of the cargo box when the front cross-member is secured to the pickup truck via the first bracket and the second bracket.
5. The tonneau system of claim 1, further comprising:
  - a first side rail being securable to the first side wall of the pickup truck, the first bracket being securable to the first side rail; and
  - a second side rail being securable to the second side wall of the pickup truck, the second bracket being securable to the second side rail.
6. The tonneau system of claim 1, wherein the front cross-member comprises:
  - at least one channel for receiving and securely retaining an end portion of the brackets.

7. The tonneau system of claim 1, wherein the front cross-member further comprises:

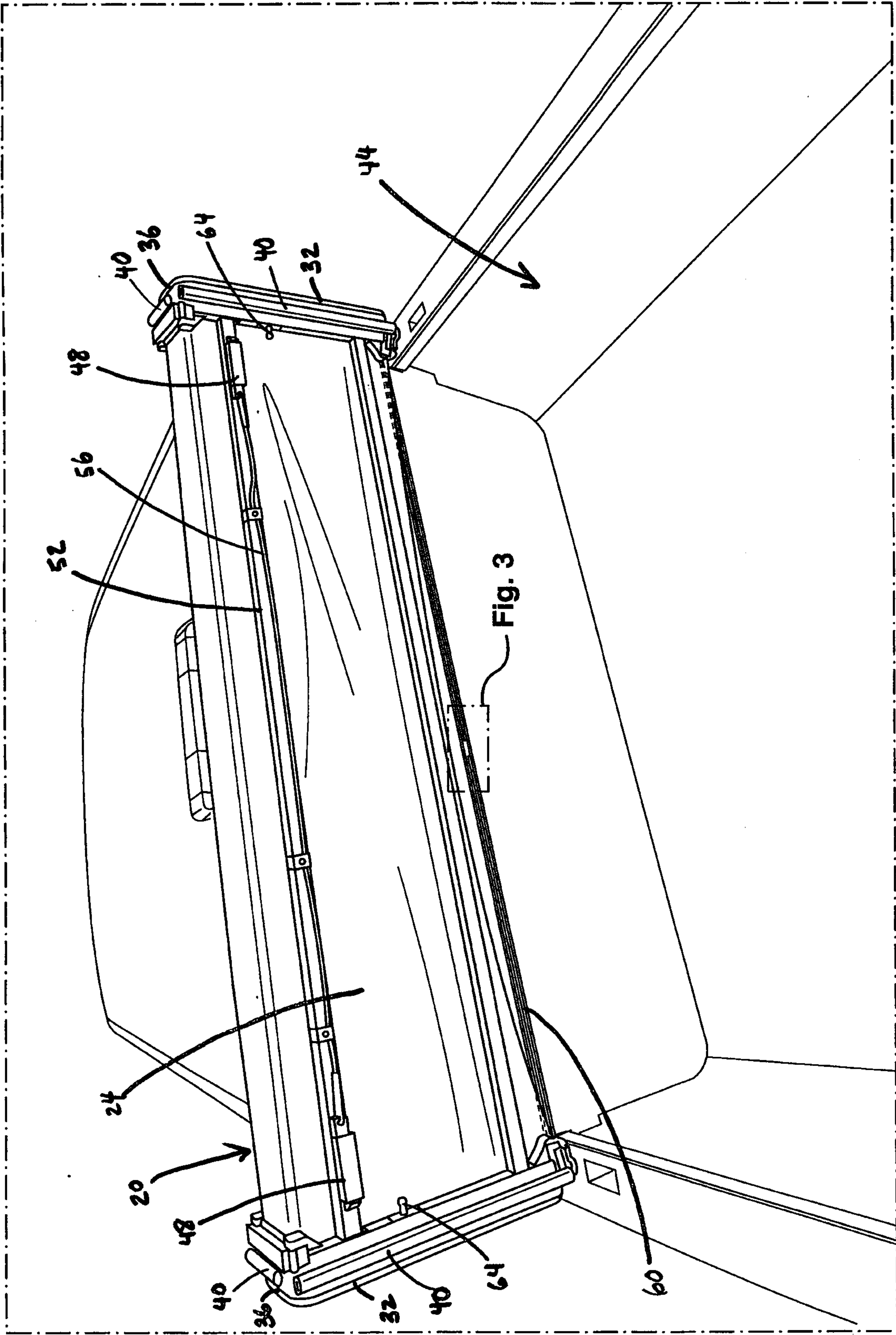
a lip partially enclosing the channel.

8. The tonneau system of claim 7, wherein the front cross-member comprises:

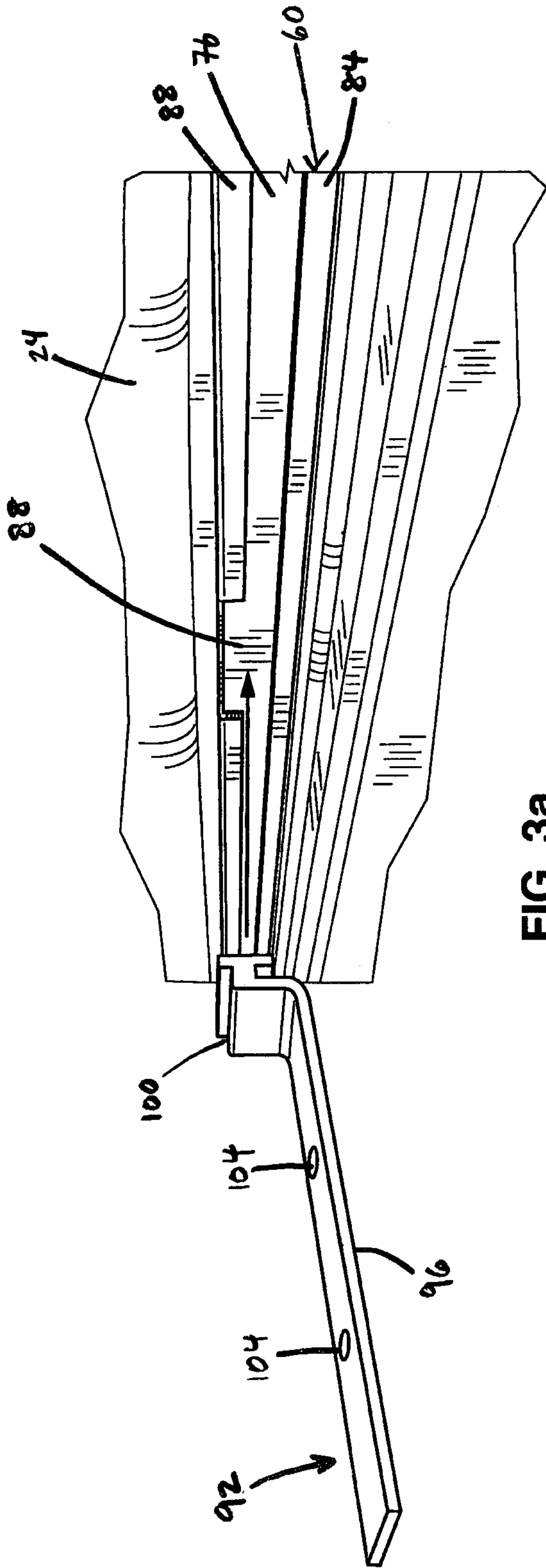
a gap in the lip to permit engagement of the bracket with the channel.



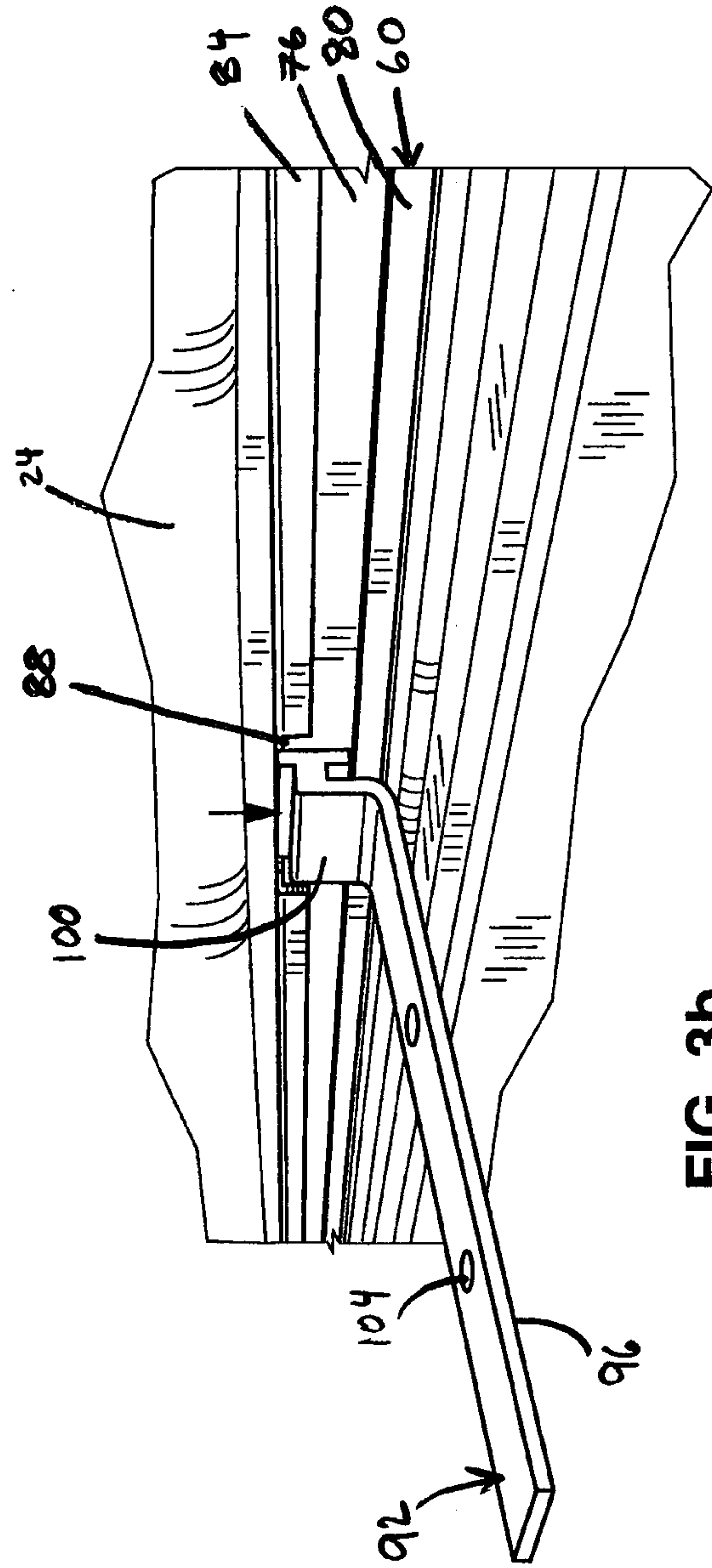
**FIG. 1**  
1/7



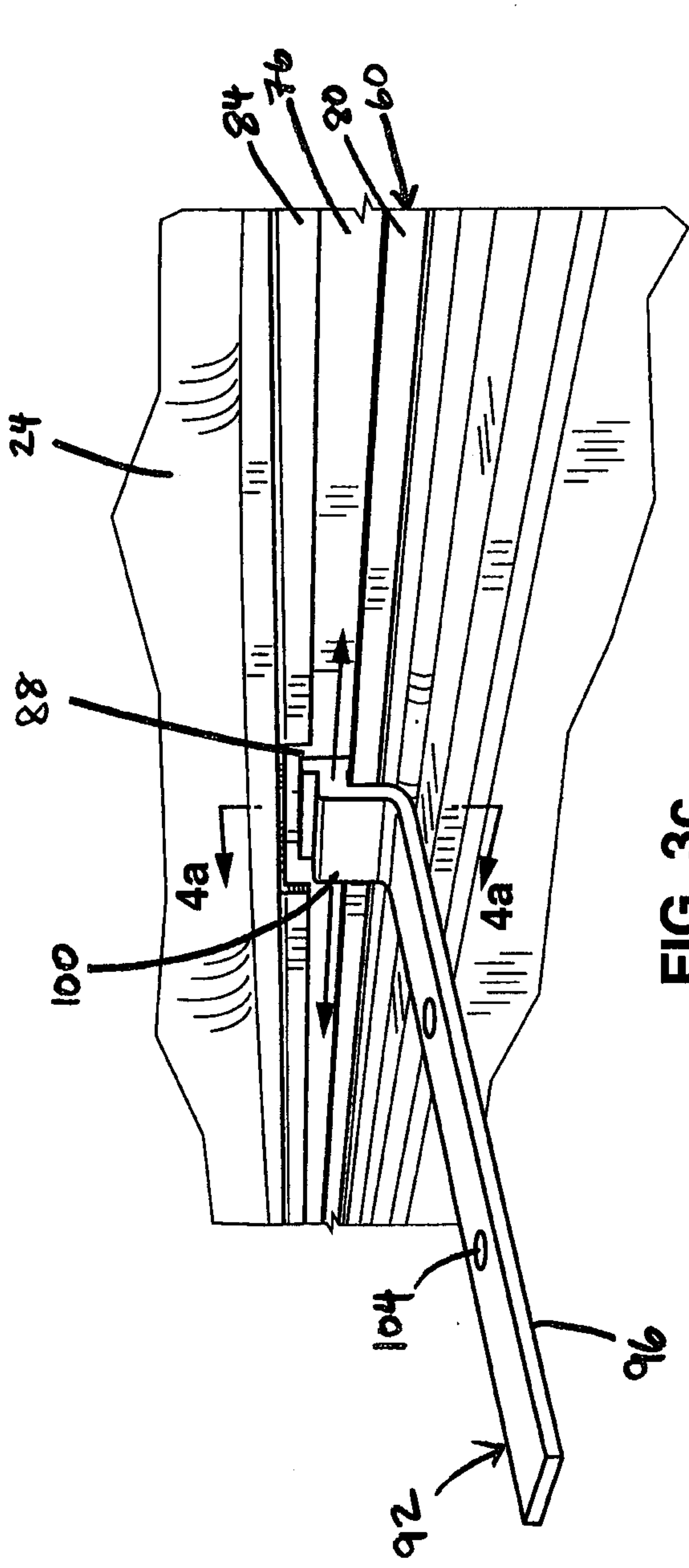
**FIG. 2**  
2/7



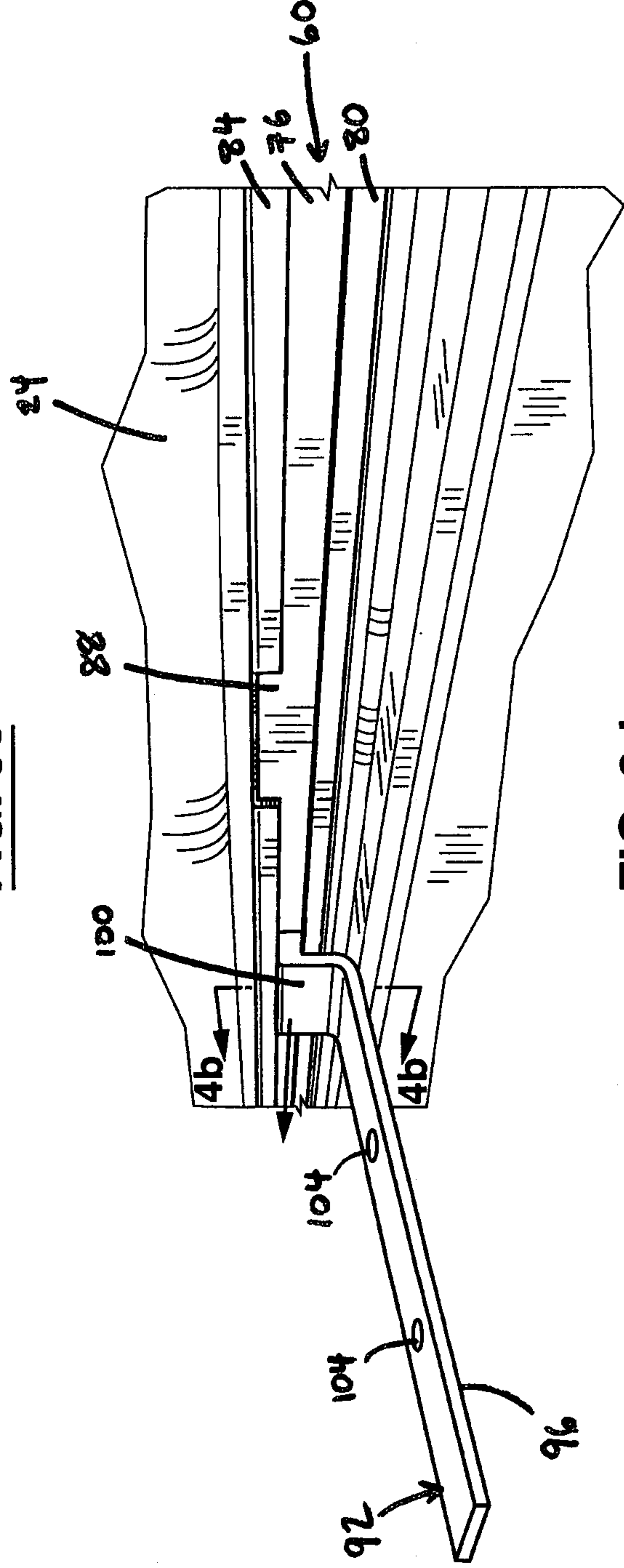
**FIG. 3a**



**FIG. 3b**

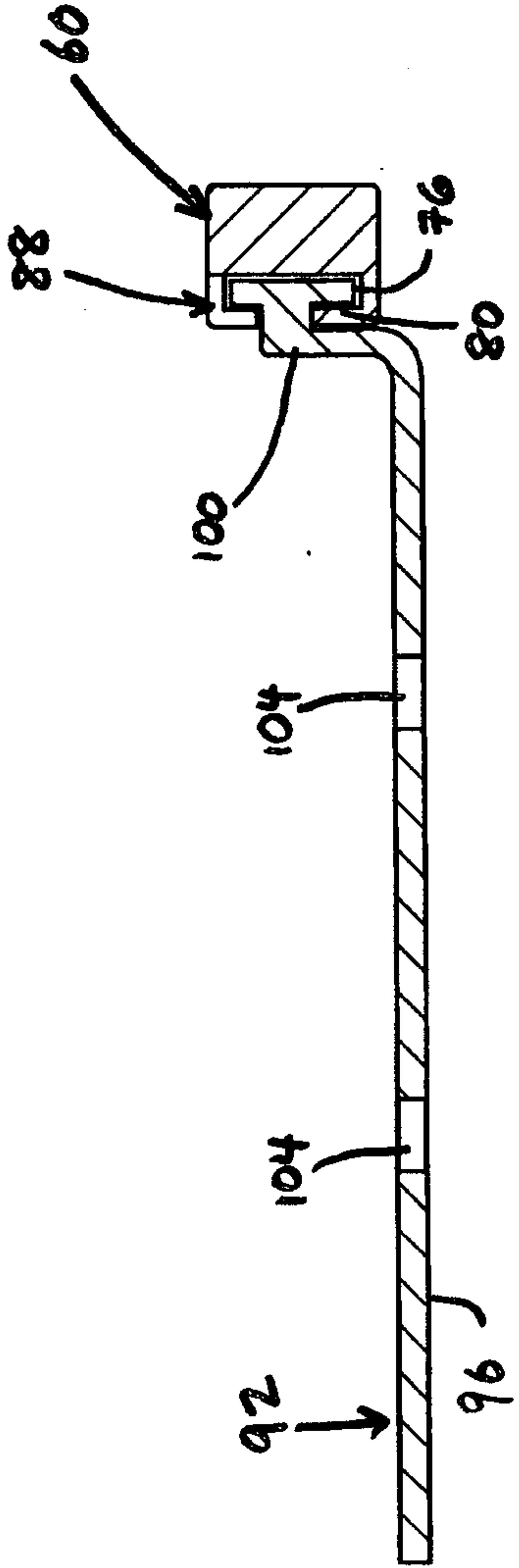


**FIG. 3c**

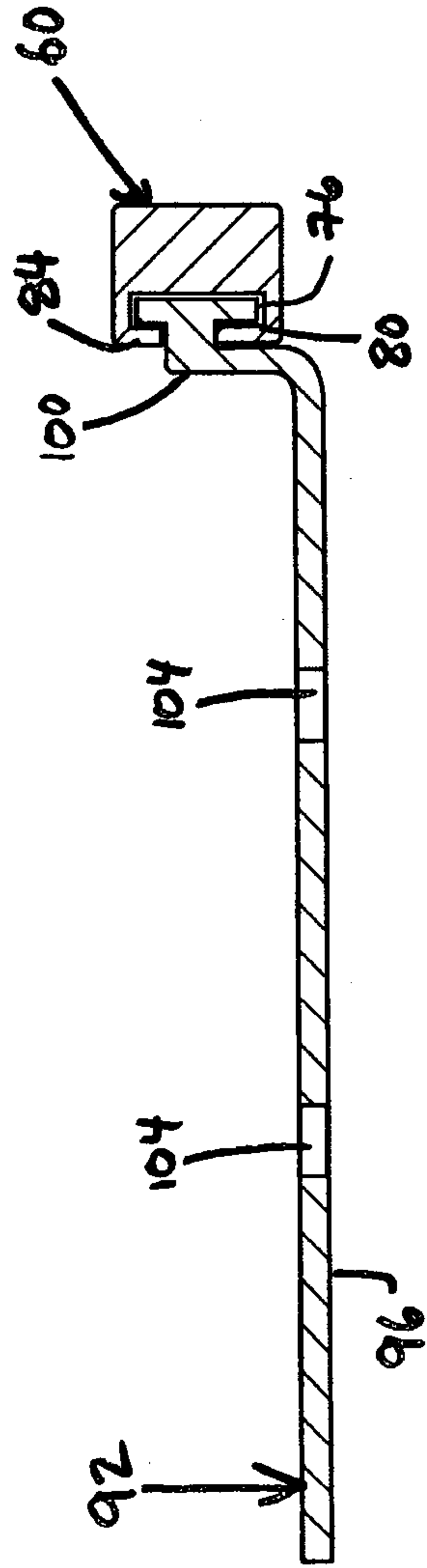


**FIG. 3d**

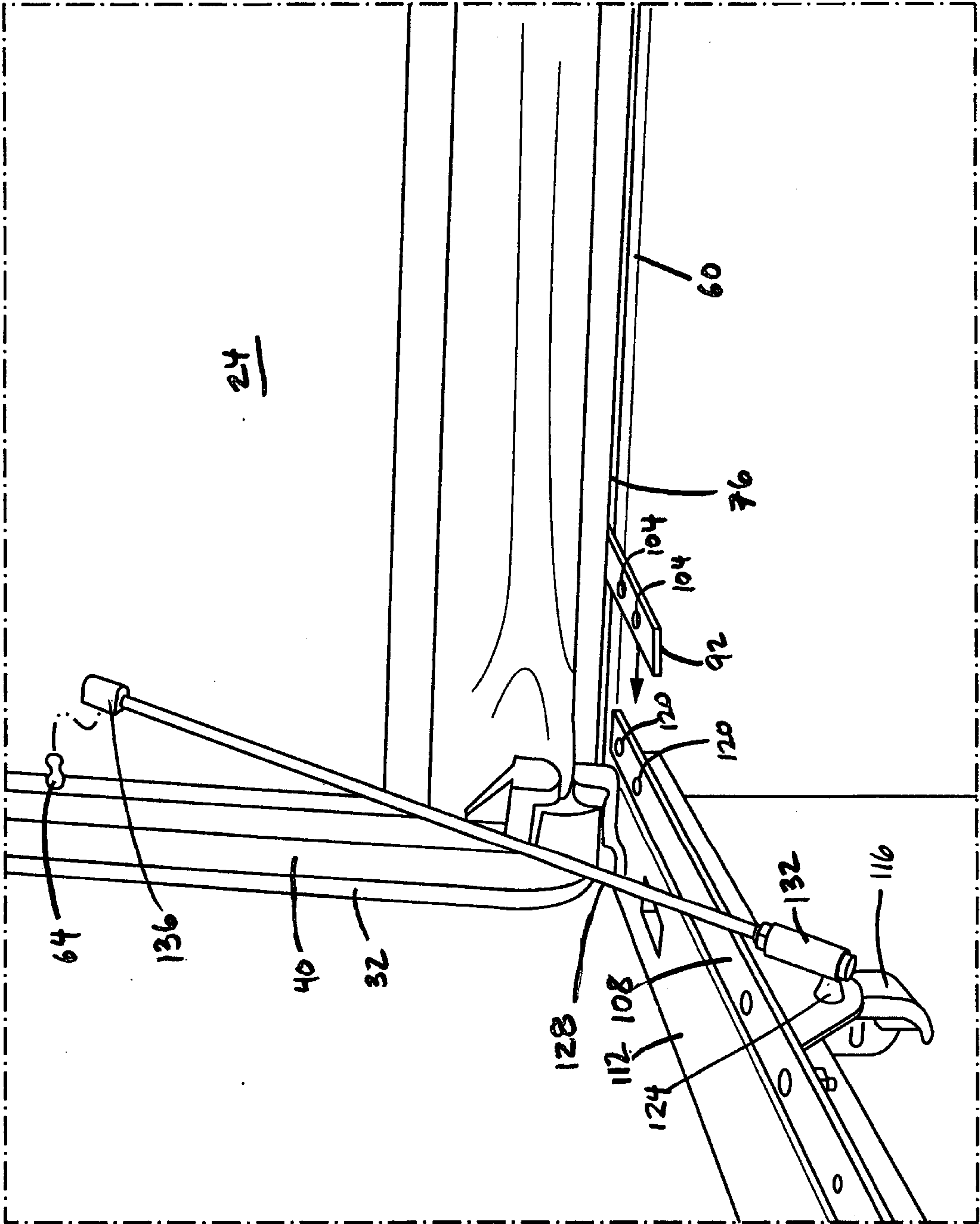




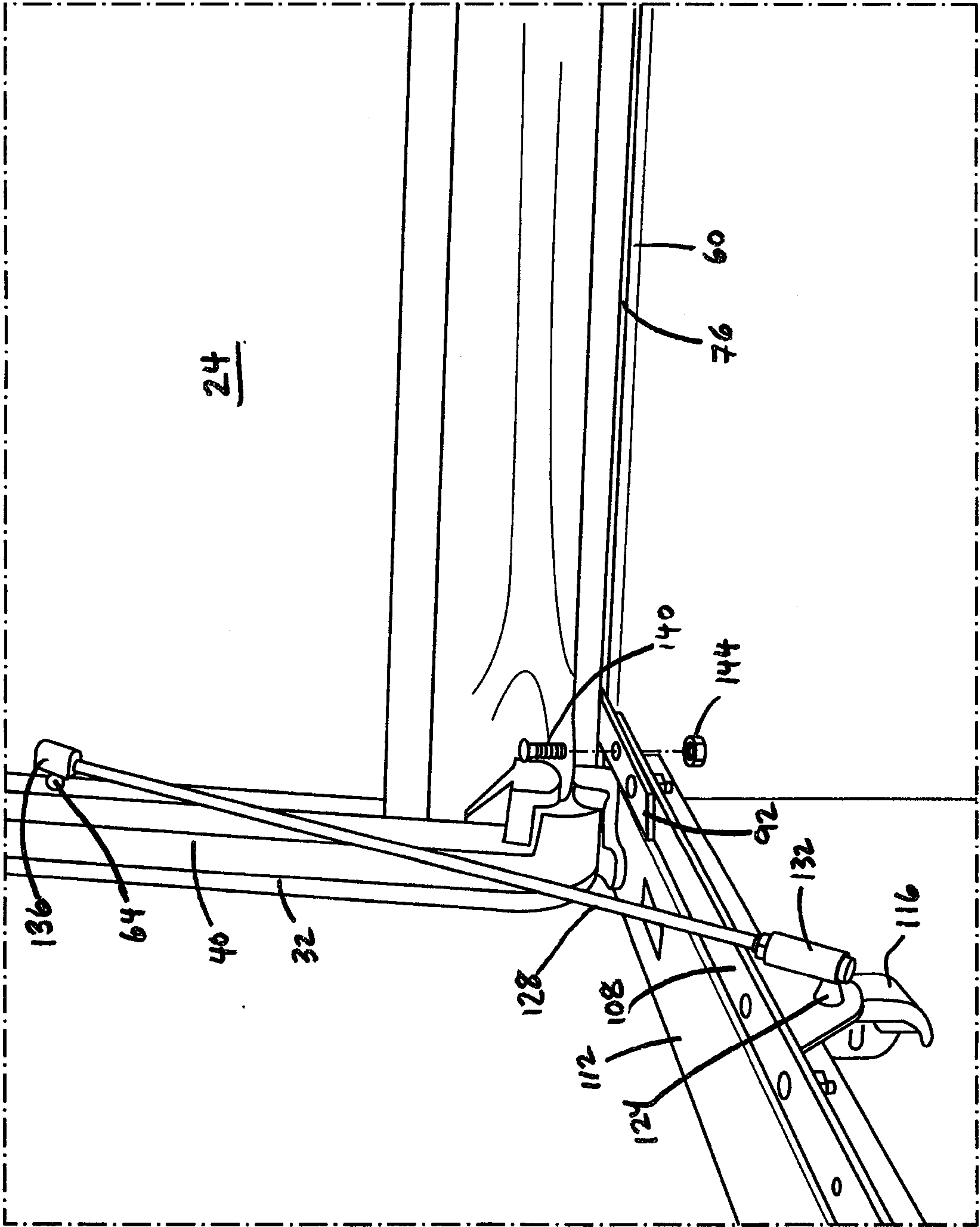
**FIG. 4a**



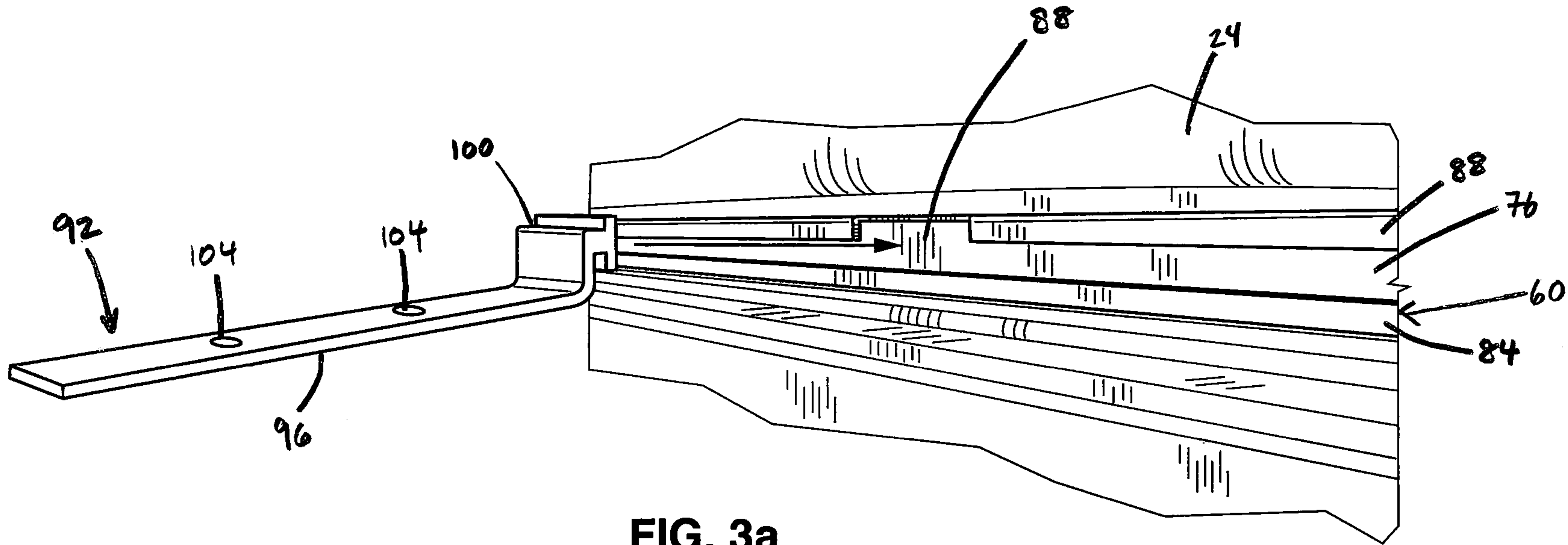
**FIG. 4b**



**FIG. 5a**  
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**FIG. 5b** 7/7



**FIG. 3a**