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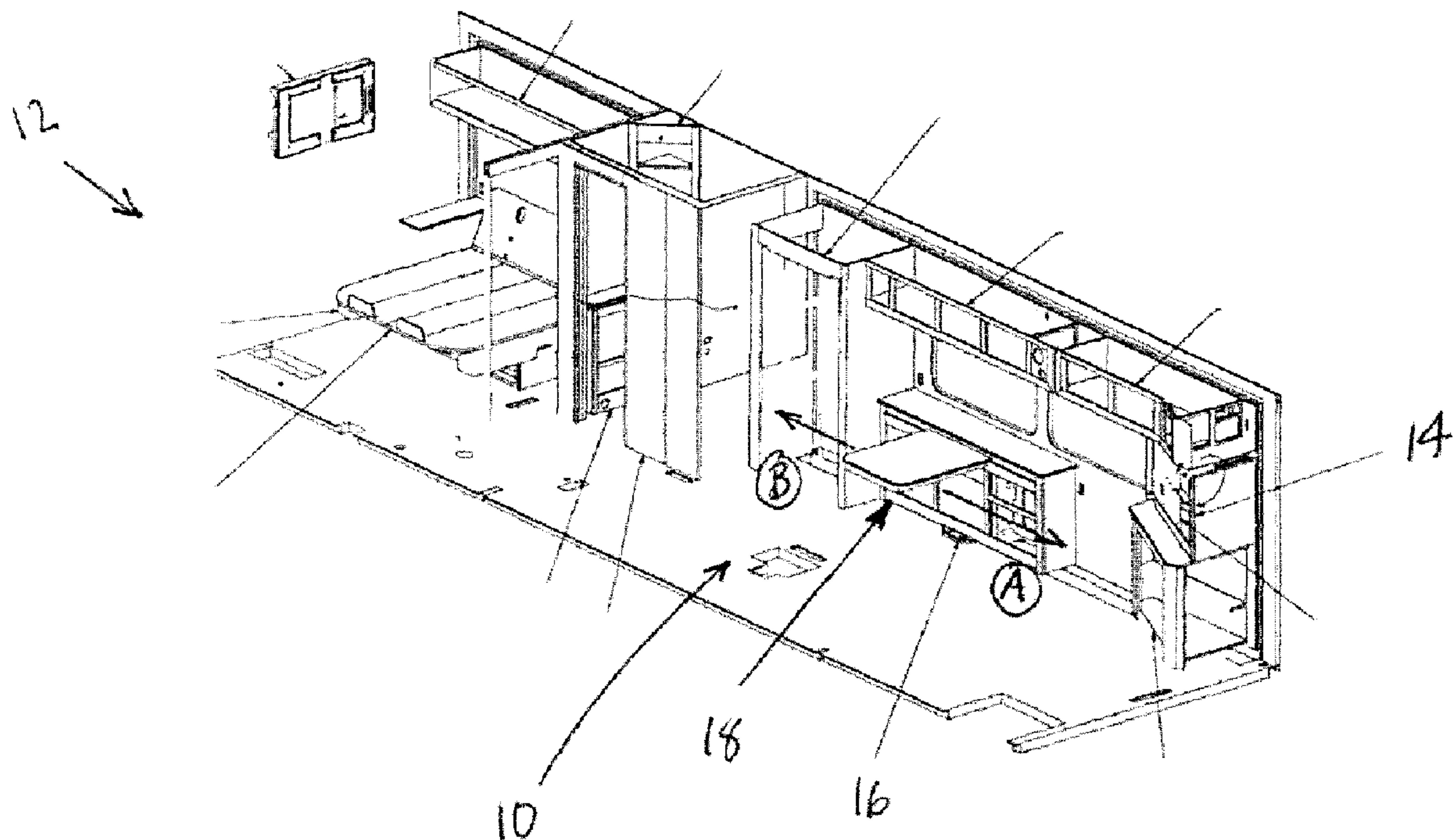
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(54) **Titre : ENSEMBLE TABLE COULISSANTE POUR UN VEHICULE**

(54) **Title: SLIDING TABLE ASSEMBLY FOR A VEHICLE**



(57) **Abrégé/Abstract:**

The sliding table system, apparatus and methods relate to a sliding table assembly for a recreational vehicle. In certain implementations, the table assembly has a supporting cabinet and a table frame which is capable of horizontally sliding relative to the cabinet by way of one or more slots. In certain implementations, the table assembly is equipped with a lock mechanism such that when the lock mechanism is engaged the table is fixed in place, and when the lock mechanism is released, the table can be moved in a direction toward the front or rear of the vehicle.

ABSTRACT

The sliding table system, apparatus and methods relate to a sliding table assembly for a recreational vehicle. In certain implementations, the table assembly has a supporting cabinet and a table frame which is capable of horizontally sliding relative to the cabinet by way of one or more slots. In certain implementations, the table assembly is equipped with a lock mechanism such that when the lock mechanism is engaged the table is fixed in place, and when the lock mechanism is released, the table can be moved in a direction toward the front or rear of the vehicle.

SLIDING TABLE ASSEMBLY FOR A VEHICLE

CROSS-REFERENCE TO RELATED APPLICATION(S)

[001] This application claims priority from U.S. Provisional Application 61/789,416, filed March 15, 2013, and entitled "Slideable Table for a Vehicle," which is hereby incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

[002] The sliding table assembly relates to devices, systems and methods which represent improvements in recreational vehicles and the like. More particularly, the invention relates to the interior fixtures of a recreational vehicle, notably a movable table.

BACKGROUND OF THE INVENTION

[003] Recreational vehicles, such as motor homes, travel trailers and the like have interior spacing and dimensional constraints due to the nature of the size of the highways they traverse and the corresponding transportation regulations. Therefore, there are significant restrictions on the interior space, particularly as to the width of the vehicles. However, the users of these vehicles desire the most comfortable and usable space within the limited dimensions. These constraints thus place a premium on the efficiency and design flexibility of the interior décor of such vehicles. Amongst other design imperatives, versatile and compact interior furniture is highly valuable to the users of such vehicles. In particular, tables are a key piece a furniture and the center of many activities such enjoying meals, playing games and the like. However tables can take up a great deal of the limited interior space and certain positions of a table may ideal for some activities but not for others. Accordingly, there is a need in the art for tables that can be easily repositioned, but that once positioned, are fixed and secure.

BRIEF SUMMARY OF THE INVENTION

[004] As discussed herein, the sliding table system relates to a sliding table assembly for a recreational vehicle with a lock mechanism such that when the lock mechanism is released, the

table can be moved in a direction toward the front or rear of the vehicle and when the lock is engaged, the table is fixed in place.

[005] While multiple embodiments are disclosed, still other embodiments of the sliding table system will become apparent to those skilled in the art from the following detailed description, which shows and describes illustrative embodiments of the invention. As will be realized, the invention is capable of modifications in various obvious aspects, all without departing from the spirit and scope of the sliding table system. Accordingly, the drawings and detailed description are to be regarded as illustrative in nature and not restrictive.

BRIEF DESCRIPTION OF THE DRAWINGS

[006] FIG. 1 is a perspective view of recreational vehicle showing an exemplary embodiment of the sliding table assembly.

[007] FIG. 2A is a perspective cutaway view of an embodiment of the cabinet showing the cabinet face and slots in the cabinet face.

[008] FIG. 2B is a side view of an embodiment of the cabinet showing the cabinet face and slots in the cabinet face

[009] FIG. 3A is a rear view of an embodiment of the cabinet depicting an embodiment of a striker latch plate.

[010] FIG. 3B is a close up drawing of a notch on the striker latch plate of FIG. 3A.

[011] FIG. 3C is a top view of an embodiment of the cabinet.

[012] FIG. 4A is a section view of one embodiment of the table support frame.

[013] FIG. 4B is a front view of the embodiment of FIG. 4A.

[014] FIG. 4C is a bottom view of the embodiment of FIG. 4A.

[015] FIG. 5A is a side view of the table assembly, according to an exemplary embodiment.

[016] FIG. 5B is a top view of the table according to the embodiment of FIG. 5A.

[017] FIG. 5C is a close up view depicting the a spring tensioned release catch of the embodiment of FIG. 5A.

[018] FIG. 6A is an embodiment of the assembly showing the table.

[019] FIG. 6B is a bottom view of the table of the embodiment of FIG. 5A

- [020]** FIG. 6C is cross sectional view of the table, support frame, and the table support frame brace of the embodiment of FIG. 5A.
- [021]** FIG. 6D is a section view of the embodiment of FIG. 6B.
- [022]** FIG. 7A shows a side view of one embodiment of the device showing the interface between the table support brace, the roller bearing tracks, and the slide frame.
- [023]** FIG. 7B shows a close up view of the embodiment of FIG. 7A.
- [024]** FIG. 8A depicts a vertical view of one embodiment of the roller bearings and angle assemblies used at the top of the table support frame.
- [025]** FIG. 8B depicts a side view of the embodiment of FIG. 8A.
- [026]** FIG. 9A depicts a vertical view of one embodiment of the roller bearings and angle assemblies used at the bottom of the table support frame.
- [027]** FIG. 9B depicts a side view of the embodiment of FIG. 9A.
- [028]** FIG. 10A depicts a top-down view of the striker latch plate.
- [029]** FIG. 10B shows a close up view of the embodiment of FIG. 10A.
- [030]** FIG. 11 is a perspective view of an exemplary implementation of the sliding table assembly showing the table, table support frame, brace, table slide frame and upper and lower roller bearing tracks.
- [031]** FIG. 12 is a side view of a further embodiment of the sliding table assembly showing the table support frame, table, brace, and upper and lower roller bearing tracks, from the point of view of the cabinet face, looking toward the cabinet face.
- [032]** FIG. 13 depicts a further embodiment of the sliding table assembly showing a side view of the table, table support, and the brace.
- [033]** FIG. 14 is a drawing of a top-down view of the table, table support frame, table support brace, upper roller bearing track and the table slide frame.
- [034]** FIG. 15 is a perspective view of a further embodiment of the sliding table assembly showing the table support frame and the upper roller bearing assembly and its engagement with upper track of the table slide frame.
- [035]** FIG. 16 is a perspective view of a further embodiment of the sliding table assembly showing the table, table support frame, table slide frame, top track and bottom track, upper roller bearing assembly and lower roller bearing assembly and table support brace.

DETAILED DESCRIPTION

[036] The various systems and devices disclosed herein relate to apparatus, systems and methods for use in recreational vehicles. More specifically, various embodiments relate to various apparatus, systems and methods for adjusting the position of certain components, namely a tabletop. Although the sliding table assembly or system has been described with reference to certain exemplary embodiments, persons skilled in the art will recognize that changes may be made in form and detail without departing from the spirit and scope of the apparatus, systems and methods.

[037] Exemplary embodiments of the apparatus, systems and methods comprise a sliding table system and slideable mounting apparatus for a recreational vehicle, which for brevity will be referred to as the “table system” or “table assembly.” Referring now to the Figures with particularity, FIG. 1 shows three-quarters perspective view of the interior of a recreational vehicle 12 featuring an exemplary embodiment of the sliding table system, shown generally at 10. In this embodiment, the sliding table system 10 is mounted generally to an interior wall 14 of the recreational vehicle. Various exemplary embodiments comprise a cabinet housing 16 and adjustable table assembly 18. As discussed elsewhere herein, in certain exemplary embodiments of the sliding table system, the cabinet housing 16 is operationally integrated with the adjustable table assembly 18. In further embodiments, the cabinet housing further comprises cabinetry. In certain exemplary embodiments of the sliding table system, the adjustable table 18 is movable relative to the cabinet housing 16, shown herein by the reference arrows A and B. In this embodiment, the movement of the adjustable table assembly 18 is substantially parallel to the floor 20 of the recreational vehicle 12, though other embodiments are within the scope of the sliding table system.

[038] FIGS. 2A-2B depict an exemplary embodiment of a cabinet housing 16 used in various embodiments of the sliding table system. In the embodiment depicted in FIGS. 2A-2B, the cabinet housing 16 further comprises a cabinet frame 17, which generally comprises a generally rectangular frame 22, mountings 24 for slide drawers (not shown), shelving 26, and cabinet space 28. Many other configurations of basic cabinet assemblies can also be included. A principle aspect of the cabinet face frame 17 in these exemplary embodiments is a first substantially slotted opening, or first slot 30, which is operationally connected to a table support frame (shown in FIGS. 61-6C). In certain embodiments, such as the one depicted in FIGS. 2A-

2B, a second substantially slotted opening, or second slot 32, is operationally coupled to the table support frame.

[039] FIGS. 3A-3C depict an exemplary embodiment of a cabinet housing 16 used in certain embodiments of the sliding table system. In various embodiments, the face frame has been removed to reveal a striker latch plate 33 (shown in greater detail in reference to FIG. 10). In these embodiments, the striker latch plate 33 extends substantially the length of the cabinet housing 16 and is positioned generally below the first slot 30 (shown in FIG. 2). In certain embodiments the striker latch plate 33 has a plurality of notches 35 at substantially equal spacing along its length. The notches 35 are positioned to receive the latch pin from a spring tensioned release catch 66 mounted on the underside of the table support frame (Best shown in FIG. 5C). FIG. 3C is a top view of the cabinet housing 16 of the embodiment of FIG. 2A.

[040] FIGS. 4A-4C depict an exemplary embodiment of a table slide frame 40 used in certain embodiments of the sliding table system 10. In this embodiment, the table support frame 41 has an upper track 42 and a lower track 44. Each of said tracks is operationally coupled to the table support frame via a roller bearing assembly (as shown in FIG. 10A-B) to allow movement of the table 18 relative to the table support frame 41. The table support frame 41 is positioned on the inside of the cabinet housing 16 and such that the upper track 42 and lower track 44 are substantially parallel with the first slot 30 and the second slot 32 in the cabinet face frame 17 (as shown in FIG. 2B), but are not visible from the interior of the vehicle. FIG. 4A shows a side view of the table slide frame 40, the table support frame 41, and the upper track 42 and the lower track 44 from section A-A of FIG. 4B. FIG. 4B shows a front view of the table slide frame 41 and the upper track 42 and the lower track 44 can be seen. FIG. 4C depicts the table slide frame 40 coupled to the table support frame 41.

[041] FIG. 5A shows a side view of another exemplary embodiment of a table support frame 50. In these embodiments, the table support frame 50 comprises a table frame assembly 52 fixedly attached to a table 54. Said table support frame 50 further comprises a first roller bearing assembly engagement member 56 and a second roller bearing assembly engagement member 58. Said first roller bearing assembly engagement member 56 positioned to operationally connect to a roller bearing assembly through the cabinet face first slot (shown as reference number 30 in FIG. 2) and said second roller bearing assembly engagement member 58 positioned to connect operationally a roller bearing assembly through the cabinet face second slot (32 in FIG. 2). Said

table support frame 50 further comprises a brace 60 having a first end 62 and a second end 64. Said first end 62 is fixedly attached to the table frame assembly and the brace 60 extends in a generally downward direction terminating with said second end 64 which is substantially parallel with the side of the table support frame closest to the cabinet. Said second brace end is operationally coupled to the second roller bearing assembly engagement member 58.

[042] As shown in FIGS. 5A, 5B & 5C, in certain embodiments, the table support frame 50 further comprises a spring tensioned release catch 66. FIG. 5B depicts a top view of the assembly, and FIG. 5C depicts a closeup of the region marked A. Certain embodiments further comprise a spring tensioned release catch handle 68, which is operationally coupled to the spring tensioned release catch 66 by way of a spring tensioned release catch comprises a cable 70 which extends the length of the table support frame 50, from the side closest to the cabinet housing 16 to the side furthest from the cabinet, as would be apparent to one of skill in the art. In certain embodiments, the cable 70 comprises a first end 72 and a second end 74 wherein said first end 72 is fixedly attached to a pull handle 68 and wherein said second end 74 is fixedly attached to spring release catch mechanism 66.

[043] As is shown in FIG. 5C, in certain embodiments the spring release catch mechanism 66 further comprises a spring member 76, said spring member 76 housed within a bracket member 78 further comprising a bracket latch 78A and a table latch member 80. In certain embodiments, the spring tensioned release catch has two states: an unlocked state and a locked state. In the locked state, the spring member exerts pressure on the table latch member 80 pushing said latch member 80 into the notch 35 of the striker latch plate 33 (as best shown in FIG. 3) and preventing the movement of the table. In the unlocked state, the handle 68 is pulled and the spring member is compressed and the latch member 80 is withdrawn from the notch 35 of the striker latch plate 33 allowing for movement of the table. When the handle 68 is released, the spring 76 extends and the latch member 80 is pushed into a notch on the striker latch plate 33 and the table is returned to the locked state.

[044] FIGS 6A-6D show further embodiments of the table support frame. FIG 6A shows a perspective view of the table top 90 and the table support frame 50. FIG 6B shows an underside view of the embodiment of FIG. 6A, showing the details of the table support frame 50, which in certain embodiments further comprises at least one truss, or support brace 60. FIG. 6B also depicts the table support assembly and spring tensioned release catch 66. FIG. 6C depicts

the view from segment A in FIG. 6A, showing the the table top 90 and the table support frame 50 prior to fastening. FIG. 6D depicts the section view from section C-C in FIG. 6B.

[045] FIG. 7A-7B show the interface between the table support brace 60, a roller bearing tracks 44, and the roller bearing assembly engagement member 58, as described in reference to FIGS. 4A-6D.

[046] FIGS. 8A-8B show diagrams of exemplary embodiments of the roller bearings 110 and angle assemblies 112 functionally integrated into the table support frame (substantially parallel with the table, as shown in relation to FIG. 1-2). In these implementations, the bearings 110 have been specifically designed and engineered to support the weight of the tabletop as well as allow it to move within the sliding table support frame. In certain implementations, a plurality of bearings 110 are affixed to a roller bearing plate 114. In certain embodiments a spacer such as a washer 116 is between the roller bearings and the roller bearing plate. In these embodiments, the roller bearings engage with the slider plate (not shown) and allow for movement of the table in a substantially horizontal direction, toward either the front or rear of the vehicle, as described elsewhere herein.

[047] FIGS. 9A-9C show various views of the roller bearings 110 and angle assemblies 112 used on the lower part of the table support frame (engaged by the bottom leg of the support brace), and operationally coupled with the table slide frame through the second slot 32 of the cabinet face frame 17 (FIG. 2). In certain of these embodiments, a plurality of fasteners 118A, 118B, such as screws and nuts, are used in combination with optional washers 116 to affix the roller bearings to the angle assembly 112 and .

[048] FIGS. 10A-10B depict various embodiments of the striker latch plate 33. FIG. 10B is a zoomed view of the detail in circle A of FIG. 10A, showing one embodiment of the notch.

[049] FIGS. 11-16 depict various exemplary implementation of the sliding table system 10 showing the table 18, table support frame 16, brace 60, table slide frame 40 and upper 42 and lower 44 roller bearing tracks, and the operational integration of the table support frame 16 by way of the bearings 110. Various other configurations are possible.

[050] Although the sliding table system has been described with reference to preferred embodiments, persons skilled in the art will recognize that changes may be made in form and detail without departing from the spirit and scope of the invention.

CLAIMS:

1. A sliding table assembly for a recreational vehicle comprising:
 - a. a cabinet affixed to the frame of the vehicle, the cabinet further comprising at least one substantially horizontal slot;
 - b. at least one slide track, fixedly attached to the at least one cabinet slot; and
 - c. a table, fixedly attached to a table support frame, wherein the table support frame is configured to be slideable relative to the at least one slide track by way of the at least one slot so as to allow horizontal movement of the table relative to the cabinet.
2. The sliding table assembly of claim 1, wherein the length of the at least one slot is substantially similar to the width of the cabinet.
3. The sliding table assembly of claim 1, further comprising a table lock member configured to have a locked state and an unlocked state, wherein while in the unlocked state, the table can be moved in a generally horizontal direction and wherein while in the locked state, the table cannot be moved.
4. The sliding table assembly of claim 1, further comprising one or more roller bearing assemblies, wherein the roller bearing assemblies are slidably connected to the table slide track.
5. The sliding table assembly of claim 4, further comprising a table support frame further comprising a table support assembly, a table support brace and at least one roller bearing assembly engagement members, wherein the roller bearing assembly engagement members are slidably connected to the roller bearing assemblies.
6. The sliding table assembly of claim 1, further comprising a striker latch plate, wherein the striker latch plate runs substantially parallel to the slot and is fixedly attached to the cabinet, wherein the striker latch plate further comprises a plurality of notches.
7. The sliding table assembly of claim 6, further comprising spring release catch mechanism.

8. The sliding table assembly of claim 7, further comprising a spring member, a table latch member, and a spring tensioned release catch, wherein the spring member is configured to exert pressure on the table latch member to slot said latch member into a notch of the striker latch plate and preventing the movement of the table.
9. The sliding table assembly of claim 1 wherein, the table lock member is fixedly attached to the table support frame, the table lock member further comprising a handle, a cable having a first end and a second end, wherein the first end is connected to the handle and the second end is operationally connected to a spring tensioned latch member, wherein the spring tensioned latch member engages the striker latch plate when the lock member is in a locked state, and wherein when the handle is pulled the spring tensioned latch member disengages from the striker latch place and table is in an unlocked state.
10. A system for providing a sliding table in a recreational vehicle, the system comprising:
 - a. a vehicle frame;
 - b. a cabinet frame fixedly attached to the vehicle frame;
 - c. a table support frame, further comprising a table;
 - d. a slide track coupled to the cabinet frame and configured to allow horizontal movement of the table support frame relative to the cabinet frame.
11. The system of claim 10, further comprising a locking mechanism configured to have locked and unlocked states.
12. The system of claim 11, further comprising a striker latch plate further comprising a plurality of notches, wherein the locking mechanism is configured to utilize the notches for the locking of the table in place relative to the slide track.
13. The system of claim 10, further comprising one or more roller bearing assemblies operably coupled to the slide track and configured to facilitate the horizontal movement of the table relative to the cabinet.

14. A method of providing a sliding table in a recreational vehicle, comprising:
- a. providing a vehicle frame;
 - b. providing a cabinet frame fixedly attached to the vehicle frame;
 - c. providing a table support frame, further comprising a table;
 - d. providing a slide track coupled to the cabinet frame and configured to allow horizontal movement of the table support frame relative to the cabinet frame; and
 - e. moving the table support frame horizontally relative to the cabinet frame by way of the slide track.
15. The method of claim 14, further comprising a locking mechanism configured to have locked and unlocked states.
16. The method of claim 15, further comprising a striker latch plate further comprising a plurality of notches, wherein the locking mechanism is configured to utilize the notches for the locking of the table in place relative to the slide track.
17. The method of claim 16, further comprising one or more roller bearing assemblies operably coupled to the slide track and configured to facilitate the horizontal movement of the table relative to the cabinet.

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Figures: 11, 12, 13, 14, 15, 16

Pages:

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Drawings

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FIGURE 1

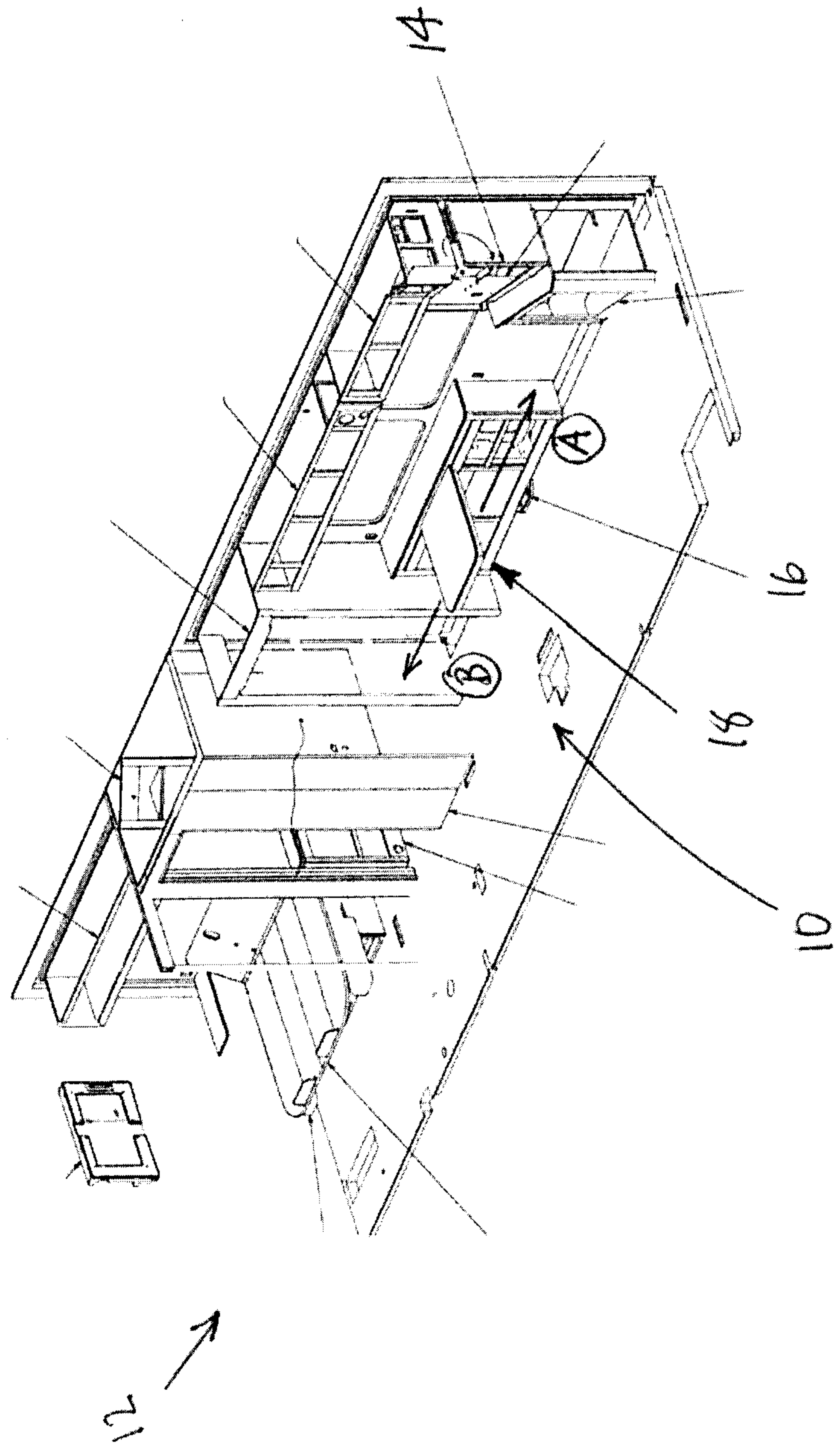


FIGURE 2

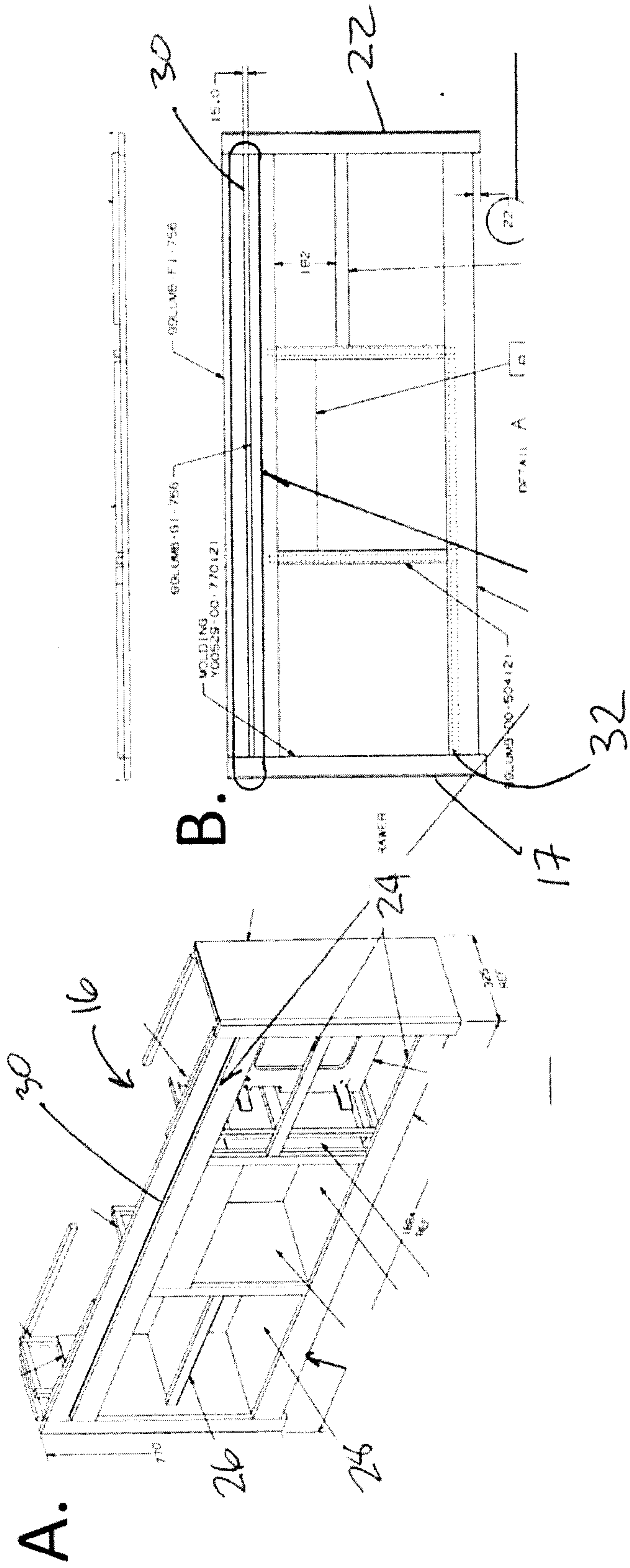


FIGURE 3

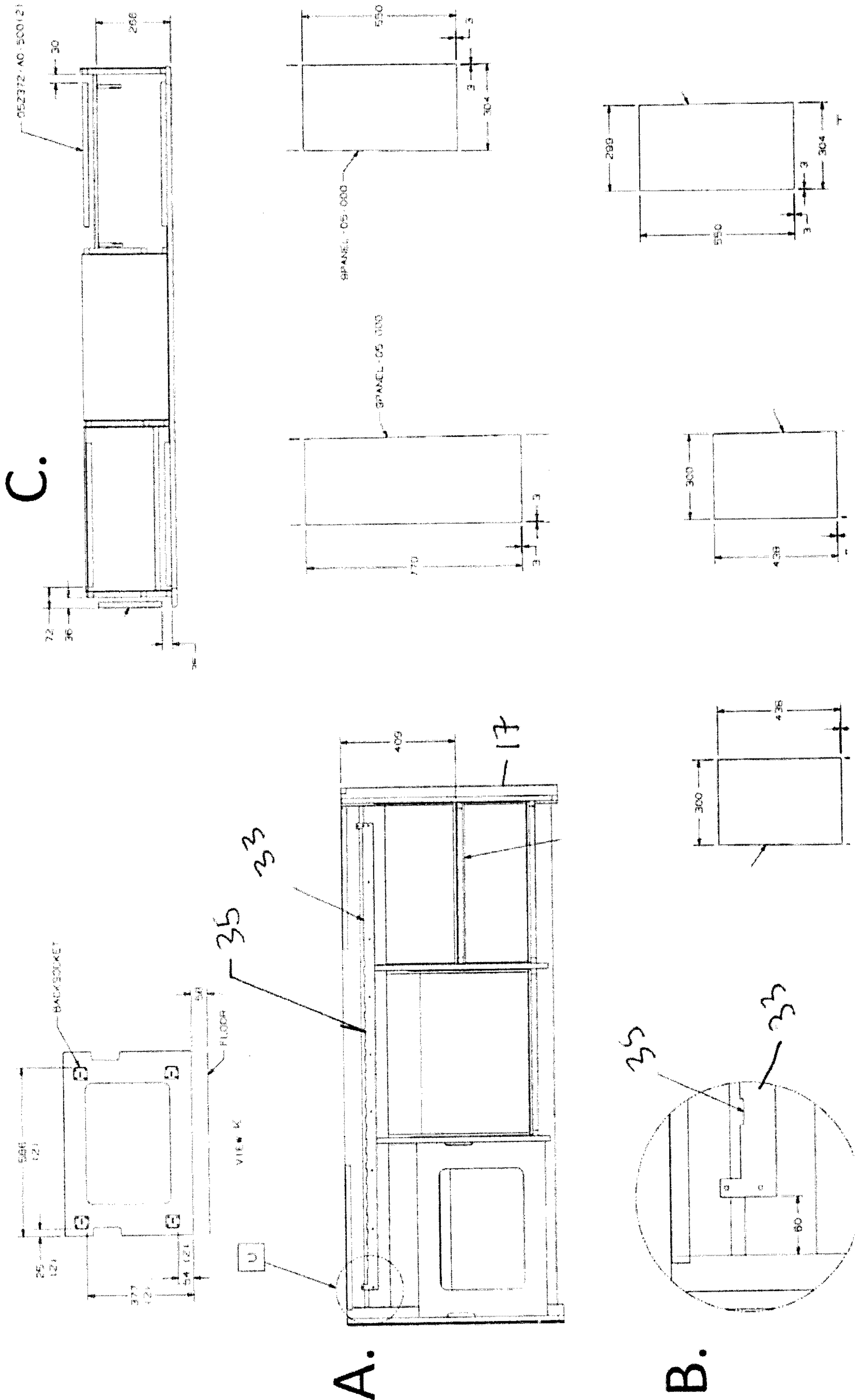


FIGURE 4

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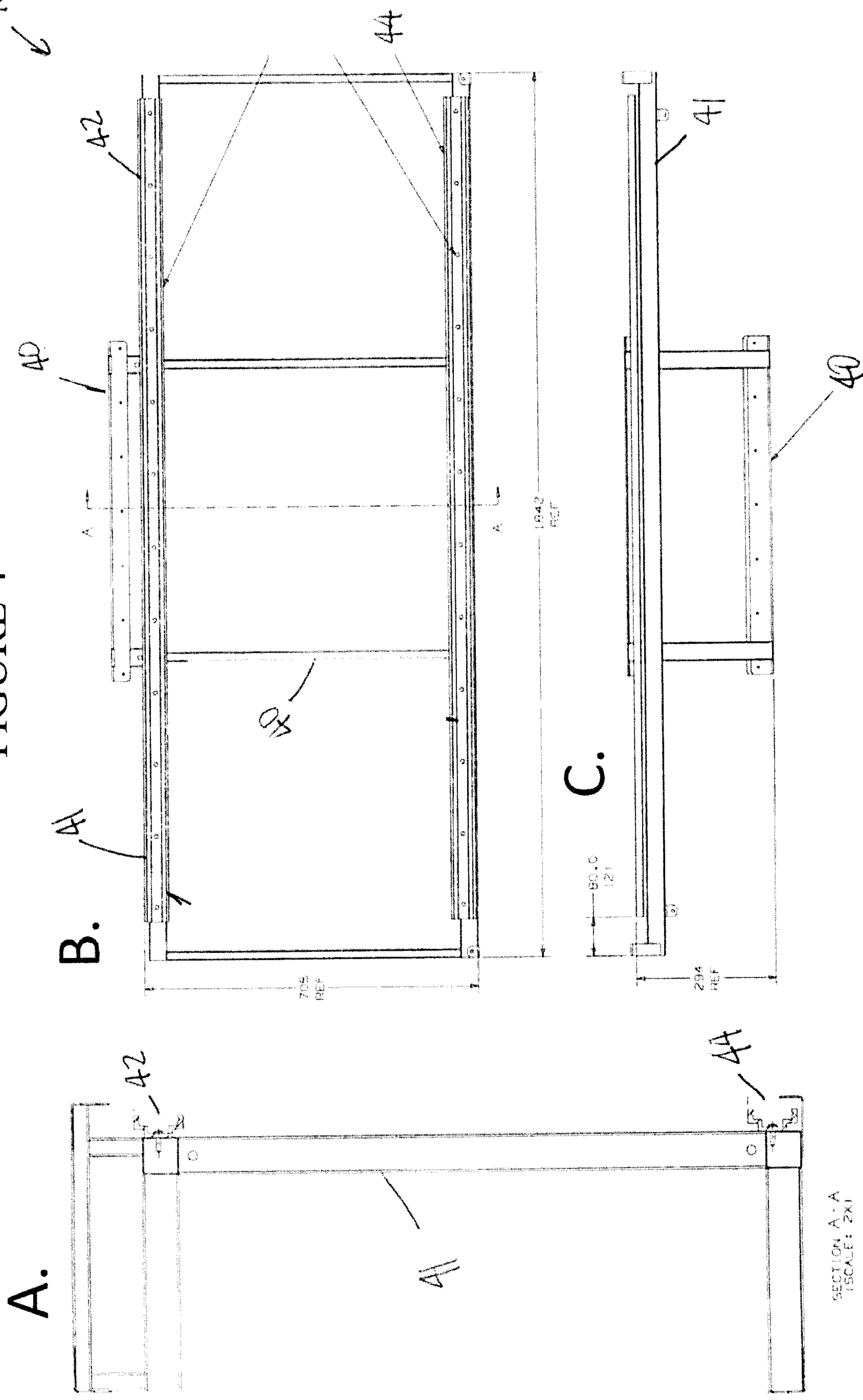


FIGURE 5

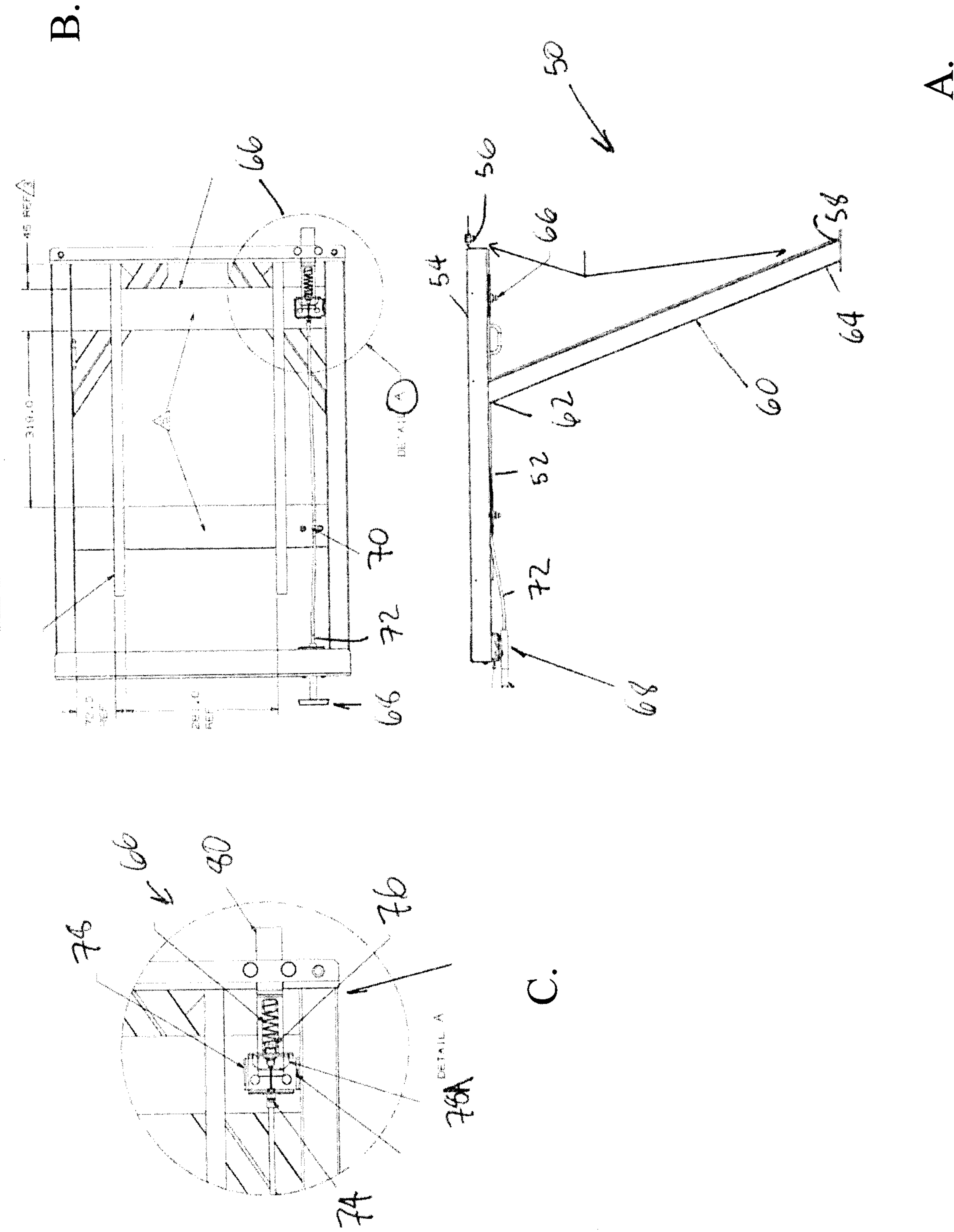


FIGURE 6

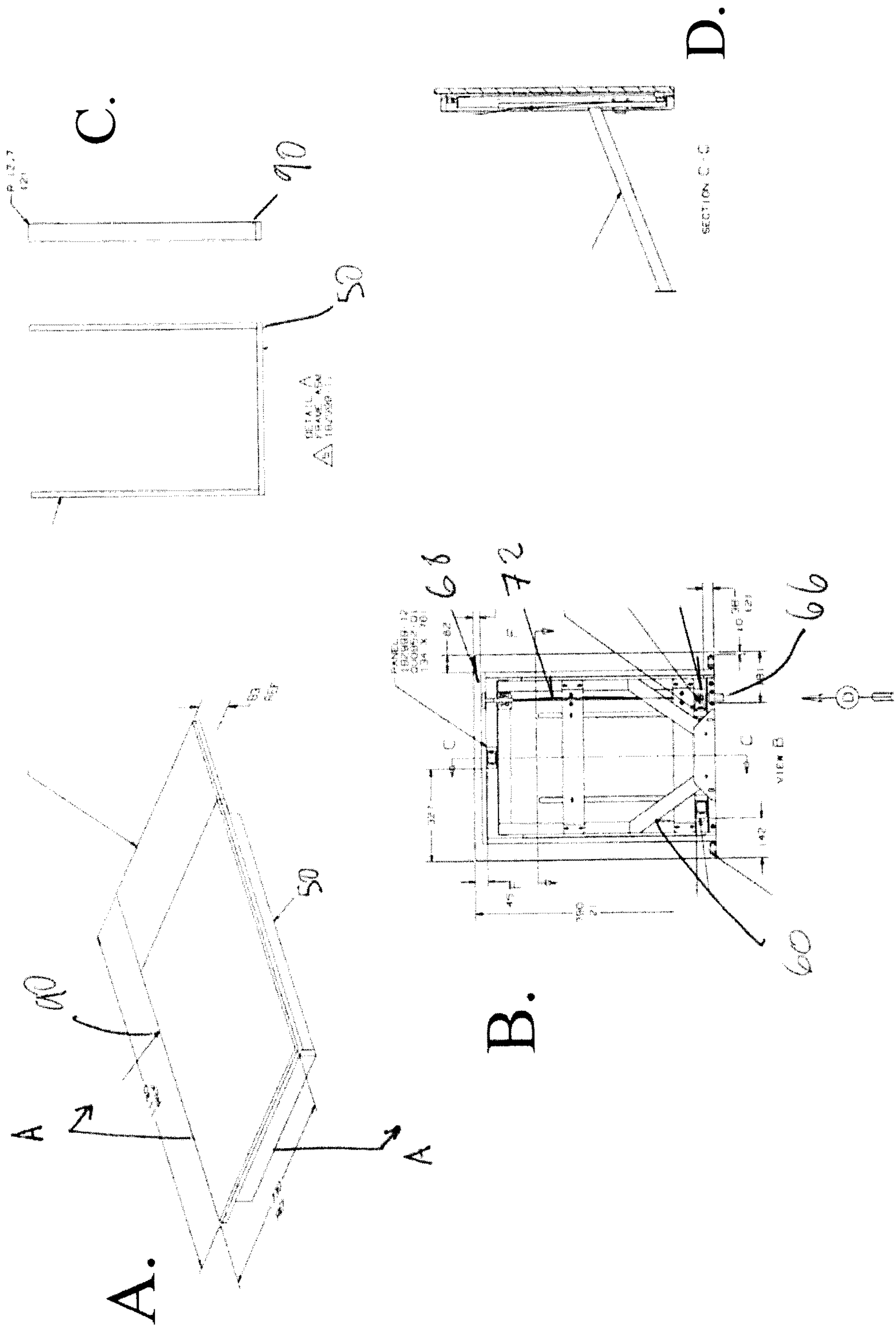


FIGURE 7

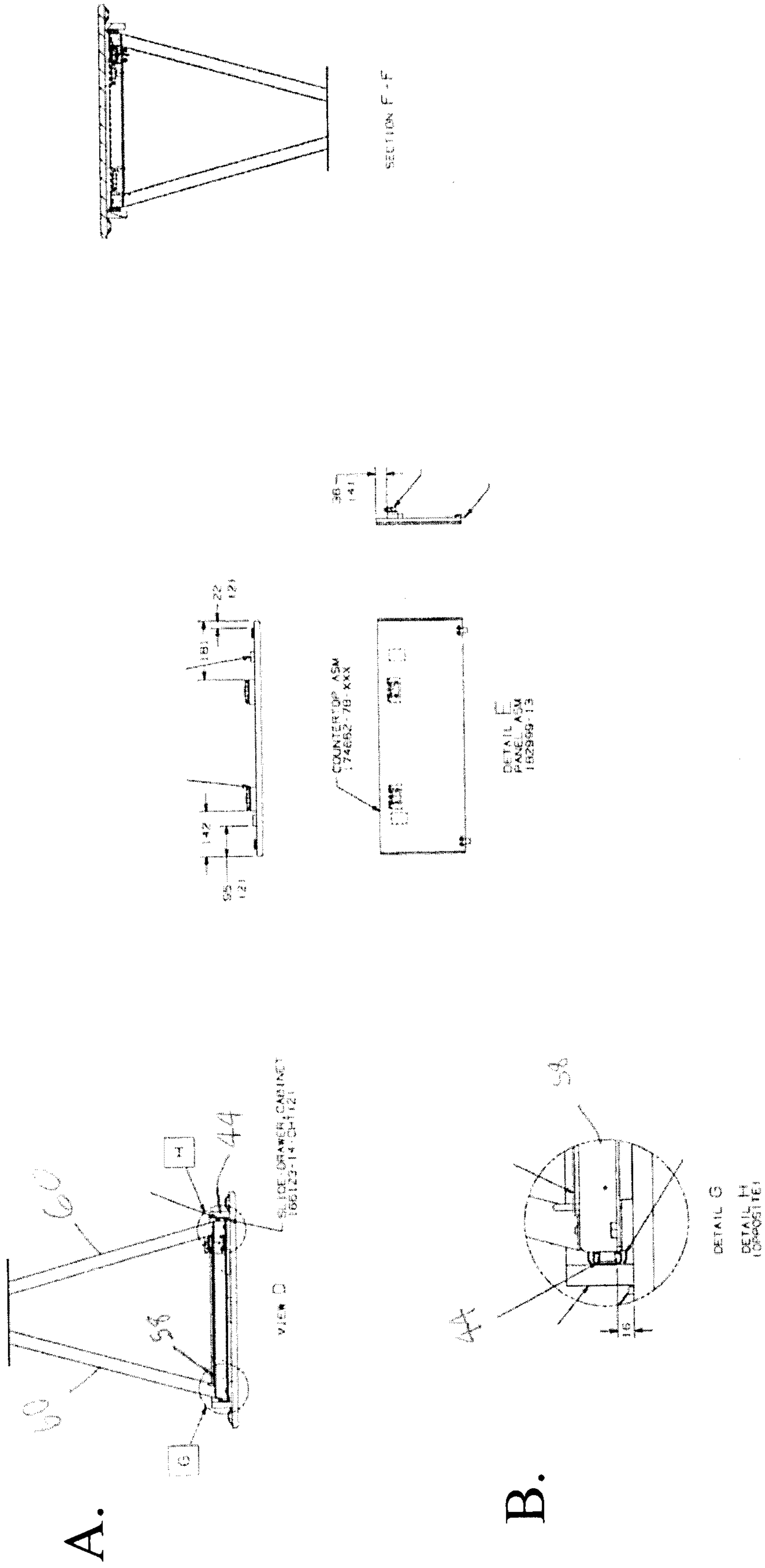


FIGURE 8

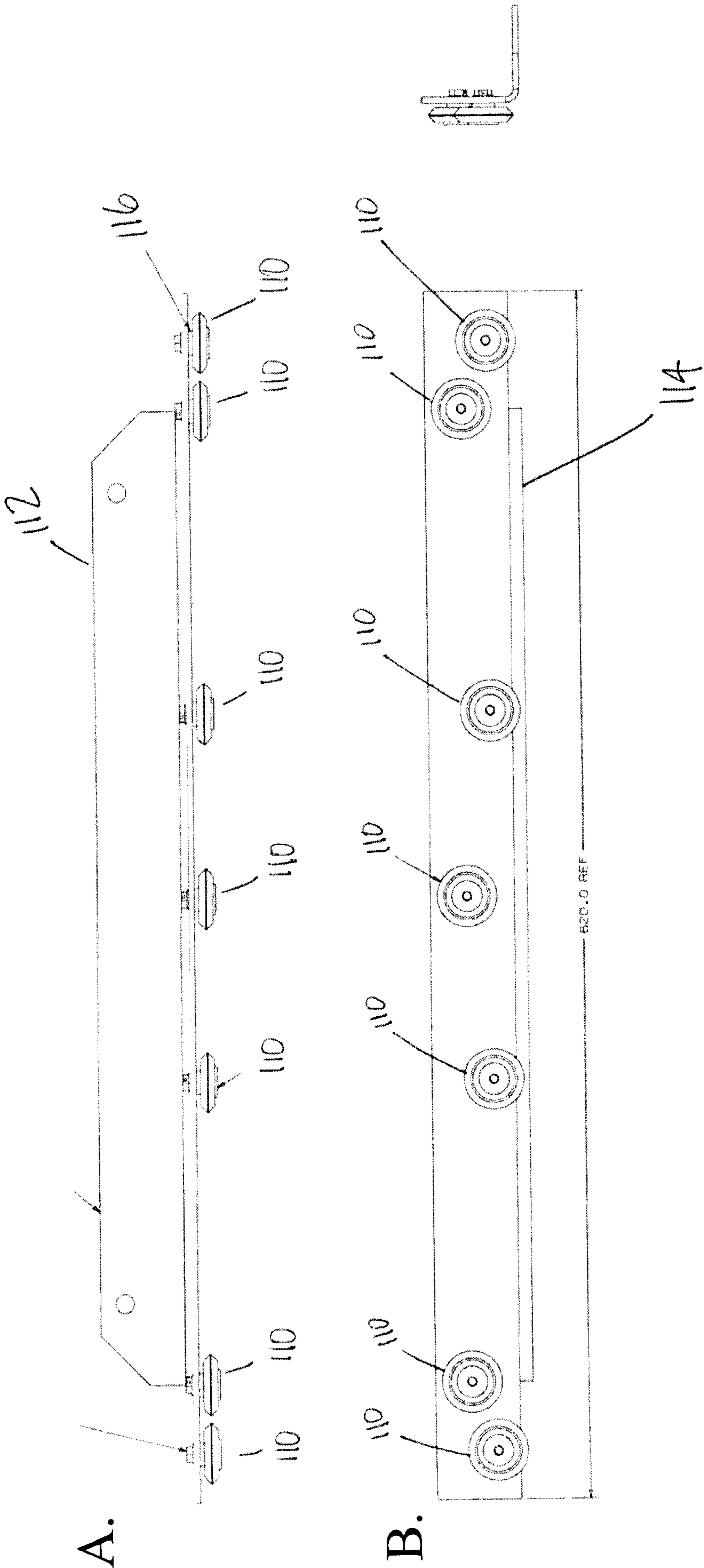


FIGURE 9

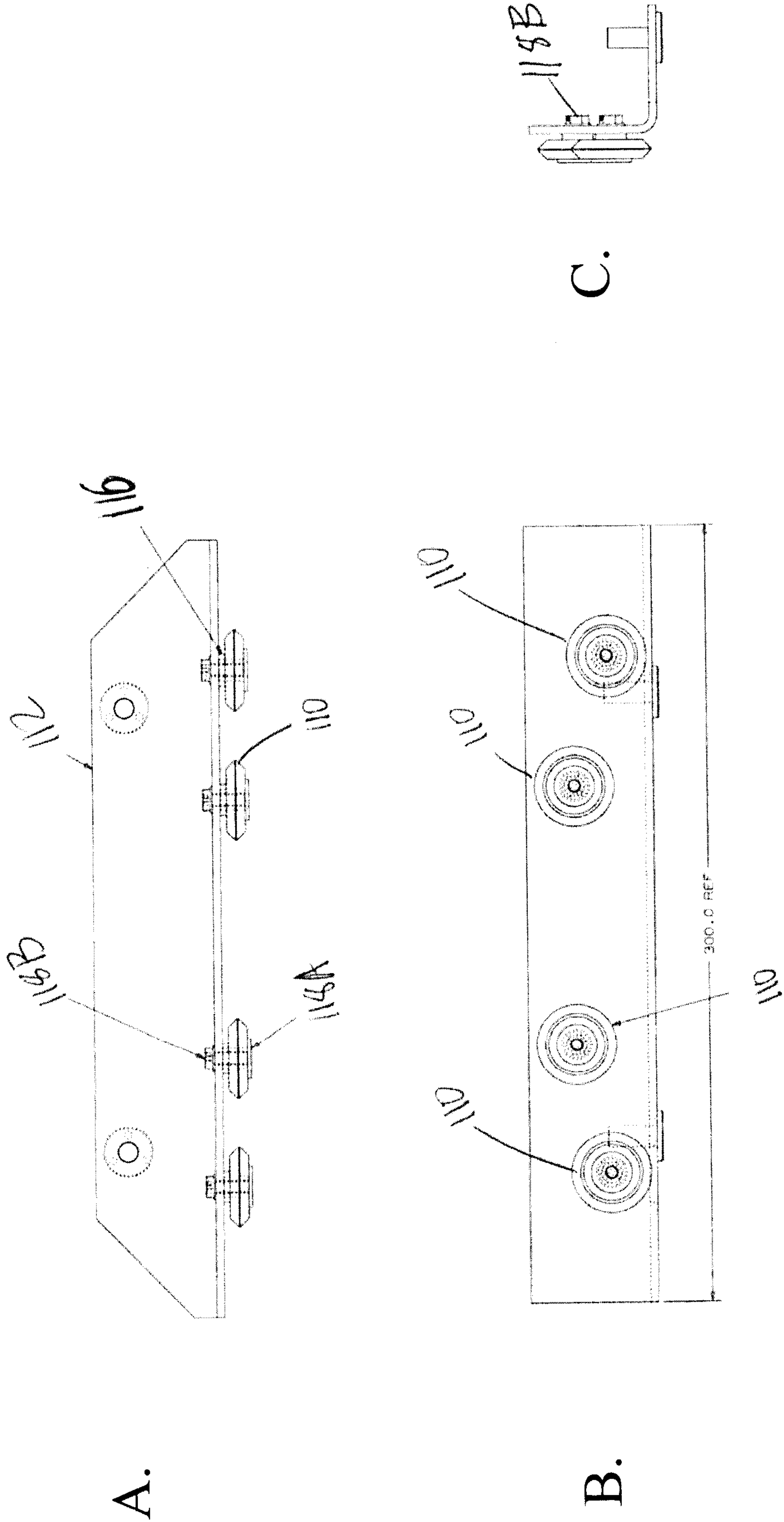


FIGURE 10

