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Lawrence

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[54] **BED BASE FOR SUPPORTING A BOX SPRING**

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[73] Assignee: **Steadley Company, Inc.**, Carthage, Mo.

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[22] Filed: **Dec. 17, 1976**

Related U.S. Patent Documents

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[64] Patent No.: **3,869,738**
Issued: **Mar. 11, 1975**
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Filed: **Jan. 11, 1974**

[51] **Int. Cl.**[2] **A47C 19/00**

[52] **U.S. Cl.** ..... **5/200 R**; 5/131; 5/238

[58] **Field of Search** ..... 5/131, 200 R, 201, 236, 5/238, 285; 312/140, 263

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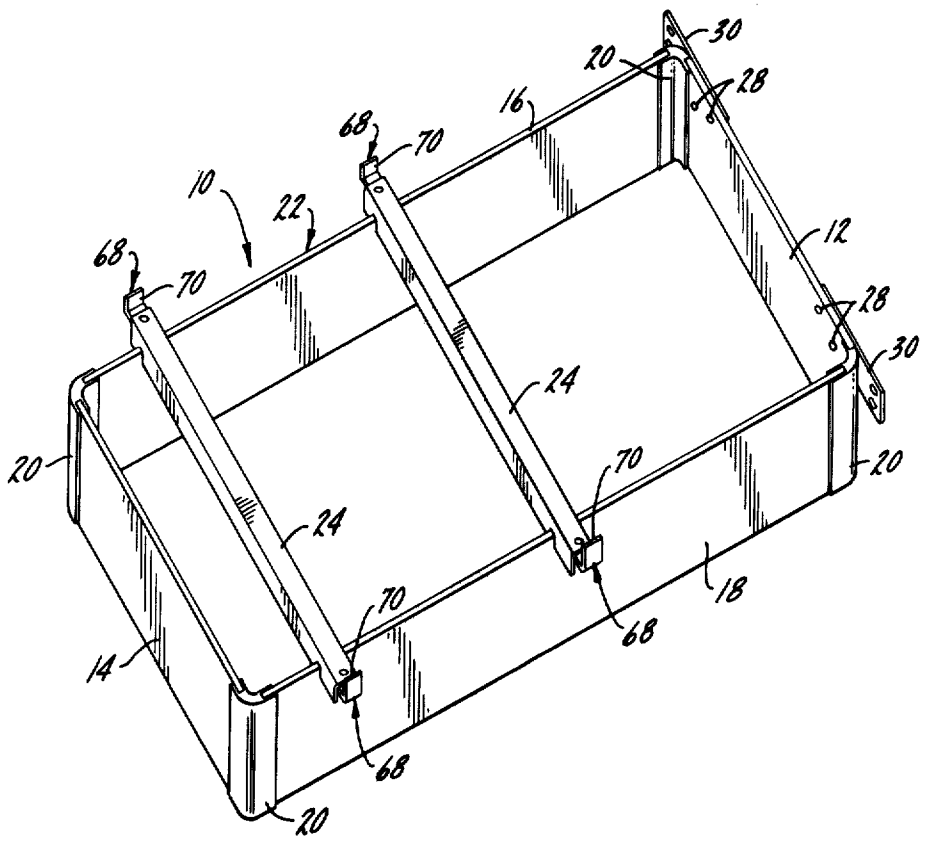
Primary Examiner—Casmir A. Nunberg

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[57] **ABSTRACT**

A box spring mattress is supported a predetermined distance above a floor by a bed base including panels connected at their ends to form a rectangular frame and a pair of cross-supports resting crosswise on the edges of an opposed pair of notched panels. Each cross-support has a generally flat surface which is generally parallel to the floor and on which the box spring rests, and a downwardly pointing brace. The braces nest in the notches in the panels and the support surfaces are essentially flush with the unnotched portion off the notched edges of the panels. Each brace includes notches which lockingly connect with the notches in the panels so that the cross-supports cannot move laterally relative to the base. There are stop members at the opposed ends of each cross-support for restricting the lateral movement of the box spring relative to the base. The panels have their ends slotted and are connected together by receptacles which include a pair of channels each of which has an open top and an open bottom entryway end for receiving a slotted end of a panel by way of top or bottom entry and a flange which points inwardly towards the panel received in the channel and fits snug within the slot in the end of the panel. Because of the construction of the panels, cross-supports, and receptacles, the bed base can be easily assembled and disassembled.

16 Claims, 15 Drawing Figures



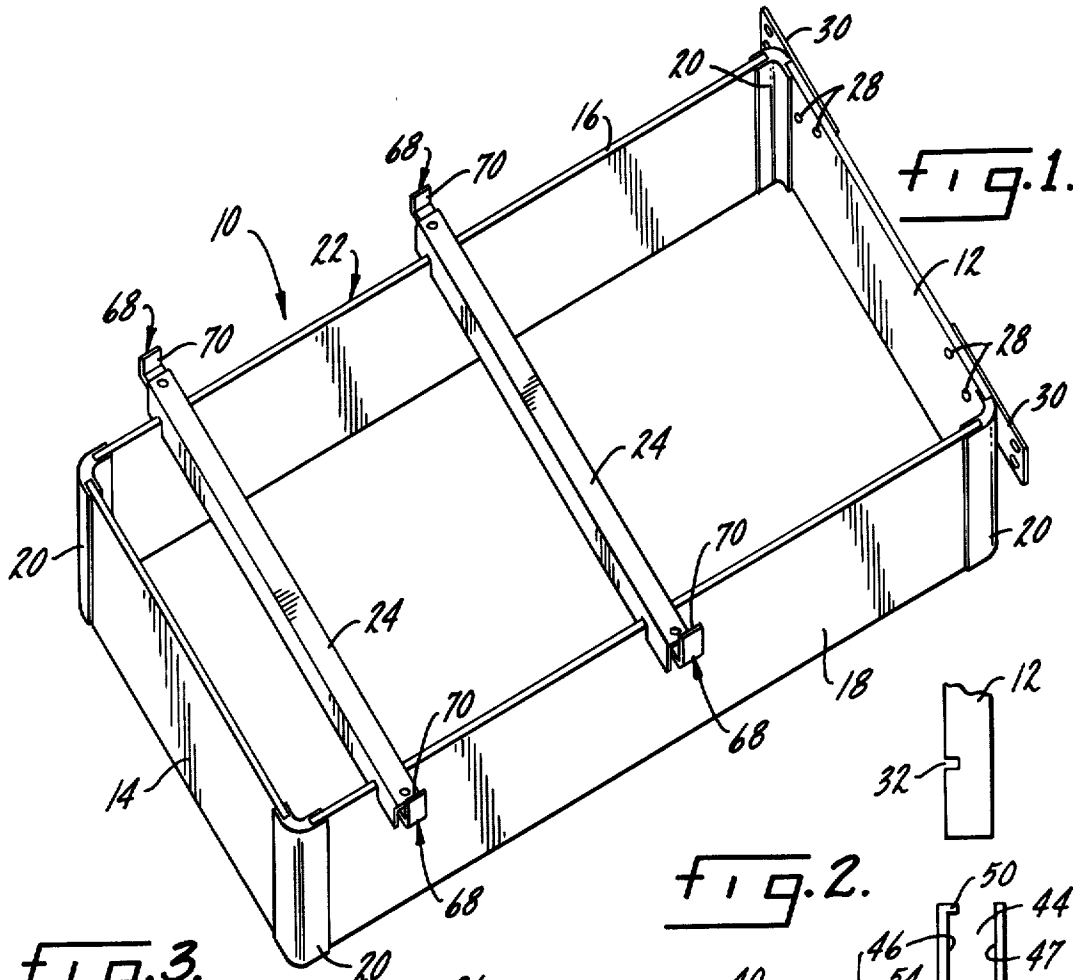


fig. 1.

fig. 2.

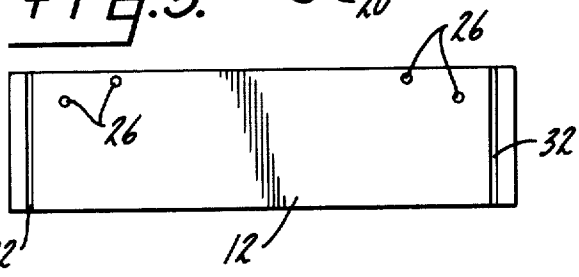


fig. 3.

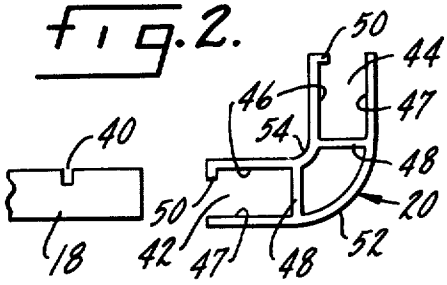


fig. 5.

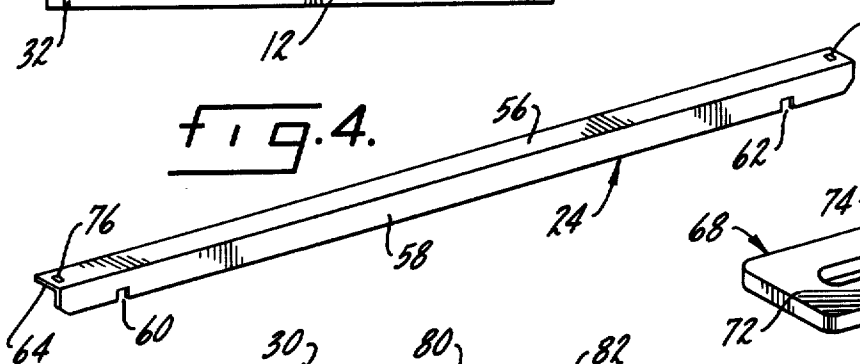
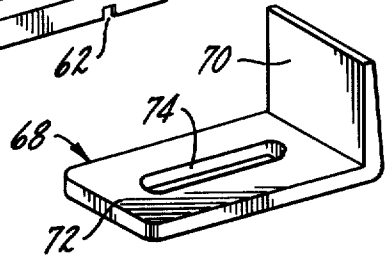


fig. 4.



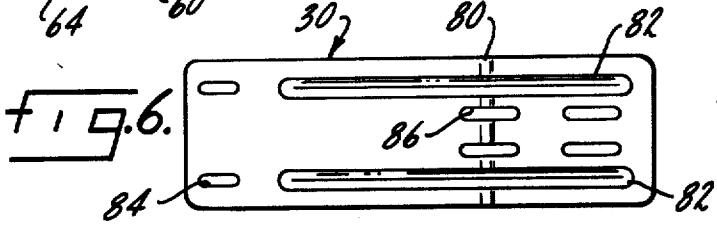


fig. 6.

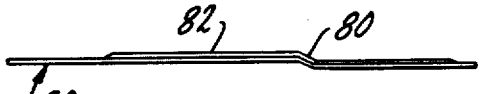


fig. 7.

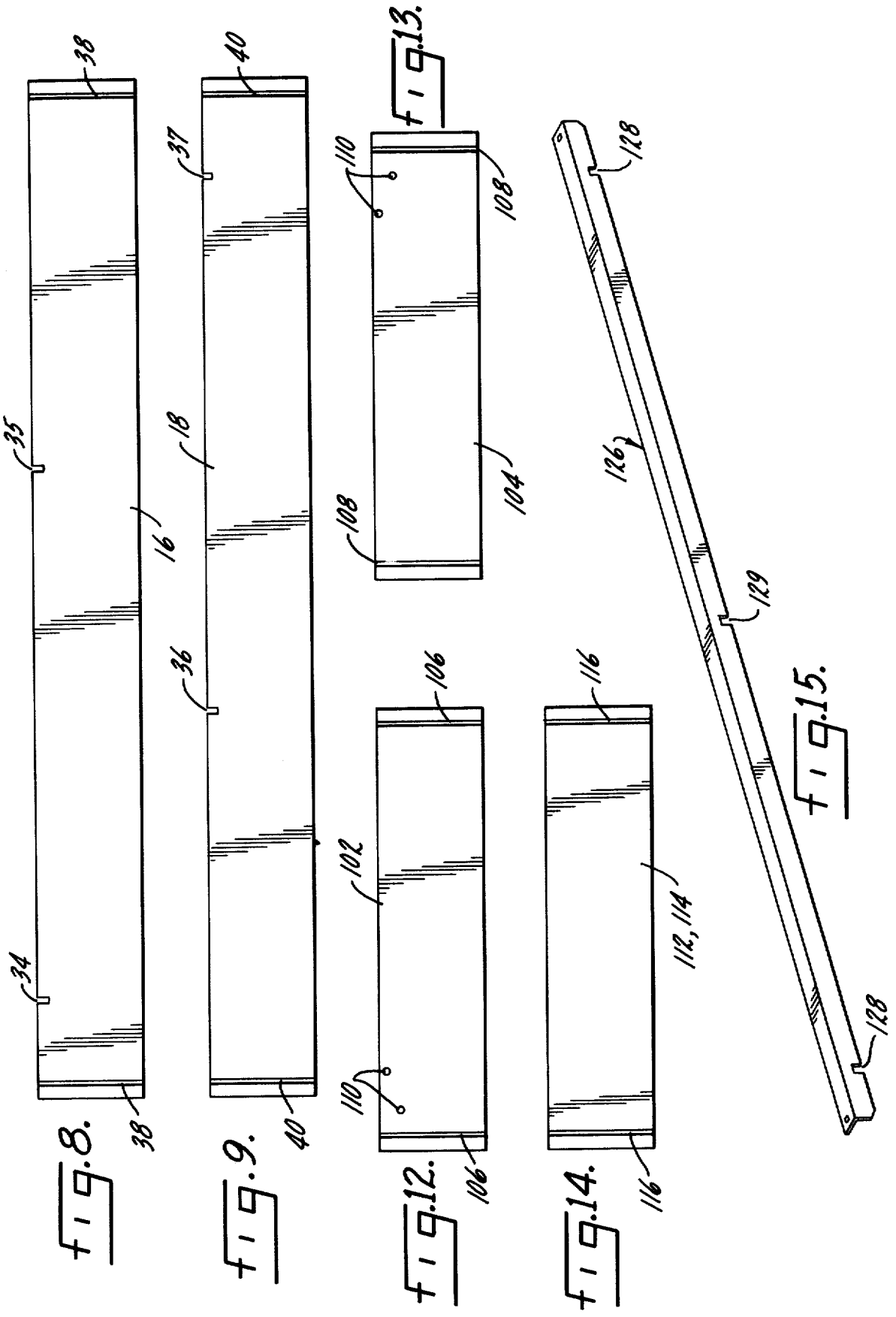


FIG. 8.

FIG. 9.

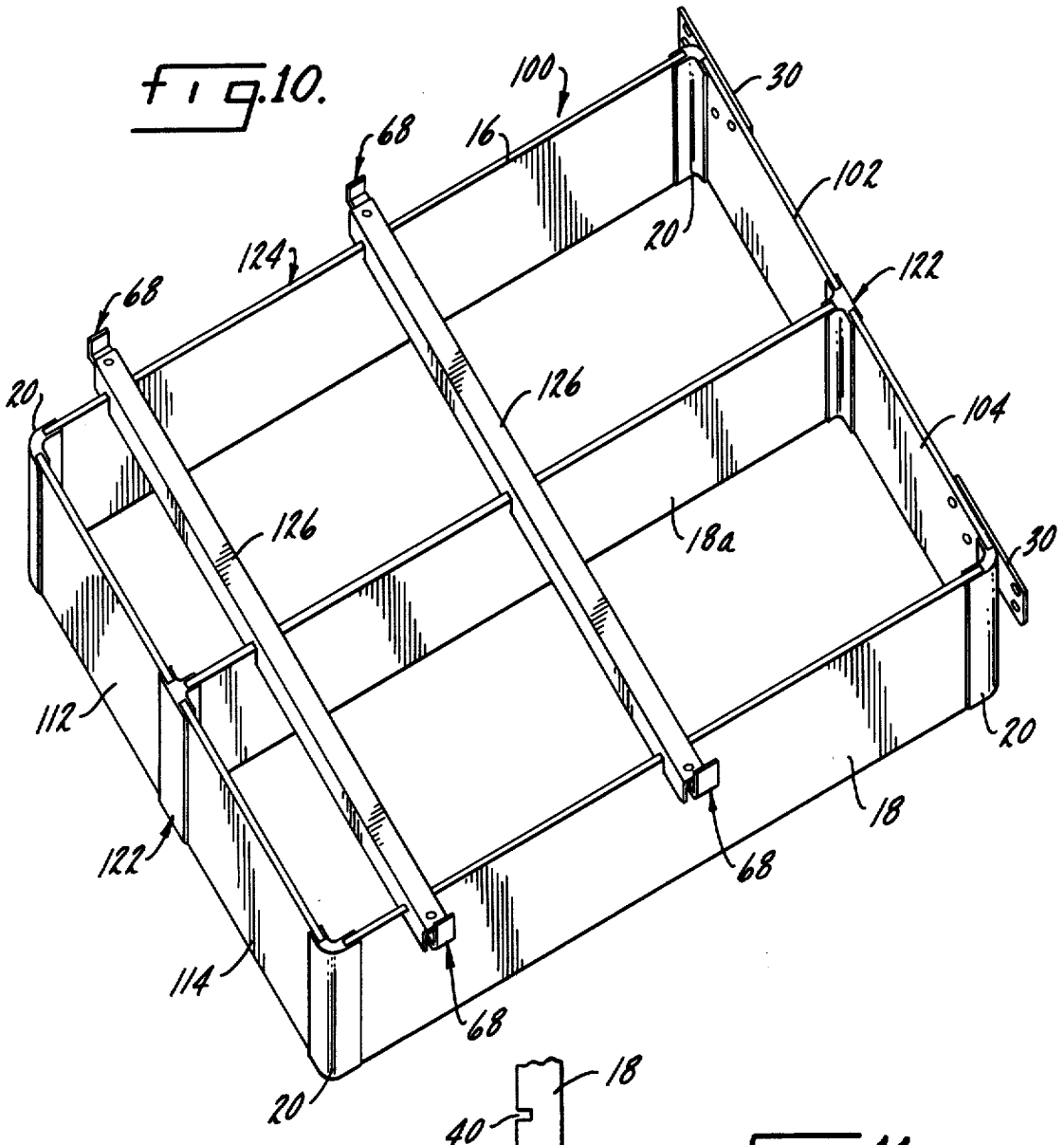
FIG. 13.

FIG. 12.

FIG. 14.

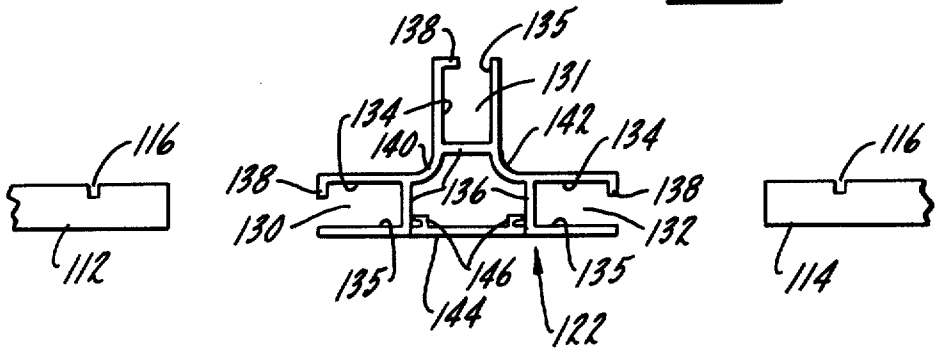
FIG. 15.

Fig. 10.


100
30
68
16
102
20
124
122
68
126
104
20
126
18a
30
112
20
18
122
68
114
68
20

18
40

Fig. 11.


138
135
131
134
142
134
140
116
116
138
136
138
130
132
112
135
146
135
114
144
122

BED BASE FOR SUPPORTING A BOX SPRING

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

BACKGROUND

Hollywood type bed frames are commonly used to support box springs for mattresses. These types of frames are generally unattractive and they permit dust and dirt to collect underneath the box spring. In general, these frames are made from angle irons which must be welded or bolted together. This makes it inconvenient to quickly assemble the frames at the point of installation. Moreover, these conventional type of Hollywood bed frames are heavy, and therefore, expensive to ship.

I have now invented a novel base support which retards the collection of dirt and dust underneath the supported box spring, is easy to assemble and disassemble, and can be shipped with minimum transportation costs. The details of my bed base are disclosed in the attached drawings and described in the accompanying description.

THE DRAWINGS

FIG. **1** is an isometric view of one embodiment of my bed base.

FIG. **2** is an enlarged plan view of one of the corner receptacles used to connect the panels of the bed base together.

FIG. **3** is a side elevational view of the headboard panel shown in FIG. **1**.

FIG. **4** is perspective view of one of the cross-supports shown in FIG. **1**.

FIG. **5** is a perspective view of one of the stop members which are attached to the opposed ends of the cross-supports.

FIG. **6** is a plan view of a headboard support bracket.

FIG. **7** is an end view of the bracket shown in FIG. **6**.

FIG. **8** is a side elevational view of one of the sideboard panels shown in FIG. **1**.

FIG. **9** is a side elevational view of the other sideboard panel shown in FIG. **1**.

FIG. **10** is an isometric view of a second embodiment of my bed base.

FIG. **11** is an enlarged plan view of the divider receptacle shown in FIG. **10**.

FIG. **12** is a side elevational view of one headboard panel shown in FIG. **11**.

FIG. **13** is a side elevational view of the other headboard panel shown in FIG. **11**.

FIG. **14** is a side elevational view of one of the footboard panels shown in FIG. **10**.

FIG. **15** is a perspective view of one of the cross-support members shown in FIG. **10**.

DETAILED DESCRIPTION

First Embodiment

The first embodiment of my bed base **10**, as shown in FIGS. **1** through **9**, includes a headboard panel **12**, a footboard panel **14**, and a pair of sideboard panels **16** and **18**. Four corner receptacles **20** connect the ends of the panels together to form a rectangular frame **22**, and

a pair of cross-supports **24**, resting on this frame, support a box spring for a mattress (not shown). The panels **12**, **14**, **16** and **18** are preferably made of an inexpensive pressboard composition, with the exterior surfaces of the panels being covered with a vinyl material which simulates a wood grain finish.

The headboard panel **12** has a width of about 7½ inches, a thickness of about 4/8 inch, and a length ranging from about 27 to 50 inches depending on the width of the box spring being supported. There are two pairs of holes **26** in the upper ends of the headboard panel **12** which receive fasteners **28** (FIG. **1**) for securing headboard brackets **30** (FIGS. **6** and **7**) to the backside of the headboard panel. Two parallel slots **32** approximately 5/16 inch from the ends of the headboard panel **12** run along the width of this panel. These slots are about one fourth inch deep and about one eighth inch wide.

The footboard panel **14** is identical to the headboard panel except it does not have the holes **26** for the bracket fasteners **28**.

As shown in FIGS. **8** and **9**, the sideboard panels **16** and **18** are similar to each other and they have the same thickness and width as the headboard and footboard panels **12** and **14**. They are longer than the headboard and footboard panels **12** and **14**, having a length ranging from about 67 to 72 inches. The upper edges of each of the sideboard panels **16** and **18** includes, respectively, a pair of notches **34**, **35** and **36**, **37**. Notches **34** and **37** are close to the footboard panel **14** and the other notches **35** and **36** are near the center of the sideboard panels **16** and **18**, respectively. The notches **34** through **37** each have a width of approximately 5/32 of an inch and are approximately three fourths inch deep. At opposed ends of each of these sideboard panels **16** and **18** running along the width of the panels are parallel slots **38** and **40**, respectively, which are displaced inwardly from the ends approximately 5/16 inch. Each of these slots **38** and **40** are about one fourth inch deep and about one eighth inch wide. When the frame **22** is formed, the sideboard panels **16** and **18** are in a right hand/left hand relationship so that the notches **34** and **37** are in registration, and notches **35** and **36** are in registration. *The size, number and location of the notches, if any, are approximate, as one skilled in the art can appreciate.*

As shown in FIG. **2**, the corner receptacles **20** are identical, each being an extruded aluminum structure including two channels **42** and **44** at 90° relative to each other and having open top and bottom ends adapted to receive a panel by way of either top or bottom entry. Each channel **42** and **44** includes a pair of flat, parallel sidewalls **46** and **47** separated by a spacer **48**. This spacer **48** separates the sidewalls **46** and **47** a distance slightly greater than the thickness of a panel. Integral with the ends of sidewalls **46** is an inwardly pointing flange **50** which fits snug within the slots **40** and **32** in the ends of panels **18** and **12** received in the respective channels **42** and **44**. The two channels **42** and **44** are joined together by arcuate connecting walls **52** and **54**. The connecting walls **52** and **54** and the sidewalls **45** and **47** have a height equal to the width of a panel, and the spacers **48** are displaced rearwardly from the flanges **50** of the sidewalls **47** a distance about equal to the displacement of a slot from the end of its respective panel. Thus, the dimensions of the channels **42** and **44** are just slightly greater than the dimensions of the end of a panel received in a channel.

As shown in FIG. **4**, the cross-supports **24** are angle irons each having a generally flat support surface **56**,

which forms a cross-support having a substantially horizontally extending support element for engaging and supporting a box spring, and a brace **58** *downwardly extending* at right angles to the support surface. There are a pair of notches **60** and **62** displaced inwardly equal distances from the opposed ends of the cross support **24**. *The notches are formed in the brace to accommodate the sideboard panels 16 and 18 so that each brace has downwardly extending outer portions defining the outer limits of the cross-support notches and which are adapted to abut the outer surfaces of the accommodated sideboard panels to support the portions of the cross-support extending outwardly of the sideboard panels, and downwardly extending inner portions defining the inner limits of the cross-support notches and which are adapted to abut the inner surfaces of the accommodated sideboard panels to support the portions of the cross-support disposed between the opposed sideboard panels.* These notches have a width equal to the thickness of the sideboard panels **16** and **18**, and a depth sufficient so that, when the cross-supports **24** are aligned with the opposed notches **34**, **37** and **35**, **36** in the sideboard panels **16** and **18**, *or engaging the sideboard panels 16 and 18,* and stretching across the sideboard panels, the underside **64** of the support surface **56** rests on top edges of the sideboard panels **16** and **18**. Consequently, the support surfaces **56** are essentially flush [with the unnotched portions of the edges of the sideboard panels **16** and **18** and] *with the top edges of the sideboard panels when the sideboard panels are accommodated within the notches in the braces. If notches are present in the sideboard panels 16 and 18,* the notches **60** in the cross-support braces **58** interlock with the notches **34** and **35**, and the notches **62** of these braces interlock with notches **36** and **37**. This prevents the cross supports **24** from moving laterally relative to the base **10**.

At opposed ends of the cross-supports **24** are stop members **68**, each including an upwardly pointing finger **70** and an integral connection piece **72** (FIG. **5**) at a right angle to the finger **70**. Suitable fasteners (not shown) passing through elongated apertures **74** in the connection pieces **71** and holes **76** in the ends of the cross-supports **24** secure the stop members **68** to the underside **64** of the cross-supports **24**. Preferably, these stop members are made of plastic which will not tend to rip a mattress resting on the cross supports **24**. Because of the elongated aperatures **74**, these stop members **68** may be laterally adjusted to accommodate mattresses varying slightly in width.

As shown in FIGS. **6** and **7**, the brackets **30** are generally flat rectangular steel members having a step **80** and ribs **82** which provide rigidity and elongated aperatures **84** and **86**. The aperatures **84** receive the fasteners **28** which connect the brackets **30** to the headboard panel **12** and the aperatures **86** receive fasteners (not shown) which connect the brackets to a headboard (not shown).

Second Embodiment

FIGS. **10** through **16** illustrate the second embodiment of my bed base **100** which is particularly designed to support box springs for king size mattresses. Only the salient differences between this embodiment and the embodiment of FIGS. **1** through **9** are described, and components identical to those of the base **10** are given the same numerals.

This king size bed base **100** includes a pair of headboard panels **102** and **104** including slotted ends **106** and **108**, respectively, and holes **110** for attaching headboard brackets **30** to the respective panels, a pair of footboard brackets **112** and **114**, including slots **116**, a pair of sideboard panels **16** and **18** and a centerboard panel **18a**. The footboard panels **112** and **114** are identical to the headboard panels **102** and **104** except there are no holes **110** in these footboard panels. The upper sideboard panel **16** as viewed in FIG. **10** is identical to the sideboard panel **16** shown in FIG. **8**, and the centerboard panel **18a** and other sideboard panel **18** are both identical to the sideboard panel **18** shown in FIG. **9**. These panels **16**, **18** and **18a** *preferably* include the notches **34** through **37** and the slots **38** and **40** running along the width of the panels as shown in FIGS. **8** and **9**. All the panels have the same width and thickness.

Four identical corner receptacles **20** as described above and two identical T-shaped divider receptacles **122** connect all the panels together as shown in FIG. **10** to form a rectangular frame **124** divided in two about equal sized compartments by the centerboard panel **18a**.

A pair of cross-supports **126** resting on the edges of the sideboard panels **16** and **18** and centerboard panel **18a** have at their opposed ends plastic stop members **68** as described above. The cross-supports **126** are similar to the cross-supports **24**, but are longer and include notches **128** in the ends of their braces in locking connection with the notches, *if present,* in the sideboard panels **16** and **18**. In addition, each cross-support **126** also includes a central notch **129** in its brace for locking connection with [the notches in] the centerboard panel **18a**.

The chief difference between the bed base **100** and the bed base **10** is the divider receptacles **122**. As shown in FIG. **11**, these divider receptacles **122** include three channels **130**, **131** and **132**. The channel **131** which receives the centerboard panel **18a** is centered relative the channels **130** and **132** and is at 90° with respect to the channels **130** and **132**. The channels **130** and **132** are at 180° relative to each other. Each channel **130** through **132** includes a pair of flat, parallel sidewalls **134** and **135**, a spacer **136** which maintains the sidewalls apart from each other a distance equal to the thickness of a panel, and flanges **138** integral with one of the sidewalls **134**. The channel **130** is joined to the channel **131** by an arcuate connecting wall **140**, and the channel **131** is joined to channel **132** by an arcuate connecting wall **142**. This forms an integral structure which is made preferably from extruded aluminum. A cover **144** fits between the gap between the channels **130** and **132**, and it includes tabs **146** which press outwardly to hold the cover snug against the spacers **136**. The sidewalls **134** and **135**, the connecting walls **140** and **142**, and the cover **144** have a height equal to the width of a panel.

The chief advantage of my bed bases **10** and **100** is that these bases are easy to assemble and disassemble. The various panels are connected together to form the frames **22** and **124** by simply sliding the receptacles **20** or **20** and **122** over the ends of the various panels. The cross-supports **24** and **126** are simply set on top of the frames **22** or **124** with the notches in the braces of the cross-supports aligned with the notches in the longitudinal edges of the sideboard panels **16** and **18** or sideboard and centerboard panels **16**, **18** and **18a**. [The] *If the panels 16, 18 and 18a are notched, the* cross-supports **24** and **126** simply drop into position and interlock with the panels so that they do not move laterally relative to the base. Initially, the stop members **68** are attached to the opposed ends of the cross supports **24** and **126** by fasteners (not shown) which hold the stop members loosely so that these stop members can move laterally relative to the cross-supports. A box spring is placed on the cross-

supports between the stop members **68**, and the positions of the stop members are adjusted so that these stop members fit snug against the side of the box spring mattress. The fasteners for the stop members **68** are then secured to prevent lateral movement of the box spring relative to the base. Normally, the head end of the mattress is about flush with the headboard panels of the frames **22** and **124** and the foot end of the box spring extends about 6 to 12 inches beyond the footboard panels of the frames **22** and **124**. Optionally, the headboard brackets **30** may be fastened to the headboard panels as shown, and a headboard may be secured to these brackets. Although instructions for assembling the bed bases **10** and **100** may be provided, the manner in which these bases are assembled is virtually self explanatory.

With the bed base **10** or **100** assembled with the box spring in position, the area inside the frames **22** and **126** is enclosed, thus retarding the collection of dust and dirt underneath the mattress.

Another advantage of my bed bases **10** and **100** is that metal and plastic components of the bed bases **10** or **100** may be manufactured at a central location while the panels can be made at a number of distant points throughout the country. For example, the corner and divider receptacles, cross-supports, stop members, and headboard brackets are preferably manufactured at one centrally located plant and shipped to different warehouses close to population centers. Locally manufactured panels stored in such warehouses would be packaged or sold with the components made at the central plant. This substantially reduces transportation costs.

As appreciated by those skilled in the art, modifications in my novel bed base may be made without departing from the principles of my invention.

I claim:

1. A bed base for supporting a box spring for a mattress and elevating said box spring a predetermined distance above a floor, comprising

panels of equal width resting on their edges and connected at their ends to form a rectangular frame,

[a pair of notches in] *at least one notch formed in each of* a pair of opposed panels at the upper edges in each one of said opposed panels, said [pair of] notches in one panel being in registration with the [pair of] notches in the other panel, and

[a pair of spaced cross-supports] *at least one cross-support* resting crosswise between the pair of notched panels, each of said cross-supports having a generally flat support surface which is generally parallel to the floor and on which the box spring rests, and a downwardly pointing brace,

each of said cross-supports being at right angles to the notched panels and aligned with opposed notches in opposed notched panels so that the respective braces of each one of said cross-supports nest in the opposed notches and the support surfaces of said cross-supports are essentially flush with the unnotched portion of the notched edges of said panels.

2. The base of claim **1** including stop members at the opposed ends of the cross-supports for restricting lateral movement of the box spring relative to the base.

3. The bed base of claim **2** in which the opposed ends of the cross-supports extend about equal distances beyond the notched panels.

4. The bed base of claim **1** wherein the cross-supports each include a pair of notches in the brace portion which lockingly connect with the notches in the panels so that the cross-supports cannot move laterally relative to the base.

5. The bed base of claim **1** wherein the panels each have slots in opposed ends running along the width of the panel, said panels being connected together by receptacles each of which includes a pair of channels, said channels each having an open top and an open bottom entryway end for receiving the slotted end of a panel and an inwardly pointing flange which fits snug within the slot in the end of the panel received by said channels.

6. A bed base for supporting a box spring for a mattress, elevating said box spring a predetermined distance above a floor, and restricting lateral movement of the box spring relative the base, comprising

a headboard panel and a footboard panel each of equal length, equal width, and equal thickness,

a pair of sideboard panels which are longer than the headboard and footboard panels but are equal in length to each other and have widths and thicknesses equal to the widths and thicknesses of the headboard and footboard panels,

a pair of notches in each of said sideboard panels along a longitudinal edge of said sideboard panels, said pairs of notches being located in identical positions along said longitudinal edges of their respective panels,

said headboard panel, footboard panel, and sideboard panels each having adjacent their respective ends slots running along the widths of said panels,

receptacles connecting the ends of said panels together to form a rectangular frame in which the panels rest on their narrow edges at right angles to the floor and the longitudinal axes of the panels are parallel to the floor,

said sideboard panels resting on edges opposite the notched edges so that said notches point upwardly and the pair of notches in one sideboard panel are in registration with the pair of notches in the other sideboard panel,

each of said receptacles including a pair of channels, each of which has an open top and an open bottom entryway end for receiving a slotted end of a panel by way of top or bottom entry and a flange which points inwardly towards the panel received in the channel and fits snug within the slot in the end of said panel,

a pair of spaced cross-supports which rest crosswise between the pair of sideboard panels, and have opposed ends which extend beyond the sideboard panels, each of said cross-supports having a generally flat support surface which is generally parallel to the floor and on which the box spring rests, and a downwardly pointing brace,

each of said cross-supports being at right angles to the sideboard panels and aligned with opposed notches in the opposed side panels so that the brace portions of the cross-supports nest in the opposed notches and the support surfaces are essentially flush with the unnotched portion of the notched edges of the sideboard panels, and

stop members attached to the opposed ends of the cross-supports which include upwardly pointing finger elements which restrict the lateral movement of the box spring resting on the cross-supports between said stop members.

7. The bed base of claim 6 in which the opposed ends of the cross-supports extend about equal distances beyond the sideboard panels.

8. The bed base of claim 6 wherein each cross-support includes notches in its brace which lockingly connect with the notches in the sideboard panels so that the cross-supports cannot move laterally relative to the base.

9. The bed base of claim 6 including brackets connected to the headboard panels for attaching a headboard to said bed base.

10. A bed base for supporting a box spring for a mattress, elevating said box spring a predetermined distance above a floor, and restricting lateral movement of the box spring relative to the base, comprising

a pair of headboard panels and a pair of footboard panels, each of said headboard and footboard panels being of equal length, equal width, and equal thickness,

a pair of sideboard panels which are longer than the headboard and footboard panels but are equal in length to each other and have widths and thicknesses equal to the widths and thicknesses of the headboard and footboard panels,

a centerboard panel which has a length, width and thickness equal that of the sideboard panels,

a pair of notches in each of said sideboard panels and said centerboard panel along a longitudinal edge of each of said sideboard panels and said centerboard panel, said pairs of notches being located in identical positions along the longitudinal edges of their respective panels,

said headboard panels, footboard panels, sideboard panels, and centerboard panel each having adjacent their respective ends slots running along the widths of said panels,

receptacles connecting the ends of said panels together to form a rectangular frame in which the panels rest on their narrow edges in right angles to the floor and the longitudinal axes of the panels are parallel to the floor, with said centerboard panel being parallel to the sideboard panels to divide the frame into two about equal size compartments,

said sideboard panels and said centerboard panels resting on edges opposite said notched edges so that said notches point upwardly and the pair of notches in the respective sideboard panels and centerboard panels are in registration with each other,

said receptacles including four corner receptacles which connect the sideboard panels to the headboard and footboard panels and two divider receptacles which connect the centerboard panel to the headboard panels and footboard panels,

each of said corner receptacles including a pair of channels which are generally at right angles to each other, and each of said divider receptacles having three channels, two of which are at 180° relative to each other and one of which is centered relative to the other two and at 90° relative to said other two,

each of the channels in the corner and divider receptacles having open top and bottom entryway ends for receiving a slotted end of a panel by way of top or bottom entryway and a locking flange which points inwardly towards the panel received in the channel and fits snug within the slot in the end of said panel,

a pair of spaced cross-supports which rest crosswise between the sideboard panels and the centerboard panel and have opposed ends which extend beyond the sideboard panels, each of said cross-supports having a generally flat support surface which is generally parallel to the floor and on which the box spring rests, and a downwardly pointing brace,

each of said cross-supports being at right angles to the sideboard panels and the centerboard panel and aligned with opposed notches in the sideboard panels and centerboard panels so that the braces of the cross-supports nest in the notches and the support surfaces are essentially flush with the unnotched portion of the notched edges of the sideboard panels and centerboard panel, and

stop members attached to the opposed ends of the cross-supports which include upwardly pointing finger elements which restrict the lateral movement of the box spring resting on the cross-supports between said stop members.

11. The bed base of claim 10 adapted to support a box spring for a king size mattress.

12. The bed base of claim 11 wherein each cross support includes notches in its brace which lockingly connect with the notches in the sideboard and centerboard panels so that the cross supports cannot move laterally relative to the base.

13. A bed base for supporting a box spring for a mattress and elevating said box spring a predetermined distance above a floor comprising

a plurality of panels of equal width resting on their edges and interconnected to form a rectangular frame, one pair of opposed panels forming side panels of the frame and the other opposed panels forming end panels of the frame,

a plurality of spaced cross-supports extending tranversely across said side panels, each of said cross-supports having a substantially horizontally extending support element for engaging and supporting a box spring and a downwardly extending brace element, said cross-supports having their brace elements notched to accommodate the side panels, each said cross-support brace element having downwardly extending outer portions defining the outer limits of the cross-support notches and adapted to abut the outer surfaces of the accommodated side panels to support the portions of the cross-support extending outwardly of the side panels, and downwardly extending inner portions defining the inner limits of the cross-support notches and adapted to abut the inner surfaces of the accommodated side panels to support the portions of the cross-support disposed between the opposed side panels, the support elements of said cross-supports being essentially flush with the top edges of said side panels when said said panels are accommodated within the notches in the brace element.

14. The structure of claim 13 wherein said cross-supports are disposed at right angles with respect to said side panels.

15. The structure of claim 13 wherein said side panels are provided with notches to interfit with the notched portions of said cross-supports.

16. The structure of claim 13 wherein said downwardly extending brace element outer portions extend to adjacent the outer extremities of the support elements of said cross-support.

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