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Hiler et al.

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[45] **Aug. 19, 1975**

[54] **STORAGE RACK**

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[73] Assignee: **Penco Products Inc.**, Oaks, Pa.

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[21] Appl. No.: **448,735**

[52] **U.S. Cl.** **211/177**; 403/319

[51] **Int. Cl.**[2] **A47F 5/10**; F16B 17/00

[58] **Field of Search** 211/148, 176, 177, 182, 211/183; 292/145–147, 183; 403/316, 319

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Primary Examiner—Roy D. Frazier
Assistant Examiner—Lawrence J. Staab
Attorney, Agent, or Firm—Jackson, Jackson & Chovanes

[57] **ABSTRACT**

In a storage rack, the beam has a recess in its front in which there is an opening whose bottom has two low places in it with a higher place in between, and the opening has a finger-like extension away from the end of the beam. A key strip has a neck which can rest securely, substantially without danger of accidental dislodgment, in either one of the two low places, a tab extending from the neck in a direction away from the end of the beam and located parallel to and in front of the recessed part of the beam's front, and a tapered end extending toward the end of the beam from the neck. When the neck is in the lower place nearer the beam's end, the tapered end passes through an opening in a recess in the beam's end and through an opening in the post and locks beam and post from coming apart, and the tab leaves the finger-like end of the front opening quite well open and visible. When the neck is moved to the lower place further from the beam's end, the tapered end is short of the post and its opening, the beam and post are free to be taken apart, and the tab largely covers the finger-like extension of the front opening.

6 Claims, 13 Drawing Figures

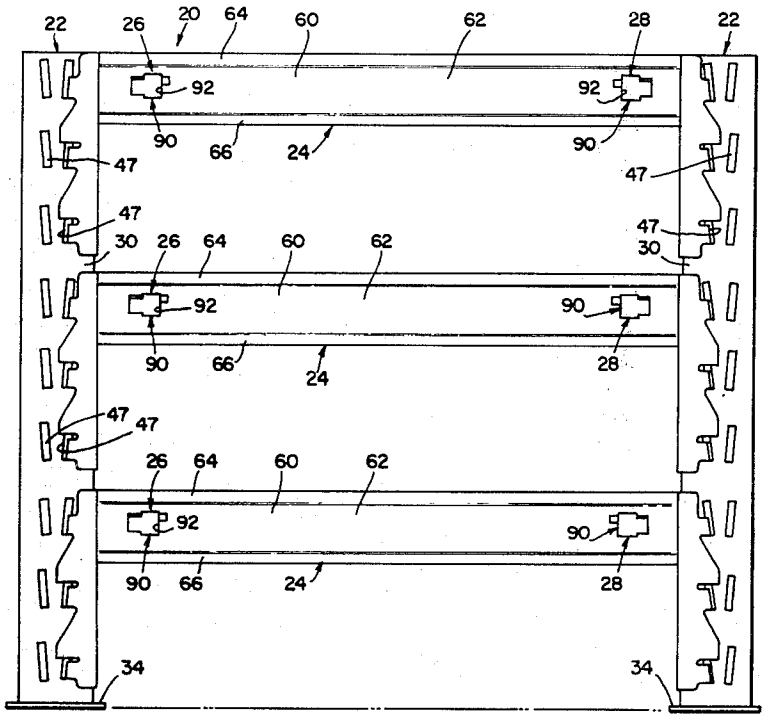


FIG. 1

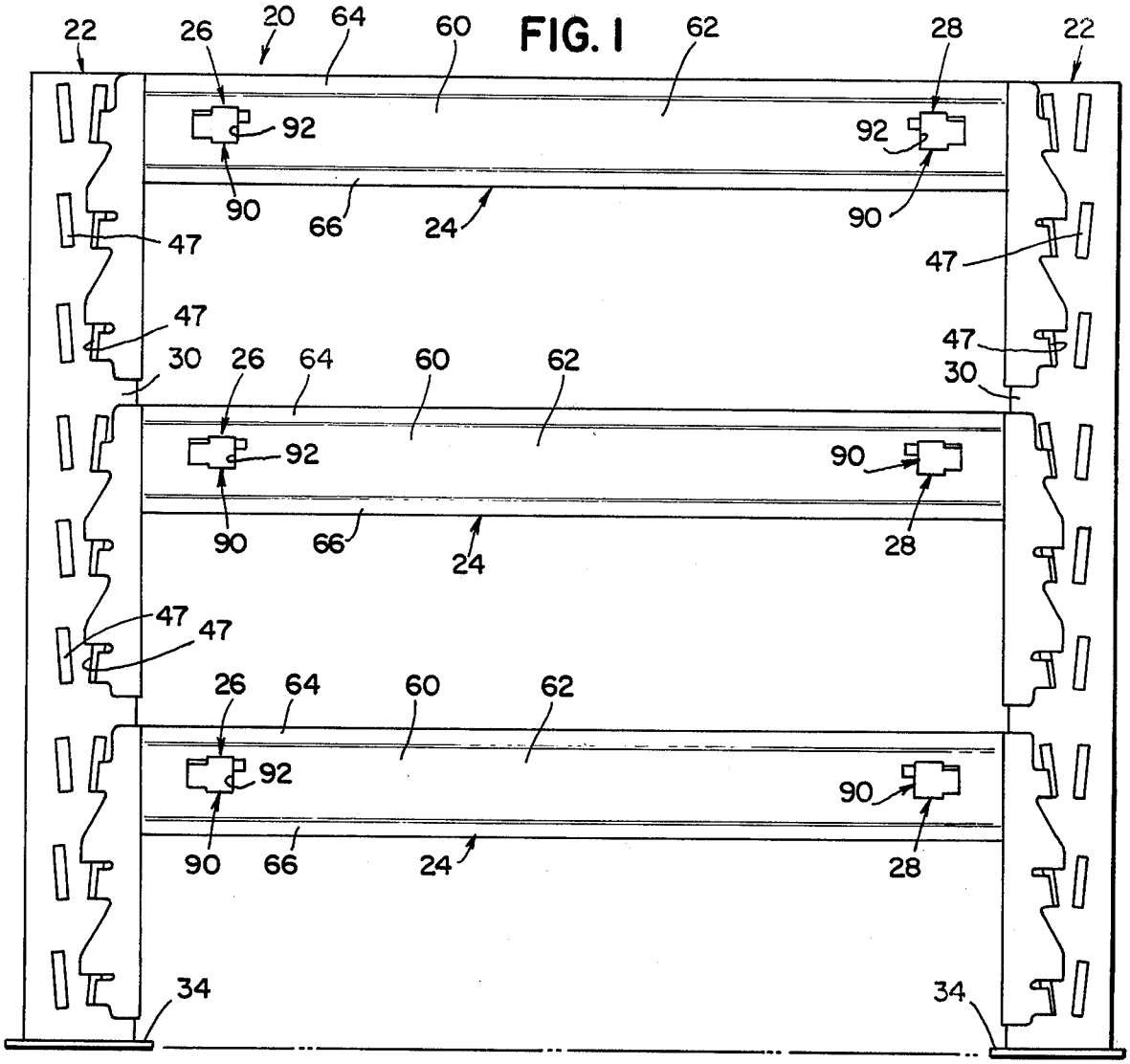

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26
20
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62
30
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FIG. 10

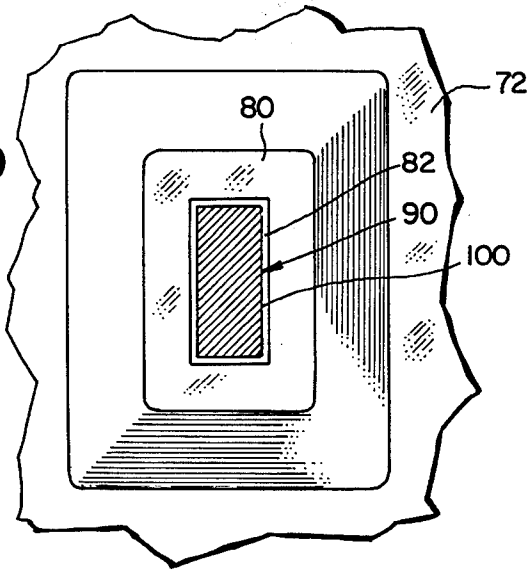

72
80
82
90
100

FIG. 2

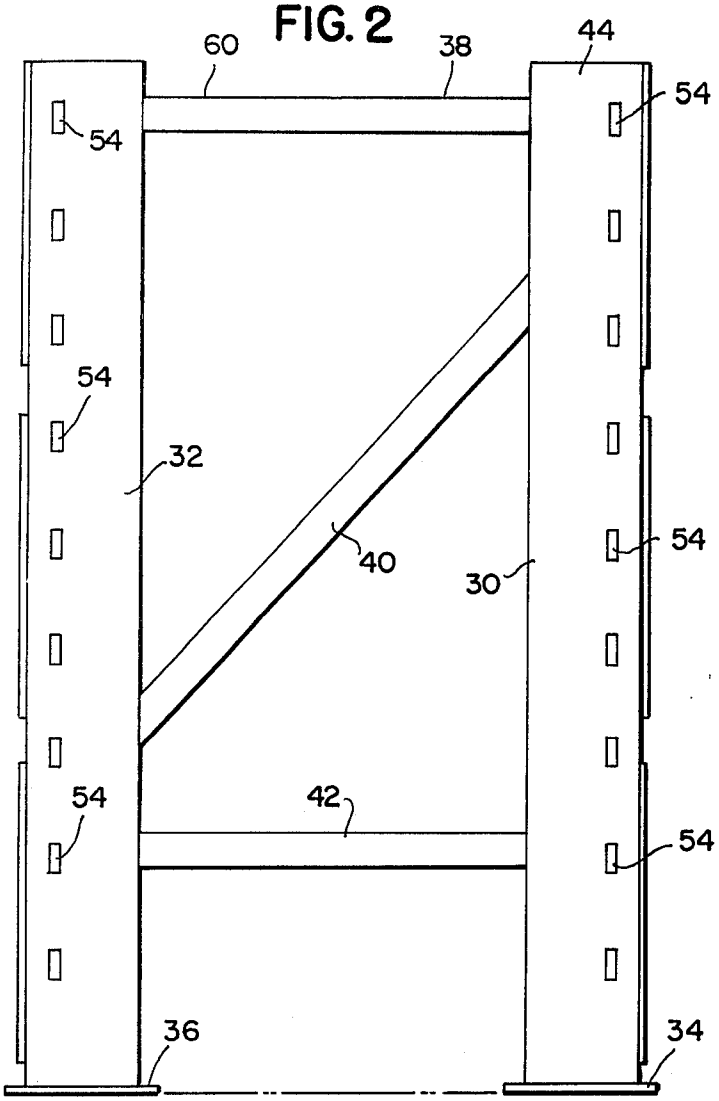


FIG. 9

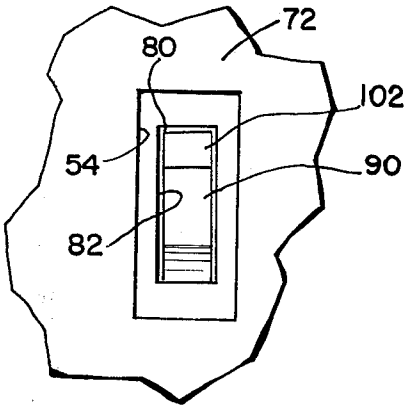


FIG. 13

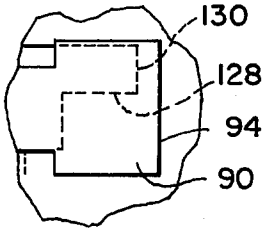


FIG. 11

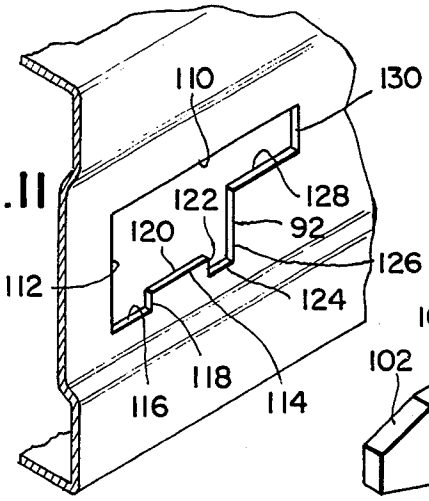


FIG. 12

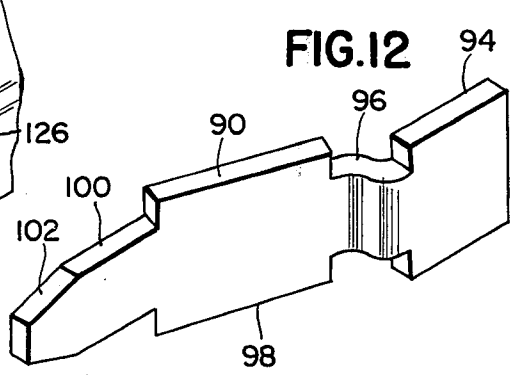


FIG. 5

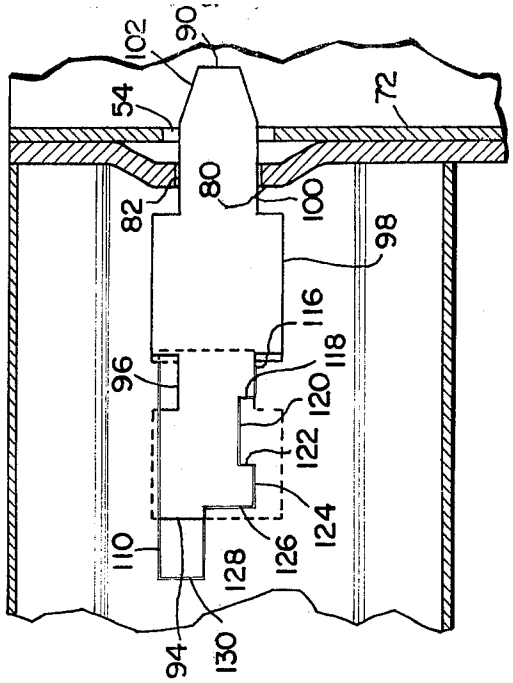


FIG. 3

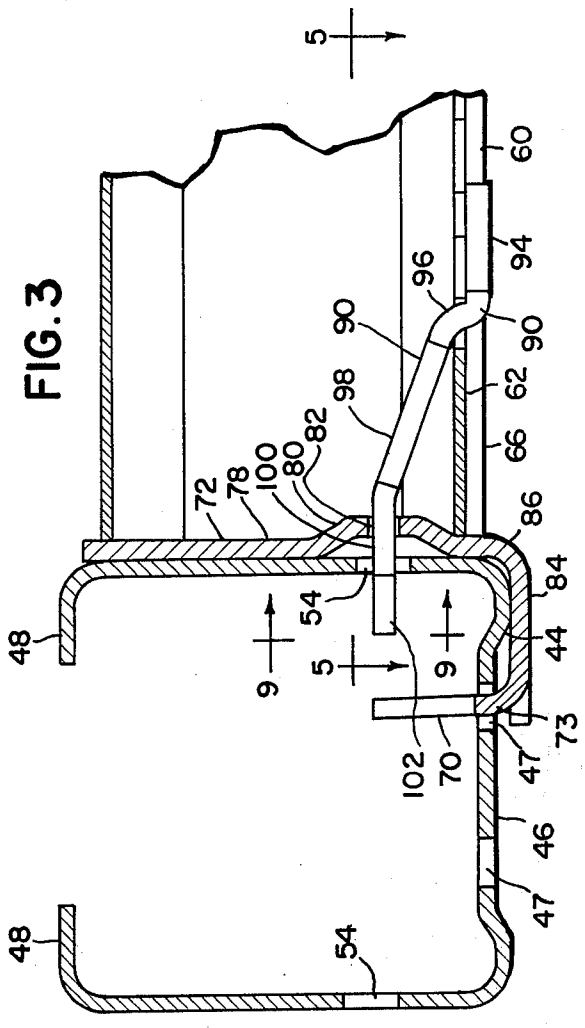
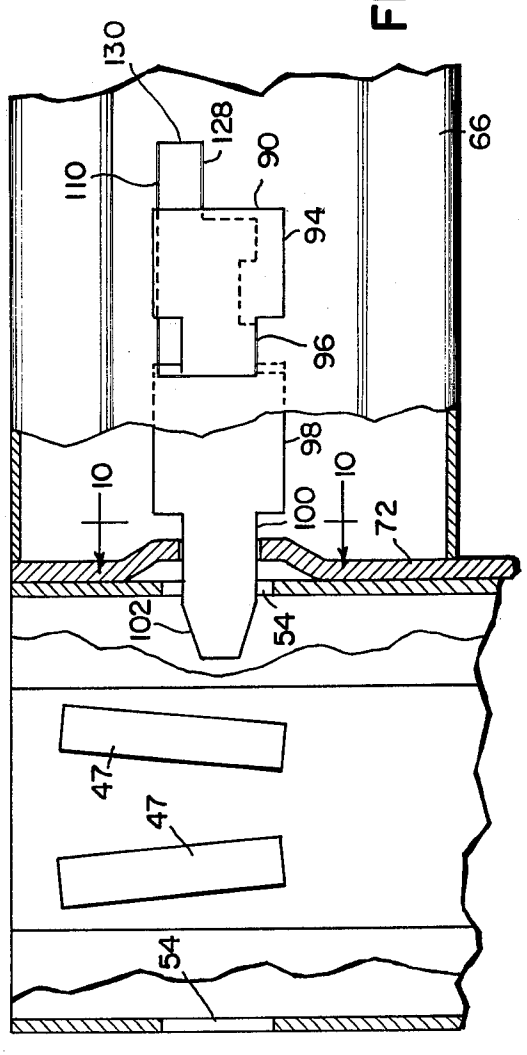
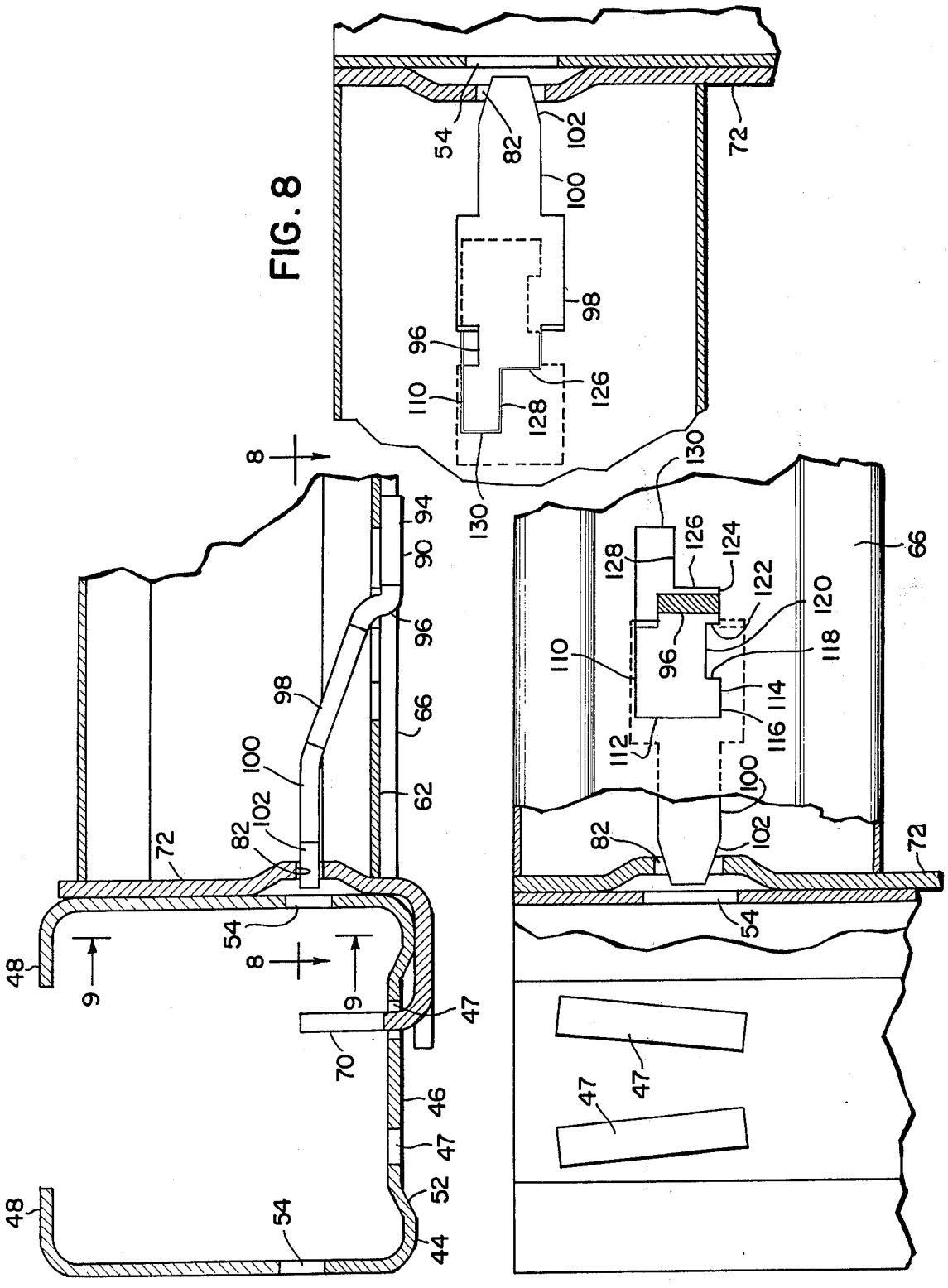


FIG. 4




54
82
102
100
72
98
96
110
128
126
130
8
94
90
66
62
48
9
47
70
46
52
44
124
122
120
118
114
116
112
FIG. 8
FIG. 6
FIG. 7

STORAGE RACK

SUMMARY OF THE INVENTION

This invention relates to rack-type structures for the purpose of storage and the like.

A purpose of the invention is to have such a structure which is especially safe.

A further purpose is to secure this by a structure which is comparatively simple and inexpensive, yet effective.

A further purpose is to minimize any chance of failure to get this as a result of failure to take the simple action required to put the safety measure into effect.

Further purposes will be evident from the remainder of the specification and the claims.

BRIEF DESCRIPTION OF DRAWINGS

The drawings all show one particular embodiment of our invention, chosen from the standpoints of convenience in illustration, effectiveness in operation, and clear demonstration of the principles involved.

FIG. 1 shows a complete rack setup of this embodiment of the invention in front elevation, having in this particular case for simplicity of illustration merely beams at three levels extending between two post setups, and having the beam lock setups all in locked position.

FIG. 2 is a side elevation of FIG. 1, taken from the left side of FIG. 1. All the remaining views are larger in various degrees as compared to FIGS. 1 and 2.

FIG. 3 is a fragmentary horizontal section through one of the beam lock setups and associated beam and post toward the left end of FIG. 1, with the view being in the downward direction from a point immediately above the locking key.

FIG. 4 is a fragmentary front elevation of the same thing as is shown in FIG. 3, broken away to show a partial interior section revealing part of the locking key.

FIG. 5 is a fragmentary section of FIG. 3 along the line 5—5, looking from the interior of the post-and-beam setup toward the front.

FIG. 6 is a fragmentary section corresponding to that of FIG. 3, but with the locking key in unlocked position, whereas in FIG. 3 the key is in the locked position.

FIG. 7 is a fragmentary section of the same thing as shown in FIG. 6, the section looking toward the rear and being mainly from a point just in front of the post and the beam both in its upper and lower face and the depressed intermediate face as well, so that the only thing there sectioned is the neck of the locking key as it comes out of the slot in the front of the beam. However, this Figure includes a portion broken away to show part of the locking key inside the beam and sectioning the beam end and opposed post face.

FIG. 8 is a fragmentary section of FIG. 6 along the line 8—8, looking from the interior of the post-and-beam setup toward the front.

FIG. 9 is a fragmentary interior elevational view taken from more or less along the line 9—9 of FIG. 3, and could about equally well be considered such a view taken from more or less along the line 9—9 of FIG. 6, the view from the point in that direction of the thing seen being the same regardless of which position the locking key is in.

FIG. 10 is a fragmentary section along the line 10—10 of FIG. 4.

FIG. 11 is a fragmentary perspective view of that particular part of the lefward front portion of the beam which includes the opening for the part of the locking key which is away from the beam end, leaving out from this showing the locking key itself, and showing only the front of the beam.

FIG. 12 is a perspective view of the locking key, looked at as a separate element without showing any of the associated beam or post, and FIGS. 11 and 12 may in the overall sense be considered an exploded view in their relation to each other.

FIG. 13 is a fragmentary front elevation of a portion of the leftward front portion of the beam and the locking key associated with it, and more specifically of the far end of that locking key away from the end of the beam, together with the associated portion of the beam.

FURTHER DESCRIPTION

Describing in illustration and not in limitation and referring to the drawings:

In the specific embodiment shown (see FIG. 1) the storage rack **20**, which may of course be merely a particular given section of a larger storage rack, is made up of post setups or upright frames **22**, one at each end, and a number of beams **24** stretching across horizontally between these post setups. Normally there will be two beams, one in front as there visible and one in back (not shown), at each level, and often of course shelves or other suitable structure (not shown) on top of the beams. Each beam, or if not that, then at any rate each of the front beams, will have a safety lock setup at each end, these being opposite counterparts when considered in their relationship to the rack section as a whole, including the beam, and being designated in the Figures as **26** and **28** for the ones shown at the left and right ends respectively.

Each post setup **22**, as shown especially for example in FIG. **2**, will preferably consist of forward vertical member or post **30** and rear vertical member or post **32**, having bearing plates **34** and **36** at their respective feet, and top horizontal tie **38**, intermediate diagonal tie **40** and lower horizontal tie **42** holding together the two vertical members. As shown especially in FIGS. **3** and **6**, the vertical members are preferably more or less box-like in overall cross section, with face **44** on the outer side of the rack being complete though recessed intermediately at **46** throughout the length of the post over a surface constituting the greater part of the total extent of the post face, and with suitable slots **47** through it in this recessed portion. However, on the other hand instead of a continuous face across the entirety of the inner side of the post, there can preferably be mere opposite edge flanges **48**, with an extended gap between, so that the post as a whole is more particularly in the form of a somewhat closed channel. The slots **47** in the front face of the post are at regular intervals in two vertical rows, one toward each side of the recessed portion, with the individual slots preferably not exactly vertical, but slanting toward the center of the face as the slot goes down, the post corners preferably rounded, and the edge lines **52** of the recessed portion of the outer face of the post preferably at a gradual angle. At regular intervals in a vertical row are rectangular openings **54** through the side faces of the posts.

Beam **24**, as shown for example in FIGS. **1**, **3** and **5**, is likewise essentially somewhat box-like in cross sec-

tion, with outer face **60** again substantially complete though recessed intermediately at **62** throughout its length and over a surface constituting a very substantial part of its total extent, the unrecessed portions **64** and **66** which are respectively at the top and bottom edges each having shorter extent toward the midpoint of the face in comparison. It too has certain particular openings in the front face, as will be gone into. It preferably is of the "step-beam" type, - that is, with a step downward in its top face toward the inner edge of that top face to facilitate use of shelves or other attachments on the top.

In each case the beam is supported at both ends by the respective post setups, by means of hooks **70,** forming part of the ends **72** of the beams. The necks **73** of the hooks extend through the nearer ones of the biased slots **47** in the front of vertical members **32** of post setups **30** and the ends of the hooks curve downward in the inside.

More specifically as to the beam, its end piece **72** is mainly a substantially flat piece **78** welded or otherwise suitably affixed to the end of the beam. However, it has in it recessed portion **80** surrounding an opening **82,** and at the outer end has a fastening portion **84** bent around at **86** to a direction more or less parallel to the front face **44** of the post, with a series of hooks **70** extending inward from the end of the parallel portion at different vertical positions in order to fit into different ones of slots **47** and thus support the beam at each end on the respective posts by means of the beam's hooks in the post's slots, as already mentioned.

Locking setup **26** consists of beam lock key **90,** forming a part of the beam which is movable in a limited way relative to the rest of the beam, together with the corresponding parts of the post and the stationary part of the beam.

More specifically beam lock key **90** is a strip of metal whose greater cross sectional dimension or width is in the vertical direction and whose lesser cross sectional direction or thickness is in the horizontal direction. It at all times extends through lock key opening **92** in the outer face of the beam near the beam end and also extends at least into opening **82** in the end piece **72** of the beam, and thus is held in the beam, there being such a beam lock key and cooperating portions of the rest of the setup at each end of the beam.

Describing the beam lock key starting at its end away from the beam end, first there is flat rectangular outside tab or plate **94,** which is at all times outside of and parallel to the recessed portion of the beam's outer face. Next is constricted bent neck **96,** which extends slantingly back through lock key opening **92** in the beam's outer face, flat rectangular plate **98** going slantingly back in toward the opening in the end plate, and end portion **100,** which is more or less perpendicular to that end plate and starts out rectangular but reduced in dimension as compared to rectangular plate **98,** and then tapers down toward the end of the key in its endmost portion **102,** which at least extends into, or may go beyond, opening **82** in beam end piece **72.** Its exact relative location depends on the position of the beam lock key, as will be gone into.

Beam lock key opening **92** in the outer face of the beam has a straight horizontal top **110** and straight end **112** down from that at the end toward the beam end, but a serrated bottom **114.** More specifically, describing the bottom starting with the end toward the beam end and going away from that end, first it proceeds horizontally at **116.** Then it has a comparatively small step upward at **118,** then proceeds horizontally again at **120,** then has a comparatively small step downward back to its former level at **122,** then proceeds horizontally again at **124,** then has a comparatively large step upward at **126,** then proceeds horizontally again at **128** to the far end **130** of the opening, which far end is vertical.

As already indicated, beam lock key **90** extends through the opening in the front of the beam and at least into the opening in the end piece of the beam, being thus held in the beam. This can be done by simply bringing it into place relative to the beam before the end piece of the beam is attached, by passing a plate of the strip-form key through the opening when the plate has its greatest cross-sectional dimension horizontal, and then turning the strip so that its greatest cross-sectional dimension is vertical and inserting the tapered end of the strip at least into the opening in the end piece when the end piece is brought up to be welded or otherwise attached, the recessed position of that opening in the end piece making such preinsertion before final positioning especially convenient. Thus of course the welded assembly of beam and end piece will have the key in place. Once in, the cooperation between end portion **100** of key **90** and opening **82** maintains the key with its greatest cross-sectional dimension in substantially vertical position, and plates **98** and **94** maintain the key in its overall general position relative to openings **82** and **92,** the vertical dimensions of those plates being greater than those of the openings.

When in place, the beam lock key has two end positions, one with its neck **96** against end wall **112** of opening **92** and its bottom resting on the one bottom surface **116** of that opening, and the other with its neck against vertical edge **126** and its bottom resting on the other bottom surface **124.** In operation as a practical matter, the key will be positioned resting somewhere on one or other of these bottom surfaces, kept from moving across from one to another by the nearer upstanding intermediate wall, **118** or **122** respectively, and the sharp angle which it makes with the bottom surface, so that in substance it will be affirmatively fixed in that position for as long as desired, free of any possibility of being swept across to the other abovementioned position by a horizontal or indeed almost any other substantial unidirectional force. This enormously reduces any possbility of accidental displacement, although of course if it is affirmatively desired to change its position, it can readily be lifted and then moved across while held at a higher level.

In one of the above general positions in operation, the one where the neck **96** is lying somewhere on the bottom surface **124,** the neck will thus be lying in the bottom portion of the lock opening which is further from the beam end, and the tapered end of the key will be short of the opening **54** in the post, leaving the beam free to be assembled to and disassembled from the post, as may be desired in setting up or taking down the rack, or altering its particular form. In this position, the tab extends beyond in front of the end of the finger-like extension of the front opening in the beam and covers and hides that end and indeed just about all of that finger-like extension, thus making it evident that the beam lock key is in the unlocked position.

In the other position of the key, its neck is in the bottom surface of the opening which is nearer the end of the beam and its tapered end extends through the opening **82** in the beam end and at least into opening **54** in the adjacent side face of the post, the overall construction including the location of the openings being such that opening **82** is in registry with opening **54** when the beam is in place on the post. When the beam lock key is in this position with its tapered end at least into the hole in the post, the beam and post are locked together, free of any danger of accidental dislodgment of the beam, as for example by misapplication of the forks of a fork lift truck. In this position, the end tab on the key in front of the beam is short of the finger-like extension of the hole, leaving that hole extension visible in a way to at once make clear that the key is in locked position.

In either position of the key, the rest of the strip-form key aside from the tab is in or immediately behind the rest of the opening in the front of the beam aside from what the tab covers or leaves uncovered.

Thus there is in the front of the frontmost beam one of two conditions - either (1) one in which the whole opening appears pretty well covered by strip in front or in back of it or (2) one in which the finger-like extension of the opening appears totally uncovered; and anyone who has to deal with the storage rack has it called to his attention at once if the beam is not locked in place when the rack is in place. In other words, it is very visible and apparent without need of reflection whether the beam is in the locked or unlocked condition as to each post.

Furthermore, this is done by a tab which, located in the recessed portion of the beam face as it is, is especially unlikely itself to be accidentally dislodged, and thus the security of positioning of the key is promoted. The recessed front portion of the beam is also a good place for any labels, etc. since they are especially unlikely to be accidentally scraped off by the forks of a fork lift truck, for example.

All this as to the locking is very important, since if, for example, a fork lift truck on an upward lift should accidentally hit an unlocked beam from below and dislodge that beam, causing it to part from the post and fall, material in storage which is resting on the beam or shelf could slide down onto the operator of the fork lift truck, seriously injuring or killing him.

Rectangular opening **82** in end piece **78** of the beam has its greater dimension in the vertical direction, as does correspondingly placed rectangular opening **54** in the adjacent side face of the post, which is substantially larger than it.

Furthermore, the construction of the beam and post is such that the openings are positioned so that there never is any problem about getting the key into opening **54**, but that end of the key always fits loosely, with plenty of play, in opening **54** when extending into that opening. Thus the movable key never has any part of the support function for the beam, but that is entirely served by the hooks that extend into the front of the post. This enables the designer to take into consideration the absence of support function in the key in designing the structure relative thereto, with possible economy as a result.

This condition of free play in the key and avoiding any support function in it can be insured, for example, by having the construction such that when the beam and post are joined together, with necks **73** of hooks **70** resting in slots **47** in the post front, and openings **54** and **82** substantially in registry with each other and the beam lock key in locking position, either (1) the key will not be itself supported by the post but by the beam, as where for example the end portion of the key is not even in contact with opening **54** in the post, or (2) at any rate if itself supported by the post the key does not itself in turn support the rest of the beam, as would certainly normally at any rate be the case for example where the key is not even in contact with opening **82** in the end of the beam, or its contact does not include any contact between it and the top of that opening nor any friction fit in the opening sides.

In view of our invention and disclosure, variations and modifications to meet individual whim or particular need will doubtless become evident to others skilled in the art, to obtain all or part of the benefits of our invention without copying the structure shown, and we therefore claim all such insofar as they fall within the reasonable spirit and scope of our claims.

Having thus described our invention what we claim and desire to secure by Letters Patent is:

1. A storage rack comprising (a) a post having a side face, (b) a beam in the front of the rack which beam is supported by the post, said beam having a front face in which there is an opening in the portion thereof toward the post, which opening has ends at different distances from the post and has a lower edge including two separate lower portions at different distances from the post, which lower portions form sharp angles with the vertical edges of an intermediate higher portion separating them, and said opening extending a substantial amount away from the post beyond the further away of the two lower portions to form an extended end portion having a bottom edge located above the lower edge of the two separate lower portions, (c) the beam including a portion adjacent to the side face of the post, and the adjacent portions of the beam and the side face of the post each having an aperture therein, and (d) a beam lock key including a portion extending in front of the beam, a portion extending through the opening in the front of the beam and a portion further back than the opening and extending from that opening at least into the aperture in the beam, the portion in front of the beam extending substantially further away from the post than the portion of the key which passes through the opening in the front of the beam, (e) the key having one position in which the portion of the key passing through the opening in the front of the beam rests in the one of the two lower portions of the lower edge of the opening which is further from the post, the portion of the key in front of the beam is in front of and substantially hides said extended end portion of the opening and the portion of the key further back than the opening stops short of the aperture in the post, and does not lack the beam against substantial upward movement relative to the post which would create a danger of displacement of the beam or its load, and the key having another position in which the portion of the key that extends through the opening in the front of the beam rests in the other of the two lower portions of its lower edge, the portion of the key in front of the beam stops substantially short of said extended end portion, and leaves said extended end portion well visible, and the portion of the key further back than the opening extends through the apertures in the post and the beam and locks the beam against substantial upward move-

ment relative to the post which would create a danger of displacement of the beam or its load, the key being in the form of an elongated strip of material having throughout its length a thickness dimension which is less than the distance between the intermediate higher portion of the lower edge and the upper edge of the opening, and having a longitudinally intermediate portion which has a width dimension less than the distance between the upper edge and the lower portions of the lower edge of the opening and having portions respectively positioned longitudinally in each direction from said longitudinally intermediate portion which each have a width dimension greater than the distance between the upper edge and the lower portions of the lower edge of the opening.

2. A storage rack of claim 1 in which the key is in the form of a strip having its greater cross sectional dimension in the upright direction.

3. A storage rack of claim 1, in which the beam is supported by the post by means of structure from the beam extending into the front of the post and requiring upward movement for removal from the position in which the support is effected.

4. A rack setup comprising (a) two upright posts spaced from each other and having upright walls approximately facing one another, which walls are hereinafter called the side walls, and upright walls approximately facing in a direction from which access will be normally had to the rack setup and which direction they are facing is hereinafter called the front, (b) at least one approximately horizontal beam extending between the posts, with posts and beam having cooperating means to support the beam from the posts, the beam having a face toward the front and the vertically intermediate part of that front beam face being recessed so as to be substantially behind the top and bottom of that front face, said recessed portion of that beam front face having walls forming a hole toward each end of the beam, said hole extending in an approximately horizontal direction and having a portion in a direction toward the end of the beam and a portion located in a direction away from the end of the beam where it is substantially lower than in an intermediate portion between them, the hole bottom between these two lower portions and the intermediate higher portion extending in sharply upstanding direction between the respective levels, and the hole having a further portion in the direction away from the beam end relative to all the foregoing bottom portions whose bottom is again higher after another sharply upstanding step upward, said beam having upstanding end walls facing the side walls of the posts, each of which upstanding end walls of the beam extends inward of the end face in an intermediate area to form an inward protuberance which includes a hole, (c) the adjacent side wall of the post in each case having a hole in approximate registry with the corresponding end wall hole in the beam, (d) and strip members each extending through a different pair of beam holes mentioned above, the holes in each pair being in each case one an end wall hole and the other the beam front wall hole toward that end, the strip being in each case in the form of a strip whose approximate longitudinal dimension is through the respective holes, whose greater cross-sectional dimension is approximately vertical and whose lesser cross-sectional direction is approximately horizontal, and which, starting the enumeration away from the beam end through which it extends, includes a head planar member located in front of the recessed portion of the beam and approximately parallel thereto and of a size when in an appropriate position to substantially cover the further portion of the hole above mentioned, a neck extending through the hole in the front face of the beam and having a bottom edge higher than the bottom edge of the head portion and the connecting planar member of bottom edge between them being sharply upstanding, an intermediate planar portion having a bottom edge below that of the neck with another sharply upstanding edge portion between them, and a locking end at least the end portion of which is tapered to reduce its vertical cross-section toward its end, which locking end extends through the hole in the end face of the beam, (e) each strip having two positions, a locking and a non-locking one, fixed by the neck's position being in one or the the other of the bottommost portions of the hole in the front of the beam, the locking position being the one where the neck is in the bottommost portion of that hole which is nearer the end of the beam and the strip in such position also extending at least into the hole in the side face of the post and the head end of the strip being toward the beam end of at least a substantial part of the further portion of the hole in the front of the beam and leaving at least that part of it uncovered and readily visible from the front as a hole entirely clear from the strip, and the non-locking position being one where the neck is in the bottommost position of the front of the beam which is further from the end of the beam and the locking end of the strip in such position being entirely short of the hole in the side face of the post and the strip in its various portions including especially the two planar portions, together with the neck, being such as to be in front of or visible a limited distance behind the hole in the front of the beam substantially throughout the entire extent of that hole.

5. A storage rack comprising (a) a plurality of upright posts in pairs, each post of a pair connected to the other by braces, (b) horizontal beams extending between corresponding posts in adjacent pairs and having support members at each end connecting them for the beam's support to the respective posts, the direction in each post away the other post of the pair and the direction in each beam away from the beam between the other posts of two pairs being designated as the outward direction, each beam having an outward face recessed inwardly, the recessed portion of the outward face having two extended holes, one near each end of the beam, these holes each having a bottom which is relatively low for a stretch nearest the end of the beam, then enumerating in the direction away from that end, an upward step and a relatively high portion for a stretch, a downward step with a relatively low portion thereafter for a stretch, and then an upward step with a relatively high portion thereafter for a stretch and each beam having end faces recessed in a direction toward the opposite end face and having a vertical slot-type hole in each recess, the posts each having adjacent the end faces a vertical slot-type hole in a position approximately corresponding to that in the end face nearby, (c) strip members each held in the beam in limitedly movable positions respectively near each beam end, with each strip member having a sharply constricted neck positioned longitudinally between two larger portions, with the greater cross-sectional dimension of each strip member being upright and each strip

member having an end outside the beam in the vicinity of the hole in the recessed face of the beam, its neck passing through that hole and its other end extending at least into the hole in the end of the beam, each strip member having one position in which that other end extends through that recessed hole in the beam end and at least into the corresponding hole in the post, the neck rests in the lower portion of the beam's outside hole which is nearer the beam end and the end of the strip away from the beam end leaves the end of that hole away from the beam end uncovered, and another position in which the end of the strip toward the beam end does not extend into the hole in the post but clears from the post, the neck of the strip is in the lower portion of the hole in the recessed outer face of the beam which is further from the end of the beam and the end of the strip away from the end of the beam covers the end of that hole away from the beam, with the rest of the strip in front and in back and through that hole substantially completely obscuring the view through that hole, and the strip and end holes in post and beam having relative dimensions and positions preventing the strip from carrying out any support function for the beam as far as the beam's support by the post is concerned.

6. A storage rack comprising (a) a post setup including a side face, (b) a beam at least partly supported by the post setup, which beam has an outside face visible from the front, part of which face is recessed relative to the rest, and an end face adjacent the side face of the post setup a portion of which end face is recessed in a direction toward the opposite end face, and (c) a safety lock means to keep the beam on the post setup and forming no part of the way by which the beam is at least partly supported by the post setup, which safety lock means includes (1) an opening in the recessed part of the outside face near the end of the beam toward the post setup, which opening has a bottom which when described in a direction starting from that end starts horizontally at a relatively low point, then has a step upward to a horizontal higher portion, then a step downward to a horizontal relatively low portion, and then a step upward to a horizontal portion higher than any before, (2) a rectangular opening in the recessed portion of the end face of the beam, (3) a rectangular opening in the side face of the post setup which opening is larger than that in the end face of the beam and registers with it, and (4) a strip-shaped key extending longitudinally from an end immediately in front of the recessed part of the visible outside face of the beam through the opening in that outside face and at least into the opening in the end face of the beam, the key having its larger cross-sectional dimension vertical and its smaller cross-sectional dimension horizontal and including, when described starting at the end away from the beam end and proceeding in the direction toward it, first a flat plate parallel to and outside the outside face but at least mainly included in its recess, which plate is large enough when in proper position to substantially cover the whole end of the outside face opening which is above the highest horizontal bottom portion of that opening, then a neck having a bottom higher than the plate which neck extends through the outside face opening, then another plate and finally a portion whose top and bottom edges taper toward each other near that end of the key, the key having a locking position in which its neck is resting in the low bottom portion of the outside face opening which is nearer the beam end face, its tapered end extends at least into the side face opening of the post setup, and the key's plate at the other end leaves at least an extended portion of that other end of the outer face opening visible, and the key having an unlocked position in which the neck of the key is resting in the other low bottom portion of the outside face opening, its tapered end terminates short of the side face opening of the post setup, and its plate at the other end substantially covers and obscures the part of the end of the outer face opening which is above that opening's highest bottom edge.

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