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Trowbridge

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[54] **QUICK RELEASE AND ADJUSTABLE PICTURE FRAME CLAMP**

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[52] **U.S. Cl.** **40/155,** 40/209

[51] **Int. Cl.** **G09f 1/12**

[58] **Field of Search** ..... 40/209, 155, 152.1; 248/488, 490; 24/274 P, 68 SK

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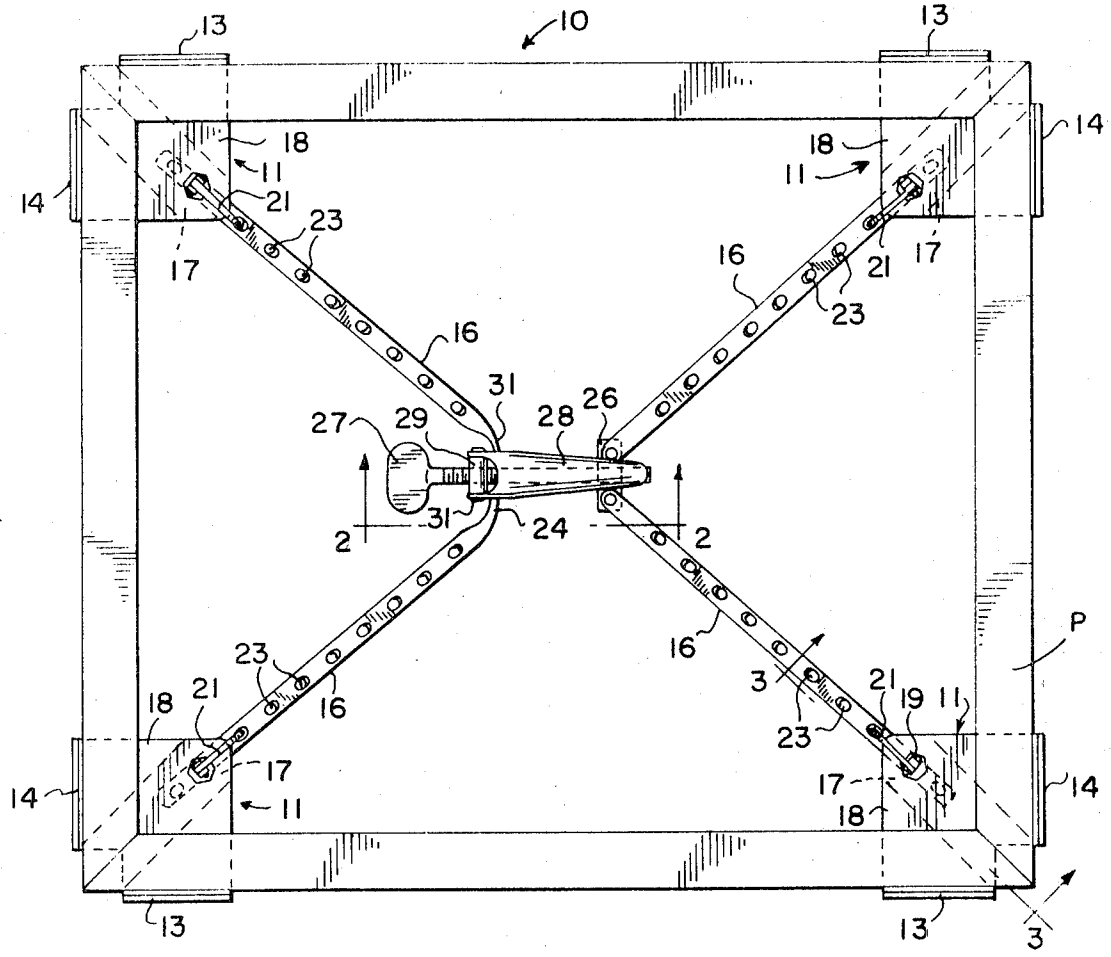
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[57] **ABSTRACT**

A picture frame clamp having four corner brackets for holding the respective corners at a right angular relationship. The four corner brackets are four diagonally extending strap lengths which are connected adjacent the intersecting ends thereof by a toggle type clamp to firmly clamp the corners together in a right angular relationship.

The straps are connected to the corners so as to be capable of varying the length thereof to the clamp at the intersection thereby to permit the clamp to be adaptable for use for different size picture frames.

6 Claims, 6 Drawing Figures



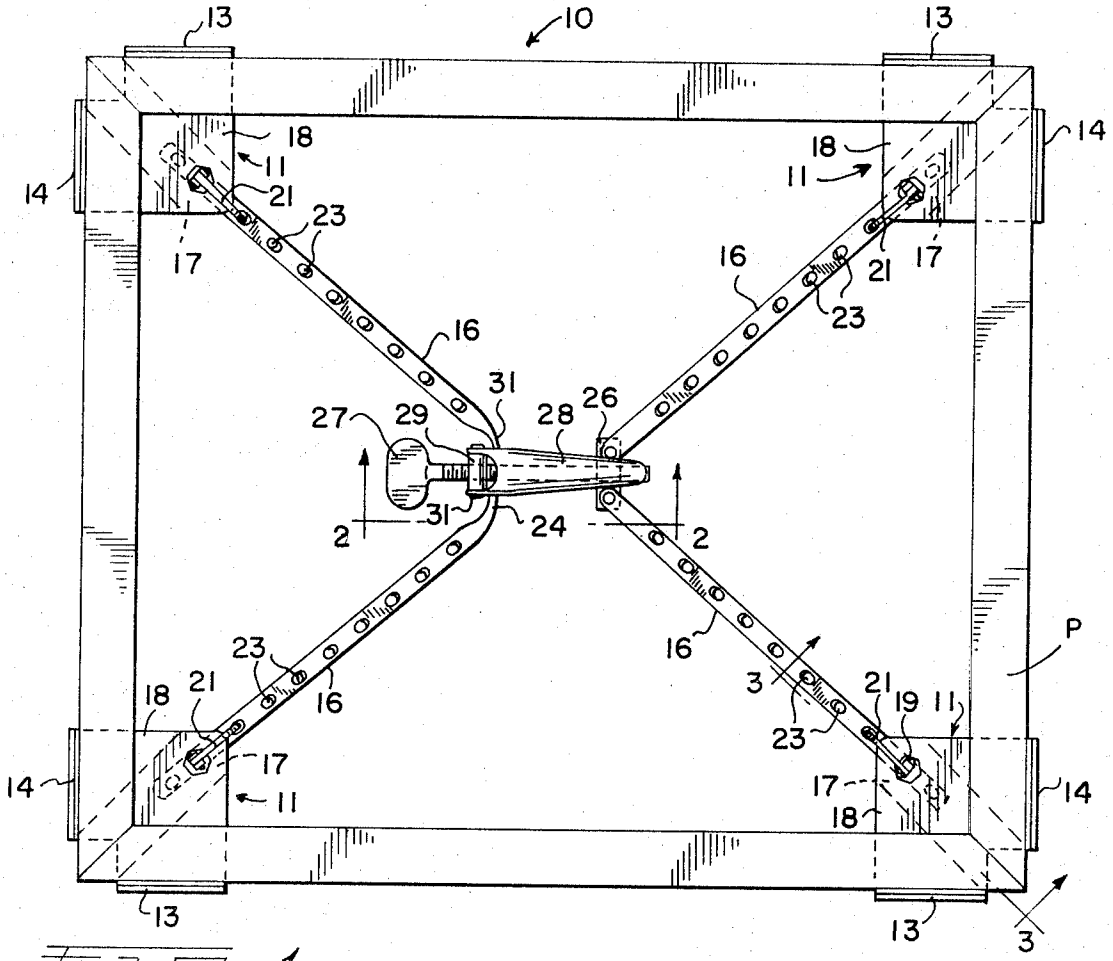


FIG. 1

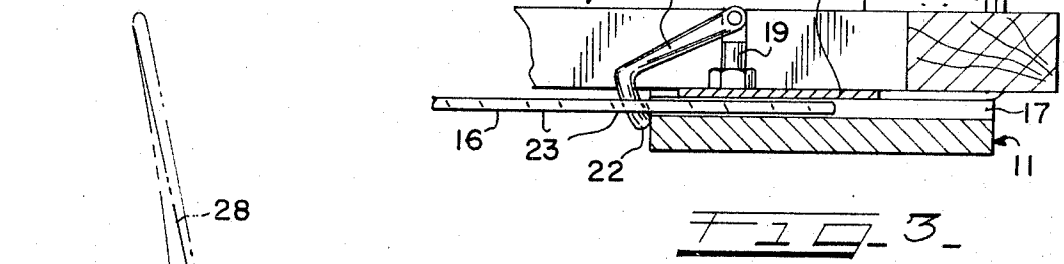
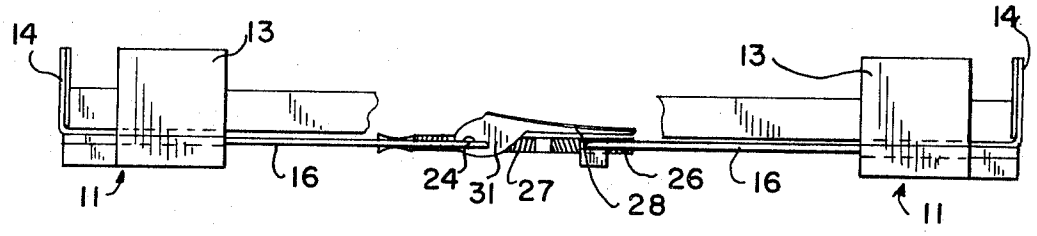


FIG. 3

FIG. 2

FIG. 4



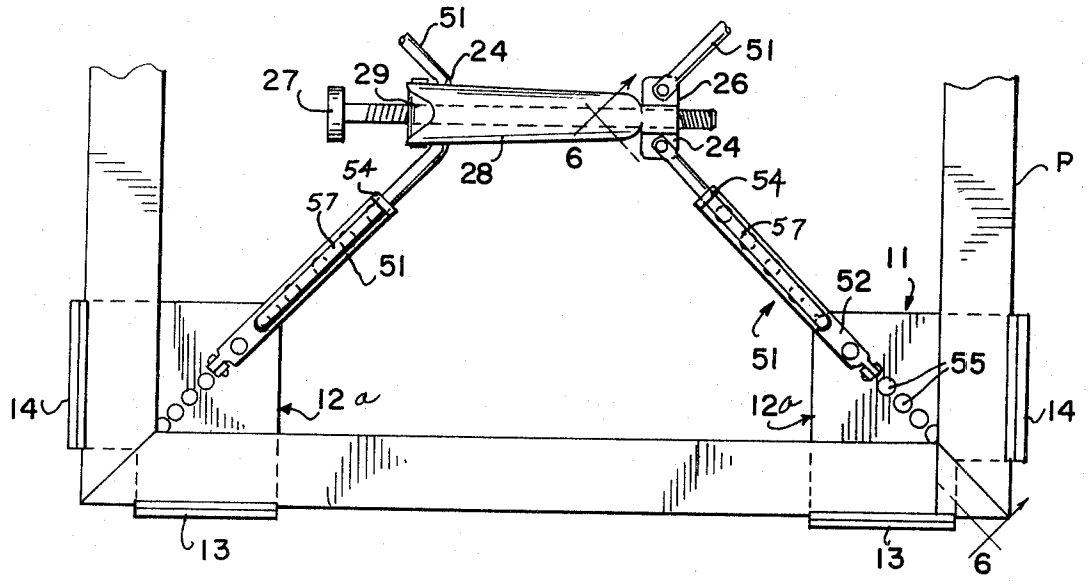


FIG. 5

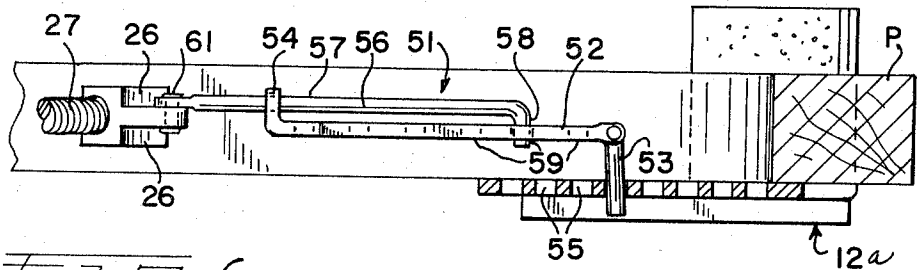


FIG. 6

QUICK RELEASE AND ADJUSTABLE PICTURE FRAME CLAMP

BACKGROUND AND SUMMARY OF THE INVENTION

The present invention relates to clamps or fixtures for clamping and assembling a picture frame in a manner such that the corners are held in a true right angular relationship.

Briefly the picture frame fixture of the present invention comprises generally four brackets each having right angular walls which engage the right angular walls forming the corners of the picture frame. A length of strap extends diagonally from each of the corner brackets and is connected thereto. Each of the straps is adjustable relative to its respective bracket so as to permit the clamp to be used for different size picture frames. A quick release toggle clamp is connected to the inner ends of each of the strap lengths so as to tightly and quickly clamp the corners.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a top plan view of a picture frame clamp embodying the structure of the present invention.

FIG. **2** is a cross sectional view taken generally along the lines **2—2** of FIG. **2** showing the toggle lock linkage.

FIG. **3** is a cross sectional view taken generally along the lines **3—3** of FIG. **1** showing the typical connection of the strap means at each of the corner brackets.

FIG. **4** is an end view of the fixture.

FIG. **5** is a fragmentary top plan view of another embodiment of picture frame clamp embodying the present invention.

FIG. **6** is a cross sectional view taken generally along the lines **6—6** of FIG. **5.**

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to FIGS. **1–4** there is shown one embodiment of a picture frame clamp **10** incorporating the structure of the present invention.

The clamp **10** includes four corner brackets **11** of identical construction.

The brackets **11** each include a generally rectangular base **12** along two of the outer sides of which projects a pair of walls **13** and **14** which are disposed at right angles. The walls **13** and **14** serve to maintain the corners of a picture frame P in right angular relationship as shown.

One end of a diagonally extending strap length **16** is disposed in a diagonally extending slot or groove **17.** Disposed over the slot **17** and fixed to the base **12** is a plate **18.** A pivot stud **19** is threaded or otherwise suitably fixed to the plate **18.** A hook **21** is pivotally connected to the stud **19** and a hooked end **22** thereof is received in one of a plurality of lengthwise spaced openings **23** provided in the strap length **16.** Upon lifting of the hook **21** about the pivot stud **19** the hooked end **22** is disengaged from the opening **23** so that the strap length is freely slidable within the groove **17.** This permits the length of the strap lengths **16** to be varied so that different size picture frames may be assembled.

In the embodiment shown the four strap lengths **16** are arranged in two pairs, of which one pair is connected at the inner ends by a bight **24** and the other pair by a block **26.**

An adjustment bolt **27** passes beneath the bight **24** and is threaded into the block **26.** A toggle clamp **28** is pivotally connected to a pivot block **29** threaded to an oppositely threaded end of the adjustment bolt **27.** The clamp **28** has a pair of depending arms **31** through which the bight **24** extends. Lifting of the clamp **28** about the pivot block **29** allows the oppositely disposed pairs of strap lengths to be moved outwardly relative to each other so that the picture frame P may be released or removed from clamp **10.** When the clamp **28** is depressed the bight **24** and the block **26** are drawn toward each other so that the corner brackets **11** are drawn into clamped engagment with the corners of the picture frame and thereby retain the corners at a true right angle. Thereafter the frame corners may be glued or otherwise fixed relative to each other.

Referring to FIGS. **5** and **6** there is shown another embodiment of a strap length **51** for varying the length thereof when attached to the corner brackets **12***a*. The strap lengths **51** each include a Z-shaped length **52** having a hooked end **53** seatable in a selective one of a plurality of diagonally disposed openings **55.** The other end **54** is formed with an opening which slidably receives a straight run **56** of an L-shaped length **57.** The hooked end **58** of the length **57** is seatable in a selective one of openings **59** formed in run **61** of the Z length **52.** The other end of the length **57** is connected to the block **26** in a pin **61.** Thus by selectively locating the hooked end **53** in an opening **55** and the hooked end **58** in an opening **59,** the length of the strap **51** may be varied to accommodate different picture frame sizes.

In all other respects the structure of the picture frame clamp is similar to that described in connection with the embodiment of FIGS. **1–4.**

What is claimed is:

1. A picture frame clamp comprising four corner brackets having wall means for engaging the four corners of a picture frame so as to maintain the corners at right angles relative to each other, diagonally extending strap means attached to each of said corners, a bight connecting two of said strap means, threaded block means connecting the two remaining ones of said strap means, and toggle clamp means connecting said bight and said block for moving said corner brackets toward each other to clamp the corners of a picture frame, and away from each other to release the picture frame.

2. The invention as defined in claim **1** wherein said toggle clamp means comprises a bolt threaded at one end into said block, and a clamp handle pivotally mounted adjacent the other end of said bolt, said clamp handle embracing said bight so that turning movement of said clamp handle about its pivot causes the bight to be moved toward or away from said threaded block.

3. The invention as defined in claim **2** wherein said strap means are of adjustable length relative to said corner brackets.

4. The invention as defined in claim **3** wherein said corner brackets each include a diagonally disposed spaced opening and said strap means includes telescoping lengths of which one length is fixed to said bight or said bracket and the other length is formed with a hook engageable within a selective one of said openings in said corner brackets, and wherein the said one of said lengths of said strap means is provided with a hooked end which is selectively positionable in one of a plural-

ity of openings provided in the other of said lengths of said strap means.

5. The invention as defined in claim **2** wherein said clamp handle is mounted on pivot support means threaded on said bolt to a thread of opposite hand from the thread entering said block means.

6. The invention as defined in claim **5** wherein said

corner blocks include a diagonally disposed slot for guiding said strap and wherein said strap means includes a plurality of spaced openings, and hook means mounted on said bracket engageable with a selective one of said openings to vary the length of the strap means.

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