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Stegmuller

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[54] **METHOD AND DEVICE FOR STRAIGHTENING BEAMS**

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[51] **Int. Cl.**.....**B27**

[58] **Field of Search**.....144/309 B, 320; 269/108; 24/286, 123 C, 131 C; 29/559; 52/514

[56] **References Cited**

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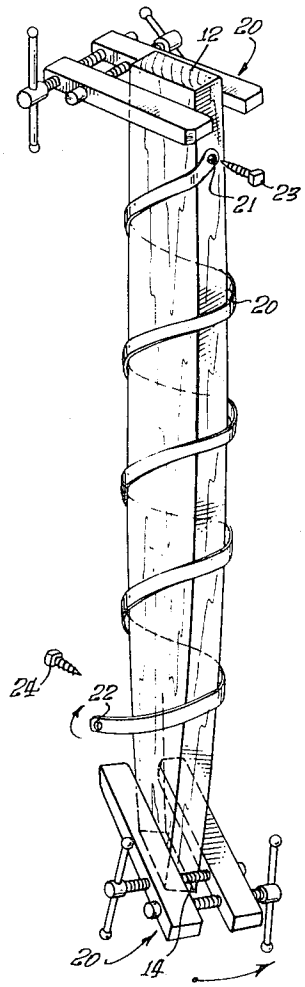
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[57] **ABSTRACT**

This invention relates to a method and device for straightening twisted wooden beams and the like and involves the use of clamping and twisting devices to straighten said beam together with a wrapped tensioning guy attached adjacent to each end of the straightened beam to hold the same in a tense position.

3 Claims, 3 Drawing Figures



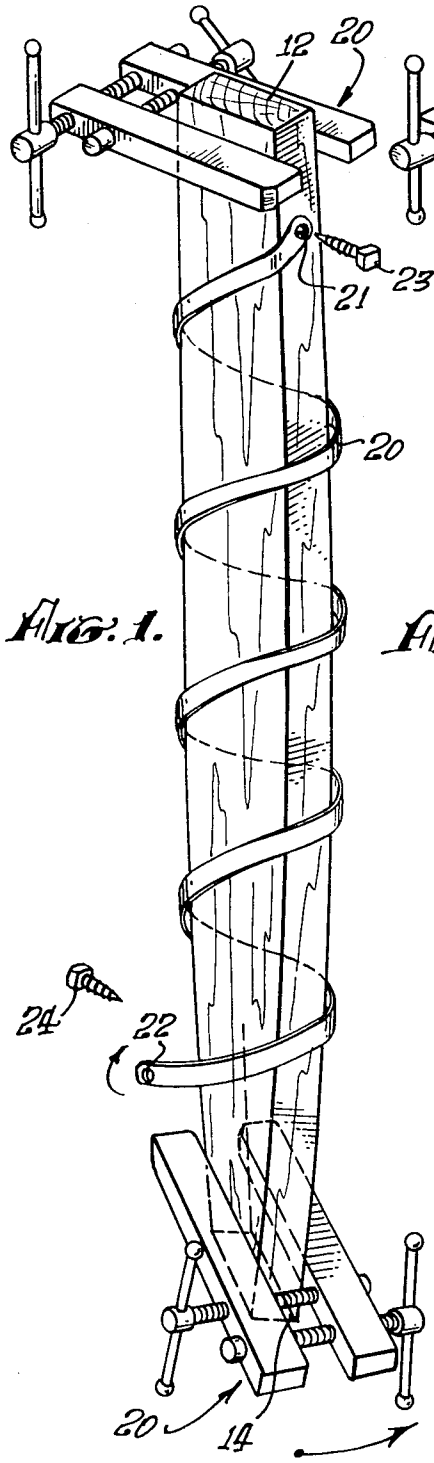


FIG. 1.

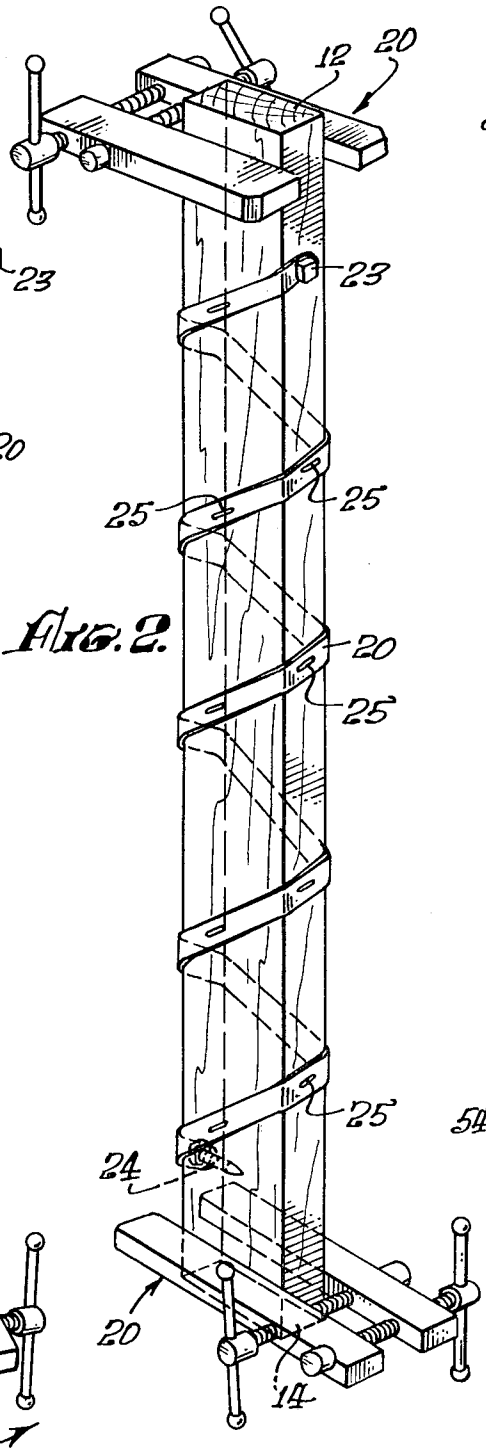
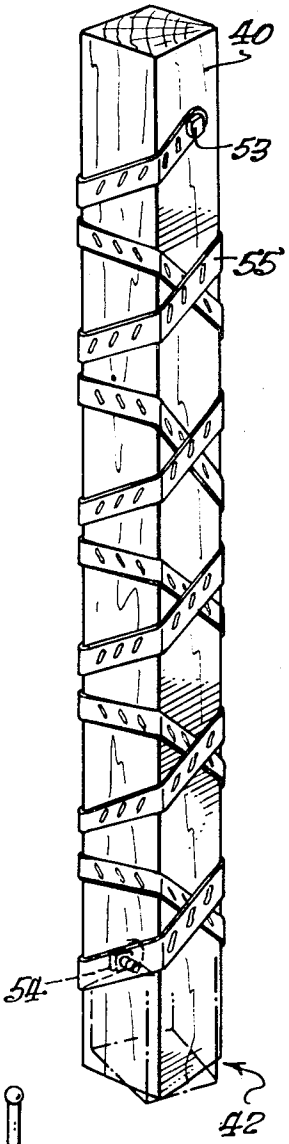


FIG. 2.

FIG. 3.



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METHOD AND DEVICE FOR STRAIGHTENING BEAMS

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to the field of wooden beams and particularly to a means and device for straightening such wooden beams when they have been warped and holding the same in a straightened position.

Description of the Prior Art

There is no prior art known accomplishing the straightening of beams by a purely mechanical arrangement which thereafter holds the beam under its own tensile forces. There have been attempts to straighten beams by a means of steaming and other similar methods, but nothing comparable to the within invention which does not require such facilities.

SUMMARY OF THE INVENTION

Wooden planks and beams are used extensively in the construction industry. All sizes such as the very commonly used "2 × 4" and the like are used in great quantity in the construction of most housing and for many other purposes.

Wood is well known as an excellent building material and is most suitable for all types of construction and structures. Wood has unusual qualities of strength, durability, ease of handling and the like, but it does have a characteristic fault in that frequently due to climatic conditions or the like, wood beams will become warped or twisted.

When wooden beams are warped or twisted they frequently become unusable resulting in great waste, or they are difficult to use and require unusual handling and placement.

In the past there have been attempts to straighten wooden beams by steaming and placing the same in presses until they are thoroughly cured in a straightened position and other such methods.

All of the methods tried require unusually difficult equipment and expensive operations.

I have devised a method and means for straightening wooden beams without the requirement for complex and expensive equipment. Basically my method consists of twisting the beam into a straightened position by means of clamps at each end of the beam and then applying a tension strap wound about the beam and firmly anchored near each end and so disposed as to counteract the natural twisting forces within the beam.

It is an object of this invention to provide a simple method of straightening wooden beams;

It is a further object of this invention to provide a method and means for maintaining a beam in a straightened position after it has been straightened;

It is a further object of this invention to provide a means for decoratively straightening beams.

The foregoing and other objects and advantages of this invention will be clear to those skilled in the art upon reading the following description of a preferred embodiment together with an examination of the attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates a twisted wooden beam which is being prepared for straightening by the method and means herein;

FIG. 2 illustrates the straightened beam after straightening has been completed; and

FIG. 3 indicates a straightened beam with a previous twisted condition shown in dotted lines near one end thereof and in which a decorative strapping is used for straightening.

DESCRIPTION OF A PREFERRED EMBODIMENT

By reference to FIG. 1, there is shown a beam **10** which is clearly in a twisted condition such as is frequently encountered in the field. It will be noticed that the alignment of the end of the beam **12** is considerably out of alignment with the end of the beam **14**.

I have found that most beams of wood when so twisted, if twisted back into a condition of a complete alignment wherein the end **14** and the end **12** are perfectly aligned with one another results in a completely straight beam, since most beams will not tend to buckle or become twisted otherwise when straightened out.

Immediately upon releasing any pressure, which has been brought to bear to bring the ends into alignment, however, normally the beam will once again twist. This is even frequently true if the beam is carefully steamed and pressed into condition and dryed carefully.

It will be noted by further reference to FIG. 1 that it is held at one end by a clamp **20** and at the other end by a like clamp **20**. These two clamps are then rotated with reference to one another either by hand or by in turn fastening extensions to said clamps and by hand or machine bringing them into alignment so that the beam is aligned as indicated in FIG. 2. The twisting action required for this purpose is clear and is illustrated in the figure.

It will be seen that a strap **20** which may be of ordinary steel strapping material or the like has been cut to an appropriate length to make several wraps around the beam in question. Each end of the strap has been provided as at **21** and **22** with a hole suitable to accommodate a strong lag bolt **23** and **24** respectively.

After the beam has been twisted into its straightening position as illustrated in FIG. 2, the lag bolt **23** is fastened in position and thereafter the strap **20** is carefully and tightly wrapped around the beam conforming to the natural contour of the beam and without allowing slack therein. The opposite end of the strap **20** is fastened adjacent to the other beam end by lag bolt **24** through the hole **22**.

It is also deemed desirable to staple or otherwise fasten the strap at numerous additional positions on the beam such as indicated by the rectangular marks on FIG. 2 and such fastening would be by staple or the like as indicated by the numeral **25** in certain of these instances.

It is important to notice the directional alignment of the strap **23** with reference to the condition of twisting previously existing in the beam. The condition of twisting previously existing in the beam as indicated in FIG. 1 would have been, if looking from the direction of end **14** towards the direction of **12** in a counterclockwise direction from top to bottom of the end **14**. After being straightened by pulling in a clockwise direction it is necessary that the strapping be applied from end **12** towards end **14** in a counter clockwise direction, that is in the same direction of the twist previously existing. A simple examination will show that this is necessary because of the tensile forces set up when the beam at-

tempts to warp after the twisting forces have been moved.

In FIG. 3 there is illustrated another beam **40** and a prior twist condition at **42** has been shown. It would be noticed that strapping **50** has been applied by lag bolts **53** and **54**. Additionally, however, the strapping **50** is noted to have several marks or designs about it and is supplemented by another like strap **55** in the opposite direction. The only reason for this is for decorative effects and to give an appearance of symmetry to the entire finished item when desired.

While the embodiment of this invention shown and described is fully capable of achieving the objects and advantages desired, it is to be noted that this is for illustrative purposes only and is not to be considered by way of a limitation.

I claim:

1. The method of straightening a beam comprising clamping the ends of a warped beam; twisting at least one end of said beam with reference to the other end through its clamping device until the beam is straight; fastening a strap adjacent one end of said beam and wrapping said strap repeatedly about said beam in a spiral like arrangement towards the other end in the direction in which the original twist had existed; and fastening the other end of said strap adjacent the other end of said beam.

2. The method of claim **1** in which said strap is fastened at additional points of surface around said beam in addition to its two end positions.

3. The method of claim **2** in which said strap is fastened upon each flat surface of said beam each time it is so encountered by said strap.

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