

F. B. PEASE.
 ROD FOR STRENGTHENING TIMBERS.
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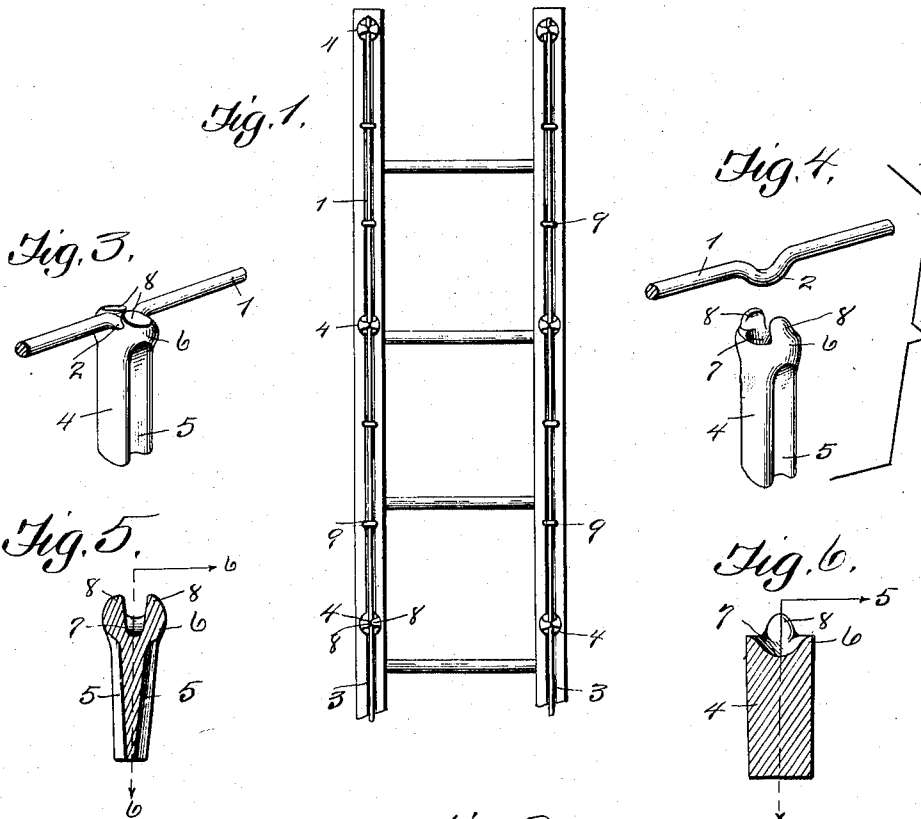


Fig. 2.

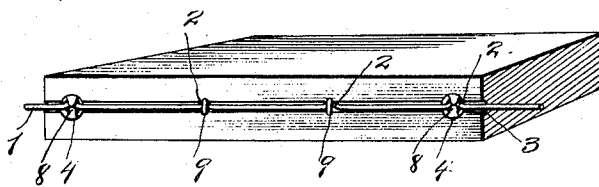
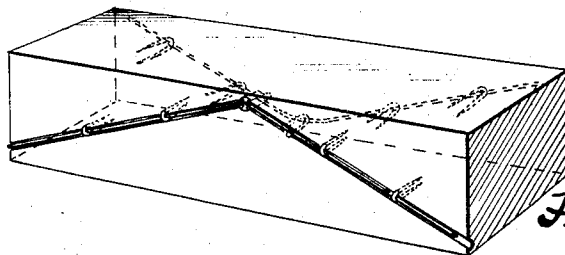


Fig. 7.



Witnesses

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ROD FOR STRENGTHENING TIMBERS.

1,002,927.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANKLIN B. PEASE, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented new and useful Improvements in Rods for Strengthening Timbers, of which the following is a specification.

My invention pertains to certain new and useful improvements in rods for strengthening timbers, and the like, and more particularly relates to the mode of securing and anchoring the rod with respect to the timber.

It is a desideratum in timber construction to maintain the timber in its original condition, and more especially as regards the weight thereof, the present invention aiming to greatly increase the strength and at the same time to enable the weight of the timber to be inappreciably increased.

In the accompanying drawings, forming a part of this specification and wherein like numerals of reference designate similar parts throughout, Figure 1, is a front elevation of a ladder showing the side rails thereof equipped with rods applied according to my invention, Fig. 2, is a view in perspective showing a section of one of the side rails, Fig. 3, is a view in perspective showing the rod secured to one of the anchors, Fig. 4, is a like view showing the rod in detached position with relation to the anchor, Fig. 5, is a vertical section of one of the anchors on line 5—5 of Fig. 6, Fig. 6, is a like view on line 6—6 of Fig. 5. Fig. 7, is a perspective view of a section of joist or beam showing in full and dotted lines one of the optional modes of disposing the rods in strengthening timbers of comparatively large size and weight.

Preliminarily it is stated that the present invention is designed for general application to timbers and like fibrous material, wherever it is required that the material be of increased strength as compared with its natural or original condition, and while the drawings which disclose certain embodiments of my invention are illustrative of the broad general lines of application of my invention, they are rather to be considered in the light of example and not enumeration thereof.

A wire rod 1, of a quality possessing a high degree of rigidity and stiffness is preferably employed, whose cross-section is proportionate to the requirements of the material to be

strengthened, and which is bent or kinked at intervals throughout its length as indicated at 2. The spaces intervening between the several bends or kinks are governed by the diameter of the rod, its length, and the weight or size of the timber, conditions varying in different individual cases. It is preferred that the timber be formed with a kerf or groove 3 of a length equal to that of the rod which permits the latter to seat therein and lie flush with the surface of the timber. At predeterminable intervals throughout the length of the rod I secure the same to the timber by means of anchors 4, which firmly and positively retain the rod with relation to the timber. These anchors are preferably formed of malleable metal and consist of a body or major portion formed with concaved grooves 5 on opposing sides underlying the heads 6, and extending through the lower end of the body portion, gradually tapering toward one another as they approach the bottom. The purpose of grooving the body portions is to facilitate the introduction of the anchors into apertures which are bored in the timbers for the reception thereof, it being understood that a driving fit is effected between the two to assure of the anchors securing a positive hold. The anchor heads project in the grooves of the timber and are formed on their upper ends with concaved seats 7 which are of a width and depth to readily receive the bent or kinked portions of the rod, and further embody a pair of integral lips 8 which are directed upwardly and are located on opposing sides of the head, preferably alining with grooves 5. Inasmuch as lips 8 are malleable it is consequently possible to hammer the free ends of the lips inwardly and downwardly to closely embrace the bent or kinked portions of the rod and thus effect a positive securement of the rod with respect to the anchors, the lips being hammered downwardly to overlies the bends or kinks and to engage one another.

It has been found that the number of anchors employed to secure a rod is dependent upon such conditions as govern the size and weight of the timber, and consequently they vary, though anchors located at say every third bend or kink are ordinarily sufficient for the purpose. I therefore employ staples 9, which seat in the bends or kinks and are driven into the fiber at all bent or kinked points of the rod between the anchors. These

staples greatly assist in strengthening the timber and holding the wire at each bend or kink throughout its length in engagement with the timber.

5 By way of illustration, Fig. 7 is an example of the possibilities of my invention, showing one mode of strengthening a beam; or joist, the rods being disposed on opposite sides of the beam and retained by anchors
10 and staples as just set forth, but distinguished from the former case in that they pursue an angular course and are disposed inverse one to the other.

Timber equipped in the manner set forth
15 may be strengthened at various points and in a variety of manners by disposing the rods to conform to requirements, the latter necessarily differing according to the needs of special and different cases.

20 Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A strengthening means for fibrous materials, comprising, in combination, a continuous comparatively stiff rod embedded in a groove formed therefor in said fibrous material and a plurality of anchoring devices
25 disposed at spaced intervals along said rod and embedded in said fibrous material to anchor said rod, said anchoring devices comprising elongated body portions having enlarged heads, said heads each having a depression across its upper face and upwardly projecting ears formed oppositely at the
30 upper edges of said depressions and bent inwardly to form a downwardly curved passage in which said rod is clamped, said depression being curved in a plane lying transversely to a line connecting said ears.

40 2. A strengthening means for fibrous materials, comprising, in combination, a continuous comparatively stiff rod embedded in a groove formed therefor in said fibrous material and a plurality of anchoring devices
45 disposed at spaced intervals along said rod and embedded in said fibrous material to anchor said rod, said anchoring devices comprising elongated body portions having en-

larged heads, said heads having transverse depressions formed in their upper faces and
50 upwardly projecting lips facing one another across said transverse depressions and being bent inwardly to overlie said depression to form a downwardly curved passage for the reception of said rod, said transverse depression being U-shaped with ends thereof
55 turned outwardly and merged into said head.

3. A strengthening means for fibrous materials, comprising, in combination, a continuous comparatively stiff rod embedded in a groove formed therefor in said fibrous material and a plurality of anchoring devices
60 disposed at spaced intervals along said rod and embedded in said fibrous material to anchor said rod, said anchoring devices comprising elongated body portions having enlarged heads, said heads being formed with depressions and corresponding overlying elements to provide a downwardly curved
65 passage in said heads to receive said rod, said depression being downwardly curved in a plane lying transversely to a line connecting said overlying elements.

4. A strengthening means for fibrous materials, comprising, in combination, a continuous comparatively stiff rod embedded in a groove formed therefor in said fibrous material and a plurality of anchoring devices
75 disposed at spaced intervals along said rod and embedded in said fibrous material to anchor said rod, said anchoring devices comprising elongated body portions having enlarged heads, said heads being formed with depressions and corresponding overlying
80 elements to provide a downwardly curved passage in said heads to receive said rod, said depression being downwardly curved in a plane lying transversely to a line connecting said overlying elements.

In testimony whereof I have affixed my
signature, in presence of two subscribing
witnesses.

FRANKLIN B. PEASE.

Witnesses:

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