June 23, 1925. 1,543,491

P. BEGHETTI

CLAMP AND TIGHTENER FOR TIE WIRES

Filed Sept. 10, 1924

Fig. 1.

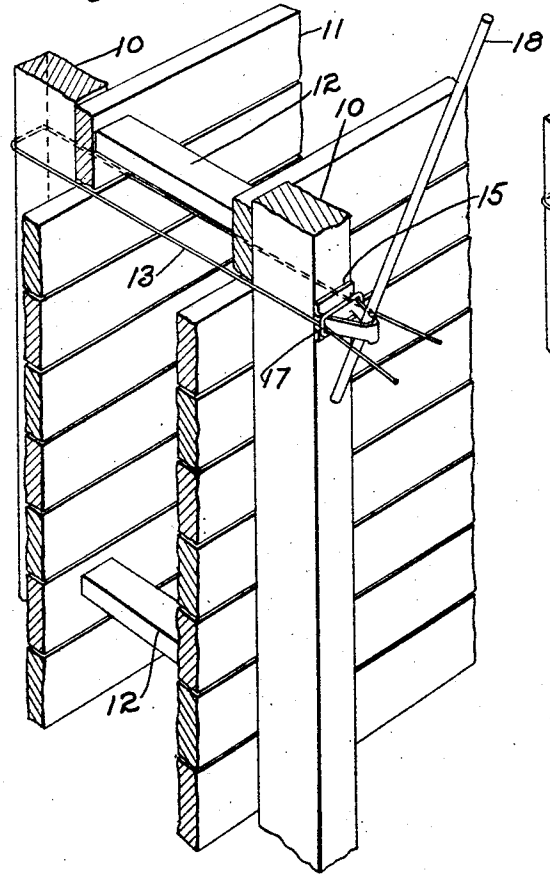


Fig. 2.

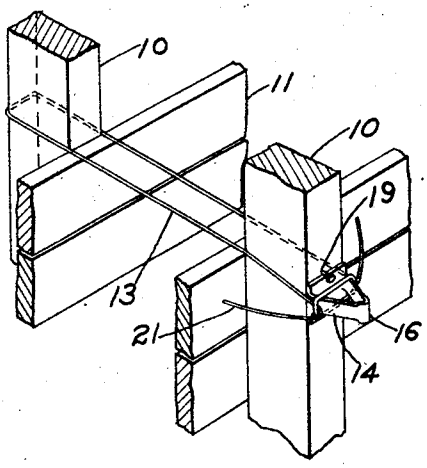


Fig. 3.

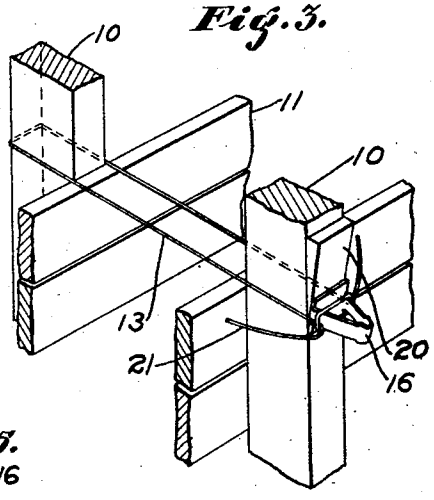


Fig. 4.

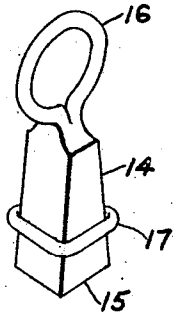
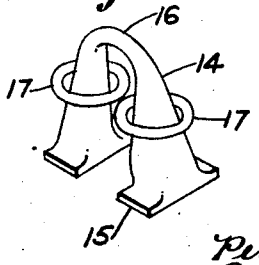


Fig. 5.



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UNITED STATES PATENT OFFICE.

PETER BEGHETTI, OF SAN FRANCISCO, CALIFORNIA.

CLAMP AND TIGHTENER FOR TIE WIRES.

Application filed September 10, 1924. Serial No. 736,952.

To all whom it may concern:

Be it known that I, PETER BEGHETTI, a citizen of the United States, residing at the city and county of San Francisco and State of California, have invented new and useful Improvements in Clamps and Tighteners for Tie Wires, of which the following is a specification.

This invention relates to a clamp and tightener for tie-wires such as are used in concrete forms.

Ordinarily these tie-wires are tightened by twisting them either at the middle or ends. In so twisting these wires there is danger of breaking them, and considerable time is required to properly tension them.

The object of the present invention is to provide a simple and inexpensive clamp to receive the ends of the tie-wire, and which can be utilized in a simple and effective manner to tighten the wires, and also to serve as an anchor or fastener for the ends of the wire while the forms are in place.

In the accompanying drawing I show in Fig. 1 a perspective view of a form having a tie-wire held in place by my improved clamp, and illustrating the manner in which the clamp can be used for tightening the wire.

Fig. 2 shows a perspective view of the clamp in place after the wire has been tightened.

Fig. 3 shows a similar view, illustrating another mode of holding the clamp in position after the wire has been tightened.

Figs. 4 and 5 show perspective views of modified forms of the clamp and device.

The forms used in the building of concrete walls and the like, include spaced uprights 10, to the inner surface of which are secured form boards 11. These form boards are held spaced apart by suitable spacing bars 12. To prevent spreading of the forms while the concrete is being poured, tie-wires 13 are employed. These tie-wires are in the form of loops passed around the upright at one side, with the free ends of the loops embracing the upright on the opposite side. In the ordinary practice, the ends of the loop are twisted together for securing them in place, and the twist at the end or in the middle of the tie-wires is depended upon to properly tension the wires and align the forms.

The present invention has particularly to do with means for gripping the ends of the tie-wires and facilitating the tightening of the same, and for this purpose I provide a simple and inexpensive clamp and tightener, which may be constructed in a variety of forms, three different forms being illustrated herein. Essentially this clamp and tightener comprises a tapered shank 14, having a flat base 15 at one end, and a loop 16 at the opposite end. A clamping ring 17 fits over the tapered shank and is slidable thereon.

In the operation of the clamp and tightener, the flat base 15 is placed against an upright of the forms, and the ring 16 is moved back on its shank to permit the free ends of the tie-wire to be inserted between the ring and the tapered shank. Thereafter the shank is pulled out by means of a pry-bar 18, or the like, inserted through the loop 16. In so pulling out on the shank the ring 17 is tightened upon the shank, so as to securely grip the wire and cause the wire to be tensioned. If there is considerable slack in the wire, two or more "bites" may be required to properly tension the same and shape it around the uprights. After the wire has been sufficiently tensioned, and the forms are in proper alignment, the clamping member is locked in place in one of several different ways. For instance, the entire clamp may be driven outwardly on the upright and held by a nail 19 or the like, as indicated in Fig. 2, or a wedge 20 may be inserted between the base of the clamp and the upright, as indicated in Fig. 3. When the final adjustment of the tie-wire is obtained, the ends are preferably bent as indicated at 21, so as to avoid any danger of the gripping ring loosening its hold on the wire. The clamp in this position is allowed to remain until the forms are removed. However, these clamps and tighteners can be re-used many times, and therefore a relatively small number of them may suffice on an ordinary building operation, where the forms are allowed to remain in place but a short time.

The shank of the clamp may be shaped as shown in Figs. 1, 2 and 3, where it is triangular in plan and capable of being stamped out of one piece of metal. In Fig. 4 I show the shank as being solid and rectangular in cross-section. In Fig. 5 is shown a bifurcated member which requires

two locking rings 17 in place of the single ring shown in the other forms. The cross-sectional forms of shank may be circular, rectangular, or otherwise, and the ring shaped accordingly,—the main requirement being that a tapered shank be provided, so that the ring will co-operate therewith to securely grip the wires, and that some sort of eye or slot be provided at the end of the shank, whereby a rod or bar can be passed through for the purpose of pulling outwardly on the clamp and tightening the wire.

If desired, the present clamp may be used to twist the ends of the tie-wire. This is done by allowing some space between the clamp and the upright, and then turning the clamp by means of a bar or rod inserted through the eye 16. When the ends of the wire are sufficiently twisted, the clamp may be removed, thereby avoiding the necessity for leaving a number of clamps in place on the forms.

What I claim as new and desire to secure by Letters Patent is:

1. The combination with a form for concrete walls of the character indicated and a tie-wire for preventing spreading of the walls, of a combined clamping and tightening means to engage the ends of the said tie-wire, said clamping and tightening means including a tapered shank, a ring upon said shank slidable thereon to engage the ends of the wire, and means on the outer end of the shank to receive a tool, whereby the said clamp may be moved outwardly to tighten the wire.

2. A clamping and tightening means for the purpose stated, comprising a tapered shank, a locking ring slidable on said shank, and means on the outer end of the shank to receive a tool, whereby the shank may be pulled outwardly.

3. A clamp and tightener for the purpose indicated, comprising a tapered shank having a flat base at one end and a loop at the opposite end, and a locking ring slidable upon said shank.

PETER BEGHETTI.