Nov. 26, 1929. L. V. DICKINSON 1,736,848

WIRE TIGHTENER

Filed Feb. 6, 1928

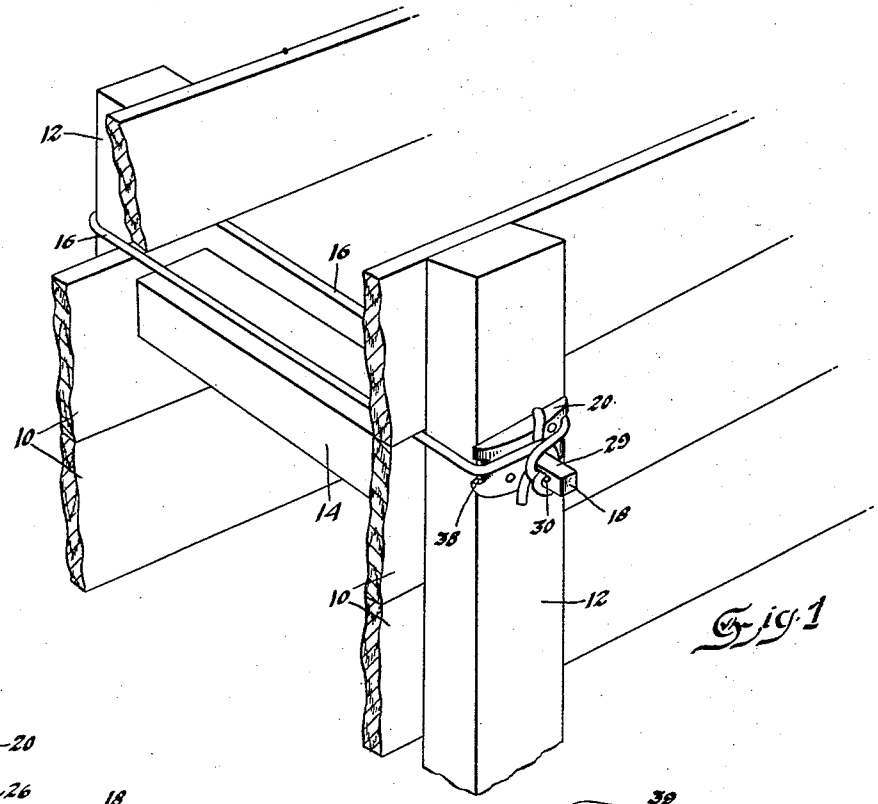


Fig. 1

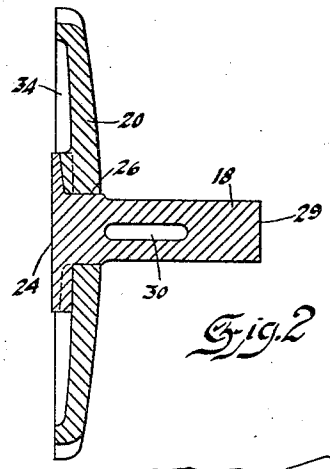


Fig. 2

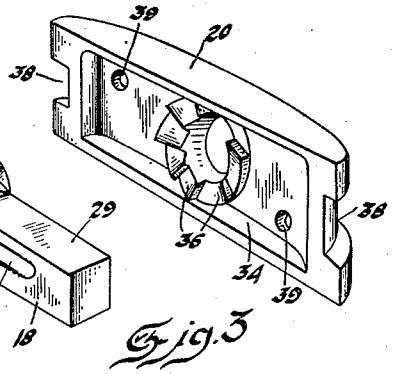


Fig. 3

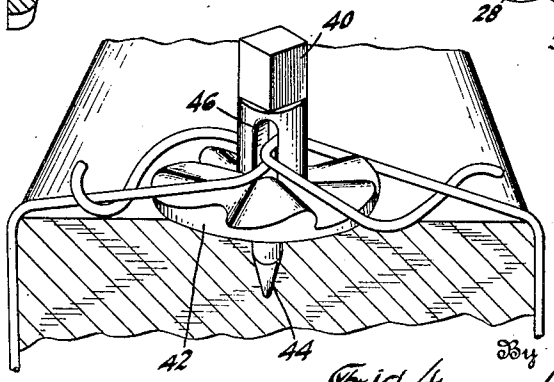


Fig. 4

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UNITED STATES PATENT OFFICE

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WIRE TIGHTENER

Application filed February 6, 1928. Serial No. 252,114.

The invention relates to improvements in wire tighteners, as described in the present specification and illustrated in the accompanying drawings that form part of the same.

The invention consists essentially of a key member rotatable to wind the wire or the like to an automatically locked tension.

The objects of the invention are to devise a simple, cheap and effective means of few parts and easily operated for tying wires taut, particularly about forms or supports used for building cement structures or the like.

In the accompanying drawings:

Figure 1 is a perspective view of a form wall broken away to show the tightener holding a supporting wire.

Figure 2 is a vertical sectional view of the tightener.

Figure 3 is a perspective detail view of the tightener key and base, and

Figure 4 is a perspective view of a modified form of tightener applied to a supporting wire.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, a wall "form" is shown in Figure 1, having the form boards 10 secured to the vertically extending timbers 12, and forming the two opposed sides between which concrete or other filling is to be poured.

As the form wall is built up, spacers 14 are placed between the sides and a wire 16 is looped around the uprights and generally tied by twisting the ends about one another. Such use, however, often breaks the wire, particularly when it is necessary to be sufficiently taut to hold the side walls firmly and in true position against the pressure of the plastic concrete or other material used to fill the space between the "forms".

In the present invention I use a tightener comprising a key 18 preferably used in conjunction with a plate 20 as shown in Figures 1 to 3 inclusive.

The key 18 has a ratchet 22 formed on the inner face of the head 24, and from which the shank 26 extends with a round portion 28 and a squared end 29 through which the lateral orifice 30 extends.

The key 18 extends through a central orifice 32 in the plate 20, and the under side of the plate is recessed at 34 to receive the head 24 of the key, and is formed with ratchet teeth 36 corresponding to the teeth of the ratchet 22.

The plate 20 is also grooved on each end at 38 and has the holes 39 therethrough. In use it is placed across the upright with the key projecting outwardly therefrom, and if desired, secured in position by nails driven through the holes 39 into the upright. The ends of the wire are then pulled over the ends in the grooves 38 and threaded through the orifice 30 of the key in opposite directions, and preferably given a single twist back on itself to prevent the ends from springing out of the key before it is tightened.

A wrench is now used to turn the key clockwise, thus winding the ends of the wire about it until sufficiently taut. It is preferable to have the head of the key project a little beyond the inner face of the plate, and as the wire is wound onto the shank of the key it will pull the plate toward the upright with a spring tension, that will permit the ratchet teeth to pass one another in a clockwise direction, but will effectively lock them against reverse movement.

In Figure 4 a key 40 is shown with a slightly larger ratchet base 42 and a spike 44 extending therefrom, and which may be driven into a timber to serve as a pilot for the key which may be used without a plate, and the wire ends when inserted through the lateral orifice 46 will pull the wire over the ratchet teeth and hold the key from reversal as it is being turned to wind the wire taut.

The lateral orifices in the keys are shown elongated to accommodate a flat or ribbon wire which is sometimes used, and likewise the end grooves in the plate are shaped to receive a flat wire.

The tightener as shown in the drawings is in no manner limited to any particular application or position for use, as it is obvious that many uses of the same will be found to tighten wire around or between objects that need not be illustrated, as the same is in no manner essential to the invention.

After a wall is built the tighteners are removed with the other "form" material, by cutting the wires 16, and used again.

It will also be understood that the number or shape of the ratchet teeth may be altered; likewise the shape and proportions of other parts within the spirit of the invention, without departing from the intent or scope thereof as stated in the claims.

I claim:

1. A wire tightener comprising a plate having a central orifice and ratchet teeth thereabout and a key fitting said orifice and having a head interlocking with said ratchet teeth, and a lateral orifice to receive the wire.

2. A wire tightener comprising a plate having peripheral notches and a recessed under side formed with ratchet teeth about a central orifice and a key having a toothed head fitting the recess in said plate and a shank extending through the orifice therein and a squared outer end cross-bored to receive the wire extending over the notched periphery of the plate and holding the same resiliently against the head of said key.

In testimony whereof I affix my signature.

LOUIS V. DICKINSON.