Jan. 31, 1956

J. J. WHEELER

2,732,606

CONCRETE FORM TIE

Filed Feb. 19, 1954

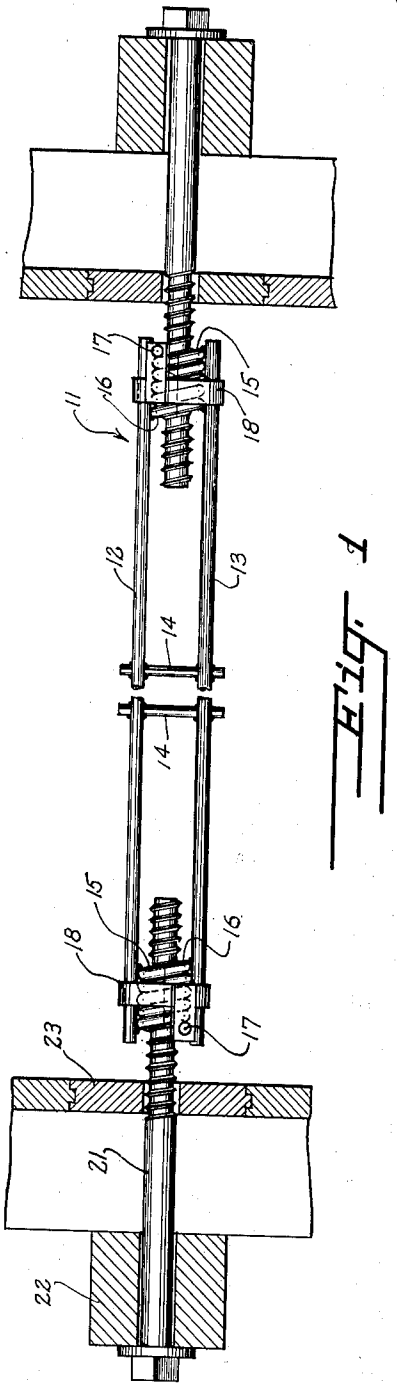


Fig. 1

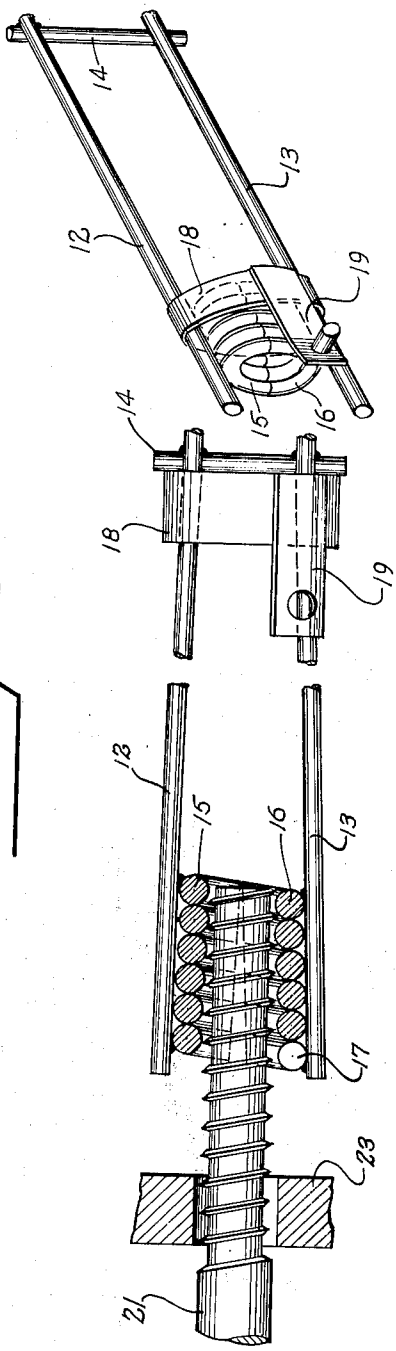


Fig. 3

Fig. 2

INVENTOR.

John J. Wheeler

BY

McMorrow, Berman & Davidson

ATTORNEYS

United States Patent Office 2,732,606 Patented Jan. 31, 1956

2,732,606

CONCRETE FORM TIE

John J. Wheeler, Staten Island, N. Y.

Application February 19, 1954, Serial No. 411,395
2 Claims. (Cl. 25—131)

This invention relates to form ties employed for holding together forms for pouring concrete, and more particularly to an improvement in a form tie of the type comprising a plurality of spaced parallel rods between which are secured means for receiving the threaded shanks of lag screws which pass through the wooden walls of the forms.

The main object of the invention is to provide a novel and improved concrete form tie which is simple in construction, which is easy to install, and which provides a great saving in the time and labor required in fastening the tie between the walls of the concrete form.

A further object of the invention is to provide an improved concrete form tie which is inexpensive to manufacture, which is sturdy in construction, and which may be rapidly placed in position.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

Figure 1 is a horizontal cross sectional view taken through a concrete form provided with an improved concrete form tie according to the present invention.

Figure 2 is an enlarged cross sectional detail view showing the manner in which the ends of the tie rods are flexed to allow the shank of a lag screw or similar fastening means to be engaged between the split nut elements on the tie rods.

Figure 3 is a fragmentary perspective view of one end portion of the concrete form tie of Figure 1 illustrating the manner in which the locking ring is lockingly engaged with one of the split nut segments to hold the ring in a position embracing the nut segments.

Referring to the drawings, the improved concrete form tie is designated generally at **11** and comprises a pair of flexible rods **12** and **13** which are secured together at their intermediate portions, as by short transverse rod elements **14** welded thereto, thus fastening the rods **12** and **13** in parallel relation at their intermediate portions. The intermediate portions of the rods **12** and **13** are thus substantially rigid, whereas the end portions thereof are free to be flexed outwardly.

Secured between the rods **12** and **13** at each end of the form tie are longitudinally split coils, each coil comprising the mating coil segments **15** and **16**, the segment **15** being welded to the rod **12** and the segment **16** being welded to the rod **13**. In the specific arrangement illustrated in Figure 1, segment **15** is welded to one end of rod **12** and segment **16** is welded to the adjacent end of rod **13**, whereas at the opposite end of the form, the coil segments are reversed, namely, a segment **15** is welded to rod **13** and the mating segment thereof **16** is welded to the end of the rod **12**. As shown, the coil segments **16** have the outwardly projecting coil ends **17**.

Designated at **18**, **18** are respective locking rings slidably engaged on the rods **12** and **13** and being movable to positions embracing the respective sets of mating coil segments **15** and **16**. Secured to each ring **18** is a resilient locking arm **19** formed at its free end portion with an aperture adapted to receive the outwardly projecting coil end **17** of a split coil segment **16**. Thus, as shown in Figure 1, when the ring **18** is embracingly engaged around the coil segments, the apertured end portion of the resilient arm **19** is engageable with the coil end **17** to lock the ring in a position embracing the coil segments.

In installing the concrete form tie, the rings **18** are disengaged from the split coil segments and are moved toward the transverse rod elements **14**. This frees the end portions of the rods **12** and **13** for flexure. The lag screws **21** are passed through the whalers **22** and through the walls **23** of the form, and the threaded shanks of the screws are engaged between the respective sets of split coil segments. The rings **18** are then moved to positions embracing the split coil segments and the resilient arms **19** are lockingly engaged with the coil ends **17** by engaging the coil ends **17** through the apertures in the resilient arms **19**. Thus, the rings **18** are locked in positions embracing the coil segments. The bolts **21** may then be tightened to desired amounts by rotating said bolts in the usual manner to adjust the tension exerted by the form tie.

While a specific embodiment of an improved concrete form tie has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. In a concrete form tie, a pair of flexible coextensive rods having inner ends and outer ends, spacing means extending between and secured to the rods at a point intermediate the ends of the rods and rigidly spacing intermediate portions of the rods from each other, the portions of the rods between said spacing means and the outer ends of the rods being flexible relative to each other, split nut elements located between the rods and composed of nut sections fixed thereto at points between said spacing means and the outer ends of the rods, and lag screws threaded into said nut elements, said nut sections comprising pairs of flexible half coils, each pair of half coils comprising a coil having a laterally projecting coil terminal, and locking means for each nut element comprising a flexible ring slidably embracing the rods and movable therealong from an inoperative position inwardly of the related nut element to an operative position surrounding the related nut element, and a flexible locking arm fixed on the ring, said arm having an opening receiving the related coil terminal so as to lock the ring in operative position, said locking arm being flexible out of engagement with the coil terminal so as to release the ring for movement to inoperative position, the locking rings being dimensioned to compress the nut sections toward each other in the operative position of the rings.

2. In a concrete form tie, a pair of flexible rod elements means securing the intermediate portions of the rod elements against separation, a longitudinally split coil having two mating segments, said segments being respectively secured to the end portions of said rod elements and defining an internally threaded nut adapted to receive a threaded shank, a locking ring slidably mounted on said rod element and being movable to embrace said coil segments and compress said coil segments together, one of said coil segments having an outwardly projecting end, and a resilient locking arm on said ring, said locking arm having an aperture arranged to receive said outwardly projecting end.

References Cited in the file of this patent

UNITED STATES PATENTS

1,143,429	Mumford	June 15, 1915
1,238,696	Mumford	Aug. 28, 1917
1,970,946	Schenk	Aug. 21, 1934
1,973,609	Colt	Sept. 11, 1934
2,335,338	Hillberg	Nov. 30, 1943
2,664,023	Mugford	Dec. 29, 1953