Feb. 7, 1956 G. O. GAETKE 2,733,496

SPACING NUT FOR USE WITH FORM CLAMPS

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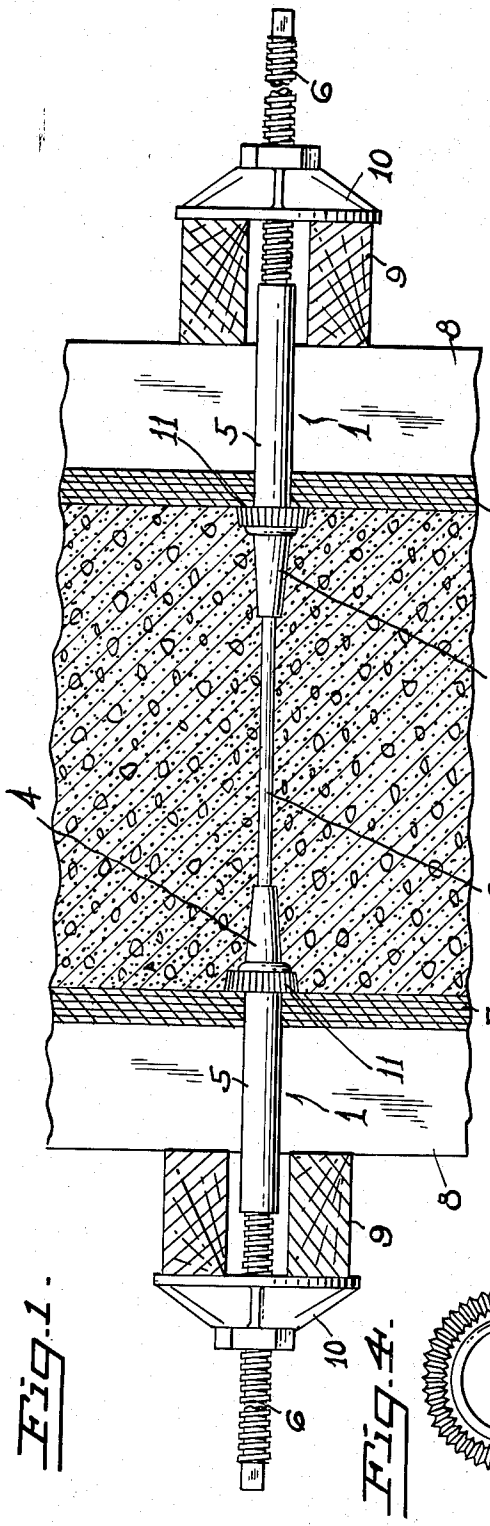


Fig. 1.

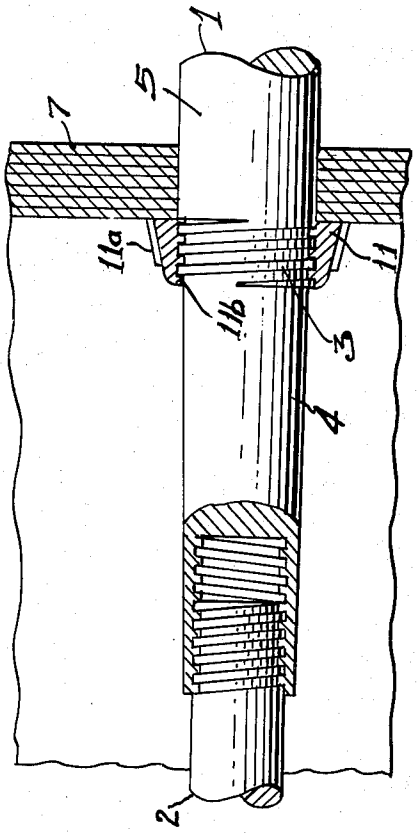


Fig. 2.

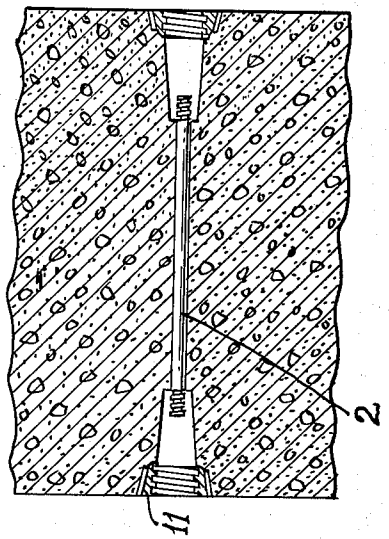


Fig. 3.

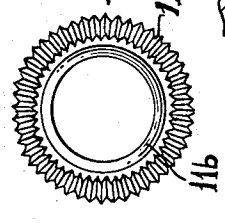


Fig. 4.

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# SPACING NUT FOR USE WITH FORM CLAMPS

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Application January 15, 1953, Serial No. 331,471
2 Claims. (Cl. 25—131)

This invention relates to concrete form clamps and more particularly to a novel spacing nut which is adapted for use with form clamps to maintain two opposed form walls in spaced relation.

Form clamps of the type embodying my invention are used to hold opposed form walls against inward compression as well as against outward spreading. It is of considerable importance in the erection and dismantling of form walls that the form clamps used to hold such form walls in rigid spaced relationship be capable of being easily assembled and disassembled, to the end that excessive labor costs may be eliminated. Also of importance to some builders is the substantial capital expenditure involved in providing an adequate supply of form clamps required for the erection of large building structures. And finally, it is desirable in a form clamp that it embody a simplified construction, one which is not easily damaged through rough handling or is apt to require cleaning in order to maintain it in operative condition.

The type of form clamp of which my novel spacing nut is a part, being simple in construction, is capable of being assembled and disassembled with the expenditure of less time and effort than is required with other types of commonly used clamps, thereby making it possible to minimize the cost of at least one of the important items of building construction. The provision of a novel spacing nut such as that embodying my invention, makes it possible to eliminate the usual spacing cones or other similar devices now commonly used with form clamps to hold two opposed form walls in spaced relation, thereby not only reducing the capital expenditure involved in maintaining an adequate supply of form clamps, but also reducing the costs incident to the maintenance of such clamps in good working order. My novel spacing nuts being located in exposed, accessible positions at the sides of the concrete wall after the removal of the forms, are easily recoverable for further use. Such a spacing nut is provided with a converging serrated periphery which prevents the rotation of the nut in the concrete wall when the waler rod is turned and facilitates the extraction of the nut from the said wall. My spacing nut is formed with an annular inwardly protruding flange which is adapted to prevent concrete material deposited inside the form walls from contacting and contaminating the threads which connect the said nut and the associated waler rod.

The principal object of my invention is to provide a novel spacing nut for use with form clamps, one which makes it possible to employ a simplified form clamp in the construction of concrete forms.

In the accompanying drawings

Fig. 1 is a side elevational view of a form clamp of the type employing my novel spacing nut;

Fig. 2 is an enlarged side elevation of a part of the clamp, showing parts broken away and in section;

Fig. 3 is a sectional view of a concrete wall after the wooden form and parts of the clamp have been removed, showing the spacing nuts before they have been extracted from the said concrete wall; and

Fig. 4 is a front view of a spacing nut embodying my invention.



Referring to the drawing the numerals **1, 1** designate two waler rods which are both internally threaded at their inwardly disposed ends to provide suitable means for detachably securing them to a suitably threaded connecting or tie rod **2**. A short portion of each waler rod, directly adjacent the form wall with which it is associated, is externally threaded as at **3**. Each waler rod **1**, from its short threaded portion **3** to its inner end is gradually tapered or cylindrical in shape, as at **4**, to permit the turning thereof when the parts of the clamp are disconnected and the said rod is removed from the concrete wall within which it becomes imbedded after the concrete hardens. The internal threads at the inner end of each waler rod **1** and the external threads **3** are of the same pitch, and such threads are of the Acme or squared type. Each waler rod **1** comprises an inner smooth or tapered section **4**, a short threaded portion **3** having a maximum larger diameter than the section **4**, a middle smooth section **5** which has a substantially uniform diameter throughout its length, and an outwardly disposed threaded section **6**. The concrete form within which the plastic concrete material is poured ordinarily comprises suitably spaced form walls **7**, studs **8** and purlins **9**. The outwardly disposed threaded section **6** of each waler rod **1** is provided with large Acme type threads which permit a clamping nut **10** screwably mounted thereon to be quickly screwed into clamping engagement with a purlin **9** when the clamp is installed.

Detachably secured to the short threaded portion **3** of each waler rod **1** is a spacing nut **11** of the type embodying my invention. When the clamp is assembled and applied to the forms the spacing nuts **11** are positioned with their large end or face in abutting relationship with respect to the inner faces of the form walls **7** and the clamping nuts **10** are arranged in firm clamping engagement with the purlins. The threads of the spacing nuts **11** are slightly larger than the threads **3** of the waler rods **1**, thereby facilitating the simultaneous detachment of either waler rod from both the connecting rod **2** and its associated spacing nut when the clamp is disassembled. The threads of the short threaded portion **3** of each waler rod are raised rather than cut into the outer end portion of the smooth section **4**, thereby providing a rod structure wherein the threaded portion **3** is of somewhat larger diameter at points at the maximum height of its threads than the diameter of the said smooth section. There are preferably about two convolutions of Acme threads making up the short threaded portion **4** of each waler rod **1**, and about four convolutions comprising the threads at each end of the connecting rod **2**, thereby making it possible to release a waler rod from its associated spacing nut **11** by giving it approximately two turns and from the connecting rod by giving it approximately four turns. The pitch of the threads on the connecting rod **2** and the short threaded section **4** of each waler rod **1** being the same, permits the simultaneous detachment of the said waler rod from both the connecting rod and the spacing nut **11** when the waler rod is turned in a certain direction.

Each spacing nut **11** is formed with a serrated converging periphery **11***a* which, when the nut is imbedded in a concrete wall, will prevent the nut from turning. The inner or smaller end of each spacing nut **11** is provided with an inwardly protruding circular flange **11***b* located directly adjacent the end threads at the smaller end of the waler rod, the said circular flange closely but rotatably fitting around the outer smooth end portion of the smooth section **4** of its associated waler rod **1**. The inside

diameter of the flange **11***b* is substantially smaller than the maximum diameter of the waler rod where the maximum height of the threads **3** occurs. The flange **11***b* of the spacing nut **11** abuts the threaded portion **3** of a waler rod when the nut has been turned sufficiently to effect such a result, and when so positioned on the rod liquid or plastic concrete material from inside the form is normally prevented from contaminating the threads of either the nut or the threads of the said short threaded section.

After the dismantling of the form walls **7** and the detachment and removal of the waler rods **1**, **1**, the internal threads of either spacing nut **11** may be engaged by a suitable hooked or other device when such spacing nut **11** is to be extracted from the concrete wall and thereby salvaged for further use.

What I claim is:

1. In a form clamp of the type adapted for use in combination with waler rods to hold form walls in spaced relation, an internally threaded spacing nut engageable with the inner face of one of such form walls and having an inwardly converging annular serrated periphery and an inwardly protruding circular flange on its smaller end, the said circular flange being located directly adjacent the end threads at the smaller end of the nut and the said flange having a smaller diameter than the inside diameter of the spacing nut.

2. In a form clamp of the type adapted for use in holding opposed form walls in spaced relation, a pair of spaced aligned waler rods extending inwardly through the form walls, each waler rod having its inner end detachably connected to a connecting rod, and each waler rod having a short threaded section positioned adjacent and internally of the form wall through which it extends, the threads of each threaded section extending outwardly from the circumferential surface of its associated waler rod, and a spacing nut detachably screwed on the short threaded section of each waler rod and arranged in abutting relation to the form wall through which its associated waler rod extends, each of said spacing nuts having an inwardly converging serrated periphery and an inwardly protruding circular flange on its smaller end, the said flange having a smaller inside diameter than the outside diameter of its associated threaded section, and the said flange being arranged for abutting engagement with the threads of the short threaded section of its associated waler rod.



**References Cited** in the file of this patent

UNITED STATES PATENTS

| | | |
|---|---|---|
| 1,116,241 | Carlson | Nov. 3, 1914 |
| 1,665,649 | Whitescarver et al. | Apr. 10, 1928 |
| 1,851,339 | Williams | Mar. 29, 1932 |
| 2,044,444 | Pond | June 16, 1936 |
| 2,235,442 | Parmenter | Mar. 18, 1941 |
| 2,375,325 | Robertson | May 8, 1945 |
| 2,388,865 | Parmenter | Nov. 13, 1945 |