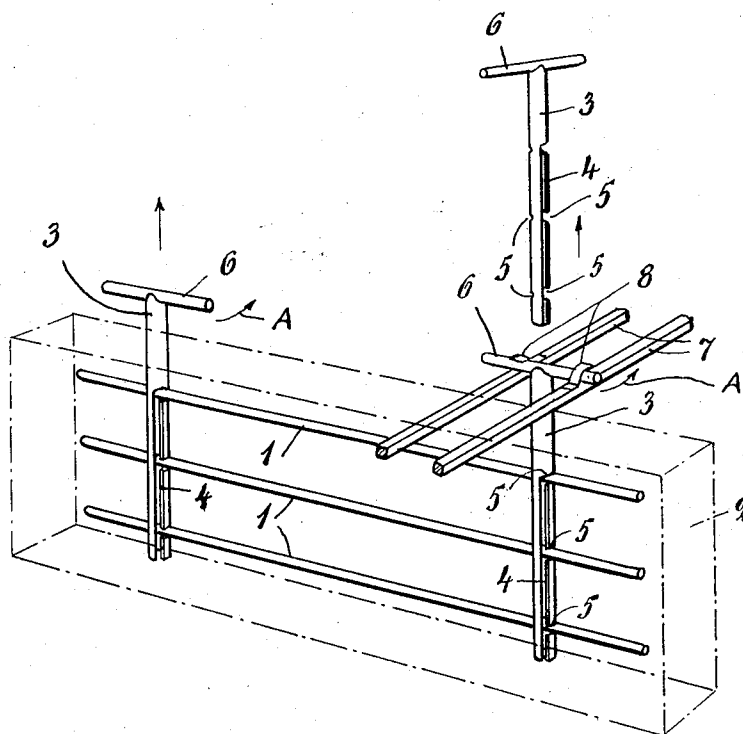


Sept. 1, 1959

K. H. HELMERSON
FIXING DEVICE FOR HOLDING REINFORCING
RODS IN A CASTING MOLD
Filed Dec. 24, 1953

2,901,807



INVENTOR.
KNUT HELMER HELMERSON.

BY *James M. Heilman*

ATTORNEY.

1

2,901,807

FIXING DEVICE FOR HOLDING REINFORCING RODS IN A CASTING MOLD

Knut Helmer Helmersson, Skelleftehamn, Sweden, assignor, by mesne assignments, to Casius Corporation Limited, Montreal, Quebec, Canada

Application December 24, 1953, Serial No. 400,298

Claims priority, application Sweden February 18, 1953

3 Claims. (Cl. 25—118)

This invention concerns the arrangement of reinforcements in light-weight concrete slabs.

In the production of light-weight concrete slabs, particularly of the kind which are of considerable length, it is customary to employ a reinforcement in the form of a mat or cage consisting of iron reinforcing rods which cross one another. Known reinforcements of this kind considerably increase the difficulty of dividing up the light-weight concrete slab by sawing or like methods, however, as the reinforcing rods, in distinction to the light-weight concrete body itself, cannot be cut with ordinary woodworking tools. It has already been proposed to solve this problem by assembling the reinforcing mats or cages from a number of parallel iron reinforcing rods on the one hand and a number of transverse connecting members of a material such as wood which is practically as easy to work as the light-weight concrete body itself, on the other hand, in order to obtain a slab that can be divided in the longitudinal direction by sawing or the like. This method of procedure has also been found satisfactory in itself, but it naturally complicates the production process to a certain extent. In addition hereto the connecting members remain in the light-weight concrete, and consequently this method does not offer an ideal solution. The present invention has for its purpose to provide a more rational solution of the problem in question.

The invention relates to the production of reinforced light-weight concrete slabs having a considerable length in relation to their other dimensions. This production is mainly characterized therein that a number of separate iron reinforcing rods are fixed in the casting mold in substantially parallel spaced positions with respect to one another during the casting of the slab, by means of at least two fixing devices spaced in the longitudinal direction of the iron reinforcing rods so that the reinforcing rods will run in the longitudinal direction of the slab. The fixing devices are removed after the casting of the light-weight concrete when the concrete mass has itself attained the necessary stability to enable it to retain the reinforcing rods in their given positions. Consequently, the reinforcement in the finished slab thus produced will consist exclusively of the longitudinal reinforcing rods, and the slab can thus be divided in the longitudinal direction between the reinforcing rods without obstruction from reinforcements which are difficult to cut.

The fixing devices may consist of any desired members connected to the casting mold but preferably each fixing device consists of a fork-shaped slotted bar, e.g. a slotted tube or pipe, tapered at its shank-ends and of substantially circular cross-section, the two shanks of which are located at a distance from one another which exceeds the diameter of the reinforcing rods and are provided with recesses in pairs corresponding to each other to permit the iron reinforcing rods inserted in the shanks to be fixed by turning the bar.

With the foregoing and other objects in view, the invention resides in the novel arrangement and combination

2

of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein described may be made within the scope of what is claimed without departing from the spirit of the invention. It will be further understood that my invention is susceptible of embodiment in many and various forms, some of which are illustrated in the accompanying drawing, and that the structural details or particular steps of the method herein set forth may be varied to suit particular purposes and still remain within my inventive concept.

The invention will now be more particularly described with reference to the accompanying drawing which shows diagrammatically and in perspective how the separate iron reinforcing rods 1—which are to be included in a light-weight concrete slab 2 indicated by dotted lines—are held in parallel, mutually spaced positions in a casting mold (not shown) for the light-weight concrete slab, so that the iron reinforcing rods will run in the longitudinal direction of the slab 2. More particularly, the iron reinforcing rods 1 are held in two fixing devices 3 which hang down into the casting mold and each consists of a tube which is divided from below in a fork-shaped form having two shanks by means of a slot 4 having a greater width than the diameter of the reinforcing rods. At a mutual distance apart along the slot 4, which corresponds to the desired distance between the iron reinforcing rods 1, the shanks of the fixing devices 3 are provided with recesses 5 which are substantially at right angles to the slots 4 and in which the separate reinforcing rods 1 can be fixed by turning the fixing device 3 so that the slot 4 forms an angle with the longitudinal direction of the reinforcing rods.

Each fixing device 3 is provided at its end, which protrudes over the light-weight concrete slab 2, with a handle 6 by means of which the fixing device 3 can be suspended on supporting bars 7 running over the casting mold, for example. These supporting bars 7 may suitably be provided with hook-like holding members 8 which prevent the suspending device 3 from moving in a vertical direction when the iron reinforcing rods should be held in a fixed position during casting.

Thus, with the help of the fixing devices 3 the iron reinforcing rods 1 are fixed in definite positions in relation to the casting mold during the casting of the light-weight concrete slab 2. After the light-weight concrete mass has solidified so that it possesses sufficient stability itself to retain the iron reinforcing rods 1 in their given positions, the fixing devices 3 are removed by first turning them in the direction of the arrows A so that they are freed from the hooks 8, while the slots 4 come into aligned position with the rods 1 which are above one another in said slots 4. With the slots 4 aligned as stated devices 3 may then be drawn out in an upward direction. The fixing devices 3 may be suitably tapered off in the downward direction for facilitating their removal from the light-weight concrete slab.

It is obvious, that the invention is not limited to the employment of the fixing devices described which, however, have been found extremely suitable for their purpose, but that all such alterations and modifications may be made therein which fall within the scope of the invention.

What I claim is:

1. A fixing device for holding reinforcing rods in a casting mold comprising a bar slotted to form two fork-like shanks, said two shanks located at a distance from one another which distance exceeds the diameter of the reinforcing rods, a recess formed in each shank, said recesses formed in the diagonally opposite edges thereof, and located at equal distances from the open end of the slotted bar, the pairs of recesses so formed permitting

3

the reinforcing rods inserted between the shanks to be fixed by rotation of the bar.

2. A fixing device for holding reinforcing rods in a casting mold in position during casting comprising a fork-shaped slotted bar having two substantially parallel shanks, the distance between said shanks being greater than the diameter of the reinforcing rods, said two shanks being provided in two diagonal edges, one in each shank, with recesses located at equal distances from the slotted end of the bar, thus forming pairs of recesses permitting the reinforcing rods inserted between the shanks to be fixed in said recesses by turning of the bar.

3. A fixing device for holding reinforcing rods in a casting mold in position in the casting operation, comprising a fork-shaped slotted bar having two substantially parallel shanks and a handle mounted on the non-slotted end of the bar, the distance between said shanks being greater than the diameter of the reinforcing rods, said two shanks being provided in two diagonal edges, one in each shank, with recesses which in both shanks are lo-

4

cated at equal distances from the slotted end of the bar, thus forming pairs of recesses permitting the reinforcing rods inserted between the shanks to be fixed in said recesses by turning of the bar by means of said handle.

References Cited in the file of this patent

UNITED STATES PATENTS

2,349,399	Awbrey	May 23, 1944
2,571,549	Dunning	Oct. 16, 1951
2,595,123	Callan	Apr. 29, 1952
2,634,603	Byars et al.	Apr. 14, 1953

FOREIGN PATENTS

901,688	France	Nov. 13, 1944
839,922	Germany	May 26, 1952
15,834	Great Britain	Nov. 9, 1915
291,838	Great Britain	June 5, 1928
414,290	Great Britain	Aug. 2, 1934
521,826	Great Britain	May 31, 1940