Oct. 6, 1925. 1,555,989

K. KISSE

REENFORCEMENT SYSTEM FOR CONCRETE STRUCTURES

Filed Aug. 26, 1922

Fig. 1.

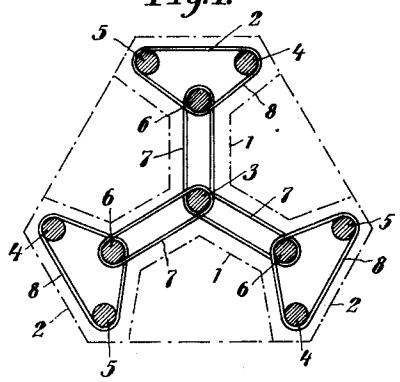


Fig. 2.

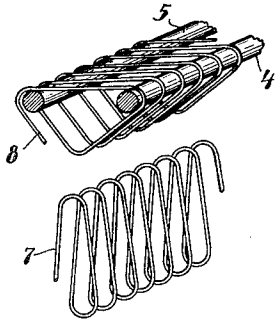


Fig. 3.

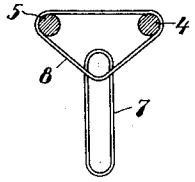


Fig. 4.

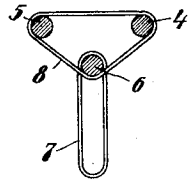
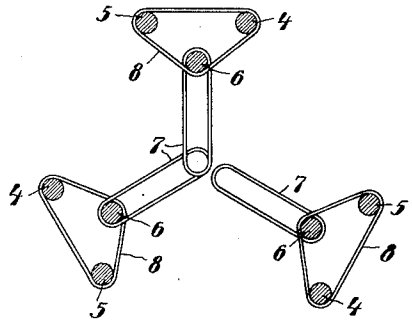


Fig. 5.



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1,555,989

UNITED STATES PATENT OFFICE.

KONRAD KISSE, OF BERLIN, GERMANY.

REENFORCEMENT SYSTEM FOR CONCRETE STRUCTURES.

Application filed August 26, 1922. Serial No. 584,528.

To all whom it may concern:

Be it known that I, KONRAD KISSE, a citizen of Germany, residing at Berlin, Germany, have invented certain new and useful Improvements in Reenforcement Systems for Concrete Structures, of which the following is a specification.

My invention has reference to reenforcement systems for concrete structures and in particular to the production of reenforced concrete structures with receding angles composed of a plurality of interconnected polygonal sections. According to the method hitherto practiced it has been found particularly advantageous to provide a complete spiral lacing for reenforced concrete bodies. The application of this method, however, to structures with receding angles, such as masts, beams, pillars, columns and the like, presents some difficulties and in such cases the method of spiral lacing is expensive and time-consuming.

I am aware that it is old to reenforce polygonal concrete shapes by embedding in the concrete a number of wire spirals corresponding to the number of sides of the polygon, each spiral extending along and reenforcing one side. According to this well known method the several spirals are brought together so as to intermesh, and longitudinal reenforcing bars are then slipped through the intermeshing parts of the spirals.

My invention has for its object an improvement of this method which constitutes a very considerable simplification accompanied by a great saving in costs and labor without in any way impairing the mechanical resistivity of the shapes thus made.

According to this invention, instead of employing a separate spiral for each side of the polygon, I use only one spiral for reenforcing the whole polygon, and in complex structures where several polygonal sections are interconnected in some suitable manner, only as many spirals are employed as there are polygonal and connecting sections.

My invention will be more fully described with reference to the accompanying drawing showing by way of example embodiment of the principle of my invention, it being assumed for the sake of illustration and explanation that the reenforced concrete column shown is formed around an inner pole without, however, restricting the invention and the application thereof to this particular structure. In the drawings

Fig. 1 is a plan view and

Figs. 2, 3, 4 and 5 illustrate the several stages of operation in the manufacture of reenforcements according to this invention.

The manufacture of the spirals shown in Fig. 2 is preferably effected upon a rotating mandrel of suitable shape, the windings of the coiled up wire being arranged in close proximity to each other. By an axial pulling action this coil is adapted to the particular length of the structural body. In the case of structural bodies of gradually decreasing section, such as masts or the like a tapering mandrel is used.

The spirals for the several cross sectional parts are then intermeshed as shown in Figs. 3 and 5, so as to partially overlap, the overlapping portions of the spirals constituting spaces into which one of the longitudinal iron bars or primary members may be inserted endwise thereby effecting the final connection of the several spirals.

Fig. 2 is a perspective view of the two spirals or coils 7 and 8 employed in a mast structure of substantially star-shaped cross section, the spiral 8 being shown as mounted upon the longitudinal bars 4 and 5. These two spirals are then inserted into each other, as shown in Fig. 3, so as to overlap. Now the longitudinal iron rod 6 is introduced endwise (Fig. 4) so as to connect both spirals to each other. After three of such reenforcing sections, as shown in Fig. 4, have been made, the free ends of the spirals or coils 7 are inserted into each other (Fig. 5), and the middle rod 3 is introduced lengthwise, so that all individual separate spirals required for the manufacture of a mast or the like, are now securely united. To the skeleton thus formed concrete is now applied, the polygonal column obtained being defined by the line 1 in Fig. 1. It is to be understood that the invention is by no means restricted to the transverse reenforcing of masts or the like, nor to the particular method of producing the skeleton, but it may also be applied with equal advantage to other reenforced concrete bodies with a plurality of receding angles; and it is also obvious that the invention is susceptible to

various modifications and alterations to better adapt it to varying conditions of application.

I claim:

A structure suitable for a pole or the like with several interconnected polygonal sections comprising a number of primary longitudinal reenforcing members equal in number to the corners of the polygonal sections, a single secondary tie member in each polygonal section extending spirally around the primary members in the respective section and a connecting tie member extending around adjacent primary members of different polygonal sections.

In testimony whereof I affix my signature.

KONRAD KISSE.