Nov. 10, 1925.

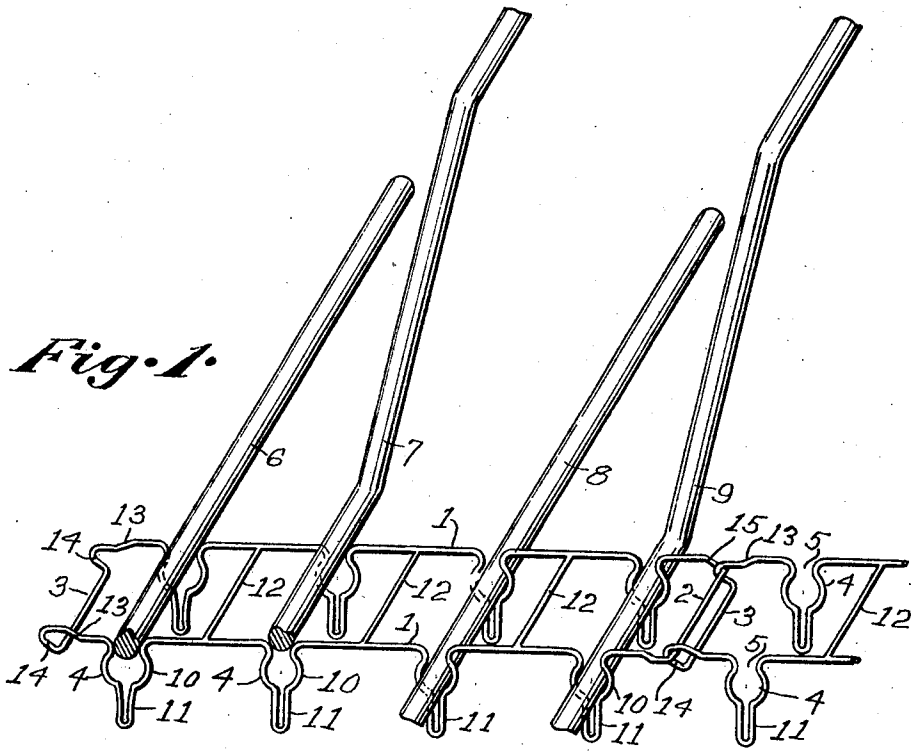
1,561,323

J. D. GREGG

BAR SPACER

Filed April 24, 1924

Fig. 1.



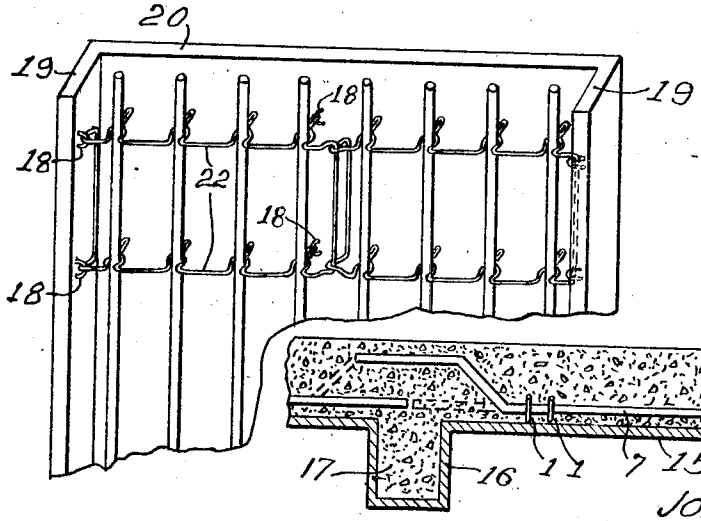


Fig. 2.

Fig. 3.

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Patented Nov. 10, 1925. 1,561,323

UNITED STATES PATENT OFFICE.

JOHN D. GREGG, OF ST. LOUIS, MISSOURI, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO REINFORCED CONCRETE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

BAR SPACER.

Application filed April 24, 1924. Serial No. 708,628.

To all whom it may concern:

Be it known that I, JOHN D. GREGG, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Bar Spacers, of which the following is a specification.

This invention relates to a device for spacing the reinforcing bars employed in reinforced concrete structures while they are being set preparatory to pouring the concrete during the erection of the structure.

Without the use of a spacer it is necessary to resort to a crude and inaccurate method of spacing conventionally employed, which consists in running thin rods transversely to the row of parallel reinforcing rods, and tying the reinforcing rods to the transverse rods by means of wire. Besides tying the rods in this manner, it is necessary in casting slabs to separate the rods from the form which determines the bottom of the proposed slab by inserting under the rods pebbles or small pieces of stone, so that when the slab is finished, the reinforcing rods will lie well within the slab and not be exposed on its under side. This method of spacing, in addition to being unreliable because of its dependence on the human element, obviously entails considerable labor, sixty per cent. of which can be eliminated by the employment of a suitable spacer.

One of the objects of this invention is to provide such a spacer which will have a series of self-locking seats for retaining the reinforcing bars in proper position, the bars being forced into the said seats by mere pressure.

Another object is to provide means for spacing the said seats from the floor of the erecting form that will not interfere with the free flow of concrete into every crevice and space intended to be filled therewith.

Another object is to provide features of construction whereby the spacer will be maintained in stable equilibrium and in proper position against the displacing and upsetting forces ordinarily exerted upon it under ordinary conditions of use.

Another object is to provide means whereby a number of such spacers may be hooked together to form one long spacer of any desired length the manufacture of the spacer in convenient and standard lengths being thereby facilitated.

Another object is to provide a spacer which can be readily and economically fabricated of wire.

Other objects and advantages will be apparent as the description proceeds.

In the accompanying drawings forming part of this specification in which like numbers of reference denotes like parts wherever the occur,

Figure 1 is a perspective view of the spacer, depicting the manner of inserting the bars therein during the construction of a floor slab;

Figure 2 is a perspective view showing the manner of applying the spacer to wall construction; and

Figure 3 is section through a floor slab embodying a plurality of rows of spacers.

The spacer has preferably the form of an approximately rectangular loop of wire, and comprises opposing sides or members 1 having their corresponding ends connected by transverse side or ties or spreaders 2 and 3.

The side members 1 wind back and forth at intervals to form a series of bar-holding loops or seats 4, the mouths 5 of said loops being narrower than the transverse dimension of the bars 6, 7, 8, and 9 capable of fitting loosely in the loop enlargements 10, and the sides of said enlargements 10 remote from the said mouths looping therefrom to form elongated constricted supports or legs 11.

One or more additional ties or spreaders 12 may be employed to connect intermediate portions of the members 1. The spreaders may be secured to the members 1 in any suitable manner, but are preferably welded thereto so as to form one rigid continuous structure.

Those portions of the members 1 juxtaposed to the tie 3 converge at 13 to shorten the distance separating them, and are bent to a hook shape 14, adapted to embrace the tie 2 of a fellow spacer so that a number of spacers may be connected together to form a series of the desired length. That portion of the members 1 adjacent the tie 2 is preferably bent at 15 to depress the tie 2, so

that the latter will fit within the opening of the hook 14 of an adjoining spacer, the shortened distance between the hooks 14 of the adjoining spacer permitting the same to fit between the members 1 of the adjoined spacer.

The mode of using the spacers in the construction of a floor slab is as follows, reference being had to Figures 1 and 3. The spacers are placed on the floor 15 of the form 16, several being connected together to form rows of the desired length between beams 17 and parallel thereto. The rods or bars 6, 7, 8, 9 and so on are then placed over the self-locking seats or loops 4, as shown more particularly by the bar 7, and pressure is exerted on the bars to force them into the seats 4, the loops spreading apart under the pressure to widen the mouths 5, as best shown by the bar 6 whereby the bars are permitted to enter the same and pass into the loops 4, in which they are held loosely, the mouths 5 contracting again because of the resilient nature of the wire loops, which is further enhanced by the resilient qualities of the loops forming the legs 11.

The legs 11, being of thin wire, do not impede the free flow of concrete into every crevice and space intended to be filled therewith, and furthermore space the bars from the bottom of the slab.

The fact that there are two members 1 separated by a substantial distance instead of a single member makes for marked stability, so that the spacer cannot be upset by the forces exerted upon it incident to the laying of the reinforcing bars.

In employing the spacers in wall construction, as exhibited in Figure 2, steeples 18 or other suitable fastening means are used to attach the end spacers of the series of spacers to the end wall 19 of the wall forms 20, the bars 21 held by the spacers 22 being, of course, vertical.

In addition to being used in the construction of floor slabs and walls, this spacer manifestly is capable of use in other ways, among which may be mentioned its employment in constructing joists, beams, and columns.

Having thus described this invention, I hereby reserve the benefit of all changes in form, arrangement, order, or use of parts, as it is evident that many minor changes may be made therein without departing from the spirit of this invention or the scope of the following claims.

I claim:

1. A bar spacer comprising an open frame of resilient material and having side bars and end bars connecting the side bars, said side bars being bent to provide depending substantially U-shaped supporting members each having the upper portions of its side arms bowed away from each other and providing the upper portions of the supporting members with rod receiving seats having constricted inlets at their upper ends through which rods may be forced into the seats.

2. A bar spacer comprising a frame formed of resilient wire and having side bars and cross bars connecting the side bars, each side bar being bent to provide a plurality of connected U-shaped spacers, each having its arms bent so that they are farther apart at intermediate portions than at their outer ends, whereby the spacers are provided with bar receiving seats having constricted inlets.

3. A bar spacer comprising a frame formed of resilient wire and having side bars and cross bars connecting the side bars, the side bars being bent at points in spaced relation to provide portions forming bar receiving seats having constricted inlets and having extensions forming supporting feet.

4. A bar spacer comprising a frame having side bars, and end bars connecting the side bars, the side bars being provided with bar receiving seats and adjacent one end of the frame being bent back and together with their connecting end bar forming a hook portion for engaging the end bar at the opposite end of a companion bar spacer to form a connected series of bar spacers.

5. A bar spacer comprising a rectangular frame formed of resilient wire and having side and end bars, the side bars adjacent one end of the frame being bent under to provide a hook member of the said end portion of the frame and the side bars having their other end portions bent to offset the end bar carried thereby and position the last mentioned end bar for engagement by the hooked portion of another bar spacer, the side bars being bent to provide bar receiving seats having constricted inlets and having extensions forming supporting feet.

In testimony whereof I hereunto affix my signature.

JOHN D. GREGG.