



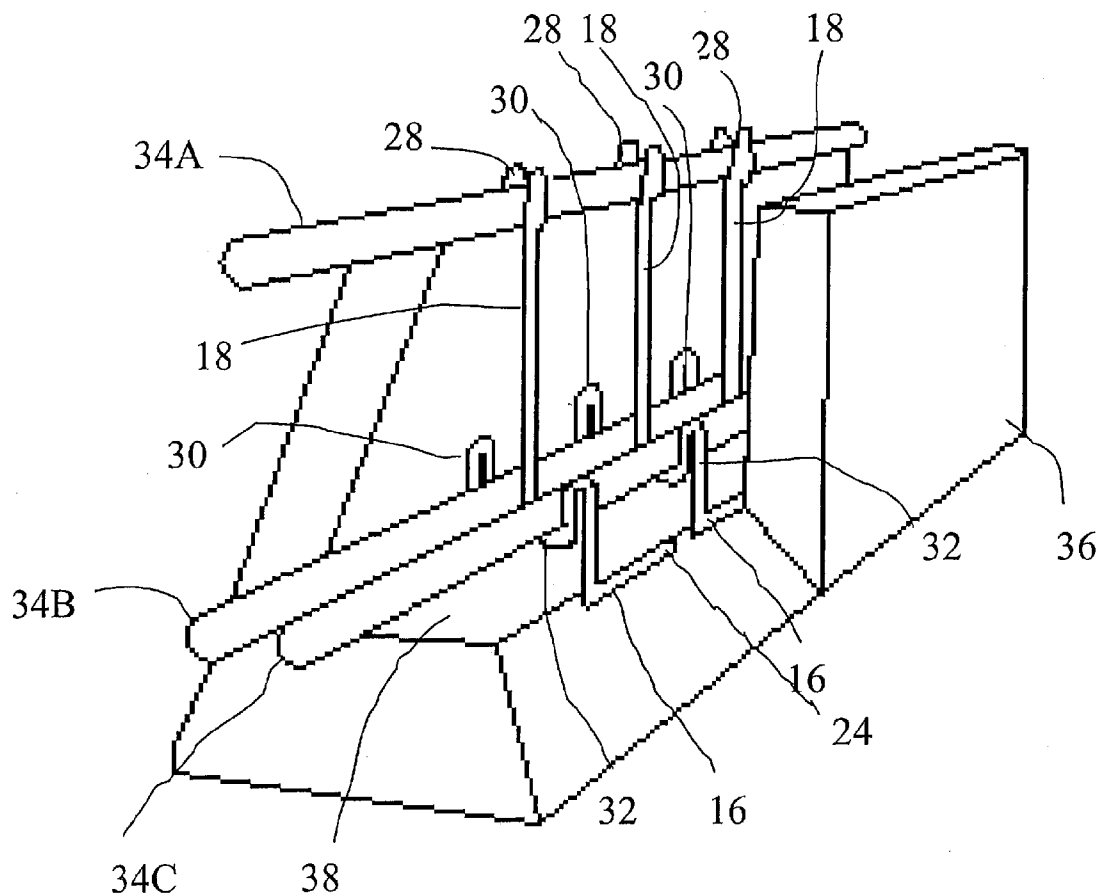
US 20120227350A1

(19) **United States**(12) **Patent Application Publication**
Wester(10) **Pub. No.: US 2012/0227350 A1**(43) **Pub. Date: Sep. 13, 2012**(54) **REBAR SUPPORT FOR USE WHEN
FORMING CONCRETE STRUCTURES****Publication Classification**(51) **Int. Cl.**
E04C 5/16

(2006.01)

(52) **U.S. Cl.** 52/687(57) **ABSTRACT**

A rebar support for use in forming concrete structures, includes a body formed from a single piece of an elongated metal substrate bent to define a first foot, a second foot positioned in spaced relation to the first foot, and a spanning segment that is vertically elevated, spans between the first foot and the second foot and has at least one rebar receptacle.

(75) **Inventor:** **David Wester, Red Deer (CA)**(73) **Assignee:** **BEAVER PLASTICS LTD.,
Acheson (CA)**(21) **Appl. No.:** **13/042,813**(22) **Filed:** **Mar. 8, 2011**

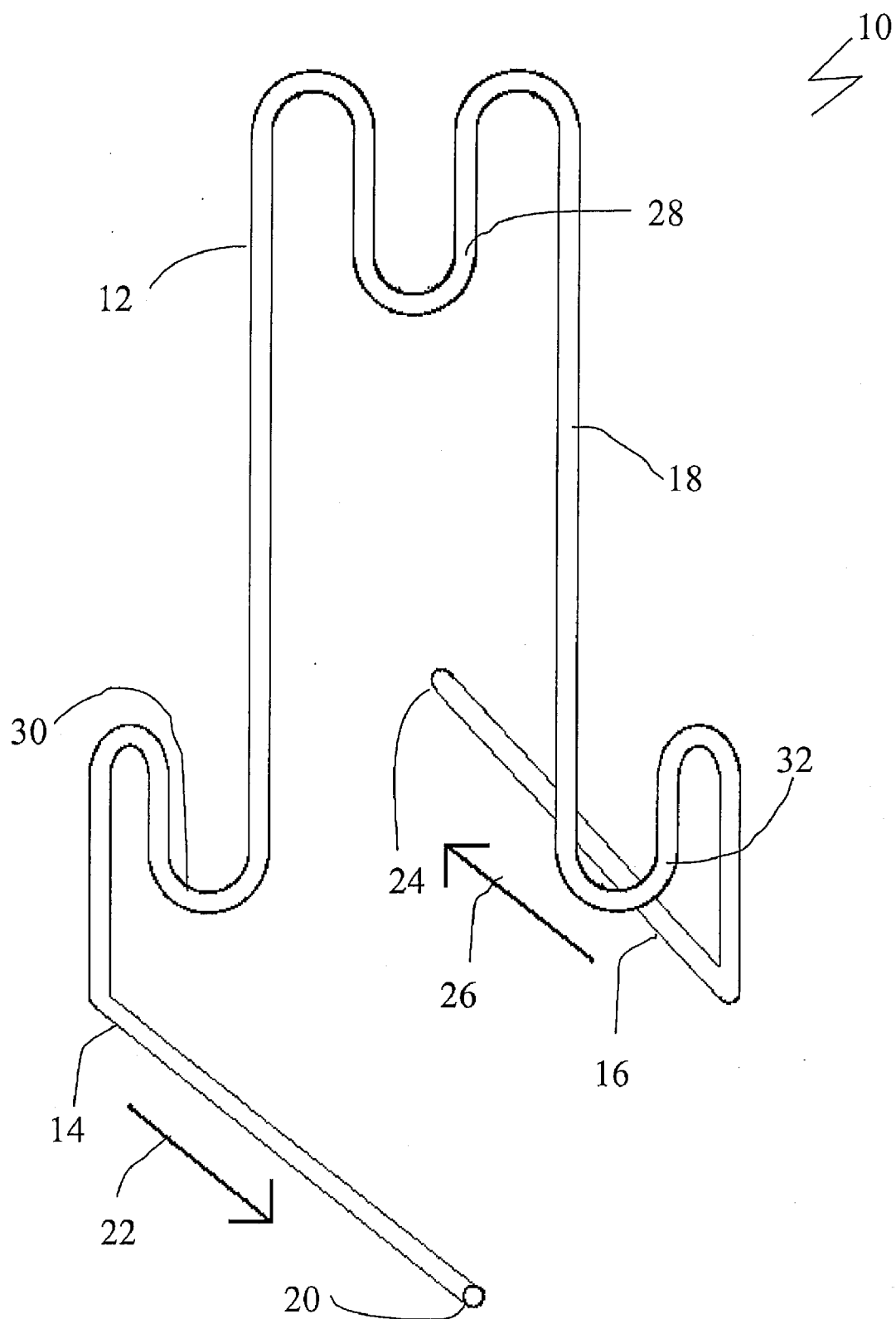


FIGURE 1

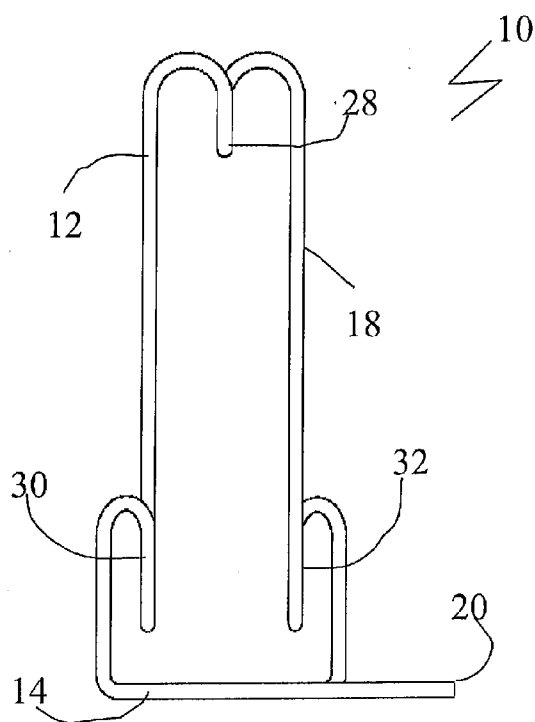


FIGURE 2

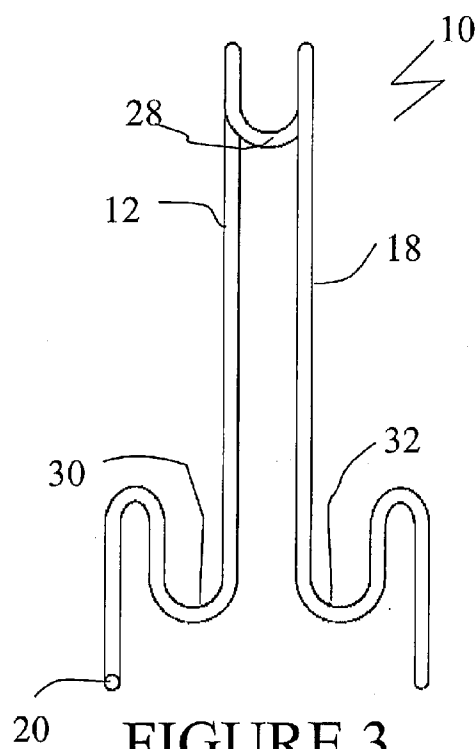


FIGURE 3

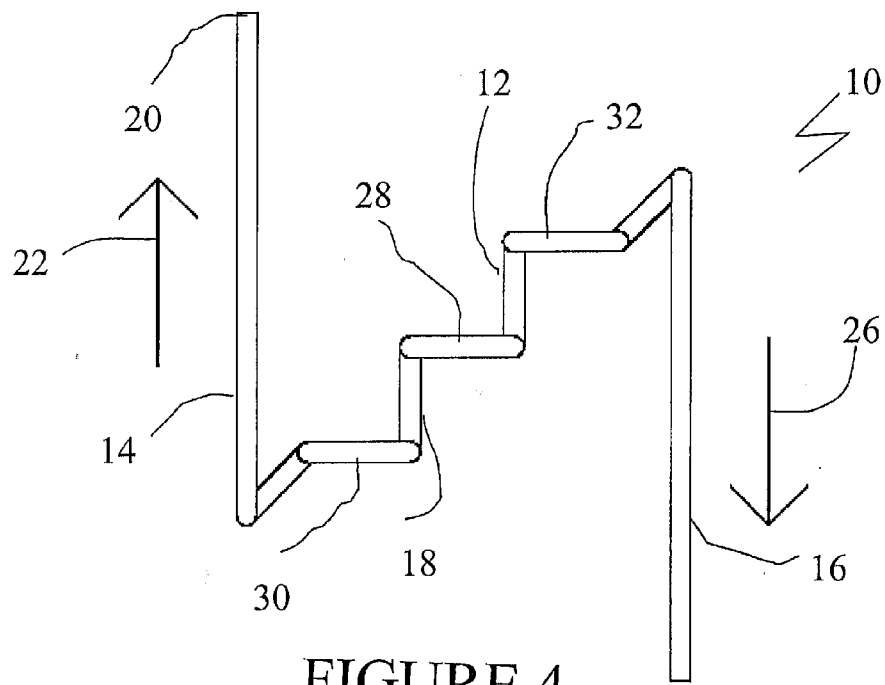


FIGURE 4

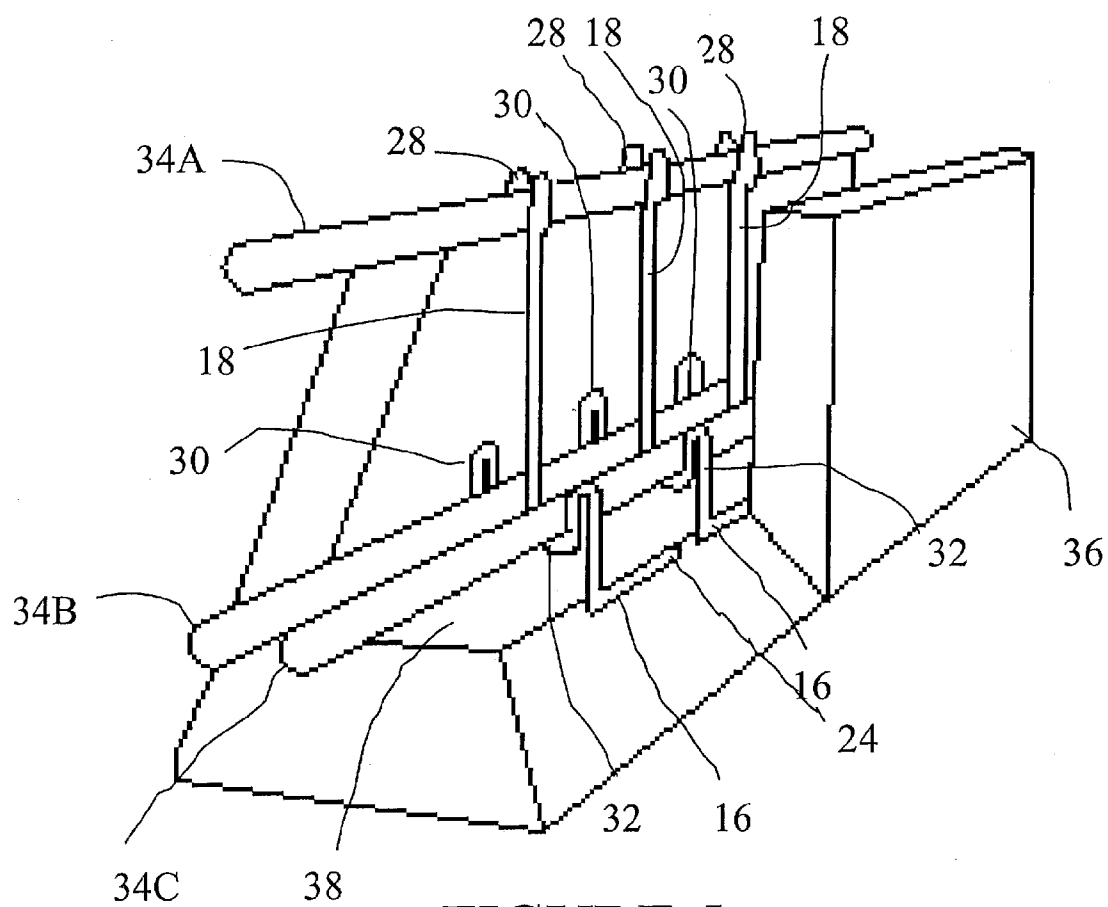
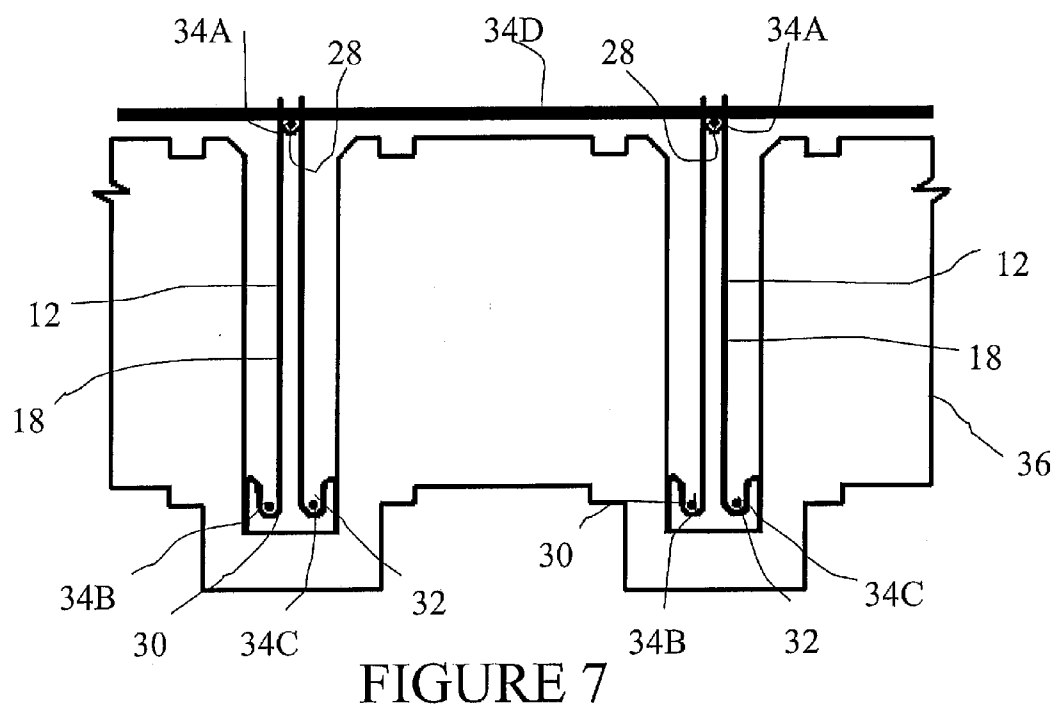
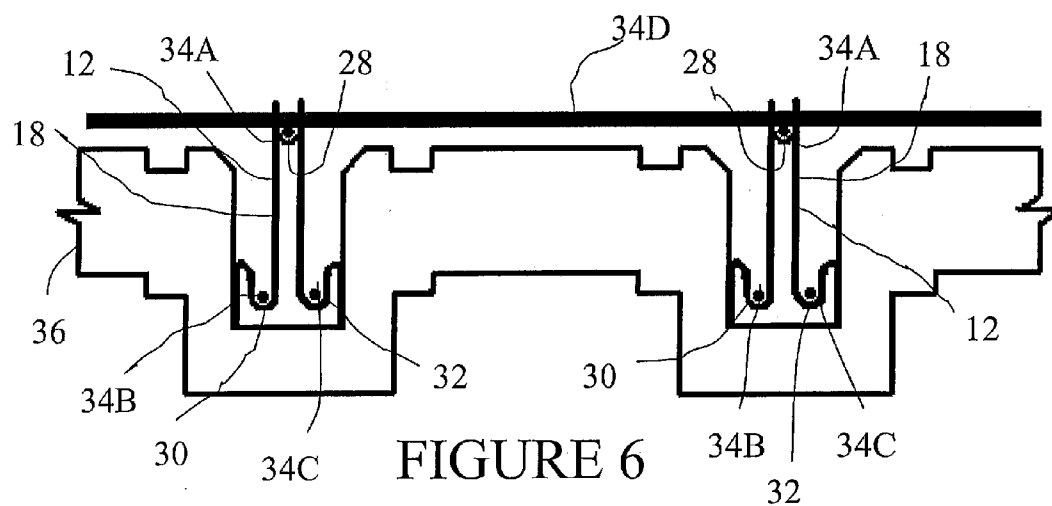


FIGURE 5



REBAR SUPPORT FOR USE WHEN FORMING CONCRETE STRUCTURES

FIELD

[0001] There is described a rebar support that supports rebar within concrete forms when forming concrete structures.

BACKGROUND

[0002] There are various configurations of rebar support used when forming concrete structures. One type of rebar support is a rebar chair. A rebar chair is used to lift rebar, so it will become completely surrounded by and encased in concrete. The rebar chair is frequently made of polymer plastic. Examples of rebar chairs include: US Design Patents D444,244; D483,246; D500,668; D548,053; D548,056; D594,737; and D618,988.

[0003] In some applications, engineering specifications call for the rebar to be supplemented. In such applications, the rebar is tied together by metal connectors, sometimes referred to as rebar "stirrups". Once embedded in concrete, the metal connectors and the rebar together form an integrated reinforcement web which provides more reinforcement than rebar alone is capable of providing.

SUMMARY

[0004] There is provided a rebar support for use in forming concrete structures, including a body formed from a single piece of an elongated metal substrate bent to define a first foot, a second foot positioned in spaced relation to the first foot, and a spanning segment that is vertically elevated, spans between the first foot and the second foot and has at least one rebar receptacle.

[0005] The rebar support, as described above, is capable of functioning as a rebar chair. However, once embedded in concrete it also becomes part of an integrated reinforcement web which provides more reinforcement than is possible using rebar in combination with any of the polymer plastic rebar chairs identified above. The rebar support acts as a mechanical lock between beam and slab when engineered as a composite slab. The length of the first foot and the second foot allows for self-spacing.

[0006] The actual configuration of the rebar support, such as the number of receptacles for holding rebar and their vertical and horizontal spacing can be varied. With the configuration that has been chosen for illustration and will hereinafter be described, the spanning segment includes: a central rebar receptacle of a first height centrally positioned between the first foot and the second foot, a first side rebar receptacle positioned between the first foot and the central rebar support, a second side rebar receptacle positioned between the second foot and the central rebar support. The height of the first side rebar receptacle and the second side rebar receptacle are shown as being lower than the first height of the central rebar receptacle.

[0007] The rebar support, described above, can be made out of a variety of metal stock. In order to promote the flow of concrete around the support it is preferred that the body is circular in cross-section. Beneficial results have been obtained through the use of wire.

[0008] In order to provide stability and resistance to tipping, it is preferred that an extremity of the first foot is oriented in a first direction and an extremity of the second foot

is oriented in a second direction opposed to the first direction. It is also preferred that the central rebar receptacle, the first side rebar receptacle, and the second side rebar receptacle be defined by generally "U" shaped recesses oriented to support rebar in parallel spaced relation.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] These, and other features will become more apparent from the following description in which reference is made to the appended drawings, the drawings are for the purpose of illustration only and are not intended to be in any way limiting, wherein:

[0010] FIG. 1 is a perspective view of a rebar support.

[0011] FIG. 2 is a side elevation view the rebar support of FIG. 1.

[0012] FIG. 3 is a front elevation view the rebar support of FIG. 1.

[0013] FIG. 4 is a bottom plan view the rebar support of FIG. 1.

[0014] FIG. 5 is a perspective view the rebar support of FIG. 1 positioned within a concrete form supporting rebar.

[0015] FIG. 6 is a side elevation view, in section, of the rebar support positioned within a short composite slab.

[0016] FIG. 7 is a side elevation view, in section of the rebar support positioned within a tall composite slab.

DETAILED DESCRIPTION

[0017] A rebar support generally identified by reference numeral 10, will now be described with reference to FIG. 1 through FIG. 7.

Structure and Relationship of Parts:

[0018] Referring to FIG. 1, a rebar support 10 is a body 12 formed from a single piece of wire. Body 12 includes a first foot 14, a second foot 16 and a spanning segment 18. First foot 14 has an extremity that is a first end 20 of wire body 12 and is oriented in a first direction 22. Second foot 16 has an extremity that is a second end 24 of wire body 12 and is oriented in a second direction 26 which opposes first direction 22. Spanning segment 18 spans between first foot 14 and second foot 16.

[0019] Spanning segment 18 includes central rebar receptacle 28, a first side rebar receptacle 30 and a second side rebar receptacle 32. Each of central rebar receptacle 28, first side rebar receptacle 30 and second side rebar receptacle 32 are "U" shaped. Central rebar receptacle 28 is of a first height centrally positioned between first foot 14 and second foot 16, while first side rebar receptacle 30 and second rebar receptacle 32 are of a second height lower than the first height. Referring to FIG. 4, first side rebar receptacle 30 is positioned between first foot 14 and central rebar support 28 and second side rebar receptacle 32 is positioned between second foot 16 and central rebar support 28. Referring to FIG. 3, first side rebar receptacle 30 and second side rebar receptacle 32 may be of the same height or second side rebar receptacle 32 may be a third height which is lower than the first height and higher than the second height.

[0020] Referring to FIG. 5, central rebar receptacle 28, first side rebar receptacle 30 and second side rebar receptacle 32 are oriented to support rebar 34A, 34B and 34C or a bundled

rebar configuration in parallel spaced relation with rebar 34A, 34B and 34C spaced both vertically and horizontally.

Operation:

[0021] Referring to FIG. 5, multiple rebar supports 10 are placed in beam form 36 prior to pouring cement. Rebar supports 10 are placed such that central rebar receptacle 28, first side rebar receptacle 30 and second side rebar receptacle 32 of one of rebar supports 10 are in alignment with those of the other rebar supports. First foot 14 and second foot 16 are placed in contact with bottom 38 of beam form 36 with spanning segment 18 spanning the space above first foot 14 and second foot 16. Rebar 34 is inserted into central rebar receptacle 28 of rebar supports 10, first side rebar receptacle 30 and second side rebar receptacle 32. Once rebar 34 is in position, concrete can be poured into beam form 36 to create a rebar supported concrete beam-truss. Although first side rebar receptacle 30 and second side rebar receptacle 32 are shown as being at the same height, it will be understood that each of central rebar receptacle 28, first side rebar receptacle 30 and second side rebar receptacle 32 may be at different heights which would allow for concrete blocks with rebar support in different areas. First foot 14 and second foot 16 are of a length designed to self-space which provides for shear reinforcement.

[0022] Referring to FIG. 6 and FIG. 7, show multiple rebar support 10 used in a composite slab to provide reinforcement. Body 12 provides support to rebar 34A, 34B, and 34C. There is also an additional rebar 34D, which rests on an angle to and on top of rebar 34A to provide shear reinforcement. Body 12 of rebar supports 10, together with rebar 34A, 34B and 34C act as a mechanical lock between the beam and the concrete slab of the composite slab.

[0023] It will be apparent to a person skilled in the art that instead of using wire for rebar support 10, one could also make rebar support out of rebar or other elongated metal stock material.

[0024] In this patent document, the word “comprising” is used in its non-limiting sense to mean that items following the word are included, but items not specifically mentioned are not excluded. A reference to an element by the indefinite article “a” does not exclude the possibility that more than one of the element is present, unless the context clearly requires that there be one and only one of the elements.

[0025] The following claims are to be understood to include what is specifically illustrated and described above, what is conceptually equivalent, and what can be obviously substituted. Those skilled in the art will appreciate that various adaptations and modifications of the described embodiments can be configured without departing from the scope of the claims. The illustrated embodiments have been set forth only as examples and should not be taken as limiting the invention. It is to be understood that, within the scope of the following claims, the invention may be practiced other than as specifically illustrated and described.

What is claimed is:

1. A rebar support for use in forming concrete structures, comprising:

a body formed from a single piece of an elongated substrate bent to define

a first foot;

a second foot positioned in spaced relation to the first foot; and

a spanning segment that is vertically elevated, spans between the first foot and the second foot and has at least one rebar receptacle.

2. The rebar support of claim 1, wherein the spanning segment includes:

a central rebar receptacle of a first height centrally positioned between the first foot and the second foot;

a first side rebar receptacle positioned between the first foot and the central rebar support;

a second side rebar receptacle positioned between the second foot and the central rebar support;

the height of the first side rebar receptacle and the second side rebar receptacle being lower than the first height of the central rebar receptacle.

3. The rebar support of claim 1, wherein the first side rebar receptacle and the second side rebar receptacle are at differing heights.

4. The rebar support of claim 1, wherein the body is circular in cross-section.

5. The rebar support of claim 1, wherein the body is of wire.

6. The rebar support of claim 1, wherein an extremity of the first foot is oriented in a first direction and an extremity of the second foot is oriented in a second direction opposed to the first direction.

7. The rebar support of claim 2, wherein the central rebar receptacle, the first side rebar receptacle, and the second side rebar receptacle are each generally “U” shaped recesses oriented to support rebar in parallel spaced relation.

8. The rebar support of claim 1, wherein the elongated substrate is metal.

9. A rebar support for use in forming concrete structures, comprising:

a body formed from a single piece of wire bent to define a first foot, the first foot having an extremity representing a first end of the wire that is oriented in a first direction;

a second foot, the second foot having an extremity representing a second end of the wire that is oriented in a second direction opposed to the first direction;

a spanning segment that spans between the first foot and the second foot, the spanning segment having

a “U” shaped central rebar receptacle of a first height centrally positioned between the first foot and the second foot;

a “U” shaped first side rebar receptacle of a second height lower than the first height positioned between the first foot and the central rebar support;

a “U” shaped second side rebar receptacle of a third height lower than the first height and higher than the second height positioned between the second foot and the central rebar support.

the central rebar receptacle, the first side rebar receptacle, and the second side rebar receptacle being oriented to support rebar in parallel spaced relation with the rebar spaced both vertically and horizontally.

* * * * *