ADJUSTABLE REBAR CONNECTOR

Inventor: Peter W. Gavin, Durham, CT (US)

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ABSTRACT

An adjustable rebar connector for joining rebar rods is disclosed. In some embodiments, the connector includes the following: a first portion including one or more arms, each of the one or more arms including a male portion extending therefrom and a first notch having a first longitudinal axis, the first notch being configured to releasably retain a first rebar rod; a second portion including a second notch formed therein and one or more female portions for receiving and retaining the male portion extending from a corresponding one of the one or more arms, the second notch having a second longitudinal axis that is not parallel to the first longitudinal axis, the second notch being configured to releasably retain a second rebar rod; a chair portion extending outwardly from one or more of the first and second portions; and a hinge portion joining the first and second portions.
ADJUSTABLE REBAR CONNECTOR

BACKGROUND

[0001] Various spacers for positioning rebar, wire, mesh, and other structural members in concrete are well known. One of the most common includes a chair-type of device on top which structural members are balance.

[0002] Other device are joined to the structural members and are able to move with the structural members without toppling and also maintain stability during most concrete pours. One such device is a universal spacer that is manufactured by Polylok Inc. of Wallingford, Conn. and described in U.S. Pat. No. 5,347,787, which is incorporated by reference as if disclosed herein in its entirety. However, known devices that are joined to structural members are not designed to connect multiple rebar rods to one another.

[0003] Typically, short pieces of wire are used to join overlapping rebar rods. However, the use of wire is labor intensive and inconsistent based on the skill of the worker. Alternatively, various types of clips are known in the art. However, known clips for connecting overlapping rebar rods are designed to specific diameters of rebar rod. As a result, a plurality of clips is required to allow for varying sizes of rebar rod. The lack of adjustability increases cost and can result in delays when required sized clips are unavailable.

SUMMARY

[0004] In some embodiments, an adjustable rebar connector for joining rebar rods is disclosed. In some embodiments, the connector includes the following: a first portion including one or more arms, each of the one or more arms including a male portion extending therefrom and a first notch having a first longitudinal axis, the first notch being configured to releasably retain a first rebar rod; a second portion including a second notch formed therein and one or more female portions for receiving and retaining the male portion extending from a corresponding one of the one or more arms, the second notch having a second longitudinal axis that is not parallel to the first longitudinal axis, the second notch being configured to releasably retain a second rebar rod; a chair portion extending outwardly from one or more of the first and second portions; and a hinge portion joining the first and second portions.

[0005] In some embodiments, an adjustable rebar connector is disclosed. In some embodiments, the connector includes the following: a first portion including one or more male portions extending therefrom and a first notch having a first longitudinal axis; a second portion including one or more arms, each of the one or more arms including a second notch formed therein and one or more female portions for receiving and retaining one of the one or more male portions, the second notch having a second longitudinal axis that is not parallel to the first longitudinal axis; and a hinge portion joining the first and second portions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The drawings show embodiments of the disclosed subject matter for the purpose of illustrating the invention. However, it should be understood that the present application is not limited to the precise arrangements and instrumentalities shown in the drawings, wherein.

[0007] FIG. 1 is a top, front isometric view of a connector joining two rebar rods according to some embodiments of the disclosed subject matter;

[0008] FIG. 2 is a top, front isometric view of a connector in an open position according to some embodiments of the disclosed subject matter;

[0009] FIG. 3 is a bottom, front isometric view of a connector joining two rebar rods according to some embodiments of the disclosed subject matter;

[0010] FIG. 4 is a bottom, front isometric view of a connector in an open position according to some embodiments of the disclosed subject matter;

[0011] FIG. 5 is a bottom, front isometric view of a connector including a chair portion joining two rebar rods according to some embodiments of the disclosed subject matter;

[0012] FIG. 6 is a side elevation view of a connector taken along line 6-6 of FIG.; and

[0013] FIG. 7 is a top, front isometric view of a connector in an open position according to some embodiments of the disclosed subject matter.

DETAILED DESCRIPTION

[0014] Referring now to FIGS. 1-4, some embodiments include an adjustable rebar connector 100 for joining first and second rebar rods 102, 104 to one another. Connector 100 includes a first portion 106 including one or more arms 108. Each of arms 108 includes a male portion 110 extending therefrom and a first notch 112 defining a first longitudinal axis 114. In some embodiments, male portion 110 is curved. First notch 112 is configured, i.e., sized and shaped, to releasably retain second rebar rod 104.

[0015] Connector 100 includes a second portion 116 that has a second notch 118 formed therein and one or more female portions 120 for receiving and retaining male portion 110 extending from a corresponding one of arms 108. Second notch 118 defines second longitudinal axis 121 that is not parallel to first longitudinal axis 114. In some embodiments, first and second longitudinal axes 114 and 121, respectively, are substantially perpendicular. Second notch 118 is configured to releasably retain second rebar rod 104.

[0016] Connector 100 includes a hinge portion 122 joining first and second portions 106 and 116, respectively. Referring now to FIGS. 5 and 6, in some embodiments, a connector 100 includes a chair portion 124 extending outwardly from one or more of first and second portions 106 and 116, respectively.

[0017] Referring again to FIGS. 1-4, corresponding pairs including one of male portions 110 and one of female portions 120 form an adjustable and releasable connection 126. In some embodiments, connection 126 is a ratchet mechanism and female portions 120 include a release button 128 for allowing male portions 110 to be released. In some embodiments, one or more of first and second portions 106 and 116, respectively, include tabbed portions 130 configured for enhancing grip.

[0018] Referring now to FIG. 7, some embodiments of the disclosed subject matter include an adjustable rebar connector 200 having a first portion 202 and second portion 204 that are releasably connected to one another via a hinge portion 206.
First portion 202 includes one or more male portions 208 extending therefrom and a first notch 210 having a first longitudinal axis 212. In some embodiments, male portions 208 are curved. Second portion 204 includes one or more arms 214 that each have a second notch 216 formed therein and one or more female portions 218 for receiving and retaining one of one or more male portions 208. Second notch 216 defines a second longitudinal axis 220, which is that is not parallel to first longitudinal axis 212. Hinge portion 206 connects first and second portions 202 and 204, respectively.

In some embodiments, connector 200 includes a chair portion 222 extending outwardly from one or more of first and second portions 202 and 204, respectively. Corresponding pairs including one of male portions 208 and one of female portions 218 form an adjustable and releasable connection. In some embodiments, the connection is a ratchet mechanism and female portions 218 include a release button 226 for allowing male portions 208 to be released. In some embodiments, one or more of first and second portions 202 and 204, respectively, include tabbed portions 228 configured for enhancing grip.

Referring again to FIGS. 1-4 and connector 100, in use, the connector is in an open state as best shown in FIGS. 2 and 4, and first rebar rod 102 is placed in second notch 118 in alignment with second longitudinal axis 121. Then, second rebar rod 104 is placed on top of first rebar rod 102 at typically a substantially perpendicular angle. Next, first portion 106 is brought toward second portion 116 so that second rebar rod 104 is positioned within first notch 112 and in alignment with first longitudinal axis 114. Male portions 110 extending from first portion 106 are received and releasably retained by female portions 120 of second portion 116 thereby connecting first and second rebar rods 102 and 104, respectively.

Connectors according to the disclosed subject matter offer benefits and advantages over known devices. Embodiments of the disclosed subject matter are the only known products that allow for various size pieces of rebar to be the connected together vertically and horizontally. Embodiments of the disclosed subject matter are easy to install and eliminate tying of rebar. At the same time, embodiments of the disclosed subject matter connect rebar unions, i.e., vertical to horizontal and combinations of different sized rebar, e.g., 1/2" rebar. Some embodiments of the disclosed subject matter include a chair portion that acts as a standoff from the inner core or floor. Various sized chair portions, e.g., 2", 1 1/2", 1", and no standoff are available. Embodiments of the disclosed subject matter are suitable for connecting epoxy coated rebar and work well with foundation, bridge, or any outside construction.

Although the disclosed subject matter has been described and illustrated with respect to embodiments thereof, it should be understood by those skilled in the art that features of the disclosed embodiments can be combined, rearranged, etc., to produce additional embodiments within the scope of the invention, and that various other changes, omissions, and additions may be made therein and thereto, without parting from the spirit and scope of the present invention.

1. An adjustable rebar connector comprising:
   a first portion including one or more arms, each of said one or more arms including a male portion extending therefrom and a first notch having a first longitudinal axis;
   a second portion including a second notch formed therein and one or more female portions for receiving and retaining said male portion extending from a corresponding one of said one or more arms, said second notch having a second longitudinal axis that is not parallel to said first longitudinal axis; and
   a hinge portion joining said first and second portions.

2. An adjustable rebar connector according to claim 1, further comprising a chair portion extending outwardly from one or more of said first and second portions.

3. An adjustable rebar connector according to claim 1, wherein one of said male portions and one of said female portions form an adjustable and releasable connection.

4. An adjustable rebar connector according to claim 3, wherein said connection is a ratchet mechanism.

5. An adjustable rebar connector according to claim 3, wherein said one or more female portions include a release button for allowing said male portion to be released.

6. An adjustable rebar connector according to claim 1, wherein said first and second longitudinal axes are substantially perpendicular.

7. An adjustable rebar connector according to claim 1, wherein one or more of said first and second portions include tabbed portions configured for enhancing grip.

8. An adjustable rebar connector according to claim 1, wherein said male portions are curved.

9-16. (canceled)

17. An adjustable rebar connector for joining rebar rods to one another, said connector comprising:
   a first portion including one or more arms, each of said one or more arms including a male portion extending therefrom and a first notch having a first longitudinal axis, said first notch being configured to releasably retain a first rebar rod;
   a second portion including a second notch formed therein and one or more female portions for receiving and retaining said male portion extending from a corresponding one of said one or more arms, said second notch having a second longitudinal axis that is not parallel to said first longitudinal axis, said second notch being configured to releasably retain a second rebar rod;
   a chair portion extending outwardly from one or more of said first and second portions; and
   a hinge portion joining said first and second portions.

18. A connector according to claim 17, wherein one of said male portions and one of said female portions form an adjustable and releasable connection.

19. A connector according to claim 18, wherein said connection is a ratchet mechanism.

20. A connector according to claim 17, wherein said connection is a ratchet mechanism.