G. S. MILES.

DEVICE FOR CONCRETE CONSTRUCTIONS, &c.

APPLICATION FILED NOV. 15, 1907.

904,978. Patented Nov. 24, 1908.

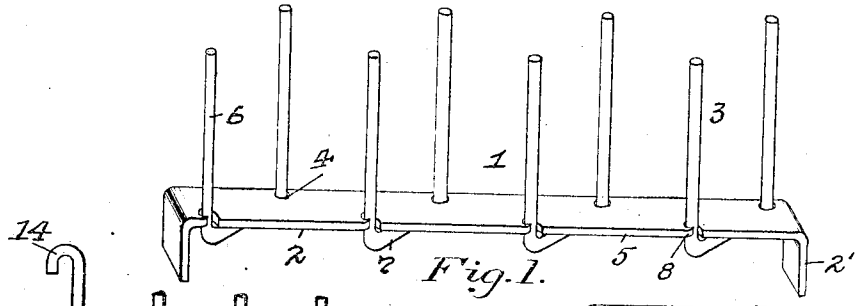


Fig. 1.

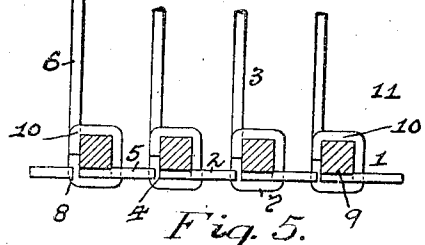


Fig. 5.

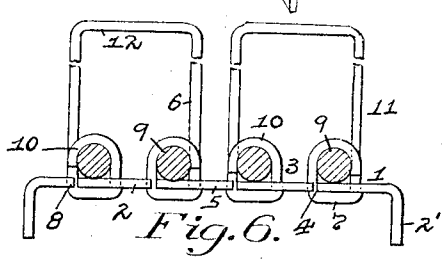


Fig. 6.

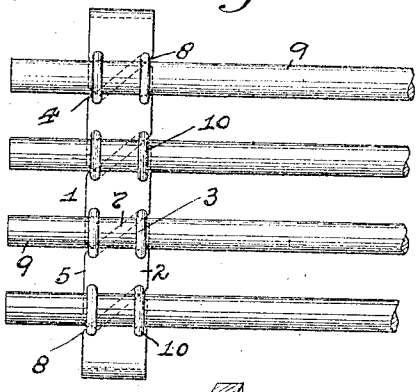


Fig. 2.

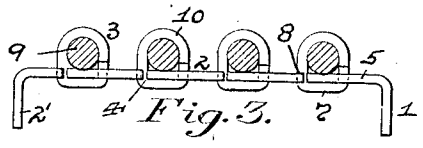


Fig. 3.

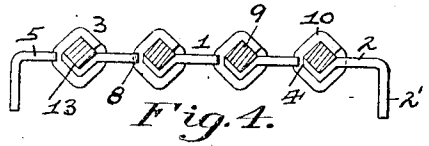
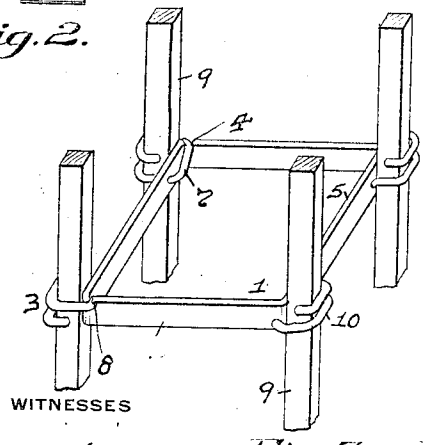


Fig. 4.



WITNESSES

Walter Samaniss

O. L. Thompson

Fig. 7.

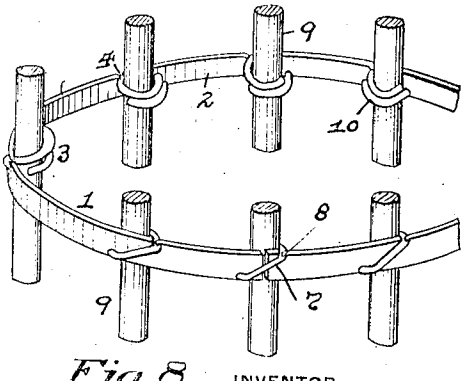


Fig. 8.

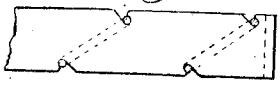
INVENTOR

George S. Miles,

By J. N. Cooke

Attorney.

Fig. 9.



UNITED STATES PATENT OFFICE.

GEORGE S. MILES, OF NEW YORK, N. Y., ASSIGNOR TO OSCAR J. MAIGNE, OF NEW YORK, N. Y.

DEVICE FOR CONCRETE CONSTRUCTIONS, &c.

No. 904,978. Specification of Letters Patent. Patented Nov. 24, 1908.

Application filed November 15, 1907. Serial No. 402,233.

To all whom it may concern:

Be it known that I, GEORGE S. MILES, a resident of New York city, in the county of New York and State of New York, have invented a new and useful Improvement in Devices for Concrete Constructions, &c.; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an attaching and connecting device for bars, and has special reference to what is generally known as "reinforced concrete constructions".

The object of my invention is to provide a cheap, simple and efficient form of an attaching and connecting device for the bars which can readily and conveniently be applied to such bars and will form a commercial and marketable article.

My invention consists, generally stated, in the novel arrangement, construction and combination of parts, as hereinafter more specifically set forth and described and particularly pointed out in the claims.

To enable others skilled in the art to which my invention appertains to construct and use my improved attaching and connecting device, I will describe the same more fully, referring to the accompanying drawing, in which:—

Figure 1 is a perspective view of the attaching or connecting device. Fig. 2 is a plan view of the same showing its engagement with a series of bars. Figs. 3 and 4 are side views of the same showing it in engagement with different forms of bars which are shown in cross-section. Figs. 5 and 6 are like views of the same showing the stirrup attachment. Figs. 7 and 8 are perspective views showing my invention applied to other forms of constructions. Fig. 9 is a detail view of the connecting plate showing the ends of the staple in section.

Like symbols of reference herein indicate like parts in each of the figures of the drawing.

As illustrated in the drawing 1 represents my improved attaching or connecting device which is formed of metal and comprises a flat bar 2 and connecting staples 3 on the same. The bar 2 has the legs 2′ bent out at each end of the same and is provided with a number of slots 4 extending into the same from the side edges 5 thereof, which slots are formed at an oblique angle or diagonal to said side edges and those on one side will extend in a parallel line with those on the other side. One of the slots 4 on each side of said bar 2 forms a set of two for each one of the staples 3, so that the outside point of each slot in a set will form the securing portion as hereinafter described, and the angles of the slots in each set will point or dip away from each other.

Each one of the staples 3 is diagonally connected to the bar 2 through the slots 4 and each one is held diagonally in a set of said slots, so that its legs 6 pass through said slots and extend in a diagonal line for some distance beyond one side of said bar, while the head 7 of the staple will thus extend in a diagonal line along the other side of said bar. Each of the staples 3 is provided with two legs 6 and such legs are secured in the two slots 4 of a set by bending the projecting portion 8 formed on the bar 2 by said slots in any suitable manner or by any suitable means, so that such portion 8 will be thus clenched against said legs and hold the staple in place on said bar.

The attaching or connecting device 1 as thus formed is connected to the tension bars 9 of a beam by placing the plate 2 of the same in a transverse position, or across and under said bars 9 at the position desired, and then bending down the legs 6 of the staples 3 on the plate 2 over and around said bars 9 in any suitable manner or by any suitable means to form the hook portions 10. This will thereby form a unitary stru ure and the devices or members 1 when thu attached to the bars 9 are used for paralleling, spacing and holding said bars in line and at fixed intervals, while the legs 2′ on the plates 2 will act to hold the bars 9 at uniform level or distance above the bottom of the mold for the beam when the concrete is placed around the said bars 9, as shown in Fig. 6.

It will be obvious that the bars 9 form the main members for the beam and the minor or auxiliary members 11 usually employed for such beam may be formed within the same in any desired manner, as by one of the legs 6 on the staples 3 being extended into the beam, as shown in Fig. 5, and formed in any desired shape as with the hook 19 at the end, or such member can be formed by one of said legs being extended into the beam from one of the slots 4 in a set and connected to a slot 4 in another set to form a loop 12, as shown in Fig. 6. These extending or stirrup portions can thus be set in a vertical or diagonal line, in the beam, and other

positions of the same may be made, if desired, while a separate auxiliary member having a combined attaching portion and an outwardly extending portion thereon may be used on the bars 9 of the beam.

If desired, my improved attaching or connecting member 1 can be used in connection with a variety of structures formed from reinforced concrete or cementitious materials or as a reinforcement or strengthening support for any form of framing of metals or embedded metals, and in Figs. 7 and 8 it is shown as applied to the bars 9 arranged in square and circular constructions respectively, in which cases the plate 2 of said member is used without its legs 2′ and is bent or formed to the shape required for such constructions, so that the staples 3 on the same can be connected or attached to said bars 9 in the manner above described.

It will be obvious that my improved attaching or connecting member 1 can have its plate 2 placed upon either side of the bars 9, so that the staples 3 can be connected or attached to said bars and such bars may be formed of a variety of shapes and forms, such as round, square, etc., while it will also be obvious that the shape and form of the plate 2 may be varied, as such plate can be indented or recessed, as shown at 13, for the insertion of the bars 9 therein which in this case said bars are square bars and are set with relation to said plate so as to be diamond shape.

It will thus be seen that my improved attaching and connecting plate is of great utility and convenient for this class of work, as it can be manufactured and sold in commercial forms and in complete shape for immediate application, as well as be packed and shipped to any distance like other forms of merchandise and be ready for immediate use at the work. The slots for the staples in the plate of the device can be made on a right angle or holes can be used in the place of the slots and one or any number of the staples can be used on said bar 1, while the manner of securing and holding said staples to or within the plate may be accomplished in other ways than by bending and clenching the metal of the plate around the same, as shown. The member can be applied to irregular and unusual forms of framing, structures and fastenings and will hold the parts to which it is attached or connected, in a rigid and secure manner. It will also be seen that my improved attaching and connecting member can be used in connection with other forms of materials or compositions and in the erection of many devices and structures from different materials and compositions.

Various modifications and changes in the application, uses, design and construction of my improved attaching and connecting member other than those herein mentioned may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as my invention, and desire to secure by Letters Patent, is:—

1. A frame for concrete and other constructions comprising a bar and a connecting plate arranged transversely thereto, said plate having a pair of oblique slots in its side edges lying in parallel lines, and a staple mounted in said slots and having its legs bent over the bar.

2. A frame for concrete and other constructions comprising a bar and a connecting plate arranged transversely thereto, said plate having a pair of oblique slots in its side edges lying in parallel lines, a staple mounted in said slots and having its legs bent over the bar, and means for securing said staple to said plate.

3. A frame for concrete and other constructions comprising a bar and a connecting plate arranged transversely thereto, said plate having a pair of oblique slots in its side edges lying in parallel lines, a staple mounted in said slots and having its legs bent over the bar, and a projecting portion forming part of said slots for being bent over said legs to secure said staple to said plate.

In testimony whereof, I, the said GEORGE S. MILES, have hereunto set my hand.

GEORGE S. MILES.

Witnesses:

NATHAN SCHAUMBURGER,

MORTON SCHAUMBURGER.