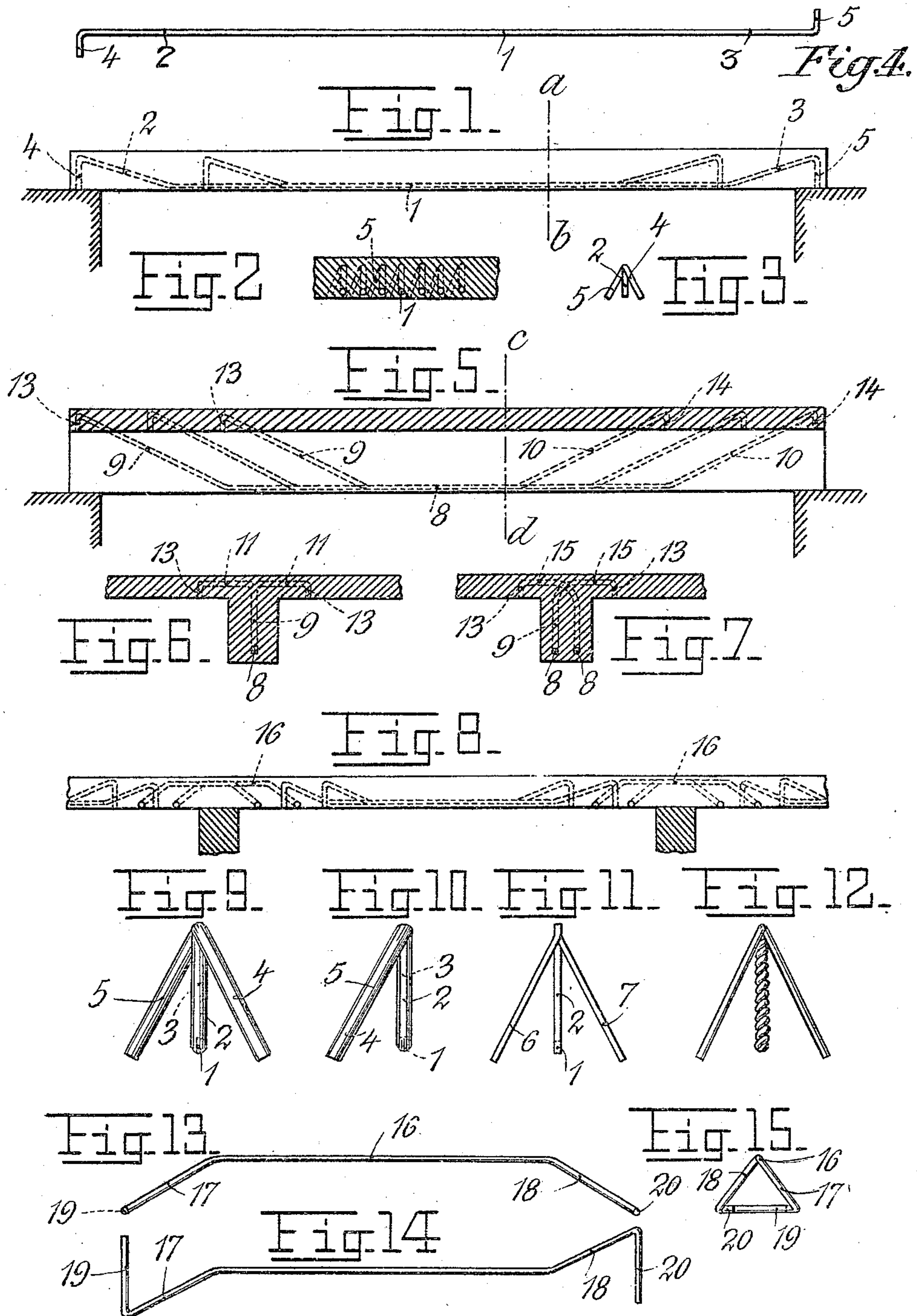


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STEEL BAR FOR REINFORCEMENT OF SLABS, BEAMS, OR SIMILAR CONSTRUCTIONS OF CONCRETE.  
APPLICATION FILED JUNE 1, 1907.

959,808.

Patented May 31, 1910.



Witnesses:

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# UNITED STATES PATENT OFFICE.

FREDRIK SELMER, OF CHRISTIANIA, NORWAY.

STEEL BAR FOR REINFORCEMENT OF SLABS, BEAMS, OR SIMILAR CONSTRUCTIONS OF CONCRETE.

959,808.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed June 1, 1907. Serial No. 376,888.

*To all whom it may concern:*

Be it known that I, FREDRIK SELMER, engineer, citizen of the Kingdom of Norway, and resident of the city of Christiania, Pilestradet 27, Norway, have invented certain new and useful Improvements in Steel Bars for Reinforcement of Slabs, Beams, or Similar Constructions of Concrete, of which the following is a specification.

In the placing of concrete for vaults, slabs or beams the reinforcing steel bars to be embedded in the concrete mass hitherto have been supported or sustained by special means in order to secure their correct position in the mass. However, it is a matter of fact, that the bent-up anchoring ends of the steel bars partly during the placing and partly during the puddling or ramming cannot be prevented from sinking somewhat down, so that their position is not really such as intended. This has of course an essential influence upon the bearing strength of the construction.

The present invention has for its purpose to obviate the defect above mentioned and is illustrated in several forms of execution, in the accompanying drawing, in which:—

Figure 1 is a side view of a slab provided with steel bars in accordance with the invention. Fig. 2 is a section along the line *a—b* in Fig. 1. Fig. 3 is an end view and Fig. 4 a plan view of the steel bar. Fig. 5 is a side view of the beam of concrete reinforced by means of steel bars of a somewhat altered shape. Figs. 6 and 7 are sections along the line *c—d* in Fig. 5 showing two forms of the steel bars. Fig. 8 is a side view of a continuous slab or beam of concrete reinforced in the tension parts of the upper and lower layers. Figs. 9, 10, 11 and 12 are end views, showing in larger scale 4 different constructions of the tie steel bars. Figs. 13, 14 and 15 are side, plan and end views respectively of a bar which is advantageously used for continuous slabs or beams in the tension parts of the upper layer.

The invention consists generally spoken in the ends of the bent-up parts of the bars being bent downward in such a manner, that said ends rest upon the centering or form and at the same time hold the bar upright in its correct position without the use of special sustaining means. This arrangement obviously may be executed in several manners.

According to Figs. 1–4 the ends of the upwardly inclined parts —2, 3— of the bar —1— are bent down in oblique direction to each side, the part —2— (Fig. 3) being bent aslope to the right in order to form the leg —4—, while the part —3— is bent aslope to the left in order to form the leg —5— (see also Fig. 9). If therefore the bar is supported as usual at its middle portion —1—, it will—as the legs —4— and —5— rest upon the centering—be supported at least by 3 points, which are not in the same straight line, so that the bar is held in a quite predetermined position without extra auxiliary means. The bar therefore can be mounted in beforehand (Fig. 2) and the laying of the construction may take place without risk of alterations in position. The legs —4— and —5— may also be bent to one side only as shown in Fig. 10. Or the ends of the parts —2, 3— may be split longitudinally and bent out to both sides as shown at —6, 7— in Fig. 11. Finally the whole bar may be constituted by two wires twisted together and the ends of which are bent out to each side as shown in Fig. 12. If a reinforced beam is to be built (Figs. 5, 6 and 7) both of the parts —9, 10— of the bars —8— may be split and bent to both sides as shown at —11— in Fig. 6, in which the ends —13, 14— are bent downward in order to form supporting parts resting upon the centerings of the slabs, or each of the parts —9, 10— may be bent to one side as shown at —15— in Fig. 7, in which the ends —13, 14— are bent downward. When finally bars —16— are to be embedded in the upper layers of continuous slabs or beams, Fig. 8, the bars are for instance given the shape shown in Figs. 13, 14 and 15, in which the inclined parts —17— and —18— are bent not only aslope downward, as usual, but also aslope to each side, and their ends —19— and —20— are bent in such a manner, that they form two horizontal supporting legs for the bar.

The invention is applicable in every case, in which reinforced constructions of concrete are built upon centerings.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A reinforcing steel bar having upwardly sloping parts, the extreme ends of which are bent downward and to opposite

sides of the vertical plane of the body portion of the bar so as to form supporting legs reaching down to the upper surface of the form.

- 5 2. A reinforcing steel bar having upwardly sloping parts, the extreme ends of which are bent down and out of the vertical plane of the body portion of the bar so as to form supporting legs reaching down to the  
10 upper surface of the form, one leg being on

one side of the body portion and the other on the other side.

In testimony whereof, I have hereunto affixed my signature this 16th day of May 1907, in the presence of two witnesses. 15

FREDRIK SELMER.

Witnesses:

AXEL LAHN,

RICHARD STOKKE.