

O. TÄNGRING.
FLATTENED STRAND ROPE.
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1,004,546.

Patented Sept. 26, 1911.

Fig. 1



Fig. 2



Fig. 3

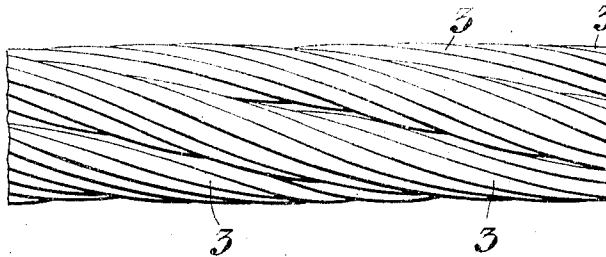
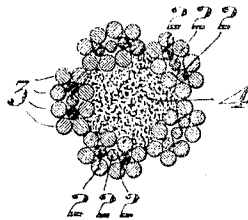


Fig. 4



WITNESSES

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OLOF TÄNGRING, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO THE AMERICAN STEEL & WIRE COMPANY OF NEW JERSEY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

FLATTENED-STRAND ROPE.

1,004,546.

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To all whom it may concern:

Be it known that I, OLOF TÄNGRING, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Flattened-Strand Rope, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to flattened strand wire ropes or cables which are used principally for haulage purposes. The ropes when so used are subject to great wear and rapidly lose their strength on account of the construction and shape of the cores used in forming the series of flattened strands comprising such ropes or cables, although owing to the flattened shape of the strand a greater number of wires are subjected to wear than is the case where the strands are circular in cross section. Heretofore, in such flattened strand wire ropes, each strand is composed of a series of round or cylindrical wires surrounding a core formed of a wire of oblong or triangular cross section. It has also been proposed to form such flattened strands by assembling cylindrical outer wires around a core formed of cylindrical wires of greater diameter than the surrounding outside wires.

The object of this invention is to provide a flattened strand rope or cable having a core formed in such manner as to increase the flexibility and thereby lengthen the life of the so formed rope by preventing breakage of the cores in the flattened strands and to greatly increase the strength of the strands from which the cables and ropes are formed.

The invention consists in forming a spirally twisted strand composed of a core formed of a plurality of round or cylindrical wires having a diameter at most not greater than the surrounding outer or strand wires, laid side by side so that the major axis of the flattened strand corresponds with and intersects the axial center of each core wire at all points in the length of the strand, and in laying a series of such strands spirally into a rope or cable.

Referring to the drawings, Figure 1 is a plan of a piece of flattened wire rope strand constructed and arranged in accordance with my invention. Fig. 2 is a transverse

section of the strand shown in Fig. 1. Fig. 3 is a plan showing a wire rope or cable formed of a series of the flattened strands shown in Figs. 1 and 2. Fig. 4 is a transverse section of the rope or cable shown in Fig. 3.

In the accompanying drawings, 2, 2, 2, designate the core wires of the flattened strand which are arranged side by side in the plane of the major axis of the strand. Around the core formed by the wires 2, are the outside or strand wires 3. The core wires and the surrounding strand wires forming each strand are laid spirally as shown in the drawings. A series of the strands shown in Fig. 2 is then laid spirally together about a core 4, this core preferably being formed of tarred hemp or Manila rope and as shown in the drawing, five of the strands are employed to form the rope or cable.

By reference to Fig. 2 it will be seen that the core wires 2 are of substantially smaller diameter than the surrounding outside or strand wires 3, this construction affording greater flexibility to the strands and increasing the life of the rope formed of such strands by reason of the greater flexibility of the core, and the prevention of breakage of the core into small pieces within a short time after being put into use, as is the result with such ropes when made with a single oblong or triangular core.

The advantages of my invention arise from the employment in forming the ropes or cables of flattened strands, in which the strands have a core formed of a plurality of cylindrical or round wires of a smaller or at most not greater diameter than the surrounding wires, and in laying the core wires side by side in such manner that the major axis of the flat strand corresponds to and coincides with the axial center of the core wires, instead of, as heretofore, using a single oblong or specially shaped core wire which is stiff and becomes broken into small pieces so rapidly after being put into service and to such an extent as to be ignored in figuring the strength of such flattened strand ropes.

I claim:—

1. In a wire rope or cable, a flattened strand having a flattened core, said core being formed of a plurality of cylindrical core wires arranged side by side in a single plane

and a series of strand wires surrounding the flattened core, said strand wires being larger in diameter than the wires forming the core.

5 2. In a wire rope or cable, a flattened strand having a flattened core, said core being formed of a plurality of cylindrical core wires arranged side by side in a single plane and a series of strand wires surrounding the
10 flattened core, said strand wires being larger in diameter than the wires forming the core, the wires forming the strand being spirally twisted.

3. In a wire rope or cable, a flattened
15 strand having a flattened core, said core being formed of a plurality of cylindrical core wires arranged side by side in a single plane and a series of strand wires surrounding the flattened core, said strand wires being
20 at least equal in diameter to the wires forming the core, the wires forming the strand being spirally twisted.

4. In a wire rope or cable strand, a flattened core formed of at least three cylindrical
25 wires arranged side by side in a single plane

and a series of surrounding strand wires at least equal in diameter to the wires forming the flattened core, the core and strand wires being spirally twisted.

5. In a wire rope or cable strand, a flattened core composed of three wires arranged side by side and a series of surrounding strand wires of larger diameter than the wires forming the flattened core, the core and strand wires being spirally twisted. 30

6. A wire rope having a series of spirally twisted flattened strands, said strands having flattened cores, the flattened cores being composed of three core wires arranged side by side, and a series of strand wires
40 surrounding the flattened core, the diameter of the strand wires being greater than the diameter of the wires forming the core, the core and strand wires being spirally twisted.

In testimony whereof, I have hereunto set
45 my hand.

OLOF TÄNGRING.

Witnesses:

A. F. BACKLIN,
C. W. HOLMES.