

No. 647,402.

Patented Apr. 10, 1900.

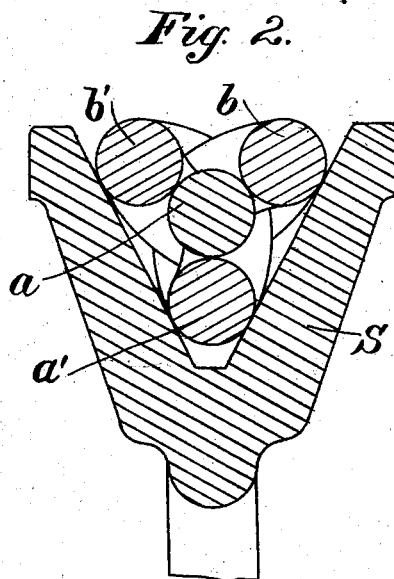
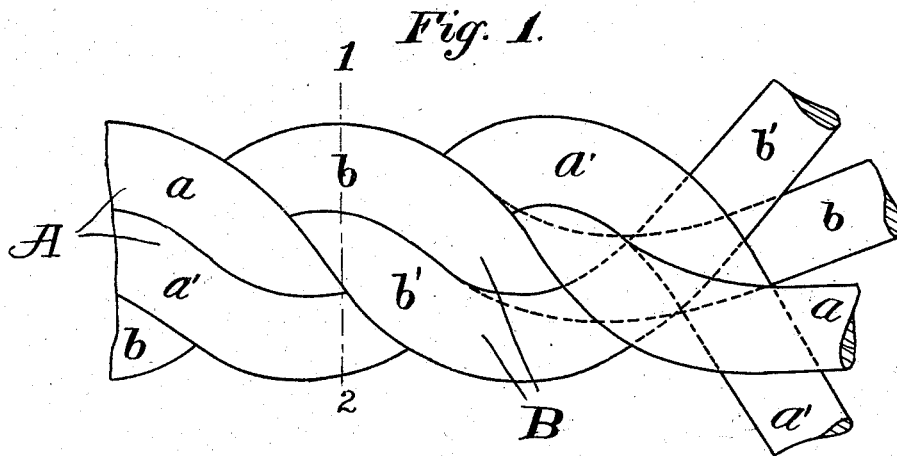
F. E. A. GÜNTHER.

ROPE, CORD, &c.

(Application filed Mar. 13, 1899.)

(Specimens.)

2 Sheets—Sheet 1.



Witnesses:

J. Stephen Kinsten
Percy C. Brown

Inventor:

F. E. A. Günther,
by Wilkinson & Fisher,
Attorneys.

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2 Sheets—Sheet 2.

Fig. 3.

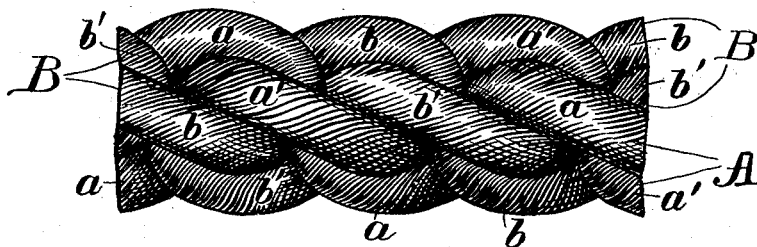


Fig. 4.

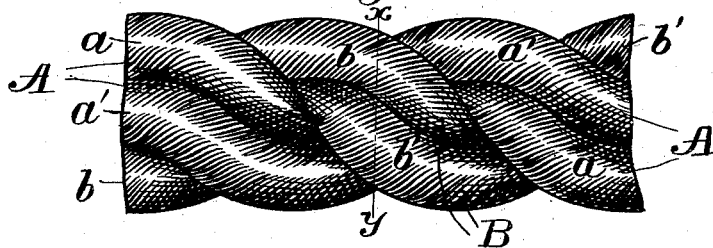
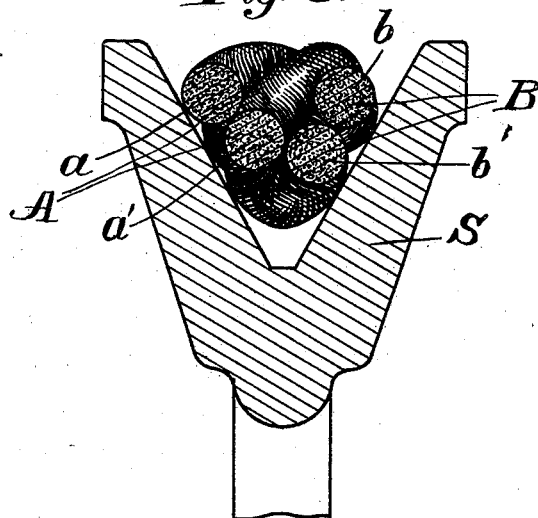


Fig. 5.



Witnesses:

Clarence A. Bateman
Rory C. Bowen

Inventor:

F. E. A. Günther,
by Williams & York,
Attorneys.

UNITED STATES PATENT OFFICE.

FRIEDRICH E. ALBERT GÜNTHER, OF HALBERSTADT, GERMANY.

ROPE, CORD, &c.

SPECIFICATION forming part of Letters Patent No. 647,402, dated April 10, 1900.

Application filed March 13, 1899. Serial No. 708,909. (Specimens.)

To all whom it may concern:

Be it known that I, FRIEDRICH ERNST ALBERT GÜNTHER, merchant, a subject of the Emperor of Germany, residing at 16 and 17

5 Woort Halberstadt, in the Province of Saxony, Kingdom of Prussia, German Empire, have invented new and useful Improvements in the Manufacture of Ropes, Cords, and the Like, of which the following is a specification.

10 My invention relates to improvements in the manufacture of ropes, cords, and the like, and has for its main object to produce a rope which may be used as a satisfactory belt for transmitting power.

15 When ropes of the ordinary circular form are employed as a belt for the transmission of power, it has been found that they have a tendency of twisting and running laterally, and when being used with a grooved pulley this
20 fault causes considerable power to be lost in binding upon the sides of the grooves. Besides the rope must be renewed very often, owing to this unnecessary twisting and binding. Four-sided ropes have been tried in this
25 connection, but most have proved impracticable, as the splices are so much thicker than the rope that as they pass over the pulleys an unusual strain is encountered, thus proving them very unsatisfactory for the purpose.
30 These faults above-mentioned are eliminated by the rope which will be hereinafter described.

My invention consists in a rope, cord, or the like which may be made of wire, hemp, cotton, or any other suitable material so twisted
35 as to form a rope of three, four, five, or more sides, each strand being so placed that the grooves of the pulley upon which it is to run will tend to even up the wear and strain upon
40 the bearing-surfaces of the rope.

To more fully describe my invention, reference will be had to the accompanying drawings, wherein the same parts are indicated by the same letters of reference throughout the
45 several views, in which for the sake of clearness is shown a rope having a triangular or three-sided formation.

Figure 1 is a view of a flat side of the rope. Fig. 2 is a section of the rope on the line 1 2
50 of Fig. 1, showing how the rope rests on the pulley. Fig. 3 is a view looking at the rope from one edge. Fig. 4 is a side view of the same;

and Fig. 5 is a section upon the line xy of Fig. 4, showing the position of the rope upon the pulley.

Two strands composed of wire, hemp, or other suitable material, such as $a a'$, are twisted around each other and form the rope A, which has a cross-section similar to the figure 8, pressed closely together. A similar rope B
55 is formed in the same manner, made up of the strands $b b'$, twisted together in the same direction. The two strands thus formed are twisted around each other in a direction opposite to that by which the strands $a a' b b'$
60 formed the ropes A B, thus causing the individual strands to lie in relation to each other so as to form a series of ridges, Fig. 3, $b' a b a' b$ upon one edge, ridges $b a' b'$, upon another edge, and ridges $a b' a b a'$, &c., upon
65 the third side, leaving a substantially-flat surface lying between each series of ridges. These ridges run in a direct longitudinal direction along the rope, and this shape is retained by the peculiar formation of the rope, the resiliency of the individual strands tending to
70 hold each other in its proper place.

When the rope is placed into the groove of a pulley, such as s , the sides of the pulley bind against the flat surfaces between the
75 ridges, and as force is applied the tendency is to draw the rope farther down into the groove, thereby giving the rope a "cling" to the pulley, which is necessary to economically transmit power by means of a belt or a rope
80 used for such a purpose.

When a wire cable used for hoisting, &c., is made according to this invention, it is obvious that instead of subjecting the entire lateral strain upon the cable passing over a
85 pulley to one point of the rope the weight is equally proportioned upon all the strands upon that flat side of the cable, thereby increasing its endurance considerably, as well as causing a more even wear upon the pulleys, &c.

It is obvious that the above-described rope may be used upon a flat-surfaced pulley, if necessary, by running it upon any one of its
90 sides.

While this invention relates principally to ropes to be used as belts, it is evident that the same is adapted to be used to serve as an ordinary rope for hoisting, &c.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

As an article of manufacture, a rope of substantially-triangular formation, composed of two pairs of individual strands twisted together in the same direction, said pairs of strands being laid together in such relation to each other that the positions of said strands which form the outer surface of the rope lie in three parallel ridges which run longitudi-

nally of the rope, that portion of the surface of the rope between said parallel ridges being substantially flat, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

F. E. ALBERT GÜNTHER.

Witnesses :

PAUL MÜLLER,
F. T. STEPHAN.