Oct. 9, 1928. 1,687,089

R. D. GREEN

SAWING WIRE

Filed April 17, 1926

Fig. 1.



Fig. 2.

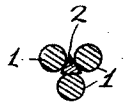


Fig. 3.



Fig. 4.

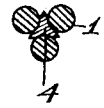


Fig. 5.

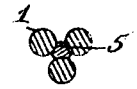
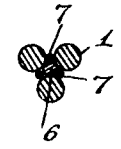


Fig. 6.



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UNITED STATES PATENT OFFICE.

RICHARD DUANE GREEN, OF TRENTON, NEW JERSEY, ASSIGNOR TO JOHN A. ROEBLING'S SONS COMPANY, OF TRENTON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SAWING WIRE.

Application filed April 17, 1926. Serial No. 102,643.

The object of the invention is to provide an improved sawing wire of that class used for sawing marble or other stone by reciprocating a wire strand carrying abrasive material, such as sand or the like, which usually is fed to the wire in liquid during the sawing process.

In such sawing wire strands, as heretofore made, the wires of the strand are in contact and the voids or spaces between the wires which carry the abrasive are comparatively small, and, as the wires of the strand wear down, these voids or spaces are rapidly reduced in dimensions, so that the proper and efficient action of the strand as an abrasive carrier is not secured.

The present invention provides a sawing wire strand in which larger voids between the wires are secured and the void areas remain of efficient abrasive carrying size as the outside diameter of the strand is reduced by wear, the void area remaining after wear being a much larger proportion of the original area than with the strands as at present made.

For a full understanding of the invention, a detailed description of a construction embodying the same in preferred forms will now be given in connection with the accompanying drawings forming a part of this specification and the features forming the invention will then be particularly pointed out in the claims.

In the drawings,—

Figure 1 is a side view of a stone sawing strand formed of three wires and a triangular center, the drawing being about full size;

Figure 2 is a cross section of the strand of Figure 1;

Figure 3 is a view similar to Figure 2 showing a four wire strand;

Figures 4, 5 and 6 are views similar to Figure 2 showing modified forms of three wire strands.

Referring now particularly to Figures 1 and 2, the strand A is formed of three wires 1 laid up helically on a triangular center 2 so that the wires 1 are spaced apart throughout, thus leaving large voids or spaces between the wires. It will be seen, also, that as the outside diameter of the strand is reduced by wear, a large proportion of the area of these spaces is retained, thus providing for the continued efficient action of the strand as an abrasive carrier.

In Figure 2 the strand is shown as formed of four wires 1 with a center spacer 3 of square form.

In Figure 4 there is shown a three wire strand similar to that shown in Figure 1, except that the center 4 has grooves forming seats within which are seated the wires 1. These grooves preferably will be provided by making the center 4 of softer metals than the wires 1, so that the grooves will be formed by the pressure of the wires 1 in laying up the strand. These grooves for the wires, however, may be formed in the center 4 previously to laying up the strand, in which case the center 4 may be of the same hardness as wires 1.

In Figure 5 there is shown a strand similar to that of Figure 4, except that the center 5 is round, but provided with similar grooves forming seats for the wires 1 which may be formed in laying up the strand, or previously, as desired.

In Figure 6 there is shown a three wire strand in which the wires are laid up on a round center 6 with small wires 7 on the center 6 between the wires 1.

It will be understood that all the constructions shown are equally applicable to strands having more than three wires, and that the constructions illustrated are selected only as some of the preferred forms of embodiment of the invention and may be widely varied without departing from the invention as defined by the claims.

What I claim is:

1. A sawing wire consisting of a strand formed of a plurality of wires laid up helically in the same direction upon and in contact with a single center element and held out of contact with each other to provide large abrasive carrying areas.

2. A sawing wire consisting of a strand formed of a plurality of wires laid up helically in the same direction on a single center element having seats therein adapted to hold said wires out of contact with each other to

provide large abrasive carrying areas, the wires being held in position by said seats in the center.

3. A sawing wire consisting of a strand formed of a plurality of hard wires laid up helically on a relatively soft center element and held out of contact with each other to provide large abrasive carrying areas, the wires when laid about said center forming seats therein whereby they are held in position.

In testimony whereof, I have hereunto set my hand.

RICHARD DUANE GREEN.