

No. 615,865.

Patented Dec. 13, 1898.

W. LIGGINS.  
GUARD FOR VELOCIPEDES.

(Application filed Apr. 6, 1896.)

(No Model.)

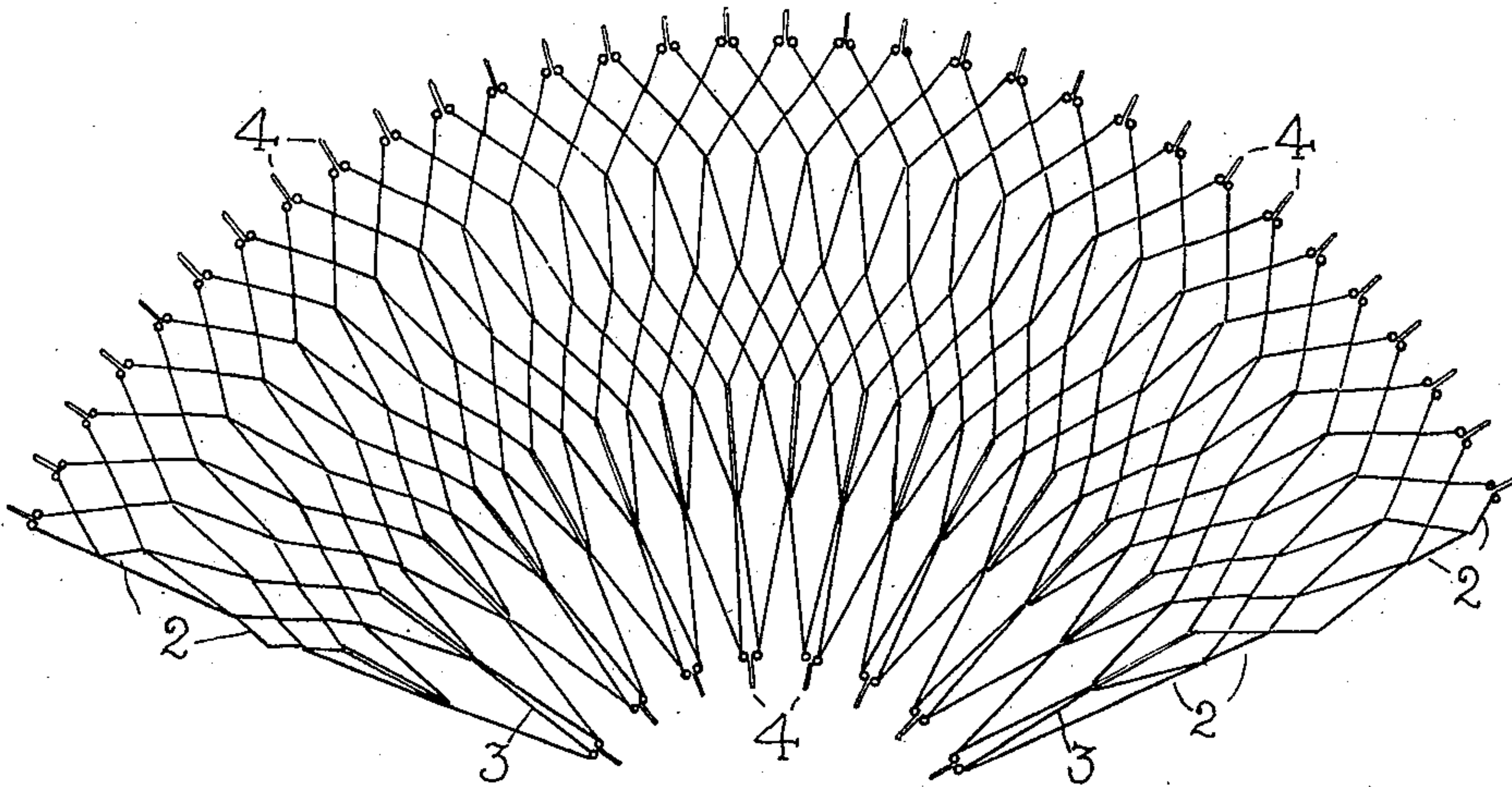


FIG. I.

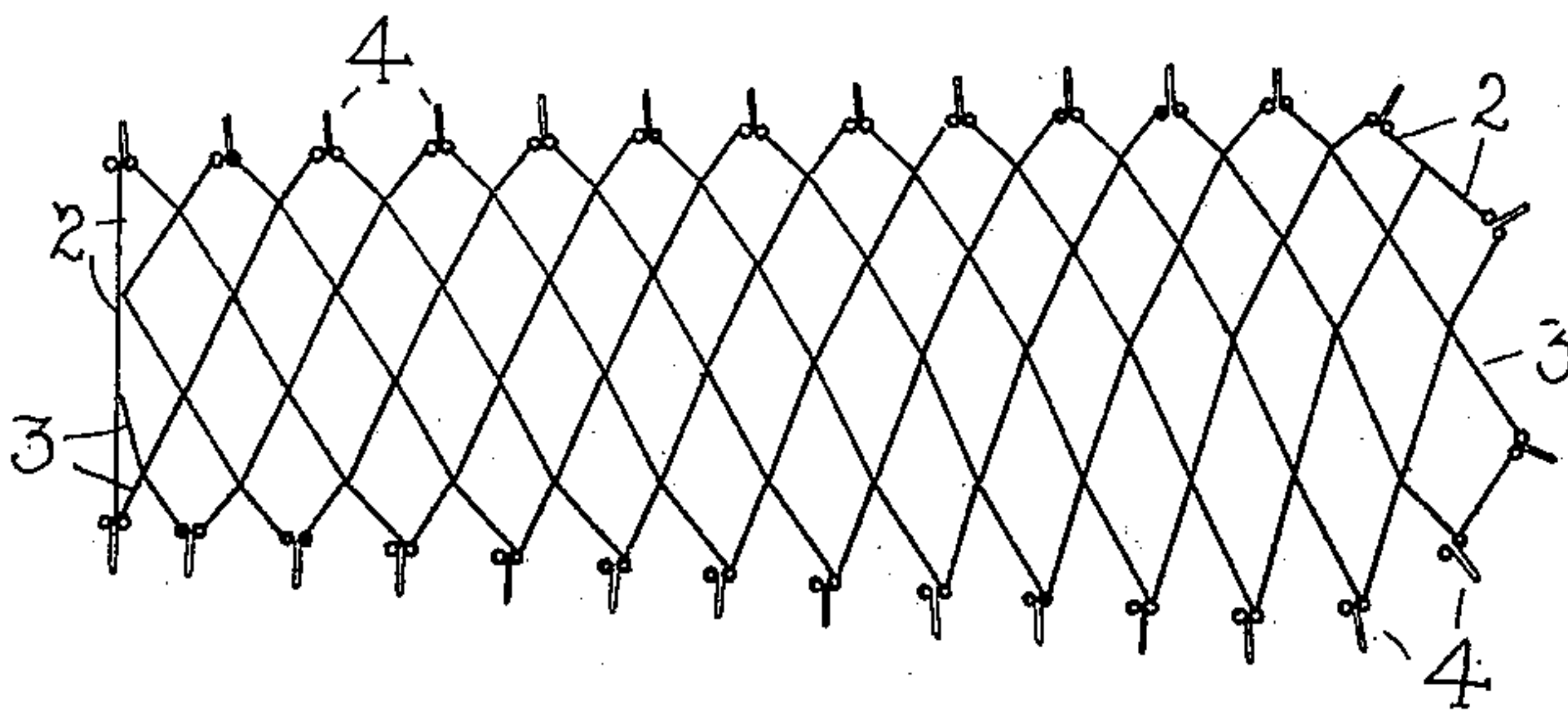


FIG. II.

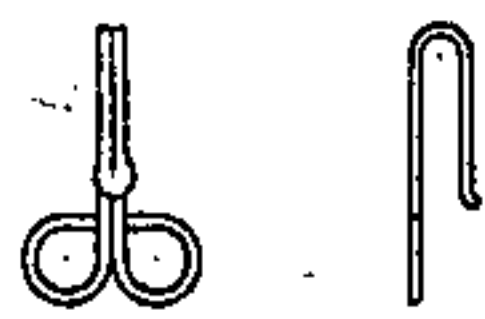


FIG. III.

Witnesses.

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# UNITED STATES PATENT OFFICE.

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## GUARD FOR VELOCIPEDES.

SPECIFICATION forming part of Letters Patent No. 615,865, dated December 13, 1898.

Application filed April 6, 1896. Serial No. 586,433. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM LIGGINS, a subject of the Queen of Great Britain, residing at Coventry, in the county of Warwick, England, have invented a new and useful construction of Guards for Velocipedes, of which the following is a specification.

My invention relates to guards fitted to velocipedes, particularly guards for protecting the skirts of female cyclists from the rear wheel and driving-chain of the type of velocipede known as the "rear-driving safety-bicycle."

Hitherto the guard, generally spoken of as the "dress-guard," for protecting the skirts from the rear wheel has commonly been constructed by lacing a cord of silk, cotton, or other material radially through holes perforated in each edge of the mud-guard (which is located beyond the upper part of and is concentric with the wheel) and through corresponding holes perforated through curved strips or plates of metal or equivalent devices formed or attached at or near to the ends of the axle of the said rear wheel. Each side of the wheel is guarded in a similar manner. Guards for protecting the skirts from the chain are constructed in a similar manner, the cord being laced through holes perforated through the outer edge of a light strip of metal shaped and supported so as to run parallel to and so as to more or less completely inclose the chain. Generally only the outer side of the chain-guard is laced, the part of the dress-guard on the chain side of the wheel being made to meet the top of the chain-guard to prevent the skirt getting between the chain and the wheel. These arrangements are open to several objections. The lacing takes a long time to effect and is therefore expensive, the friction arising from the vibration of the velocipede cuts the cord where it passes through the holes, and meteorological changes often cause the guard either to shrink so much as to break the cords or to injure the parts to which they are attached, or cause it to stretch so much as to allow the skirt to come into contact with those parts from which it is intended to be protected. These objections are overcome and several incidental advantages are attained at the same time by my invention, which is illus-

trated, by way of example, in the accompanying drawings, in which—

Figure I is an elevation of a network for a dress-guard. Fig. II is an elevation of a network for a chain-guard. Fig. III shows a hook separately from the network.

Similar numerals refer to similar parts throughout the drawings.

In carrying out my invention as applied to the dress-guard I construct a network partly of silk, cotton, tinsel, or other suitable cord 2 and partly of covered india-rubber (caoutchouc) or other suitable elastic cord 3. I do not confine myself to any particular pattern of network nor to any particular position for the elastic cord, except that I arrange the said elastic cord so that it engages with and acts on the non-elastic cord and serves to hold the whole guard in tension while in use. The elastic cord allows the inelastic cord to shrink or stretch without any injurious results to the guard as a whole or to the parts to which it is attached. I make each of the two networks approximately in the form of a sector of a circle, and to the points on the circumference and near the center I secure a number of small hooks 4, such as those employed on ladies' dresses. By engaging these hooks with the holes hereinbefore mentioned as provided for lacing the cords through the network can be very quickly attached to the velocipede and the elastic causes it to set with an even tension at once. A network forms a better protection than cords arranged radially only; but the necessity of constructing the network directly on the velocipede, which required special skill to effect and which usually necessitated sending the velocipede to a maker of network-guards, made their employment inconvenient to the velocipede-manufacturer.

Network-guards constructed according to my invention can be kept in stock by the said velocipede-manufacturer and used as required. Further, the owner of the velocipede or other person can readily remove the guards in order to clean the velocipede or for other purposes and replace them afterward.

The above remarks apply to a large extent to chain-guards, which I construct of non-elastic cord 2 and elastic cord 3 and provide with hooks 4 in a similar manner.

I do not confine myself to the precise details herein described and illustrated, as they may be modified without departing from my invention.

5 Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

A guard for a velocipede consisting of a network in tension, the cords of which network  
10 are so interwoven that they are united at every

point to the neighboring cord, the said network being made up as to one or more zones of elastic cord and as to the remaining zone or zones of inelastic cord, substantially as and for the purpose set forth.

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Witnesses:

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