

No. 881,593.

PATENTED MAR. 10, 1908.

O. M. KNOX.

TRAINING STRING CONNECTOR.

APPLICATION FILED MAR. 27, 1907. RENEWED JAN. 9, 1908.

Fig. 1.

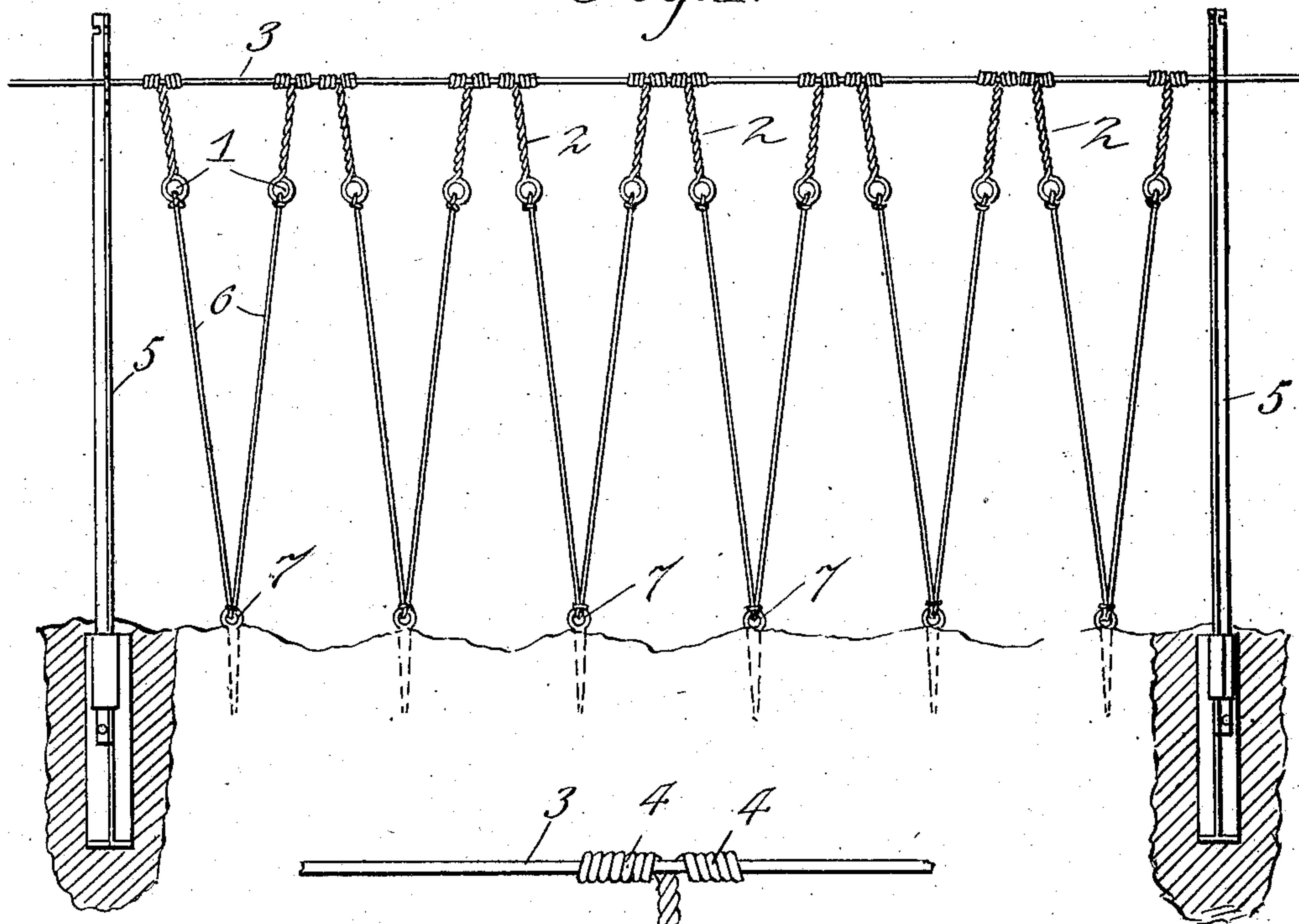
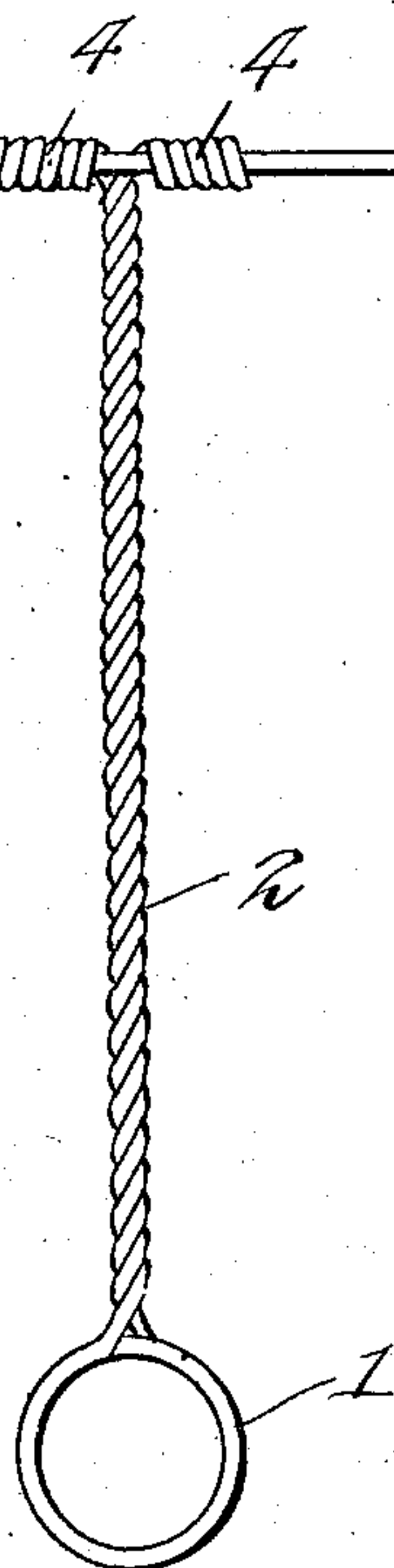


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## TRAINING-STRING CONNECTOR.

No. 881,593.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed March 27, 1907, Serial No. 364,861. Renewed January 9, 1908. Serial No. 410,013.

*To all whom it may concern:*

Be it known that I, ORVILLE MARSHALL KNOX, a citizen of the United States of America, residing at Oneida, in the county of Madison and State of New York, have invented new and useful Improvements in Training-String Connectors, of which the following is a specification.

The invention relates to an improvement in hop vine training frames and particularly in a connector whereby the training strands leading from the hill may be properly supported from an overhead wire or other support.

The main object of the present invention is the production of a connector constructed and arranged for convenient attachment to the overhead wire and which will provide for the simple and expeditious connection of the training strand thereto.

With the above object in view, the invention consists in the device to be particularly described in the following specification, reference being had to the accompanying drawings, in which:—

Figure 1 is a view of a portion of a hop yard frame, illustrating the use of my improved connector. Fig. 2 is an enlarged elevation of the connector showing the same in applied position on the supporting wire.

Referring particularly to the drawing, my improved connector, which is preferably constructed of a single length of wire, is bent intermediate its ends to form a double ring 1, the coils of which are arranged in close order to provide a substantial eye.

Beyond the ring the wire lengths are intertwined to provide a comparatively rigid stem 2, which as understood may be of any desired length. Beyond the stem the terminals of the connector are projected in opposite directions, and when applied to the supporting wire 3 are coiled thereabout, as at 4, the coils, of course, extending in opposite directions lengthwise the supporting wire from the juncture of the stem 2 with that wire.

In use, the hop yard supporting frame, which for the purposes of the present invention may be said to comprise a series of poles 5 arranged in spaced relation and connected by the supporting wires 3, is provided with a series of the connectors which are secured to the supporting wires in the manner described.

The connectors are arranged in pairs for

each hop hill, being attached on the supporting wires in spaced relation above the hill. The eyes 1 of each connector form the attaching means for the upper end of the training strand 6, preferably a cord or the like, the lower end of which strand is connected to an eye pin 7 to be driven into the ground of the hill. The training strands from each hill are thus arranged in divergent relation, and are independently connected at their upper ends to distinct connectors.

The metallic connectors described form a very material part of hop vine supporting frames, for the reason that it is desirable that the part of the training strand about which the vine is initially trained be of a light flexible character, as a cord or the like, and as this cord is liable to be broken by the weight of the vine after considerable growth, the connector, as a part of the strand, will receive and support the vine and thereby relieve the flexible portion 6 from the weight.

In order to assist in this function and transmit the strain of the weight of the vine so that the latter will be supported in an effective manner, the eye 1, in addition to being doubled and instead of being bent at an angle to the stem, is arranged to lie vertically in the plane of the stem. By this construction and arrangement the weight of the vine, instead of tending to throw lateral strain on the connector, as would be the case if the eye were bent obliquely or at right angles to the stem, is transmitted on a straight line directly to and through the stem, whereby it is equally distributed as a straight down pull to the coiled attaching members 4.

The connector is also important in providing a simple and convenient connection for the upper end of the flexible cord and in properly positioning that cord with relation to the hill, it being understood that the connector forms a permanent part of the hop yard supporting frame, thereby remaining at all times in the proper and readily accessible position for connecting the training strand thereto.

Having thus described the invention, what is claimed as new, is:—

In a training-string connector for hop-trellises, the combination, with an overhead supporting wire, of a flexible training-string leading from the hop-hill, and a connector coupling said string to the wire, and about which the vine is adapted to twine to relieve

the string of a portion of the weight thereof, said connector comprising a member formed of a single length of wire bent to form a ring or eye to which the string is attached, inter-  
5 twisted above the eye to form a single stem, and projected beyond the stem in opposite directions and coiled to provide attaching members engaging the wire, the eye being arranged to lie vertically in the plane of the

stem to transmit the strain of the weight of 10 the vine on a direct line to and through the stem to the wire, substantially as described.

In testimony whereof, I affix my signature in presence of two witnesses.

ORVILLE MARSHALL KNOX.

Witnesses:

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EDW. L. HASKELL.