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HOP POLE.

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HOP-POLE.

No. 881,592.

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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 Hop-Poles, of which the following is a specification.

The invention relates to an improvement in poles for hop culture, comprehending specifically a pole adapted to be used in conjunction with means for so supporting the hop vines as to insure their proper growth and training and to facilitate their cultivation.

In the hop yard as ordinarily arranged each hill is provided with two wooden poles for service as training trellises, necessitating about fifteen hundred poles to the acre. This particular arrangement has proven objectionable owing to the necessity for removing and storing the poles when not in use and to the fact that, owing to the elements, the effective life of the pole is comparatively short.

The main object of the present invention is the production of a pole designed to be used in conjunction with coacting vine supporting and training means in such a manner as to form a permanent supporting structure, while permitting disassociation of the parts when occasion requires and at the same time materially reducing the number of poles required in a given field.

The invention in the preferred embodiment of detail will be described in the following specification, reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a view in elevation illustrating my invention. Fig. 2 is a side elevation of one of the posts, the same being shown in position in the supporting base. Fig. 3 is a front elevation of the base. Fig. 4 is an enlarged section on line 4—4, Fig. 2. Fig. 5 is an enlarged section on line 5—5 of Fig. 2, the stay wire being shown in place.

Referring to the figures of the drawings, my improved structure for the support and training of hop vines consists generally in a series of poles 1, of identical structure, said poles being employed in conjunction with supporting wires 2 removably connected to the respective poles, a series of connectors 3 pendent from the supporting wires, and a se-

ries of flexible leaders 4, extending from the connectors to the hop hill.

In detail structure the post or pole 1 comprises a base 5 having a relatively broad bearing plate 6 provided at the lower end with a laterally projected foot 7. The plate and foot are reinforced by a centrally disposed laterally extending web 8 which extends from the foot to a point some distance below the upper end of the plate. A socket member 9 is secured to the plate 6 above the web, being formed with an L-shaped opening 10 extending longitudinally thereof, the length of the opening extending at right angles to the plate and being alined with the web 8. The post or pole proper comprises an elongated strip 11 of L-shaped angle iron, of proper sectional dimensions to fit snugly in the socket member 9. One web of the pole 11 is formed near the relatively upper end with a series of successively arranged downwardly inclined slots 12 to provide seats for the supporting wires, as will presently appear. Near the upper end of the pole and beyond the slots 12 the pole webs are each formed with an inwardly extending notch 13, said notches being alined transverse the pole to receive the stay wires.

It will be observed that the form and arrangement of the socket member allows one web of the pole to bear broadly against the face of the base-plate while the other web is held and sustained by the outwardly projecting portion of the socket member and the bracing web, by which the pole is firmly and securely sustained against strain in any direction.

The supporting wires 2 are ordinary wire rods of a length sufficient to bridge the desired space between the poles, and are, of course, to be of sufficient rigidity to support the vines.

The connectors 3 may, so far as the present invention is concerned, be of any desired construction, though I prefer that they be constructed of a single length of wire bent intermediate its ends to provide an eye 14, then twisted, as at 15, to provide a connector of the desired length, the terminals of the wire beyond the twisted portion being arranged for coiling about the supporting wire, as at 16, to provide for effectively joining the connector and supporting wire.

By the use of poles constructed in accordance with my invention, the parts described

may be combined and arranged in a particular manner for the production of a supporting framing of maximum strength notwithstanding the use of a materially less number of poles than is customary. To this end, and assuming the hop yard as ordinarily laid out, I erect a pole 1 in each hill of, say, every seventh row, leaving the intervening rows entirely free of pole supports. The poles are arranged in longitudinal and transverse rows or series and are each set by planting the base 5 in the ground so that the extreme upper end only is exposed, the pole proper 11 having been previously inserted in the base by passing said pole through the socket member 9 until one web of the pole rests directly upon the upper end of the base web 8. A pin 17 is passed through the pole web and base plate 6, securing the pole proper against dis-connection from the base.

The supporting wires 2 extend in one direction, say transversely, across the field, each wire 2 being suitably anchored at its ends in the ground or fixed to suitable anchor posts beyond the terminal trellis poles and seated in the notches of a transverse row or series of poles, while stay wires 18 are provided and extended at right angles to the wires 2 or longitudinally across the field and connect the poles in longitudinal rows or series to tie said poles into a firm framing. Each wire 18 is looped to encircle the poles, the looped portions being seated in the notches 13 of the respective poles, whereby a simple, and yet effective, form of connection is provided, and it will be understood that the ends of said wires are anchored similarly to the wires 2 at the ends of the field or beyond the series of poles connected thereby. After the poles are set up and connected as described in longitudinal rows or series by the wires 18, the supporting wires 2 are placed in the respectively aligned poles of the transverse series to bridge the intervening rows of hop hills and the connectors 3 are arranged on the supporting wires, as shown. The connectors are arranged in pairs, one pair for each hill, and the connectors of each pair are spaced apart and depend from the supporting wires. The leaders 4, one for each connector, depend from said connectors to the hill, thus providing a pair of leaders for each hop hill. The upper ends of the leaders are connected to the eyes of the connectors, while their lower ends are connected to the eye of a pin 19 arranged to be driven into the ground. As the lower ends of the leaders are connected to a single pin, it is obvious that the leaders diverge from the hill to the supporting wire, thus spacing the respective vines as they train on the respective leaders. The leaders 4, which are appropriate lengths of cord or the like, thus form the main training support for the vines, but it is to be noted

in this connection that after the vines have reached a certain growth in which their weight would be liable to break the leaders, the vines will have reached the connectors 3, thereby relieving the leaders of the weight to a material extent, and obviating the liability of breaking the supporting structure.

As the structure described is of a character to be but little affected by the elements, it is obvious that the same, with the exception of the leaders 4, may remain in position permanently, and that from season to season only the leaders will require renewal. Furthermore, the particular arrangement of the parts provides for the use of a minimum number of poles, thereby reducing the expense of a hop yard frame support.

The poles proper may be conveniently removed from the base structure when desired for renewal or the like, and the supporting wires and connectors may also be conveniently detached from the poles. The provision of a plurality of slots 12 permits of the adjustment of the supporting wires relative to the ground for an obvious purpose.

The structure as a whole enables the grower to arrange a permanent hop yard at a material saving in labor and cost, as the number of poles is greatly reduced over the ordinary arrangement, all parts of the present structure are practically indestructible, and the specific construction permits ready renewals and repairs.

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

An all-metal hop pole comprising a vertical base plate provided at its lower end with a laterally-projected foot, an angular socket member arranged at the upper end of the plate upon one of the side faces thereof, above the foot, said socket member forming with the plate an L-shaped opening whose portions extend respectively parallel with the plate and at right angles thereto, a bracing web upon the plate extending upward from the foot in alinement with the latter-named portion of the socket opening and terminating below the socket member, an L-shaped pole proper fitted at its lower end in the socket opening and extending below the same, one web of said pole bearing against the side of the plate and the other resting loosely upon the upper end of the bracing web, and a fastening connecting the plate and the bearing web of the pole below and at one side of said socket member, substantially as described.

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

ORVILLE MARSHALL KNOX.

Witnesses:

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