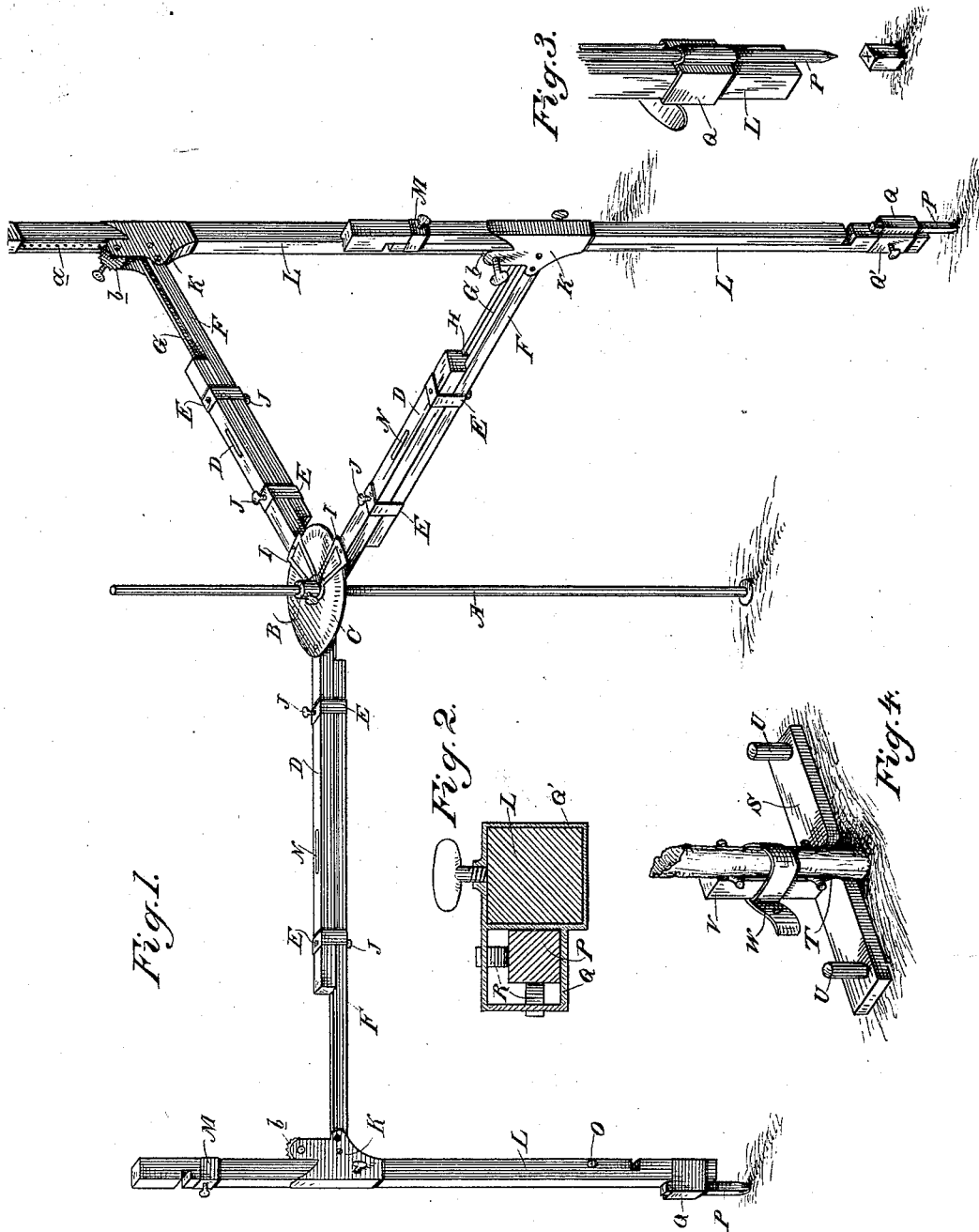


(No Model.)

J. B. YOUNT.
DEVICE FOR LAYING OUT ORCHARDS.

No. 422,104.

Patented Feb. 25, 1890.



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UNITED STATES PATENT OFFICE.

JOHN BURNETT YOUNT, OF DIXON, CALIFORNIA.

DEVICE FOR LAYING OUT ORCHARDS.

SPECIFICATION forming part of Letters Patent No. 422,104, dated February 25, 1890.

Application filed June 6, 1889. Serial No. 313,357. (No model.)

To all whom it may concern:

Be it known that I, JOHN BURNETT YOUNT, of Dixon, Solano county, State of California, have invented an Improvement in Devices for Laying out Orchards; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a mechanical device for laying out orchards and for other like work.

It consists of a mathematically-adjustable frame with devices whereby stakes may be set, the holes made, and the trees set in mathematical lines and in a perfectly-vertical position.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of the apparatus. Fig. 2 is a horizontal section taken through the foot of one of the vertical posts and showing the means for holding and centering the stakes. Fig. 3 is an enlarged view of the bottom of one of the posts with its adjustable central point and a stake in position beneath it. Fig. 4 shows the device for setting the tree.

In laying out orchards it is especially desirable that the trees should be so set with relation to each other as to form rows in several directions from any given point, with open roads or spaces between them for the purpose of cultivation, to gather fruit, and for symmetrical appearance. In order to effect this I employ a frame constructed as follows:

A is the central post or support, which passes vertically through a sleeve B in the center of a horizontally-graduated disk C, this disk having its periphery divided into degrees, and such smaller divisions as may be necessary for the purpose of accurate adjustment. Beneath this disk are radial arms D, the inner ends of which have flat plates with holes through them to fit around the lower part of the horizontal sleeve beneath the disk C, and these arms are provided with clasps E, through which pass extension-arms F. These arms are preferably grooved, as shown at G, and corresponding tongues H project from the bars D into these grooves when the bars F are passed through the guiding-straps E, so that these bars may be moved outwardly or inwardly to lengthen or shorten the arms, and

will be maintained in a perfect line with the bars D without looseness or side shake. Vernier-plates I have their inner ends fitted to surround the sleeve B, and their outer ends are attached to the arms D just beyond the edge of the disk C, and it will be manifest that the arms D may be turned so as to stand at any desired angle with relation to each other, and this angle may be accurately determined by means of verniers in the usual way. The length of the arms is also adjustable by means of sliding bars F, and when the proper length has been ascertained the bars D and F are locked together by holding-screws, as shown at J.

At the outer ends of the bars F are pivoted vertical guides K, these guides swiveling about their pivot-pins, so as to allow them to be adjusted with relation to the arms F. Through the guides K pass the two-part extension-posts L, the two parts of the posts sliding within the guides K, and also through the clamping-guides M, by which they are locked at any desired point, this extension of the legs being necessary upon uneven or rolling ground in order to maintain the arms D and F in the horizontal position. In addition to this, the legs L are moved up and down within the guides K, so that while standing in a perfectly-vertical position the arms D and F will remain horizontal. The horizontal position of these arms is determined by means of the levels N, which are fixed in the surfaces of the bars D, and by which the proper adjustment is ascertained. The vertical position of the legs L may also be determined by levels fixed in some portion of the bars, or by plumb-bobs suspended in channels in the legs and showing through openings, as shown at O in the left-hand leg in the drawings, Fig. 1. The legs L have racks *a* fixed upon them, and ratchet-wheels *b* have their shafts journaled horizontally in the guides K, and provided with thumb-nuts by which to turn them, so that the ratchet-wheels will raise or depress the legs when turned by their engagement with the toothed racks.

In setting an orchard it is desirable that the trees should all stand with the relation to each other at the intersecting angles of equilateral triangles, and in order to accomplish this the radial arms D and F are fixed, by

means of the central graduated disk, so as to stand in this position. The arms D and F are then extended so as to give the proper distance between the trees, and the apparatus
 5 is set with one side upon the proposed line of the row of trees. It will be manifest that the other point of the triangle will rest at a point where one of the trees of the next parallel
 10 row is to be planted, and by moving this triangular frame along either of these lines, or two of them alternately, the trees may be set with great exactness.

In order to fix the points where trees are to be set, I employ stakes P, which pass
 15 through guides Q upon the bottom of the legs L, and in order to fix the stakes exactly in a central line the guides Q are made as shown in Fig. 2, that portion through which the stake is to pass being of somewhat larger di-
 20 ameter than the stake and having the springs R fixed in it upon two sides, so that when the stake is introduced these springs will press the stake into one corner of the guide. That
 25 portion Q of the guide, which surrounds the leg L is of larger diameter than the guide Q, and this guide Q is set with relation to the clasp Q', so that one of its sides is parallel with one of the sides of the clasp, while the
 30 angle into which the stake is forced by the springs is in such a position that the center of the stake will be exactly in line through the center of the leg L, and when the stake is forced into the ground it will keep exactly the desired mathematical position. These
 35 stakes are thus set after the ground is properly prepared and ready to receive the trees.

When the trees are to be set, I employ a board or plate S, having at one side an opening cut away, as shown at T, and through the
 40 two ends of this plate are holes, in which pins U are inserted. This plate is set upon the ground, so that the slot T in the side exactly surrounds the stake P, which has been previously set, and the stake is withdrawn, the
 45 hole being made for the young tree to be set. The pins U being put into the ground through the plate S, the tree is set, the hole partially filled, watered, and left until the water has been absorbed, after which the hole is
 50 filled above the level of the ground, and the tree is set perfectly vertical by means of the post V, which projects upward from the plate S at one side of the opening T and is provided with a strap W, which holds the tree in
 55 position while being fixed in place.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1.. A device for laying out orchards, comprising the central graduated disk and stand- 60
 ard, the radial arms extending outwardly therefrom, and the extension-sections fitted thereto and adjustable upon said arms, substantially as described.

2. In a device for laying out orchards, the 65
 central graduated disk, the radial arms extending outwardly from the center of the said disk and having verniers, the sliding extensions guided upon said arms and fixed with relation thereto, and the levels N, in combination with the vertical posts passing through
 70 guides at the ends of the arms and adjustable and fixed with relation thereto, substantially as described.

3. In a device for laying out orchards, the 75
 radial extension-arms, the central graduated disk and verniers by which said arms are adjusted with relation to the disk, and the levels by which they are maintained in a horizontal position, in combination with
 80 guides swiveled to the outer ends of the arms, posts or legs passing through said guides, and the racks and pinions, whereby said posts are vertically adjusted with relation to the arms, substantially as described. 85

4. In a device for laying out orchards, the extension-arms projecting horizontally from the central graduated disk and adjustable with relation thereto, the vertical swiveled
 90 guides at the ends of said arms, the extension-legs, and mechanism for raising and depressing them within their guides, in combination with the stake-guides Q, fixed to the lower ends of said legs, and the spring R within said guides, whereby the stakes are
 95 maintained in a central position when placed in the guides, substantially as described.

5. In a device for laying out orchards, the centering device for fixing the position of the trees when the stakes have been removed, 100
 consisting of the plate S, with its post V and strap, and the pins U, substantially as described.

In witness whereof I have hereunto set my hand.

JOHN BURNETT YOUNT.

Witnesses:

HERMAN EPPINGER,
 EDGAR MCFADYEN.