

(No Model.)

2 Sheets—Sheet 2.

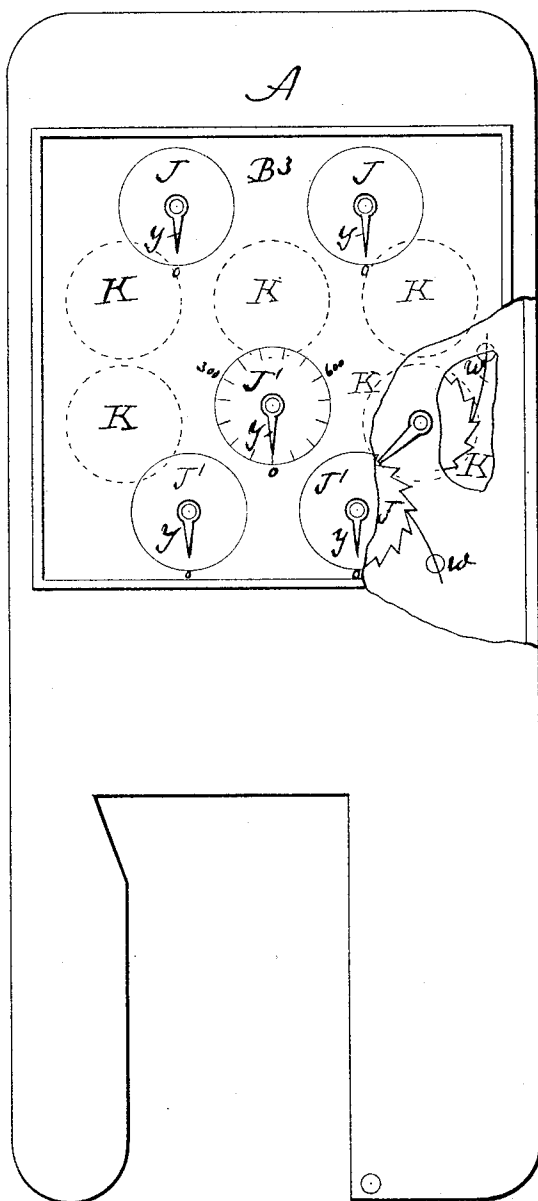
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FRUIT TREE MEASURER, MARKER, AND REGISTER.

No. 536,964.

Patented Apr. 2, 1895.

Fig. 3



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JAMES W. McNARY AND JAMES W. DEAR, OF DAYTON, OHIO.

FRUIT-TREE MEASURER, MARKER, AND REGISTER.

SPECIFICATION forming part of Letters Patent No. 536,964, dated April 2, 1895.

Application filed October 11, 1894. Serial No. 525,572. (No model.)

To all whom it may concern:

Be it known that we, JAMES W. McNARY and JAMES W. DEAR, citizens of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in a Fruit-Tree Measurer, Marker, and Register; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and numerals of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in a fruit-tree measurer, marker, and register, the features of which will be fully hereinafter described and claimed.

The objects of our invention are the measuring of the diameter of nursery trees, the marking of the trees of each class with a specific pigment, and to indicate the number of each class thus marked. The utility of the instrument consists in the process of readily classifying the trees with a view of their being dug up for shipment. We attain these objects by the mechanism illustrated in the accompanying drawings,—two sheets,—in which—

Figure 1, is a top view of the instrument with a large portion of the top plate cut away. Fig. 2, is taken on the broken line 2 2 of Fig. 1. Fig. 3, is a view of the under side with parts omitted, and portions cut away to exhibit the interior.

The same letters and numerals designate the same or like parts throughout the several views.

The inclosing case A comprises an oblong frame closed partially at the top, and to which the thimble B is attached, which is for the reception of the handle C. The front end of the case A is deeply notched, and the lid B' closes the balance of the top excepting said notched portion.

B² is a case attached to the top of plate B', and incloses the indicator hands *v*, the top of which case B² may be a plate of glass, or this case may be hinged and opened when it is desirable to examine the position of said hands.

There are five of the indicator dials I. The two, not shown in the drawings, Fig. 1, have positions to the right corresponding to the two on the left, and are concentric to the ratchet-wheels K, on whose shafts the hands *v* are attached. The several dials, and their respective ratchet wheels, are all identical in construction, and all are operated by similar pawls.

To the bottom of the principal case is attached the divided register case B³, the upper division of which contains the ratchet wheels J whose shafts have bearings in the division plate. The position of these wheels is shown in circular dotted lines Fig. 1, at J Figs. 2 and 3. The operating arm L comprises a body with an arm extending to the right, the point P, the ear 20, to which the rod M is pivoted and a lengthened slot at the forward end of the arm, which slot embraces the standard 21.

At the front end of the principal case A the standard 21 is fixedly attached. This is entered into the slot of the operating arm. The thimble O, with its lengthened slots, top, and bottom, is pivoted to the outer end of said operating arm. Within the thimble is the spiral spring 24, which serves to hold said operating arm back against said standard. The spiral spring N holds the operating arm to the right, and as held by the two springs, the same can have a forward and a lateral movement.

The function of the operating arm is to obtain the diameter of a young tree. The circular dotted line Q shows the position of a tree as the instrument is about being pressed against it. The effect is to carry said arm to the left and forward, so that the point enters one of the compartments of the guide 17, the top plate of which is partially cut away to show the partitions 19. The operating-arm holds the tree against the plate R, along which the tree slides as the instrument is pressed forward. The sliding-pawls 1, 2, 3, 4, and 5 are loosely held beneath and between the bar 13 and the standards 15. These pawls are identical in construction with the exception of a variation in length and curve in the wire portions *s*, which engage their respective ratchet wheels. The bodies of these pawls are of square bars provided with notches in their upper surfaces, as shown at 7 Fig. 2, and

into which the gravity pawls 6 drop to hold said pawls forward until released.

The bar 18 is provided with rods held in the standards 14, and about these rods are the spiral springs 16, which serve to hold the sliding-pawls against the guide 17. The five pawls 6 are held on the rod 25 supported in the standards 15. A top view of one pawl is shown at 6 Fig. 1, and a side view at 6 Fig. 2. A series of flat springs *t* hold the pawls in engagement with the ratchet-wheels. The flat springs *u* hold the ratchet wheels against any return movement, but if said wheels are otherwise slightly bound, these could be dispensed with. Each of these pawls engages its respective ratchet wheel K, and when one of the pawls is thrust forward said wheel moves one notch, and this is indicated by the hand *v* moving over one space of the dial I, which in its divisions exactly corresponds to the teeth of said ratchet wheels.

The two series of ratchet wheels, five in each series, are identical, and each has preferably thirty teeth—only fifteen as shown in the drawing. One rotation would therefore represent thirty on the upper dials. The arm *y*—shown at Fig. 2—is connected to the shaft of the top dials, and this in each rotation would give to the under series of ratchet-wheels the movement of one tooth, and therefore thirty would be indicated by the hand *x*; and one complete rotation would show the number of nine hundred, the greatest number which could be registered for each of the under dials.

The quadrangular frame E comprises the cross-piece, which lies under the series of gravitating pawls 6. At the rear end is a slotted extension, which embraces the lower end of the bell-crank F, and which bell-crank is pivoted in the ears of the thimble. The other end is pivoted to the rod G held in a guide of the handle. Between this guide and the end of said bell-crank is the spiral spring H, which by depressing the end of the bell-crank, keeps the frame in its normal position. The rod G is provided with a loop for the finger, and by pulling the same the frame is drawn back, thereby raising any one of the five pawls which may be down in the notch of the sliding-pawls, and thereby releasing them to be carried back to their normal position against the guide-bar 17.

On a broken part of the top plate B' Fig. 1, is shown a portion of the device used in marking the trees with a pigment. There are five identical parts, and the compartments are supplied each with a paint of a distinct color, as red, white, blue, yellow, and green; and each of these colors in their order may represent the maximum sizes of five classes, as one-half, three-fourths, one, one and one-fourth and one and one-half inches. This part comprises two standards 11—but one is shown in Fig. 1. In these standards are supported the rod 25, on which is pivoted the five arms 10, and to which are attached sponges or other absorb-

ent material to absorb the paints, which are placed in the apartments 12,—two of which are shown.

The sliding-pawls have a rear and upward extension, and to their tops are secured the bars 9, which are likewise attached to the arms 10. This connection with the sliding-pawls causes the ends of the paint arms to be thrown forward, when the sliding-pawls are thrown backward, and thereby the pigment is brought in contact with the tree, which is forced to the edge of the large notch in the case.

The operation may be thus briefly described: The instrument is placed against the trunk of a tree and pressed forward, and if the tree be less than one-half of an inch in diameter, the point of the operating-arm will enter the first compartment on the right—in the position as shown. This will carry the sliding pawl rearward corresponding to this compartment and the right lower dial will show a register of one. At the same time a spot of paint is impressed on the tree, and indicating by the color the size, or class of the tree. In digging the trees the like colors are placed together. By using the instrument as indicated, the trees can be measured, marked, and the number indicated in each of the distinct classes up to nine hundred. When the sliding-pawls are thrust out, the gravity pawls hold them until released by hand as before described. The size of the tree determines where the point must strike to engage the sliding-pawl, and the results must be exact, as the operations of the series of five pawls are determined by the diameters of the trees.

The construction of the five parts are alike in construction and operation, and the description of one is a substantial description of the others.

When one of the sliding-pawls is thrust forward, the pawl drops into its notch, and it is there held until released by the hand.

The instrument is carried in the hands and is pressed against the trunk of trees to effect its functions.

Having fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In combination with the notched case A provided with the standard 21, the operating arm L comprising the projection at a right angle, the point P and a slot to embrace said standard, the slotted thimble O, with spiral spring 24, pivoted to said arm, to hold back said operating-arm, the rod M and spiral spring N to hold the same against the side of the notch, and the point adapted to enter the compartments of guide 17, the sliding-pawl, the ratchet-wheel with its hand and dial to indicate size and number of trees to which the instrument has been applied, substantially as described.

2. In combination with the notched case adapted to receive a tree, the pivotal operating-arm held by spiral springs to the rear

and laterally against the side of the notch of
said case, the series of sliding-pawls, viz., 1,
2, 3, 4, and 5, held in guides, the series of
ratchet-wheels engaged respectively by said
5 pawls each having their respective hands and
dials, the arms *y* on the shafts of the upper se-
ries of ratchet-wheels, and the ratchet-wheels
J with their respective hands and dials to reg-
ister each succeeding thirty trees, to which
10 the instrument has been applied, substan-
tially as described.

3. The combination of the operating-arm L,
flexibly held to admit of a forward and lateral
movement the case having a notch, the slid-

ing-pawls with arms extending upwardly, the 15
connecting-bars 9, standards 11, the paint
arms 10 and the compartments 12 for the pig-
ments, to mark the tree with a color as the in-
strument is pressed against the same, sub-
stantially as described. 20

In testimony that we claim the foregoing as
our own we affix our signatures in presence of
two witnesses.

JAMES W. McNARY.
JAMES W. DEAR.

Witnesses:

B. PICKERING,
MICHAEL CAHILL.