

No. 715,123.

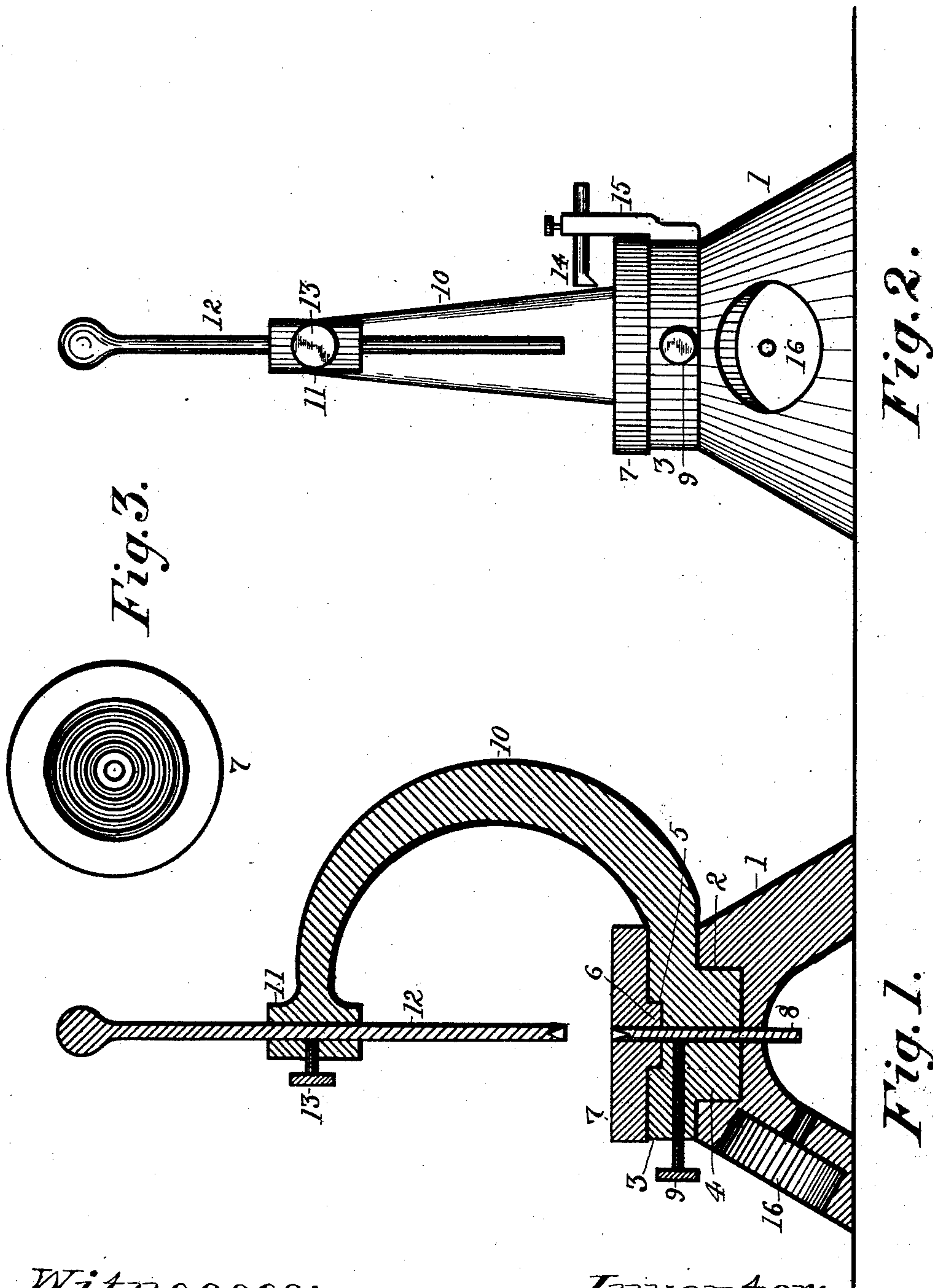
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R. D. NELSON.

TOOL FOR TRUING BALANCE WHEELS OF WATCHES.

(Application filed July 10, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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TOOL FOR TRUING BALANCE-WHEELS OF WATCHES.

SPECIFICATION forming part of Letters Patent No. 715,123, dated December 2, 1902.

Application filed July 10, 1902. Serial No. 115,009. (No model.)

To all whom it may concern:

Be it known that I, ROBERT D. NELSON, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Tools for Truing Balance-Wheels of Watches, of which the following is a specification.

My invention has relation to improvements in tools for watch-repairers' use, whereby the balance-wheel may be made accurately true, both circumferentially, so that the rim shall be an exact circle, and laterally, so that the wheel shall be in a true plane at an exact right angle with its "staff," by which latter term is meant its axle.

The object of my invention is to produce a new and improved tool by which the foregoing effects may be rapidly, easily, and accurately secured.

To the accomplishment of the foregoing effects my invention consists in the peculiar and novel construction, arrangement, and combination of parts hereinafter described and then specifically claimed, reference being had to the accompanying drawings, which form a part hereof.

In the accompanying drawings, in which similar reference-numerals indicate like parts in the different figures, Figure 1 is a central fore-and-aft section, Fig. 2 a front elevation, and Fig. 3 a plan, of the top plate hereinafter described.

Referring to the drawings, 1 is the base, which is preferably the frustum of a truncated cone, in the central portion of the upper face of which is a central cylindrical recess 2. On top of this base is a circular plate 3, having on its under face a central integral cylindrical projection 4, that accurately fits the recess 2. In the top of the plate 3 is a central cylindrical recess 5, in which fits a cylindrical central projection 6, depending from and integral with the circular face-plate 7. Through the face-plate 7, projection 6, plate 3, projection 4, and base is a vertical opening, in which fits a steel rod 8, held at any elevation by a set-screw 9. From one side of the plate 3 rises an arm 10, curved over the plate and terminating in a head 11, in which is a vertical hole to receive a rod

12, held by a set-screw 13 and having a round head to form a convenient finger-grip. The parts are so constructed that the rods 8 and 12 are in accurate alinement and at an exact right angle with the face-plate 7, and the adjacent ends of these rods are centrally countersunk to receive the ends of the balance-wheel staff.

The top of the face-plate 7 has a series of concentric lines at accurate distances from its center, by which the balance-wheel can be tested and trued, and to enable these circles to be more easily read by the eye or a glass every other one may be enameled, as suggested by the alternate heavy and light lines in Fig. 3, the heavy lines indicating enamel and the lighter ones a fine line in the metal.

In operation the balance-wheel to be tested and trued is laid on the face-plate 7 with the ends of its staff in the countersunk ends of the rods 8 and 12. Then its circular accuracy can be tested by the inscribed circles on the plate, by the eye, or by a right-angled tool resting on the plate with its vertical edge close to or touching the edge of the wheel to be tested and any inaccuracies remedied by suitable tools. If it is out of a true plane or not at a right angle with its staff, this can also be detected by means of a small tool 14, having a depending point and adjustably supported in a post 15, attached to the edge of the plate 3, which tool will indicate on the wheel as it is revolved. To provide for a different view of the balance-wheel when for any reason it is desired, there is a recess 16 in one side of the base 1, like the recess 2, to receive the projection 4. Thus the arm 10 and associated parts can be placed in a diagonal position, and the parts will perform their respective function in the same manner as when vertical.

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

1. An improved tool for truing balance-wheels of watches embodying a base, a plate revolubly mounted thereon having a lateral arm with a head to overhang the center of said plate, a face-plate revolubly mounted on said arm-carrying plate, rods in said head and arm-carrying and face plates in alinement with

each other having ends arranged to receive the ends of a balance-wheel staff and means for adjustably retaining said rods in said head and arm-carrying plate, substantially as shown and described.

2. An improved tool for truing the balance-wheels of watches embodying a base with a plate revolubly mounted thereon having a lateral arm with a head overhanging the center of said plate, a face-plate revolubly mounted on said arm-carrying plate, rods in said head, arm-carrying and face plates with their axes in alinement having their adjacent ends arranged to receive the staff of a balance-wheel, means for adjustably retaining said rods in position and a post secured to the side of said arm-carrying plate having adjustably secured therein a tool, substantially as shown and described.

3. An improved tool for truing balance-wheels of watches having a base having sides at an angle with its top a central circular recess in its top and a similar recess in its side in combination with a plate having a circular projection on one face to fit said recesses, a circular face to fit revolubly on said first plate,

an arm rising from said first plate provided with a head to overhang the face-plate, rods in said head and plates in alinement with each other having ends fixed to receive the ends of balance-wheel staff, substantially as shown and described.

4. An improved tool for truing balance-wheels of watches embodying a base, a revoluble face mounted thereon, an adjustable rod passing through its center, an overhanging head, a rod in said head, said rods being in alinement, the surface of said face-plate being inscribed with concentric circular lines, substantially as shown and described.

5. In tools for truing balance-wheels for watches the combination of a revoluble face-plate, inscribed concentric lines on said plate and enamel between alternate circles, substantially as described.

In testimony that I claim the above I hereunto set my hand in the presence of two subscribing witnesses.

ROBERT D. NELSON.

Witnesses:

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