(No Model.)

R. E. FENNER.

WATCH MAKER'S TRUING TOOL.

No. 459,928. Patented Sept. 22, 1891.

Fig. 1.

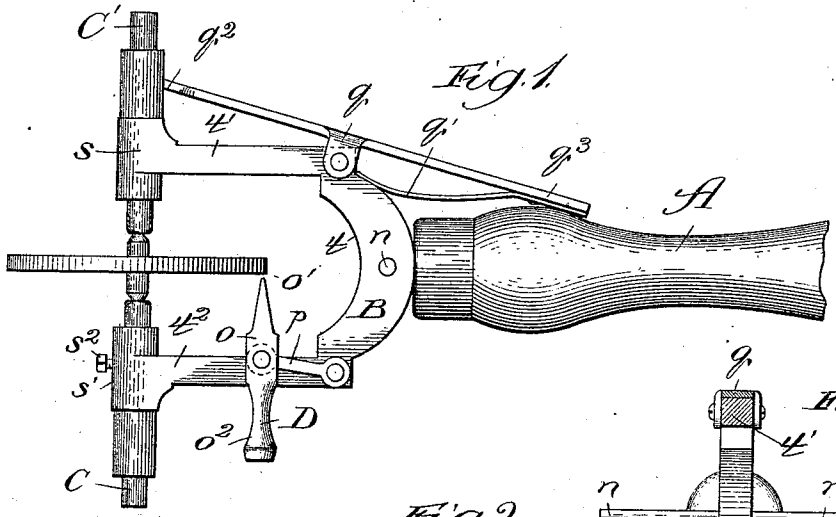


Fig. 6.

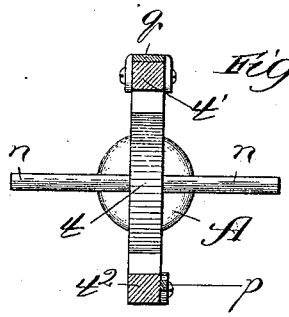


Fig. 2.

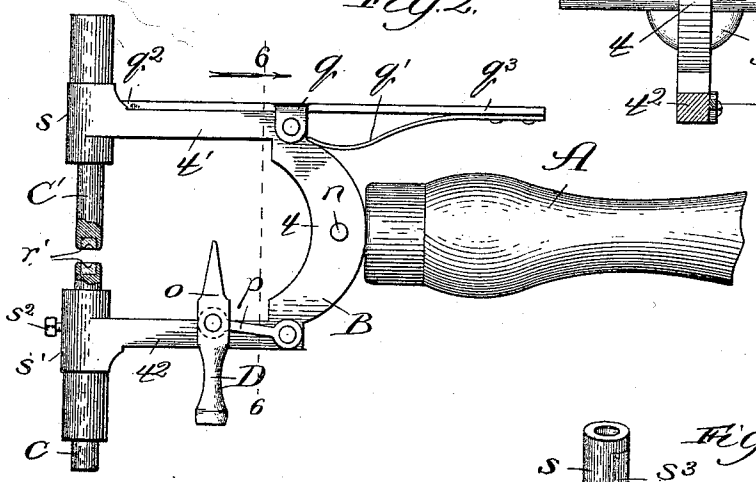


Fig. 5.

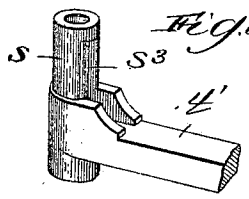


Fig. 3.

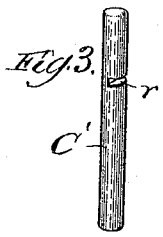
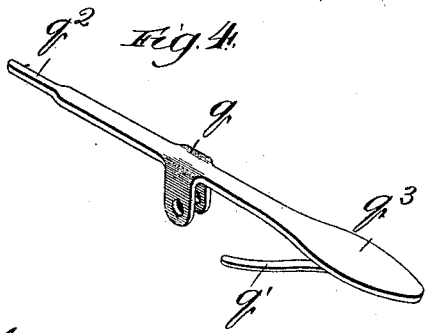


Fig. 4.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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WATCH-MAKER'S TRUING-TOOL.

SPECIFICATION forming part of Letters Patent No. 459,928, dated September 22, 1891.

Application filed April 17, 1891. Serial No. 389,321. (No model.)

To all whom it may concern:

Be it known that I, RICHARD E. FENNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Truing Devices for Balance-Wheels, of which the following is a specification.

My object is to provide a device for the use particularly of watch-makers and watch-repairers for "truing" balance-wheels—that is to say, for permitting the detection of any deviation in the rim of the balance-wheel from the plane at right angles to its axis of rotation and locating the defect, to the end that the same may be corrected by bending the balance-wheel where required.

In the drawings, Figure 1 is a broken view in elevation of my improved device, showing a balance-wheel in position therein; Fig. 2, a view similar to the last, but showing the movable jaw-piece in normal position, the ends of the jaws being partly broken away to show details; Figs. 3, 4, and 5, perspective views of details, and Fig. 6 a section taken on the line 6 of Fig. 2 and viewed in the direction of the arrow.

A is the handle of the device, upon which is secured a frame B, comprising the back t and parallel arms t' t^2. On the ends of the arms are sleeves s s', the bores of which are in direct line with each other.

C is a pin or jaw-piece which extends adjustably through the sleeve s' and which may be secured in any adjusted position by a set-screw s^2. Extending loosely through the sleeve s is a pin or jaw-piece C', provided in one side with a notch r. Pivoted to the arm t' is a lever q, held normally against the arm by a spring q' and having a reduced end q^2, which extends through an elongated opening s^3 in the side of the sleeve s into the notch r of the pin C'. The opposite end q^3 of the lever is widened to afford a convenient thumb-rest for the operator.

D is a gage comprising a link p, pivoted upon the arm t^2, and a finger o, pivoted about midway of its length upon the free end of the link p. The finger o is formed, preferably as shown, with the pointed end o', and its other end formed into a handle o^2. Extending from opposite sides of the back B are pins n.

In operation to place a balance-wheel in the device the operator grasps the handle A in his hand, with the end of the lever q under his thumb, and by pressing down upon the lever causes it to move the jaw-piece C' in the direction away from the jaw-piece C until stopped by contact of the end q^2 of the lever with the outer end of the opening s^3. The adjacent ends of the jaw-pieces C and C' are provided with jewel-sockets r', and the balance-wheel is inserted between the jaw-pieces, with the ends of its shaft resting in the said sockets. The lever q, being released by the thumb, will be caused by the spring q' to press the jaw-piece C' against the end of the balance-wheel shaft and hold it in place. The gage D is then adjusted, as shown in Fig. 1, to cause it to extend with its pointed end adjacent to but out of contact with the balance-wheel. The pivotal connections of the link p with the frame and finger o are sufficiently frictional to cause the finger to remain in its adjusted position. The operator will then turn the balance-wheel around on its pivots r', and will be able to detect with his eye any variation in the distance of the rim of the balance-wheel from the gage during the rotation of the former. The pins n act as supports for the device when it is laid down, and serves to keep the balance-wheel out of contact with the surface upon which the device rests. It will be apparent that, inasmuch as the pins n project laterally from the flat side of the device, when the device is laid down the operating end, carrying the balance-wheel, rests upon the end of a pin and one or the other of the arms t t' maintaining the center of the balance-wheel in a raised position at a greater height above the surface upon which the device rests than the radius of the balance-wheel. Although a gage must necessarily be employed in connection with the other features of my device in truing wheels and is preferably attached thereto, the device could be employed for its purpose if the gage shown were dispensed with and the operator held a separate gaging-instrument in fixed relation to the frame B while the wheel is rotating.

While my improved device is designed particularly, as stated, for use in truing the bal-

ance-wheels of watches, it may, with or without slight modification, which would not depart from my invention, be used in truing wheels for any purpose which would make it necessary or desirable that the rims of the wheels should be uniform in diameter or not deviate at any point from the plane at right angles to their axes of rotation.

What I claim as new, and desire to secure by Letters Patent, is—

1. A wheel-truing device comprising, in combination, a handle, a frame upon the handle, having stationary arms t' t^2, a bearing for the wheel on one arm, a movable jaw-piece or bearing for the wheel on the other arm, and an operating-lever pivoted upon the frame and connected with the movable jaw-piece, substantially as described.

2. A wheel-truing device comprising, in combination, a handle, a frame upon the handle, having stationary arms t' t^2, a bearing for the wheel on one arm, a movable jaw-piece or bearing for the wheel on the other arm, a spring-controlled operating-lever pivoted upon the frame and connected with the movable jaw-piece, and a gage upon the frame adjustable with relation to the rim of the wheel, substantially as described.

3. A wheel-truing device comprising, in combination, a handle, a frame upon the handle, having stationary arms t' t^2, a bearing for the wheel on one arm, a movable jaw-piece or bearing for the wheel on the other arm, a spring-controlled operating-lever pivoted upon the frame and connected with the movable jaw-piece, and laterally-extending supports upon the frame to maintain the wheel out of contact with the surface upon which the device is laid, substantially as described.

RICHARD E. FENNER.

In presence of—
J. W. DYRENFORTH,
M. J. FROST.