

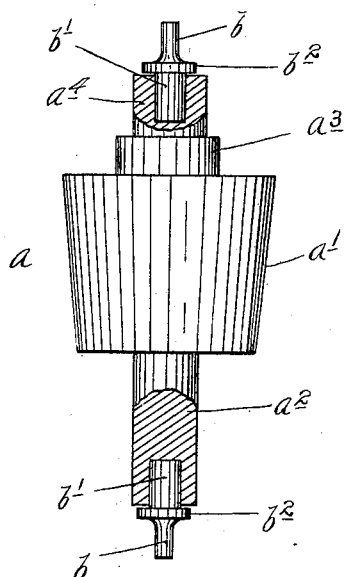
No. 650,162.

Patented May 22, 1900.

J. A. ANDERSON.
WATCH BALANCE STAFF.

(Application filed Feb. 13, 1900.)

(No Model.)



Witnesses,
Harry Kilgus,
Robert Otto.

Inventor,
John A. Anderson.
By his Attorneys,
Williamson Merchant

UNITED STATES PATENT OFFICE.

JOHN A. ANDERSON, OF SANDSTONE, MINNESOTA.

WATCH BALANCE-STAFF.

SPECIFICATION forming part of Letters Patent No. 650,162, dated May 22, 1900.

Application filed February 13, 1900. Serial No. 5,043. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. ANDERSON, a citizen of the United States, residing at Sandstone, in the county of Pine and State of Minnesota, have invented certain new and useful Improvements in Balance-Staves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to watches, and has for its object to provide an improved balance-staff.

To the above ends the invention consists of the novel devices and combinations of devices hereinafter described, and defined in the claim.

The invention is illustrated in the single view, which is principally a plan view, but is partially sectioned.

The balance-staff as an entirety is indicated by the letter *a*, and it is, as is ordinary, provided with an enlarged spacing collar or body *a'* and oppositely-projecting spindles *a²* and *a³*, the latter of which is provided with a reduced portion *a⁴*. In this construction, as well as in the ordinary construction, the balance-wheel will be secured on the spindle or section *a³*, the so-called "roller-table" will be mounted on the spindle *a²*, and the hair-spring will be secured to a collar, which in turn is secured on the reduced section *a⁴*.

My invention consists in providing the balance-staff with removable trunnions having a standard size, so that when one is broken another may be substituted without varying in any extent the original adjustment of the balance-staff and balance-wheel. These removable trunnions are indicated in the drawing by the letter *b*, and they are provided with enlarged inner extremities *b'* and with intermediate collars *b²*. The inner extremities *b'* of the trunnions fit snugly in sockets or seats formed in the ends of the balance-staff, and these sections *b'* are made slightly

longer than the seats in which they fit, so that when driven inward to their limit a little space will be left between the flanges or collars *b²* of said trunnions and the adjacent ends of the staff. This is important, as it makes the removal of a broken trunnion easy to accomplish simply by forcing a sharp-edged blade or instrument into the space between the end of the staff and the collar *b²* of the trunnion, and thus to force the said trunnion outward. The projected portion *b* of the trunnion is of course the smallest portion of the trunnion and is the part that will always be broken. Another advantage is derived from the fact that it is not necessary, in view of my improvement, to temper the body of the staff. The trunnions themselves are tempered and polished and may be supplied separately to the trade, so that they may be kept on hand by jewelers, thus enabling them to replace at a moment's notice any broken trunnions. This will of course also greatly reduce the cost of repairing a watch having a broken balance pivot or staff. As already stated, it insures a much better job.

It is of course understood that a balance-staff of the above character is an exceedingly-small device, being considerably less than a quarter of an inch in length.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

A balance-staff for a watch, having seats or sockets in its ends, in combination with the detachable trunnions *b* formed with enlarged inner ends *b'* and collars *b²*, the length of said sections *b'* being greater than the depths of their sockets, whereby the collars *b²* are spaced from the ends of said staff, substantially as described.

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

JOHN A. ANDERSON.

Witnesses:

M. M. MCGEARY,
F. D. MERCHANT.