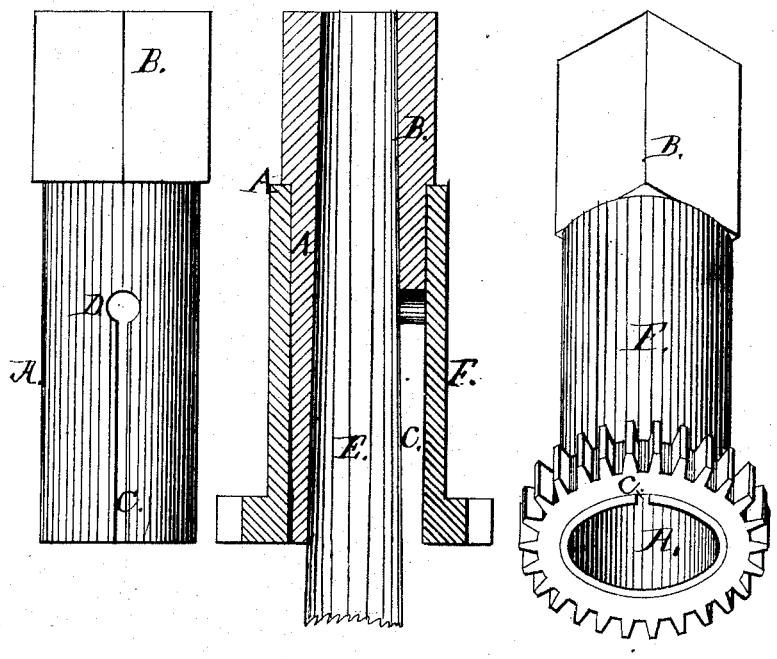
S. RAMEY.

Cannon-Pinion for Watches.

No. 161,822. Patented April 6, 1875.

Fig. 3. Fig. 2. Fig. 1.



WITNESSES
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SANFORD RAMEY, OF PATASKALA, OHIO.

IMPROVEMENT IN CANNON-PINIONS FOR WATCHES.

Specification forming part of Letters Patent No. **161,822**, dated April 6, 1875; application filed August 8, 1874.

To all whom it may concern:

Be it known that I, SANFORD RAMEY, of Pataskala, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Cannon-Pinions, of which the following is a specification:

The object of my invention is to provide a more reliable method of frictionally securing the cannon-pinion of watches upon the arbor of the center-wheel than is now known or practiced by the trade. My improvement consists, first, in interposing a split spring-sleeve between the barrel of the cannon-pinion and the arbor of the center-wheel, the parts being so constructed and connected that the cannon-pinion will be firmly secured to the upper unsplit portion of the sleeve, while the split portion of the latter will clasp the arbor, owing to its elastic character, with the necessary force to cause it and the cannon-pinion to be revolved with the arbor, permitting, however, the turning of the sleeve and cannon-pinion on the arbor in setting the watch. Secondly, in forming but a single split in the friction-sleeve, terminating in an eye at the upper end to obtain the required elasticity. This construction of the friction-sleeve I have found in practice to be far superior to a sleeve split on opposite sides, because it clasps the arbor the entire length of the split and at all points of the surface covered by the split portion, while a sleeve with two splits affords frictional contact virtually at only two points, and still another very important characteristic of the single-split sleeve is that there is no liability of its becoming "set," losing the nature of a spring, to which the double-split sleeve is, on the contrary, very subject.

In the annexed drawings, Figure 1 is a perspective view of a cannon-pinion and friction-sleeve connected together according to my invention. Fig. 2 is an axial section of the same, showing also a portion of the arbor. Fig. 3 is an elevation of the friction-sleeve detached.

The same letters of reference are used in all the figures in the designation of identical parts.

The cannon-pinion F has the customary elongated hub or barrel, the bore of which in this case is sufficiently greater than the diameter of the arbor E of the center-wheel, so as to admit of the interposition between them of a sleeve, A, cylindrical for the greater part of its length, but terminating at its upper end in a square head, B, for the reception of the minute-hand of the watch or other time-piece. The cylindrical portion of this sleeve is split from the lower end a considerable distance upward, on one side, as at C, the split terminating in an eye D, increasing the range of elasticity of the sleeve, due to the split. The sleeve is preferably made of steel. The unsplit cylindrical portion of this sleeve fits very tightly in the upper end of the barrel of the cannon-pinion, but the split portion has a slight play in said barrel. The sleeve fits very snugly, but not too tightly, on the arbor E, the required friction between the two, so that they may ordinarily move together, being produced by the clamping action of the split end of the sleeve A. Any wear of the arbor or sleeve will not affect the frictional contact between them, because such wear will be compensated by the spring-action of the sleeve. This split friction-sleeve may be applied very readily to cannon-pinions of the ordinary construction, and its use enables me to provide a solid head for the attachment of the minute-hand, at the same time that the connection between the cannon-pinion and arbor is maintained at the proper friction by a compensating clamping device; in which respects my invention is broadly distinguishable from all other contrivances of this kind heretofore known or used.

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

1. The combination of the arbor E, split friction-sleeve A, and cannon-pinion F, connected and operating substantially as and for the purpose specified.

2. The friction-sleeve A, with solid or unfractured head B, and having a single split, C, terminating in the cylindrical portion in an eye, D, substantially as and for the purpose specified.

In testimony that I claim the foregoing, I have hereunto set my hand.

SANFORD RAMEY.

Witnesses:

JONATHAN REES,

J. W. MILLER.