(No Model.)

W. B. LEARNED.

CANNON PINION FOR WATCHES.

No. 439,845. Patented Nov. 4, 1890.

Fig. 1.

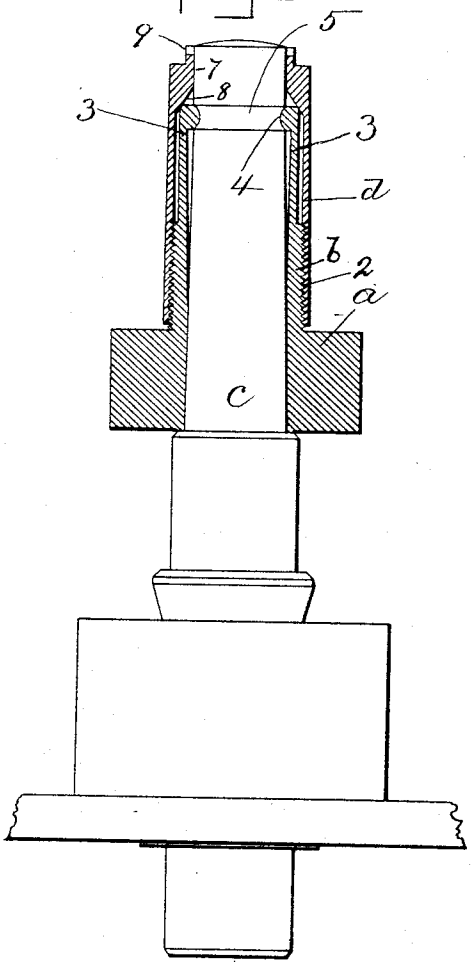


Fig. 2.

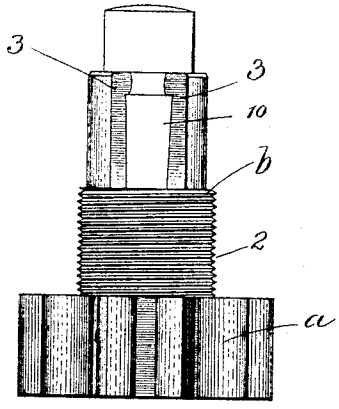


Fig 3

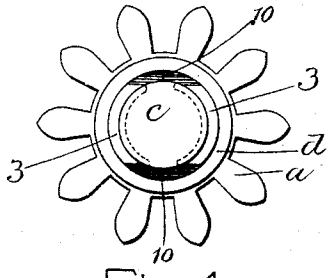


Fig. 4.

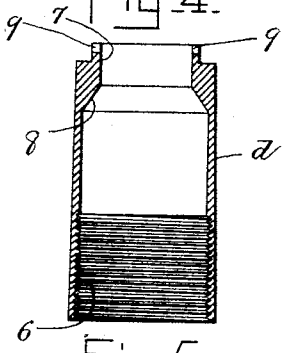
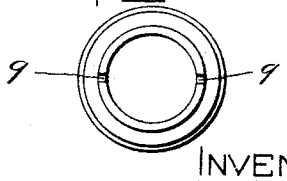


Fig. 5



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

UNITED STATES PATENT OFFICE.

WILLIAM B. LEARNED, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO THE E. HOWARD WATCH AND CLOCK COMPANY, OF SAME PLACE.

CANNON-PINION FOR WATCHES.

SPECIFICATION forming part of Letters Patent No. 439,845, dated November 4, 1890.

Application filed February 24, 1890. Serial No. 341,417. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. LEARNED, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Cannon-Pinions for Watches, of which the following is a specification.

This invention has for its object to provide simple and effective means for regulating the frictional hold of a cannon-pinion of a watch upon the arbor that rotates it; and it consists in a cannon-pinion the tubular sleeve of which is externally screw-threaded for a portion of its length and is reduced at its outer end and there split longitudinally to form spring-jaws, the latter having inwardly-projecting tips or rounded shoulders at their outer ends to engage with a peripheral groove formed in the arbor, combined with a sleeve or cap which is internally threaded to engage the external thread on the staff of the cannon-pinion, and which has an internal inclined face or seat formed to bear on the ends of the spring-jaws and force the same inwardly against the grooved periphery of the arbor with a degree of pressure dependent upon the adjustment of said sleeve, all of which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a sectional view of my improved cannon-pinion and a side elevation of the arbor to which it belongs. Fig. 2 represents a side elevation of the pinion. Fig. 3 represents an end view of the same. Fig. 4 represents a longitudinal section of the sleeve or cap which regulates the pressure of the spring-jaws of the pinion upon the arbor. Fig. 5 represents an end elevation of said sleeve.

The same letters of reference indicate the same parts in all of the figures.

In the drawings, *a* represents a cannon-pinion, from one end of which projects a tubular staff *b*, having an external screw-thread 2 on a portion of its length, the outer portion of said staff being somewhat reduced in diameter and longitudinally split or cut away at 10 10 from its outer end to the screw-threaded portion to form two or more spring-jaws 3. On the inner surfaces of said jaws at their outer ends are inwardly-projecting beads or shoulders 4, which preferably have the rounded form shown in Fig. 1. Said shoulders or beads project into a peripheral groove 5, formed in the arbor *c*, with which the cannon-pinion *a* is connected.

d represents a cap or collar which is formed to receive the staff *b*, and is internally screw-threaded at 6 to engage the screw-thread 2 on said staff. The outer portion of the cap or collar *d* is reduced in diameter at 7 to fit closely on the outer end of the arbor *c*, as shown in Fig. 1, and below said reduced portion the inner surface of the cap or collar *d* is provided with an inclined face 8, which is arranged to bear upon the outer ends of the spring-jaws 3 3.

It will be seen that when the cap or collar *d* is screwed upon the staff of the cannon-pinion until the inclined face 8 comes to a bearing on the free ends of the jaws 3 3 said jaws will be forced inwardly against the grooved periphery of the arbor *c* with a degree of pressure dependent upon the position of adjustment of the cap or collar *d*, so that by turning said cap or collar in one direction or the other the pressure of the jaws upon the arbor and the frictional hold of the cannon-pinion on the arbor afforded by the contact of the said jaws therewith will be increased or diminished, as the case may be. A slight rotary movement, therefore, of the cap or collar *d* will cause a considerable difference in the frictional hold of the cannon-pinion upon its arbor. Slots 9 9 are formed in the outer end of the cap or collar *d* for the reception of a pronged tool, whereby the cap or collar may be rotated.

It will be seen that the construction is simple and that by the described means ready adjustment of the frictional hold of the cannon-pinion may be effected.

I claim—

1. A cannon-pinion the staff of which is for a portion of its length externally screw-threaded, the remaining portion being slightly reduced in size and longitudinally split to form spring-lipped jaws, combined with a containing sleeve or cap internally threaded to engage the external thread on said staff

and provided with an internal face or seat adapted to press the ends of said jaws inwardly, as set forth.

2. The combination of the cannon-pinion having the externally-screw-threaded and spring-jawed staff, the arbor having a groove to receive the inwardly-projecting shoulders or lips of the jaws of the said staff, and the containing sleeve or cap internally threaded to engage the external thread on the staff of the pinion and provided with an internal angle or seat to act on the free ends of the jaws, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 14th day of February, A. D. 1890.

WILLIAM B. LEARNED.

Witnesses:
A. D. HARRISON,
ARTHUR W. CROSSLEY.