No. 681,839. Patented Sept. 3, 1901.

O. F. TEED.

CANNON PINION FOR WATCHES.

(Application filed Nov. 30, 1900.)

(No Model.)

Fig. 1.

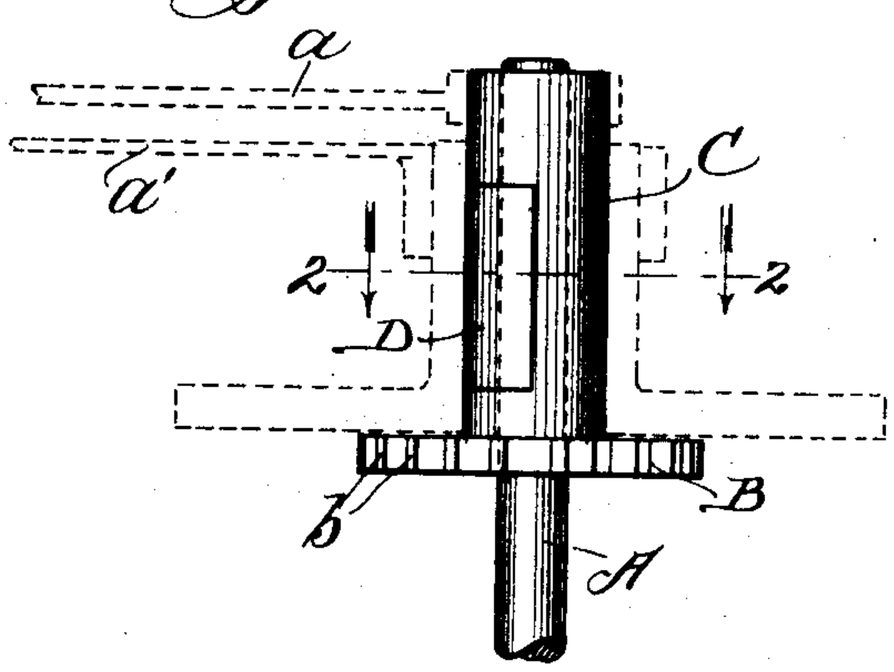


Fig. 2.

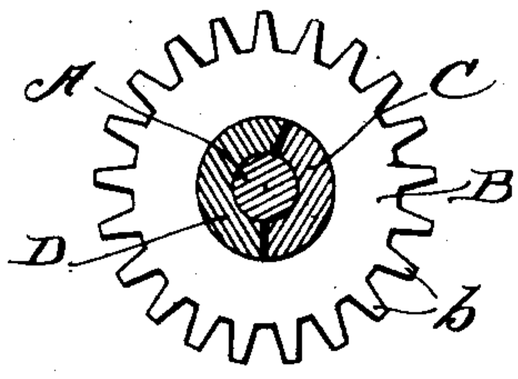


Fig. 3.

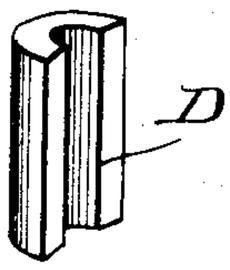


Fig. 4.

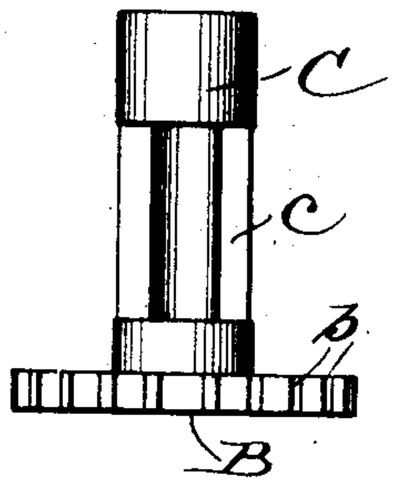


Fig. 5.

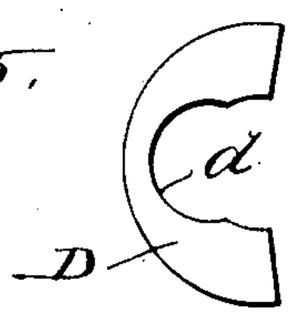


Fig. 6.

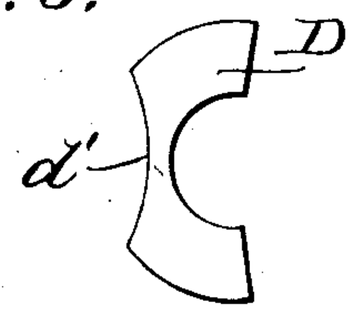
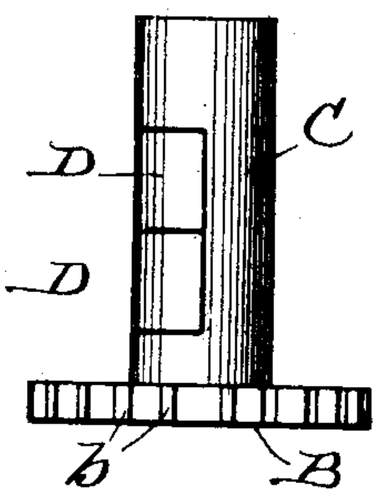


Fig. 7.



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

UNITED STATES PATENT OFFICE.

OLIVER F. TEED, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HIMSELF, WILLIAM F. PRAWIZ, AND LOUISE LEUBRIE, OF SAME PLACE.

CANNON-PINION FOR WATCHES.

SPECIFICATION forming part of Letters Patent No. 681,839, dated September 3, 1901.

Application filed November 30, 1900. Serial No. 38,108. (No model.)

To all whom it may concern:

Be it known that I, OLIVER F. TEED, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cannon-Pinions for Watches, of which the following is a specification.

This invention relates to improvements in horology or watchmaking; and it consists in certain peculiarities of the construction, novel arrangement, and operation of that part of a watch known as the "cannon-pinion," as will be hereinafter more fully set forth and specifically claimed.

As is well known to those skilled in the art of watchmaking, the cannon-pinion must be held in position on the center arbor by frictional contact therewith, so that the hands of the watch may be adjusted or "set" when required, and it is also a well-known fact that the said pinion by reason of long or continuous usage frequently becomes loose on the center arbor, and thus causes the hands to fail to operate properly. Heretofore cannon-pinions have been held in position on their arbors or shafts by means of a spring or part of the barrel of the pinion made integral therewith or attached thereto in such a manner that the free portion of the spring or part of the barrel of the pinion which acts as a spring would impinge the arbor, and thus hold the pinion in frictional contact with the arbor. This construction has been found objectionable for the reason when the said spring becomes worn or broken it necessitates the use of a new pinion or requires a great deal of skill and labor to repair it.

It is therefore the principal object of my invention to provide a cannon-pinion for watches or other devices in which such pinions may be used which shall be so constructed that it will be held in position on its arbor or shaft by the frictional contact of one or more clamps which are separate and detached from the barrel of the pinion, to the end that when the arbor clamp or clamps shall become worn, so as to render the operation of the watch unsatisfactory, a new clamp or clamps may be readily employed instead of the old ones and will render the work of repairing an easy matter.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which I have shown on an enlarged scale a portion of the center arbor of a watch and a cannon-pinion embodying my invention.

Figure 1 is a view in elevation of a portion of the center arbor of a watch with my improved cannon-pinion mounted thereon and illustrating by dotted lines the position of the hour and minute hands. Fig. 2 is a sectional view taken on line 2 2 of Fig. 1. Fig. 3 is a detached perspective view of one form of the clamp used for holding the pinion in position on the arbor. Fig. 4 is a detached view of the pinion, showing the recess in the barrel thereof for the reception of the retaining-clamp. Figs. 5 and 6 are end views representing modified forms of the retaining-clamp; and Fig. 7 is a view in elevation of the pinion, showing it with two clamps in position in its recess.

Similar letters refer to like parts throughout the different views of the drawings.

A represents the center arbor of a watch or the arbor or shaft upon which the cannon-pinion is mounted. This pinion consists of a wheel B, having gear-teeth *b*, of the ordinary or any preferred construction, and of a barrel C, which is provided with a recess *c*, of any suitable size and shape, but preferably with its ends in parallelism, as is clearly shown in Fig. 4 of the drawings. Within the recess *c* is located a retaining-clamp D, which is preferably made of spring-steel, but may be of any other suitable material, and is preferably so formed that when in position on the arbor or shaft A its outer surface will be flush with the periphery of the barrel C of the pinion. In forming the recess *c* in the barrel C of the pinion I prefer to cut away a little more than half of that portion of the barrel in which the recess is formed, so that the clamp D may embrace the arbor and extend its edges a little beyond the diametrical line of the arbor, as is clearly shown and

will be readily understood by reference to Fig. 2 of the drawings. By this construction it is apparent that the clamp embraces a little more than one-half of the circumference of the shaft and the barrel of the pinion the other portion of the shaft, as well as encircling it above and below the clamp, thus allowing the clamp a larger surface for frictional contact.

While I prefer to construct the barrel and clamp as above set forth and as shown in Fig. 2 of the drawings, yet I may make the clamp so that it will embrace less than one-half of the circumference of the arbor without departing from the spirit of my invention.

In Figs. 5 and 6 of the drawings I have shown modifications in the construction of the clamp, which consist, in the first instance, in cutting away the inner central portion, as at *d*, of the clamp to afford more resiliency, and in the second instance I have shown the outer central portion cut away, as at *d'*, for the same purpose.

In Fig. 7 of the drawings I have shown the pinion provided with two clamps D, as I may sometimes use one, two, or more of them to form the clamping portion, and in such event the clamp or clamps may be of either constructions shown in Figs. 3, 5, and 6 or any other suitable shape.

From the foregoing and by reference to the drawings it will be clearly understood that when the arbor clamp or clamps become worn, so as to be ineffectual, the clamps can be removed and replaced by new ones of the proper size to fit the worn arbor, and for this purpose various sizes of the clamps may be kept in stock by the jeweler or watchmaker.

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

A cannon-pinion comprising a toothed wheel or disk, a barrel connected thereto and having a recess larger than one-half of its circumference, and a clamping portion located in said recess and formed to embrace more than one-half of the circumference of the arbor and to engage the arbor with its side edges, substantially as described.

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