

(No Model.)

H. C. KLEIN.
CANNON PINION FOR TIMEPIECES.

No. 476,656.

Patented June 7, 1892.

Fig. 1.

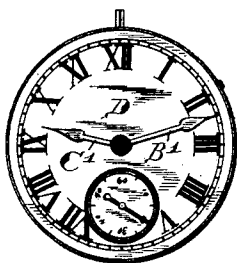


Fig. 2.

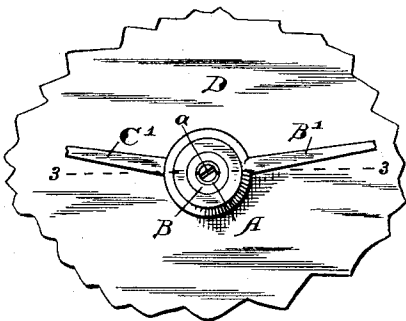


Fig. 3.

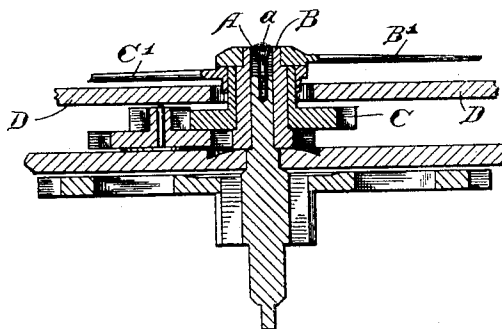


Fig. 4.

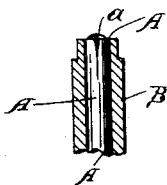
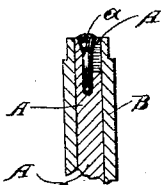


Fig. 5.



WITNESSES.

F. Dean Rhodess
L. C. Tallentive.

PER

Henny C. Klein,
ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY C. KLEIN, OF MUNCIE, INDIANA.

CANNON-PINION FOR TIMEPIECES.

SPECIFICATION forming part of Letters Patent No. 476,656, dated June 7, 1892.

Application filed May 19, 1890. Serial No. 352,297. (No model.)

To all whom it may concern:

I, HENRY C. KLEIN, a citizen of the United States, residing at Muncie, in the county of Delaware and State of Indiana, have invented certain new and useful Improvements in Pinions for Watches and Clocks, of which the following is a specification.

Heretofore in watches and clocks it has been difficult to evenly adjust the frictional tension of what is known as the "cannon-pinion," both because of the inability to adjust the parts and because of the difficulty in getting access to them, it having required the complete taking apart of the watch or clock to reach these parts for the purpose of adjustment.

The object of my said invention is to provide a means whereby this cannon-pinion in watches and clocks may be properly held upon the center pinion; and it consists in providing the outer end of said center pinion with a longitudinal perforation, slitting it upon one or both sides thereof and inserting a screw-wedge in said longitudinal perforations between the parts of the divided end, whereby they can when desired be forced apart against the interior surface of the cannon-pinion, which serves to give the desired amount of friction between the parts, as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a full-sized front elevation of the face of the watch provided with my said invention; Fig. 2, a fragmentary elevation, on a greatly-enlarged scale, similar to the central portion of Fig. 1; Fig. 3, a central sectional view on the dotted line 3 3 in Fig. 2; Fig. 4, a view similar to a portion of Fig. 3 except that the portion of the central pinion shown is in side elevation; and Fig. 5, a view similar to a portion of Fig. 3, except that the central pinion is slitted or divided on one side only of the longitudinal perforation.

In said drawings the portion marked A represents the central pinion; B, the cannon-pinion, which carries the minute-hand B'; C, the hour-wheel which carries the hour-hand C'; and D the face or dial of the watch or clock. All of these parts except the outer

end of the central pinion are or may be of any usual or desired construction, and as they do not in themselves embody my present invention they will not be further described herein, except incidentally in describing said invention.

The central pinion A, as hereinbefore stated, is slitted or divided at its outer end, which end extends up through the dial of the watch or clock to the outside thereof and has an opening or longitudinal perforation formed in its end, which is tapped out or screw-threaded for the purpose of receiving a screw *a*, which acts as a wedge for forcing the two sides of the end of the center pinion apart and throwing them into closer contact with the interior of the cannon-pinion, thus increasing the friction to the desired extent. When, by reason of wear, the cannon-pinion comes to revolve too loosely upon the center pinion, the normal condition can be restored by simply giving this screw *a* a slight turn, spreading the sides of the center pinion slightly farther apart, as will be readily understood. As will also be seen, this can be done from the outside or face of the watch or clock without disturbing any other part, and thus not only a much better result is obtained than heretofore, but with a less expenditure of time and labor. In performing these operations the screw does not need to be removed, but only turned slightly in its seat. I prefer to make the screw with a tapered or wedge-like head, as shown; but, as will be readily understood, the arrangement may be such that a plain straight screw will spread the ends between which it is placed and thus accomplish the same result, and therefore I do not desire to be understood as limiting myself to this particular form. I also prefer to split the center pinion on both sides of the longitudinal perforation, as shown; but, obviously, the slight spreading necessary can be secured by slitting one side only, as shown in Fig. 5, and this I may do at pleasure. I prefer this latter construction where the parts are very small.

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

1. The combination, in a watch or clock, of the cannon-pinion, the center pinion divided

at its outer end, and a screw entering said
outer end, whereby the sides of said center
pinion may be forced outwardly against the
interior of said cannon-pinion and the amount
5 of friction thus increased, substantially as
set forth.

2. The combination, in a watch or clock, of
the cannon-pinion, the center pinion on
which said cannon-pinion is mounted, said
10 center pinion being divided at the end and
provided with a longitudinal screw-threaded
perforation, and a screw having a wedge-

shaped head adapted to be inserted in said
perforation and thus force apart the ends of
said center pinion, substantially as described, 15
and for the purpose specified.

In witness whereof I have hereunto set my
hand and seal, at Indianapolis, Indiana, this
14th day of May, A. D. 1890.

HENRY C. KLEIN. [L. S.]

Witnesses:

CHESTER BRADFORD,
L. E. TALLENTIRE.