No. 719,342. PATENTED JAN. 27, 1903.

E. KUHN.

GEARING FOR TIMEPIECES.

APPLICATION FILED SEPT. 24, 1902.

NO MODEL.

Fig. 1.

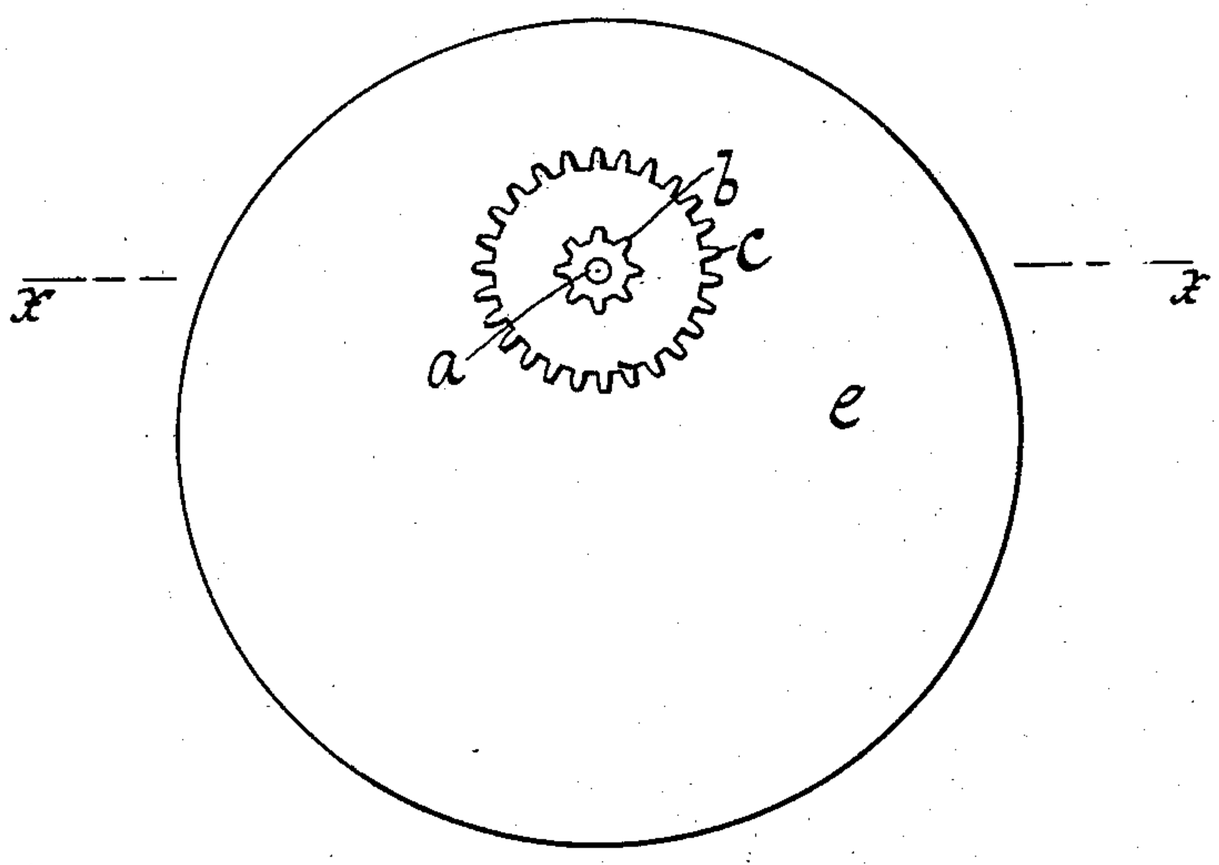


Fig. 2.

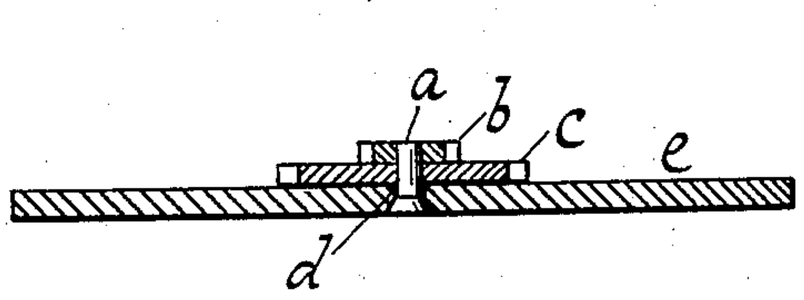
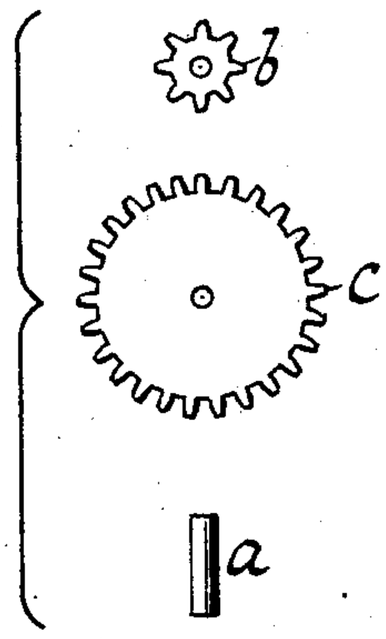


Fig. 3.



WITNESSES:

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GEARING FOR TIMEPIECES.

SPECIFICATION forming part of Letters Patent No. 719,342, dated January 27, 1903.

Application filed September 24, 1902. Serial No. 124,695. (No model.)

To all whom it may concern:

Be it known that I, EDMOND KUHN, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented new and useful Improvements in Gearing for Timepieces, of which the following is a specification.

In mechanism such as timepieces it has been customary in uniting a pinion and gear to rivet or stake one of the parts to the other. A shoulder part on the pinion and a bore or perforation in the gear-wheel enabled these parts to be riveted together. By means of this invention such labor can be avoided and a simple and cheap gearing for timepieces can be obtained, particularly for the intermediate wheel and pinion as used in watches. The riveting of the pinion to the wheel is avoided and the parts are united by the bearing stud or arbor forming the axle of the pinion and gear. This bearing-stud being of larger diameter than the bore or axial hole of the pinion and gear and being jammed or forced into such holes will become firmly united or fixed to the pinion and wheel and will also tie or bind the pinion and wheel to one another. A flat pinion and a flat wheel free from shoulders or extensions and placed loosely or unconnected one onto the other and then having a bearing stud or axle firmly jammed or crowded therethrough will become fixed or united to one another and to the bearing-stud, so that all three parts become practically one. The bearing-stud can be rotatively mounted or riveted loosely or rotatively to a movement-plate to allow a rotary motion, the bearing-stud and pinion with wheel all rotating together as one piece.

Of course in speaking of watches or timepieces no limitation of the invention is to be implied. This invention has been practically applied in the manufacture of watches; but it may be found useful elsewhere. Such devices as pedometers, cyclometers, and other mechanism may find practical application for this invention and are consequently included in the scope of the same.

This invention is set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 shows the gearing mounted on a movement-plate. Fig. 2 is a section thereof at the line $x\,x$. Fig. 3 shows the pinion, gear, and bearing-stud dismounted or separated.

This invention provides a cheap and effective method of uniting a pinion and gear-wheel to a bearing-stud which is riveted loosely to the movement-plate of a timepiece, so as to allow the stud and the gears to rotate. The stud a is made larger in diameter than the axis-holes of the pinion b and the gear-wheel c, so that when the said stud is forced into the said holes the pinion gear-wheel and stud will be held or joined firmly together. The said stud is fitted loosely into the hole d of the movement-plate e, thus allowing the stud, with pinion and gear, to rotate. It should be noted that the end of the stud projects beyond the depth of the hole in the movement-plate when first inserted. The projecting part is riveted into the countersunk hole d in such a way that it will prevent the stud from coming out of the plate, but loose enough to allow rotary motion of the gears and stud.

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

1. The combination with the movement-plate of a timepiece, of a bearing-stud rotatively mounted therein and projecting from one face thereof, the head of said stud being larger than the opening in said plate and countersunk therein, and a pinion and a gear-wheel in close contact with one another and fixedly secured on the projecting end of said stud.

2. The combination with the movement-plate of a timepiece, of a bearing-stud rotatively mounted therein and projecting from one face thereof, the head of said stud being larger than the opening in said plate and countersunk therein, and a pinion and a gear-wheel in close contact with one another, the contact-faces of said gear and pinion wheel being unbroken, said pinion and gear wheels fixedly secured to the projecting end of said stud.

3. The combination with the movement-plate of a timepiece, of a bearing-stud rotatively mounted therein, the head of said stud larger than the opening in said plate and countersunk therein, and a pinion and a gear-wheel in close contact with one another, the

contact-faces of said gear and pinion wheels being unbroken, said pinion and gear wheels having axial holes of the same diameter and fixedly secured to the projecting end of said stud.

4. The combination with the movement-plate of a timepiece, of a bearing-stud rotatively mounted therein and projecting from one face thereof, and a pinion and a gear-wheel in close contact with one another and provided with axial holes of the same diameter and of less diameter than the projecting end of the bearing-stud, said pinion and gear wheel adapted to be secured to the projecting end of said stud, the latter extending through the axial holes of the pinion and gear wheels.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDMOND KUHN.

Witnesses:
CHAS. E. POENSGEN,
E. F. KASTENHUBER.