

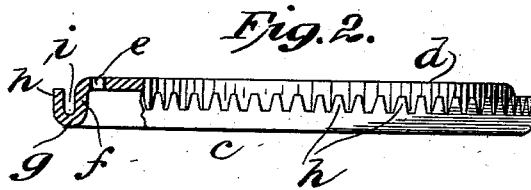
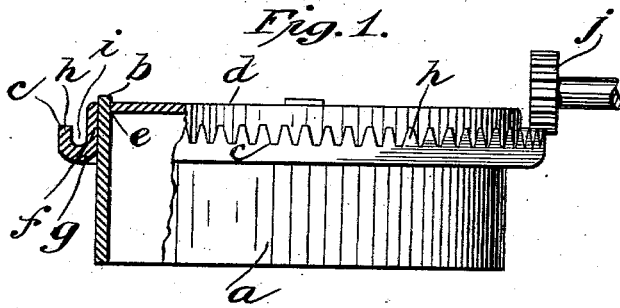
No. 748,653.

PATENTED JAN. 5, 1904.

F. A. RICHTER.  
GEAR WHEEL.

APPLICATION FILED SEPT. 25, 1903.

NO MODEL.



Witnesses  
Comitcheff  
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his Atty.

# UNITED STATES PATENT OFFICE.

FRIEDRICH ADOLF RICHTER, OF RUDOLSTADT, GERMANY.

## GEAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 748,653, dated January 5, 1904.

Application filed September 25, 1903. Serial No. 174,536. (No model.)

*To all whom it may concern:*

Be it known that I, FRIEDRICH ADOLF RICHTER, a subject of the Emperor of Germany, and a resident of Rudolstadt, Germany, have invented certain new and useful Improvements in Gear-Wheels for Spring-Motors, of which the following is a specification.

This invention relates to gear-wheels for spring-motors—such, for instance, as are used in music-boxes or other instruments operated by spring-motors. In such motors in which the springs are wound by the barrel it is of importance that the space between the upper edge of the winding-wheel and the top plate of the music-box or other instrument shall be as small as possible. If the barrel which winds up the spring is to turn to the left, this was heretofore only possible by the use of a beveled annular gear-wheel. The beveled gear-wheel, which was arranged above the winding-wheel, had its entire bearing upon the upper edge of the winding-wheel, and the making of this beveled gear increased the expense of the motor considerably.

The object of the present invention is primarily to remove these objections by arranging the teeth of the winding-wheel at any desired distance below the upper edge, and these teeth permit of using a cheaper straight operating-pinion.

The invention consists of certain features of construction to be hereinafter described and then claimed, reference being had to the accompanying drawings, showing a desirable form of the invention, and in which—

Figure 1 is a side elevation, partly in section, of a barrel of a spring-motor provided with my improvements; and Fig. 2 is a sectional side elevation of the winding or gear wheel.

The barrel *a* of the spring-motor is in the construction shown provided at its upper edge with upwardly-projecting studs or lugs *b*, which may be of any suitable cross-section. Applied over that end of the barrel *a* which is provided with the said lugs or studs *b* is a gear-wheel *c* in the form of a cap, the main body portion *d* of which is flat and forms a top or end wall to the said barrel. The body portion *d* is provided at its peripheral portion with openings *e*, which receive the studs or lugs *b*, forming an interlocking connection

between the barrel *a* and the gear-wheel *c*. It will be seen that when the barrel turns the gear-wheel *c* is caused to turn with it, due to the interlock between the two. It is evident that the interlock or other connection may be made in any suitable manner; but the construction shown is a desirable one. The peripheral portion of the gear-wheel, or properly the body portion *d*, is provided with a circumferential flange *f*, which forms a wall the inner diameter of which conforms with the outer diameter of the barrel *a*. An outwardly-bent portion *g* extends from the wall *f*, and from this projects the gear-teeth *h*, which extend in a plane concentric with the plane of the circumferential wall *f*, or, in other words, the teeth *h* are parallel with the wall *f*. To express it more specifically, the teeth extend approximately parallel with the axis of the body portion and are arranged in a concentric series around the circumferential wall of the body portion. An annular space or recess *i* will thus be seen to be formed between the teeth *h* and the wall *f*. This space *i* is necessary for the purpose of permitting the use of an ordinary straight gear-wheel or operating-pinion *j*.

The gear-wheel *c* may be made from iron, steel, or other suitable sheet metal by punching or stamping it up, and into the edge of the same the teeth *h* are cut or punched before the entire wheel is made.

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

1. A gear-wheel for spring-motors, the same consisting of a body portion of suitable material, having a circumferential wall, and provided with teeth extending approximately parallel with the axis of said body portion and spaced at a suitable distance from said wall, for substantially the purposes set forth.

2. A gear-wheel for spring-motors, the same consisting of a body portion, provided with a circumferential wall, and having gear-teeth extending in a line around and concentric with the said wall and separated at a distance from the wall, for substantially the purposes set forth.

3. A gear-wheel for spring-motors, the same being composed of stamped-up or drawn sheet metal, and comprising a body portion, pro-

vided with a circumferential wall, and a concentric series of teeth around the wall, for substantially the purposes set forth.

5 4. The combination with a barrel for spring-motors, of a gear-wheel, said parts being provided with struck-up interlocking studs or lugs and openings, for substantially the purposes set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FRIEDRICH ADOLF RICHTER.

Witnesses:

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