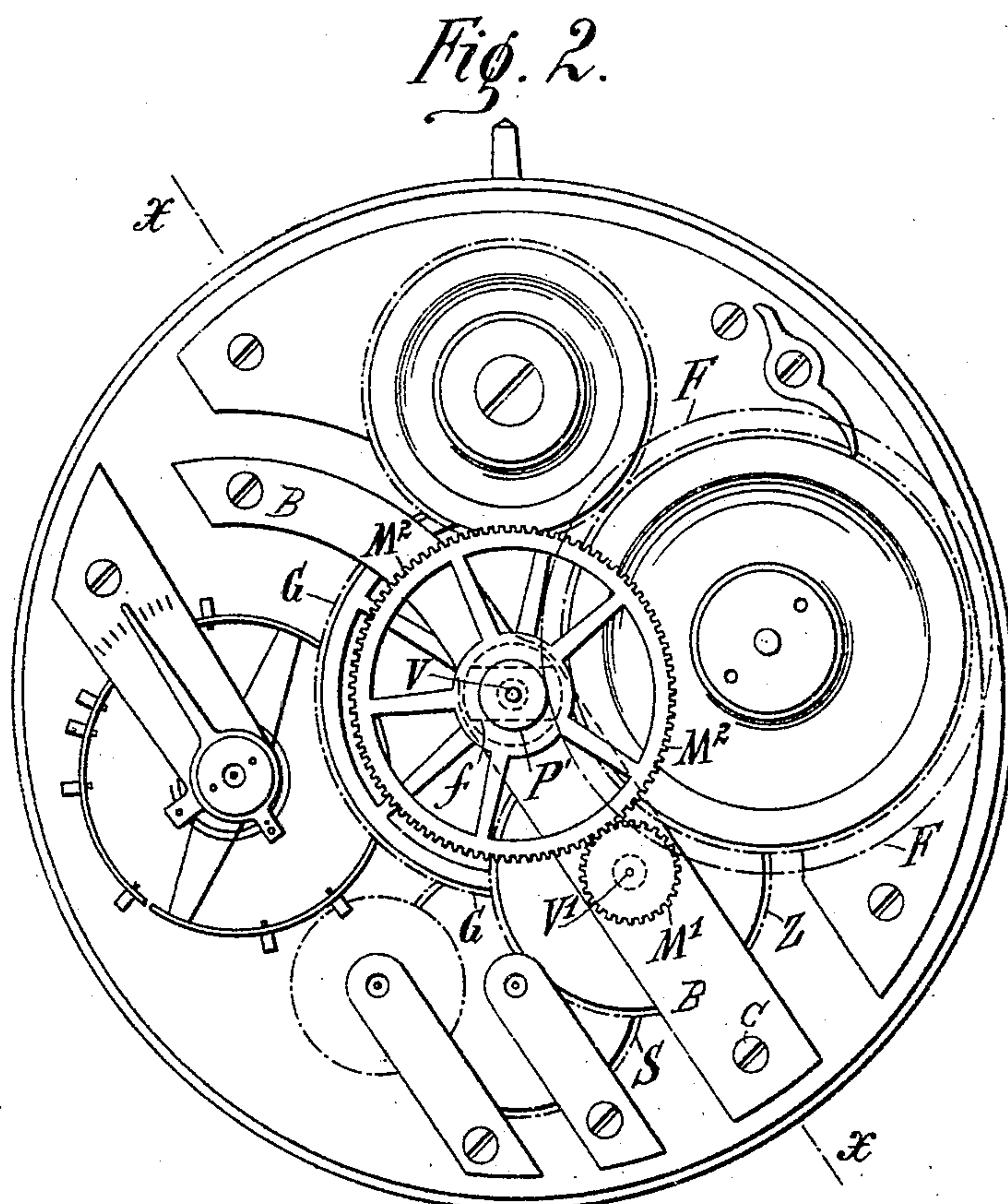
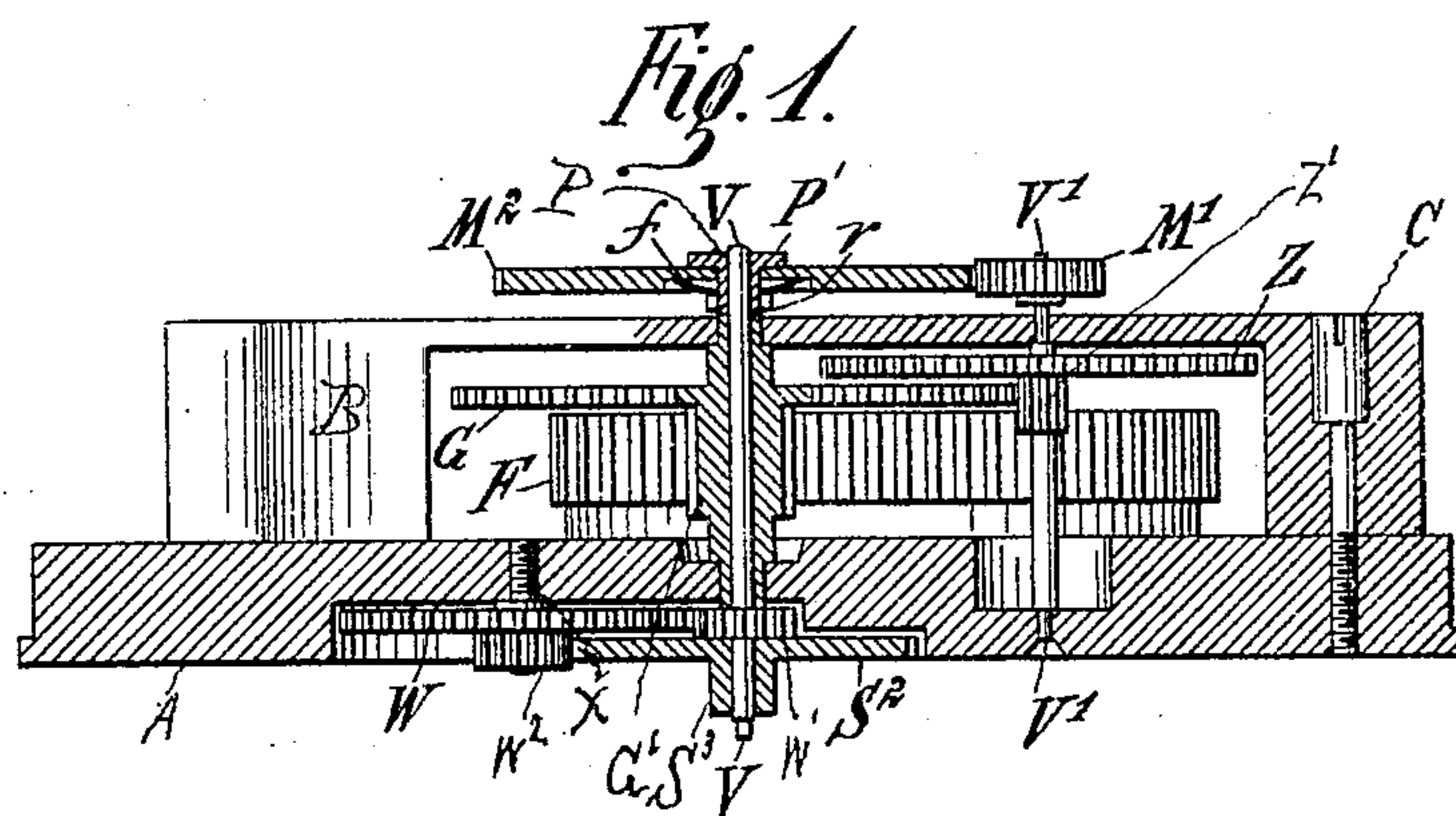


No. 816,321.

PATENTED MAR. 27, 1906.

F. HARTMANN.  
REMONTOIR WINDING WATCH.

APPLICATION FILED MAR. 23, 1905.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

FRANTISEK HARTMANN, OF PRAGUE, AUSTRIA-HUNGARY, ASSIGNOR OF  
ONE-HALF TO JOSEF OLIÁK, OF PRAGUE, AUSTRIA-HUNGARY.

## REMONTOIR WINDING-WATCH.

No. 816,321.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed March 23, 1905. Serial No. 251,566.

*To all whom it may concern:*

Be it known that I, FRANTISEK HARTMANN, a subject of the Emperor of Austria-Hungary, residing at Prague, in the Kingdom of Bohemia, Austro-Hungarian Empire, have invented a new and useful Remontoir Winding-Watch, of which the following is a specification.

My invention relates to so-called "remontoir winding-watches," such as are required to be wound once only in, say, eight days; and its object is to so arrange the several wheels and other parts of the gearing as to make the winding at relatively long periods possible without increasing the size of the watch, the number of the wheels, and the height of the barrel or spring-box, and retain the center wheel in the middle.

My improved watch is fully illustrated in the accompanying drawings, wherein—

Figure 1 is a transverse sectional view on the line  $xx$  of Fig. 2, and Fig. 2 is a plan view of the mechanism.

The two figures of the drawings show all that is essential to my invention.

In said drawings, A is the top plate, and B a bridge secured to the back thereof, as by screws C in the usual manner.

F is the usual spring-box, and V the minute-hand arbor.

G is the center wheel, which is free to rotate with respect to said arbor and is penetrated centrally thereby, said center wheel being journaled in the top plate and the bridge. Formed integrally with the center wheel G is a pinion  $G'$ , which meshes with the teeth of the spring-box.

On an arbor  $V'$ , journaled in the top plate and bridge, is a gear Z and a pinion  $Z'$ , the latter being in mesh with the center wheel G. The rear end of arbor  $V'$  projects through the bridge and carries another pinion  $M'$ . Pinion  $M'$  meshes with a gear  $M^2$ , arranged in the manner later to be described on arbor V, so as to normally rotate therewith and drive the arbor.

$S^2$  is a gear, on the hub  $S^3$  of which the hour-

hand is placed, said gear rotating freely on the arbor V. Said gear  $S^2$  is made to rotate at a different speed (slower) than arbor V by a pinion  $W^2$ , fixed to a gear W, journaled on an arbor X in the top plate, said gear W meshing with a pinion  $W'$ , fixed on the arbor V. The arrangement is such that without enlarging the spring-box instead of the center wheel driving the arbor V, which controls the minute-hand, said center wheel drives the arbor indirectly through pinion  $Z'$ , gear Z, pinion  $M'$ , and gear  $M^2$ , while at the same time gear  $G'$  rotates the hour-hand through the parts  $W'$ , W,  $W^2$ , and  $S^2$ .

The pinion  $M^2$  is arranged on a bushing P, which is fixed on the arbor V and is formed with an abutment  $P'$  at the back, against which gear  $M^2$  is pressed by a spring  $f$ , interposed between the gear and another abutment  $r$ , fixed on the bushing; the object of this mechanism being to permit gearing the minute-hand.

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

In a watch-movement, the combination, with a suitable frame, of the center wheel journaled therein, the minute-hand-carrying arbor penetrating axially, and rotatable in, the center wheel, a pinion formed as one with the center wheel, a spring-box journaled in said frame and meshing with said pinion, another arbor, another gear fixed on the first-named arbor, other pinions on the last-named arbor meshing the one with said last-named gear and the other with the center wheel, an hour-hand-carrying gear rotatable on said first-named arbor, and means for rotating said hour-hand-carrying gear from said first-named arbor, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANTISEK HARTMANN.

Witnesses:

JOSEF OLIÁK,  
L. WJATEK.