

# UNITED STATES PATENT OFFICE.

EDOUARD GOLAY, OF GENEVA, SWITZERLAND.

## ALLOY.

SPECIFICATION forming part of Letters Patent No. 420,598, dated February 4, 1890.

Application filed October 21, 1887. Serial No. 253,664. (No specimens.) Patented in France November 14, 1887, No. 184,778, and in Austria-Hungary April 15, 1888, No. 38,764 and No. 11,298.

### *To all whom it may concern:*

Be it known that I, EDOUARD GOLAY, watch-maker, residing at Geneva, Switzerland, have invented a new and useful Improvement in  
5 Alloys for Non-Magnetic and Inoxidizable Compensation Balance-Wheels for Watches, (for which I have received Letters Patent in France, November 14, 1887, No. 184,778, and in Austria-Hungary, April 15, 1888, Nos. 38,764  
10 and 11,298,) of which the following is a specification.

The difficulty of obtaining non magnetic balance-wheels arises from the rarity of non-magnetic metals having the required quali-  
15 ties to make a good working compensation balance-wheel. Those qualities are the following ones:

First. For the interior metallic band of the balance-wheel the same degree of dilatibility  
20 as steel. This metal must have nearly the same specific gravity as steel, and it must have a great elasticity. My composition specified below has all those qualities, and is, moreover, non-magnetic and inoxidizable.

25 Second. The metal which I prefer to use for forming the external band of the balance-wheel must have the same dilatibility as brass and a perfect homogeneousness. It must also be capable of being soldered to the interior  
30 metallic band without melting the same.

My composition specified below answers to all those requirements, and is less oxidizable than brass.

After a great number of trials and experiments I have combined two alloys, the combination of which gives a complete compen-  
35 sation balance-wheel, producing a quite perfect regulation of the watch and being easily manufactured, the metals being very malleable.

I form the interior band of the balance-wheel of an alloy composed of about forty  
40 per cent. platinum, about thirty-five per cent. copper, and of about twenty-five per cent. nickel, and this is preferably used with an external band of an alloy composed of about  
45 fifty-five per cent. silver, about thirty-five per cent. zinc, and of about ten per cent. copper.

I claim as my invention—

The alloy for the inner band of compensa-  
50 tion-balances, composed of about forty parts platinum, thirty-five parts copper, and twenty-five parts nickel, substantially as set forth.

EDOUARD GOLAY. [L. S.] 55

Witnesses:

E. IMER SCHNEIDER,  
TH. TRUER.