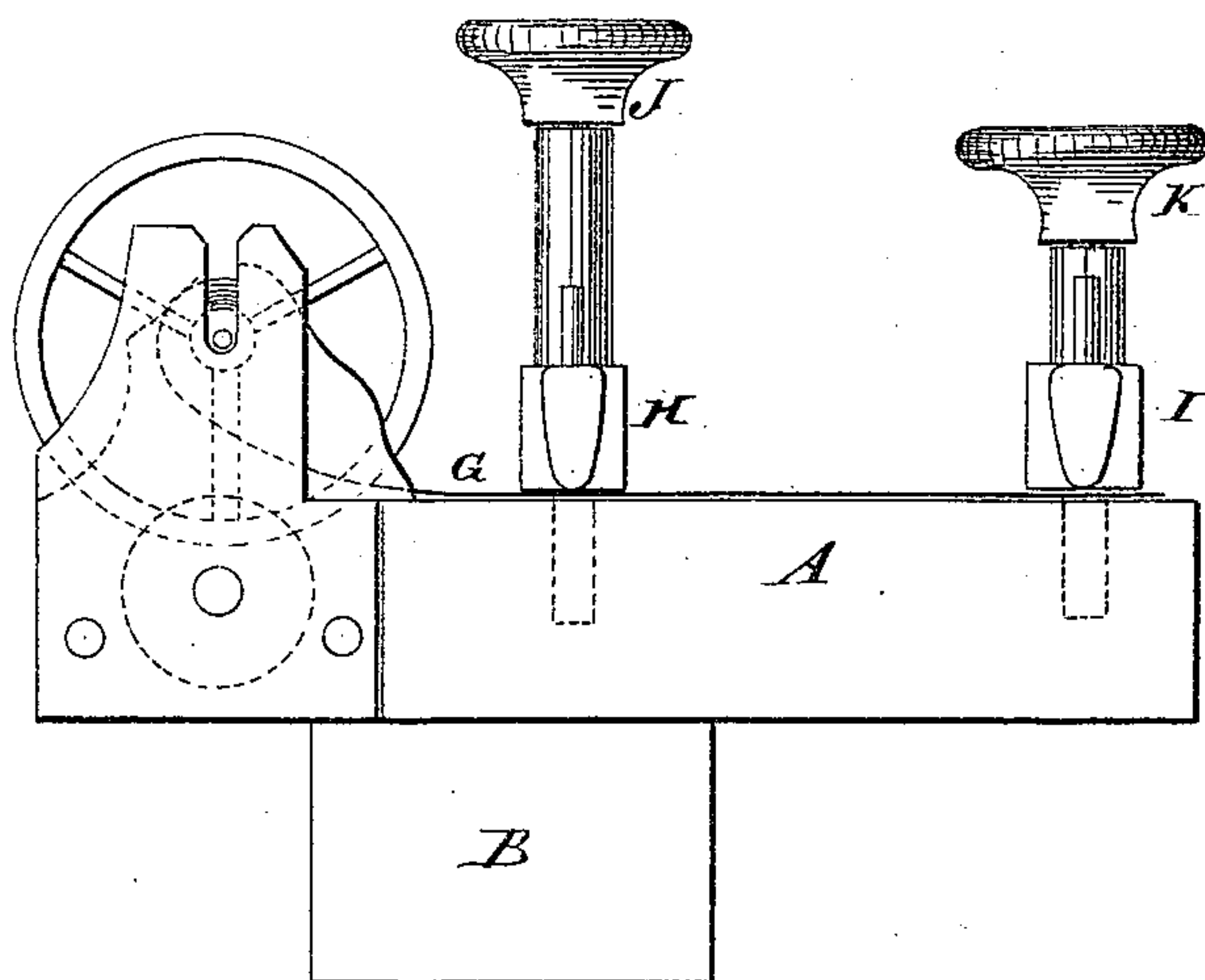


**J. F. YOUNG.**  
**Watch Makers' Tools.**

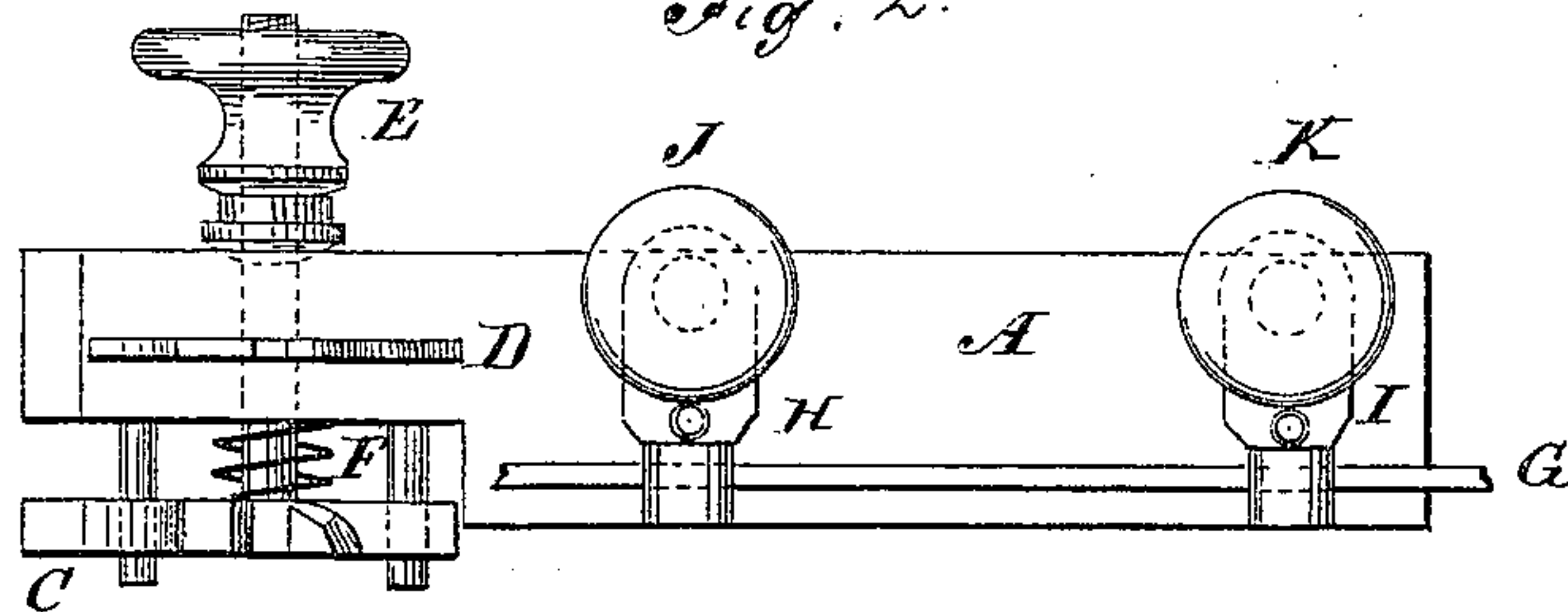
No. 151,333.

Patented May 26, 1874.

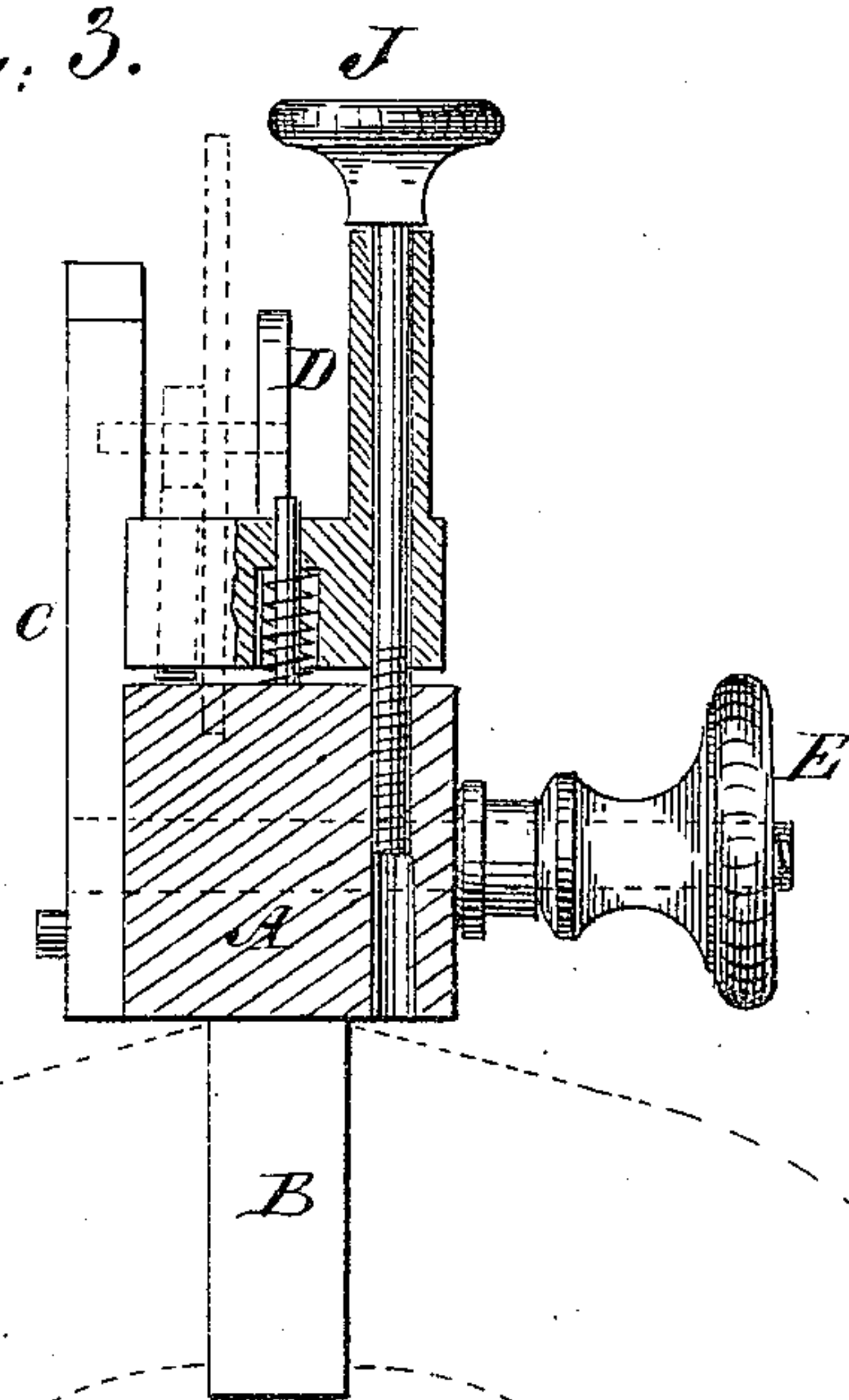
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES.

*Chas. Nida*  
*Wm. Nida*

INVENTOR.

*J. F. Young*  
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ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JULIUS F. YOUNG, OF OWATONNA, MINNESOTA.

## IMPROVEMENT IN WATCH-MAKERS' TOOLS.

Specification forming part of Letters Patent No. **151,333**, dated May 26, 1874; application filed April 18, 1874.

*To all whom it may concern:*

Be it known that I, JULIUS F. YOUNG, of Owatonna, in the county of Steele and State of Minnesota, have invented a new and useful Improvement in Watch-Makers' Tools, of which the following is a specification:

The object of this invention is to furnish means for reducing the tension and elasticity of hair-springs of watches, so as to vary the time or action of the watch-movement from fast to slow, as may be desired.

In the accompanying drawing, Figure 1 is a side view of the tool. Fig. 2 is a top view, and Fig. 3 an end view.

Similar letters of reference indicate corresponding parts.

A is the body or bed of the tool, which is confined (when in use) in a vise by gripping the lug B on the under side of the bed. C is an adjustable rest, which is designed to hold between it and the stationary stand D any diameter of watch balance-wheel with the hair-spring and parts connected therewith. This rest C is adjusted, as may be desired, with reference to the stand D, by the finger-screw E. The arbor of the balance-wheel rests in slots in the rest C and the stand, as represented in the drawing. F is a spiral spring on the screw E, between the rest C and the body of the tool, to keep the rest steady and in position. G is the hair-spring. The balance-wheel with the hair-spring being thus confined, the end of the hair-spring is taken hold of with a pair of pliers or tweezers, and is gently drawn along under the spring-clamps H and I. These clamps are first

raised by means of the finger-screws J and K. The clamp I is then screwed down onto the hair-spring, and then the clamp H is screwed down. These clamps hold the hair-spring flat to the bed A, so that with a scraper of any suitable kind the hair-spring may be reduced so as to alter the running of the watch from five minutes to an hour and a half in twenty-four hours. When the clamps are raised the hair-spring is allowed to slip back by its own tension, so as to assume its former diameter, and is readily recoiled. For producing the desired effect it is only necessary to scrape a space of, say, one-half inch of the hair-spring. The balance-wheel and hair-spring are now taken out by turning the finger-screw E, and replaced in the watch.

This, it is believed, is the only reliable means of weakening the hair-spring of a watch. By the tool above described this may be done in the most expeditious and perfect manner.

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

A tool for watch-makers for reducing hair-springs, having a bed, A, and adjustable rest C, a stationary stand, D, clamps H and I, and finger-screws E and J K, arranged substantially as and for the purposes herein shown and described.

JULIUS F. YOUNG.

Witnesses:

HENRY BORCHERT,  
J. W. HALL.