

(No Model.)

G. P. GANSTER.
CLOCK ESCAPEMENT.

No. 286,419.

Patented Oct. 9, 1883.

Fig. 1.

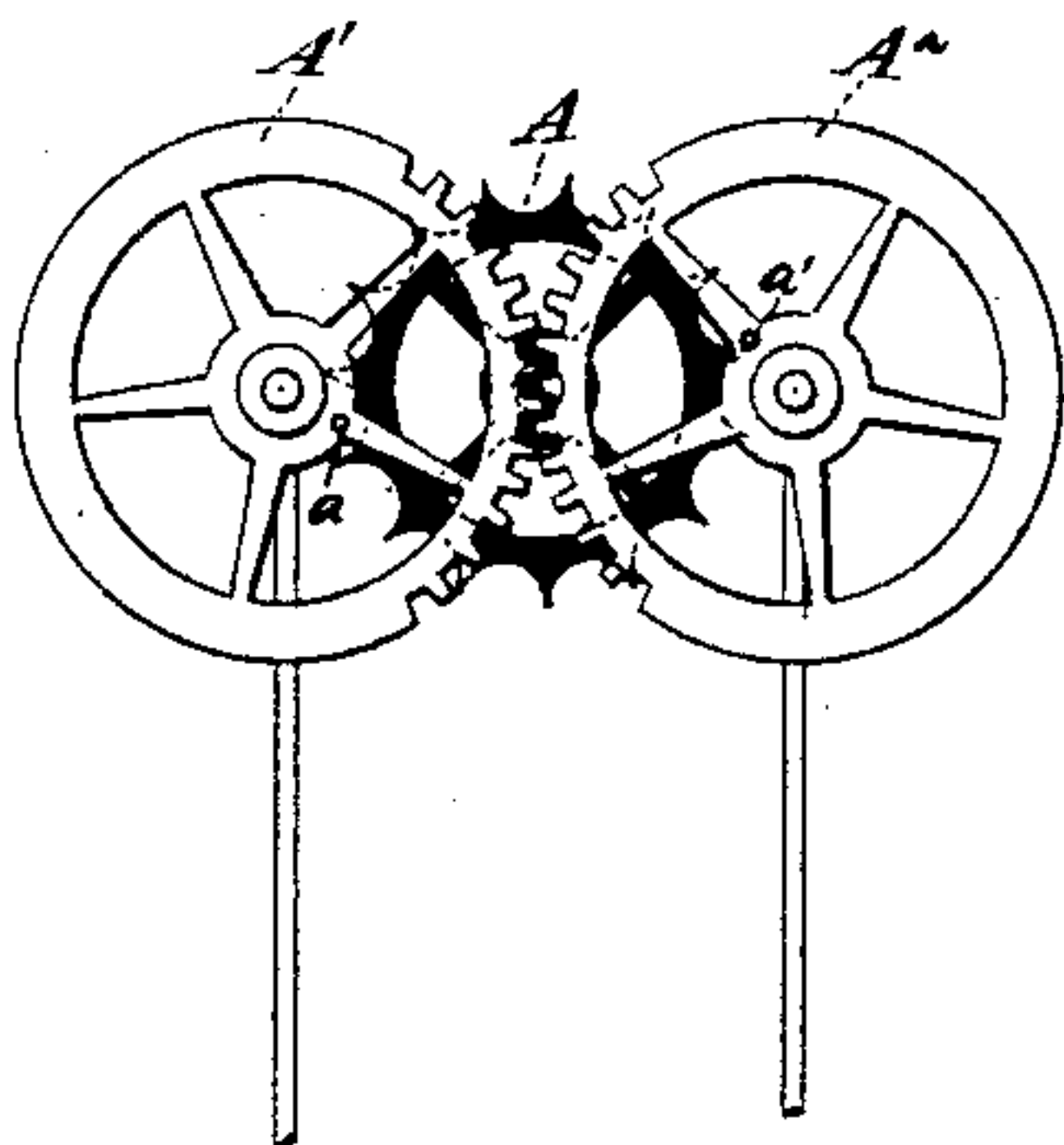


Fig. 3.

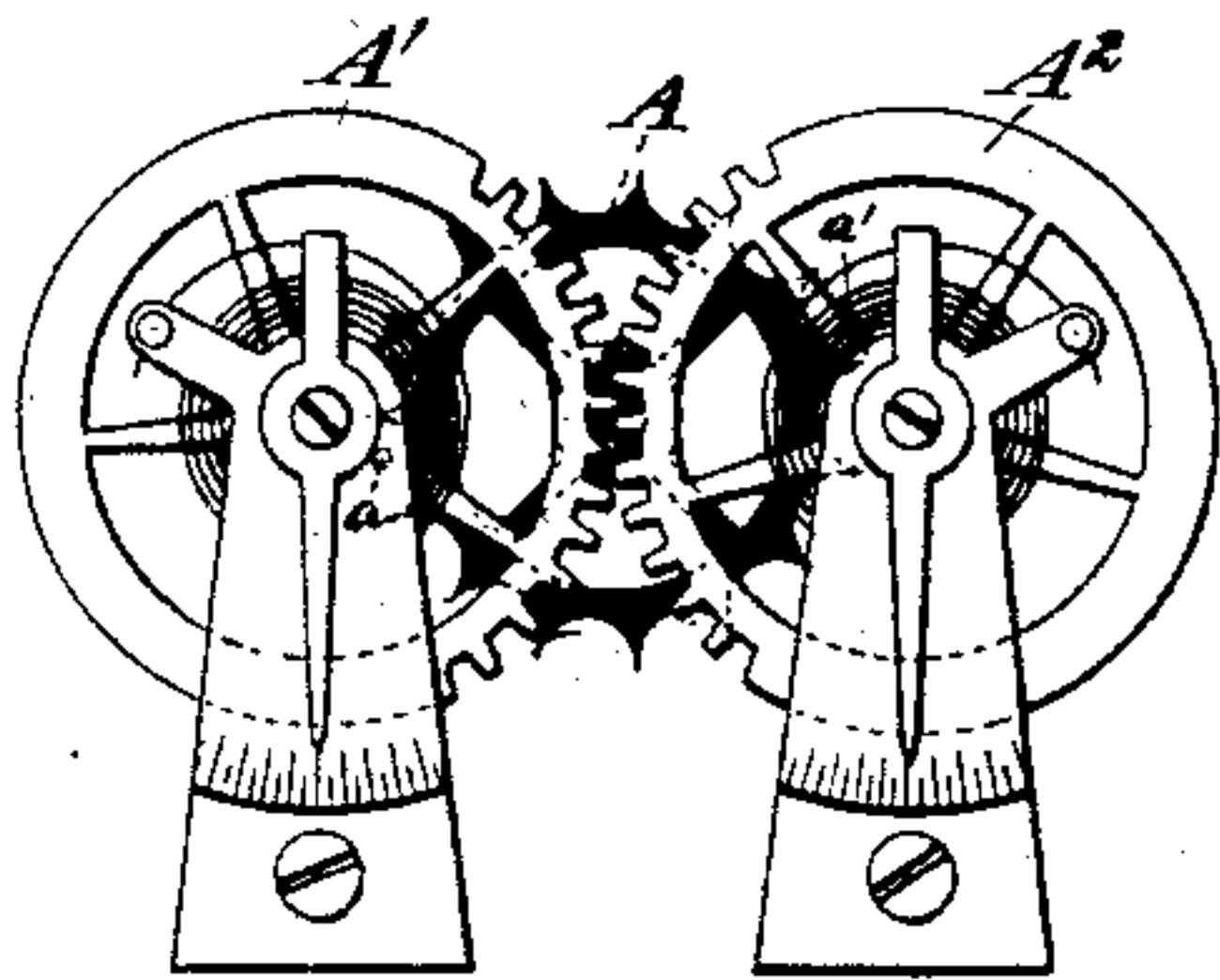


Fig. 2.

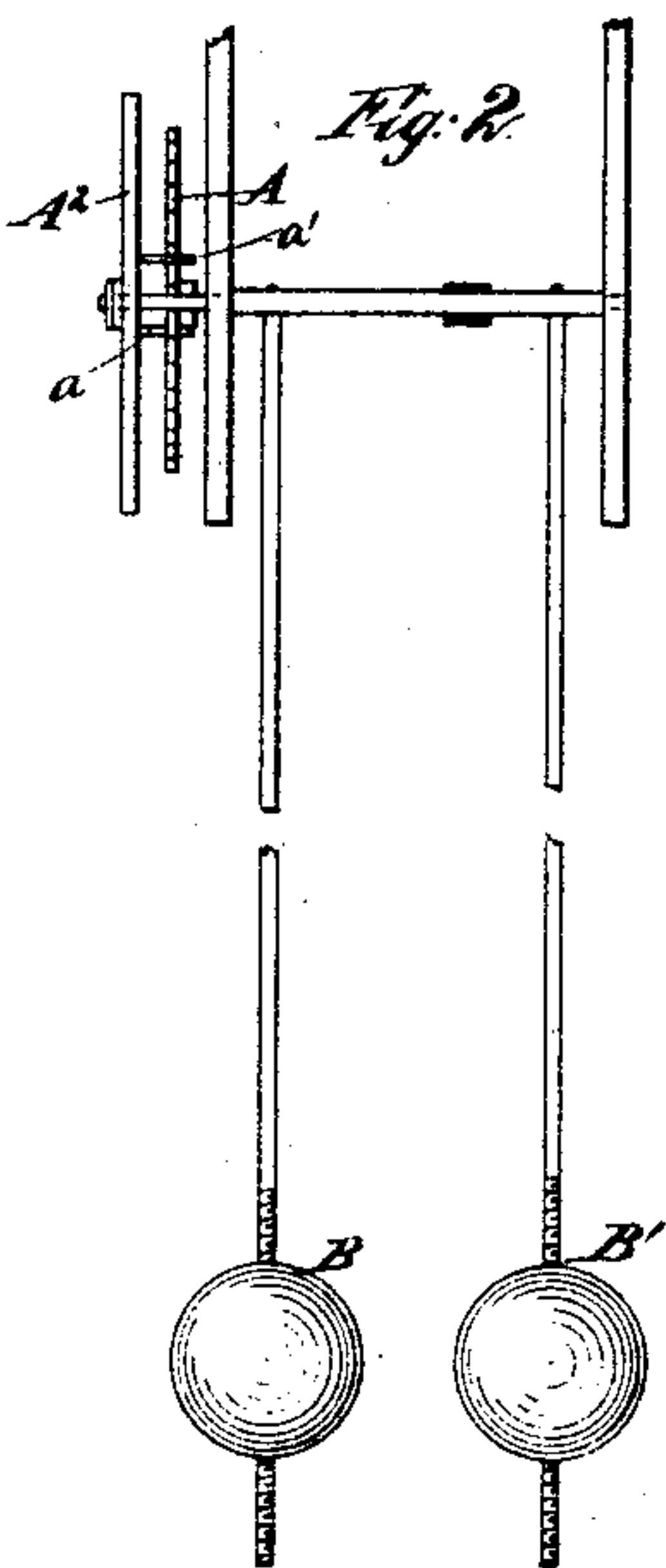
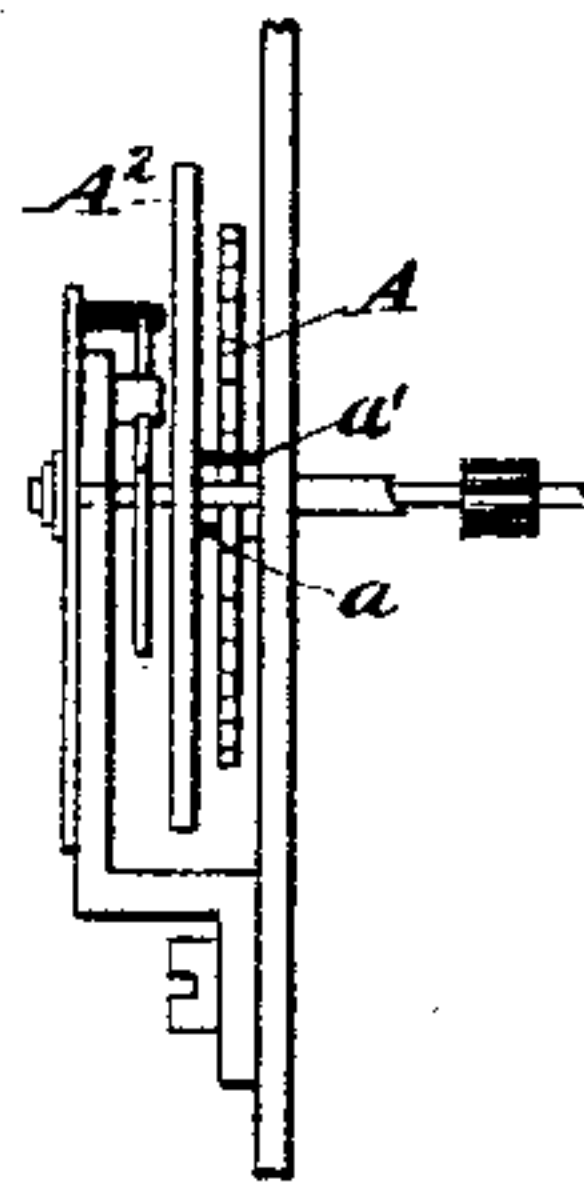


Fig. 4.



Witnesses:

Charles V. Seale
H. H. Gentry

Inventor:

George P. Ganster,
by his attorney
Thomas S. Stetson.

UNITED STATES PATENT OFFICE.

GEORGE P. GANSTER, OF READING, PENNSYLVANIA.

CLOCK-ESCAPEMENT.

SPECIFICATION forming part of Letters Patent No. 286,419, dated October 9, 1883.

Application filed February 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. GANSTER, of Reading, Berks county, in the State of Pennsylvania, have invented certain new and useful Improvements Relating to Clock-Escapements, of which the following is a specification.

I combine with a peculiar escapement, already patented to me, the principle of the pendulum or of the spring-balance, the two being equivalent in this combination, as fully set forth below.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a front view, and Fig. 2 an edge view. Figs. 3 and 4 represent a modification in which a spring is employed as a substitute for the pendulum. Fig. 3 is a front view, and Fig. 4 an edge view.

Similar letters of reference indicate corresponding parts in all the figures.

I have in Letters Patent issued to me dated December 19, 1882, No. 269,278, set forth a form of escapement in which two oscillating wheels are employed, geared together, and actuated by an escapement-wheel proper, which turns intermittently in one direction and acts alternately on pins on the two oscillating wheels. I employ such in my present invention, the intermittent escapement-wheel being marked A and the two oscillating wheels A' A².

Instead of, as in my said patent of December, 1882, having the center of gravity of each of the said oscillating wheels in the axis of motion, so that each wheel is balanced and capable of turning or standing indifferently in all positions, I attach to each oscillating wheel a pendulum, B' B². These pendulums, swinging in opposite directions with the oscillations of their respective wheels, control the time by well-known laws. The two pendulums should be adjusted as nearly alike as practicable. They may be regulated, like ordinary pendulums, by turning nuts to raise or lower the bobs. Each may have the well-known parallel bars of different metals to make it self-regulating for change of temperature, if desired.

I can introduce a spring analogous to the hair-spring of the oscillating fly-wheel of watches and chronometers with analogous

provisions for adjustment thereof, instead of a pendulum, if preferred in any case. I consider such a spring an equivalent of a pendulum so far as this invention is concerned. The action is similar in tending to hold the wheel in a certain fixed position, and resisting its divergence from such position on either side, allowing it to swing alternately past that position from one side to the other and back, subject to the same conflict between its inertia, and a constant force, so as to determine the time accurately independent of slight variations in the impelling force received from the clock mechanism.

I esteem the direct action of the teeth of the escapement-wheel against the respective pins a' an important quality in my former device above referred to. By my present invention I have applied a pendulum or an equivalent spring in combination therewith and obtained increased correctness of time-keeping. The two pendulums, by vibrating in opposite directions at the same time, and exactly balancing each other, relieve the general mechanism and casing from most or all of the vibration attending the ordinary clock action.

Modifications may be made in the forms and proportions.

Parts of the invention may be used without the whole.

I can use the device with only one pendulum, simply fixing a pendulum on the shaft of one wheel, A', and leaving the other wheel, A², in the free condition set forth in my former patent.

I claim as my invention—

1. The escapement-wheel A, two connected oscillating wheels, A' A², engaged therewith, as shown, in combination with each other, and with a pendulum, B, connected to one of the wheels A', and serving to aid in regulating the time, as herein specified.

2. The two pendulums B B', swinging in opposite directions, in combination with the geared wheels A' A², and escapement-wheel A, and suitable driving mechanism arranged for joint operation, as herein specified.

In testimony whereof I have hereunto set my hand, at New York city, this 9th day of February, 1883, in the presence of two subscribing witnesses.

GEORGE P. GANSTER.

Witnesses:

HATTIE A. JOHNSTONE,
B. E. D. STAFFORD.