

(No Model.)

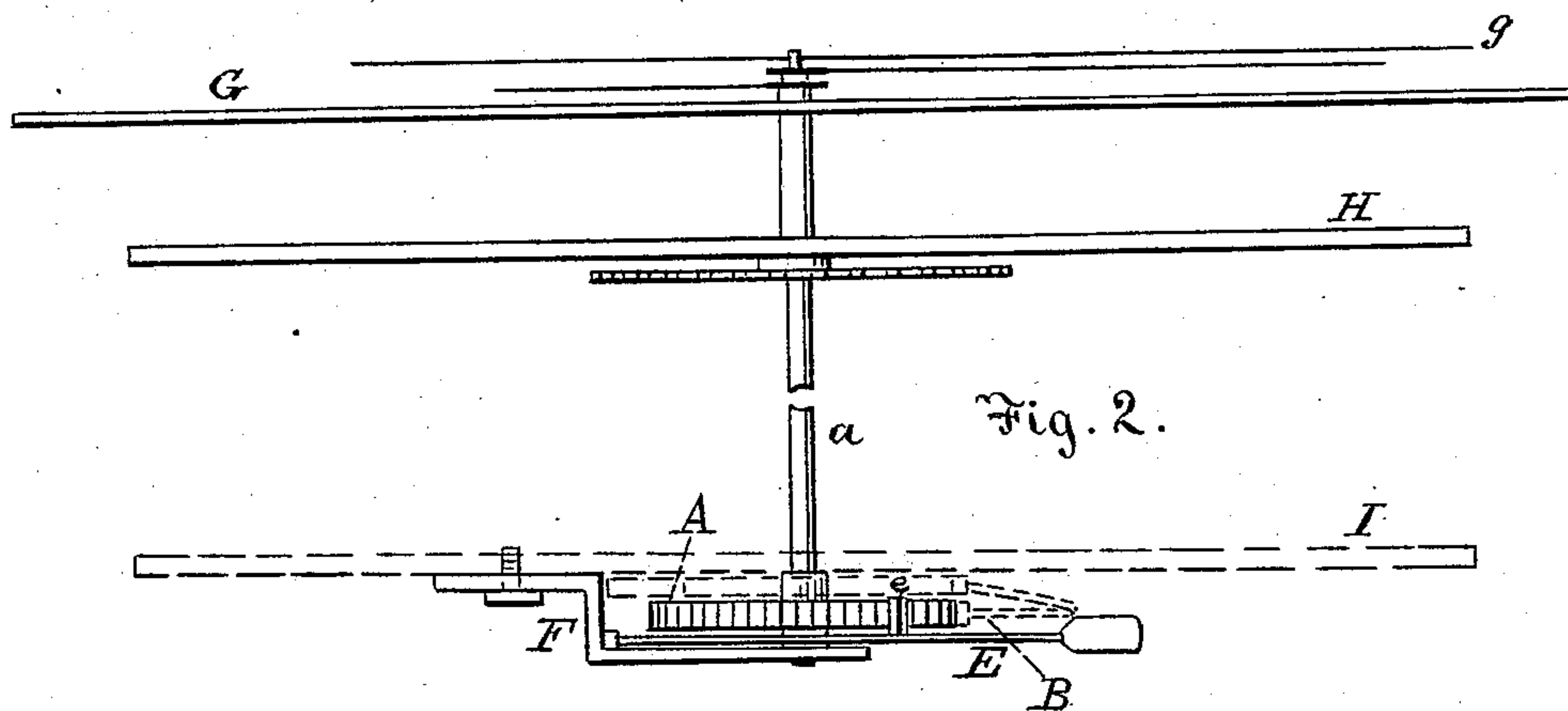
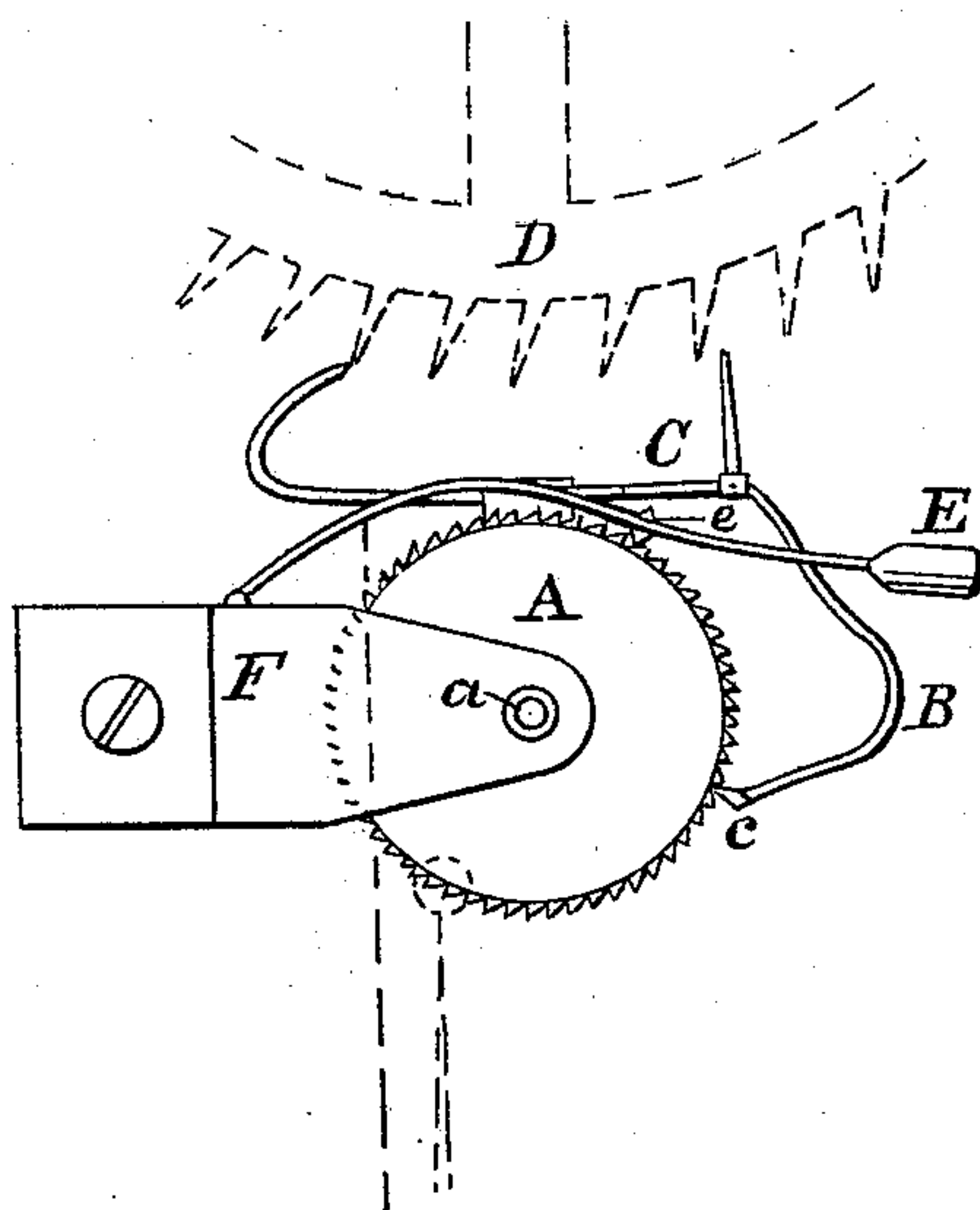
F. L. GREGORY.

SECOND HAND ATTACHMENT FOR CLOCKS.

No. 281,493.

Patented July 17, 1883.

Fig. 1.



Witnesses
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UNITED STATES PATENT OFFICE.

FRED L. GREGORY, OF NELIGH, NEBRASKA.

SECOND-HAND ATTACHMENT FOR CLOCKS.

SPECIFICATION forming part of Letters Patent No. 281,493, dated July 17, 1883.

Application filed August 11, 1882. (No model.)

To all whom it may concern:

Be it known that I, FRED L. GREGORY, a citizen of the United States of America, residing at Neligh, in the county of Antelope and State of Nebraska, have invented certain new and useful Improvements in Clock Attachments, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to clocks; and it consists in an improved second-hand attachment, as herein shown and described.

In the accompanying drawings, Figure 1 represents part of a clock-movement provided with my improvement. Fig. 2 is a top view of certain parts of a clock-movement and attachment.

A designates a wheel fastened on a shaft, *a*, which is usually provided with a bearing on each side of the wheel. The said wheel has sixty teeth for engagement with a ratchet or click, *c*, at the end of an impulse-arm, B, the latter being secured to the verge C, which engages with the escape-wheel D of the clock-movement. The arm B, however, may be attached to any vibrating part of the clock-escapement which vibrates twice in a second, and will impart a like movement to the said arm, which acts against the wheel A, moving it one tooth forward at each stroke, or two vibrations of the arm. Thus the wheel A is moved by the impulse-arm B sixty times to effect one revolution of the wheel, such revolution occupying one minute, and the arm B making one hundred and twenty vibrations in the same time. The impulse-arm may be hinged or coupled to the verge or other vibrating part, in which case it may be pressed to wheel A by a spring or by its own weight.

E indicates a retaining-lever provided with a diamond-shaped click or detent, at *e*, to engage with the teeth of wheel A. After the impulse-arm has made its stroke against wheel A, moving it one-sixtieth of a revolution in the proper direction, the wheel is detained by lever E in position to receive the next stroke from arm B, the said detent-lever being actuated or brought in contact by its weight or by

means of a spring. The lever E is usually secured to a cock-plate F, which also forms a bearing for the shaft *a*, which carries the second-hand, the same being usually placed at the dial end of the shaft, (see Fig. 2,) in which G indicates the dial-plate, *g* the second-hand, and H and I the front and rear plates of the clock-movement.

The device may be variously modified in construction and arrangement, and, when a separate dial for it is used, may be placed in any convenient part of the clock-case, the parts being constructed accordingly to effect the requisite connections and operation. When what is known as a "sweep" second-hand is used with the same dial of the hour and minute hands, the attachment may be placed at the rear of the clock-movement, as shown in the drawings, a hollow minute-hand shaft being used. The attachment may be placed at the front of the clock-movement and a small dial provided for it on the ordinary clock-dial; or it may be located with a dial above, below, or at either side of the clock-dial, the parts being modified in construction accordingly. The device has also simplicity and cheapness in construction, and may be made to operate successfully within much less space than other devices for the same purpose.

I claim—

1. In combination with the escapement of a clock-movement, an impulse-arm, B, and the wheel A on a shaft holding a second-hand having a suitable dial, substantially as and for the purposes described.

2. In combination with a clock-movement, the wheel A on a shaft holding a second-hand having a suitable dial, the impulse-arm B, attached to a vibrating part of the clock-escapement, and the lever E, having a detent, substantially as and for the purposes set forth.

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

FRED L. GREGORY.

Witnesses:

H. H. JURGIN.

J. E. WILDER.