(No Model.)

F. A. LANE.

CLOCK MOVEMENT.

No. 256,708. Patented Apr. 18, 1882.

fig 1

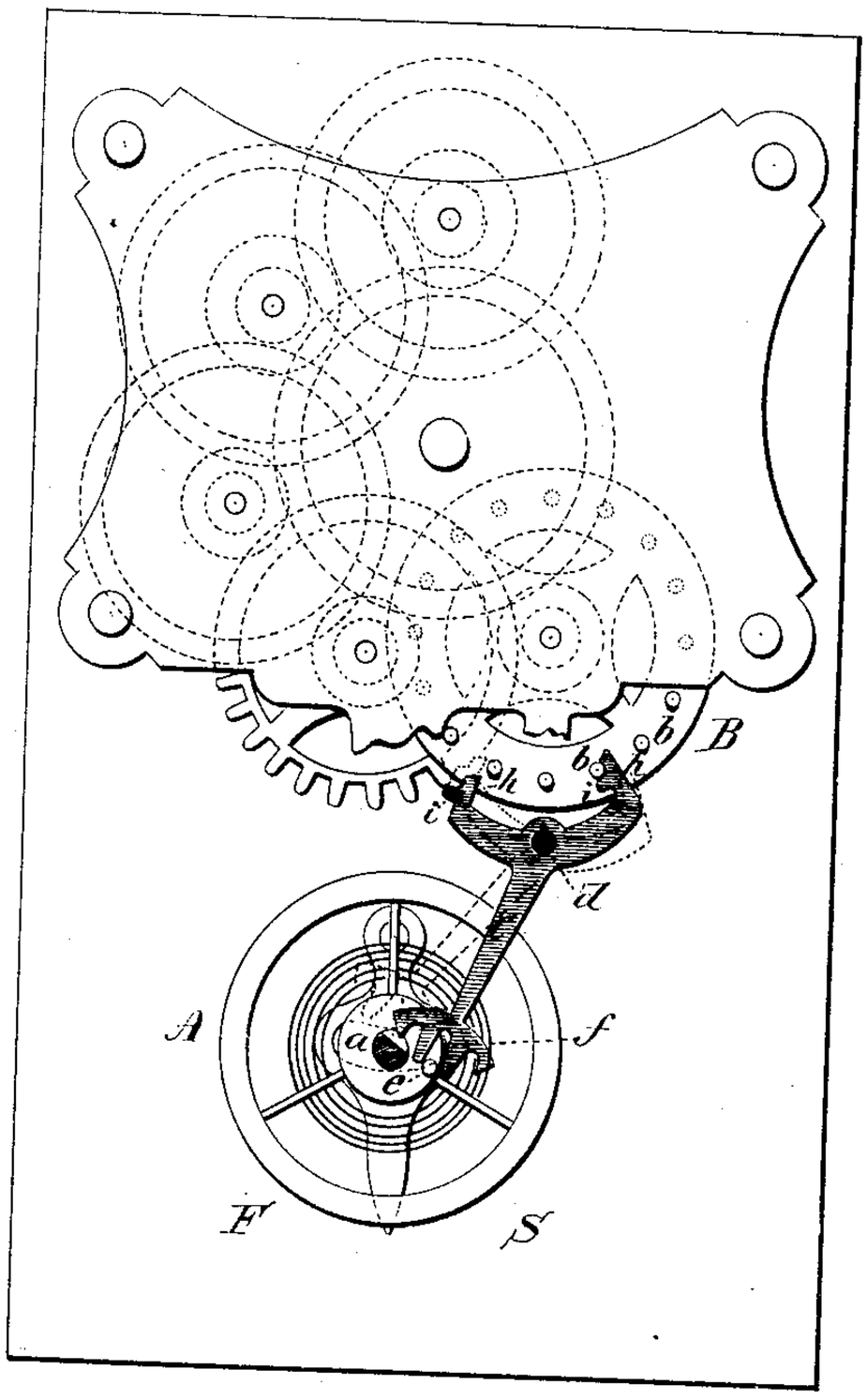

fig 2

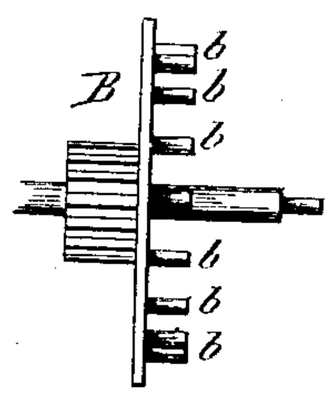

fig 3.

Witnesses.

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FREDERIC A. LANE, OF NEW HAVEN, CONNECTICUT.

CLOCK-MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 256,708, dated April 18, 1882.

Application filed December 30, 1881. (No model.)

To all whom it may concern:

Be it known that I, FRED. A. LANE, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Clock-Movements; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view; Fig. 2, the escapement-wheel detached; Fig. 3, the lever detached in perspective.

This invention relates to an improvement in that class of clock-movements commonly called "marine"—that is to say, such as employ a balance-wheel and a lever working between the balance and the escapement wheel.

In the usual construction of this class of movements the verge is made from steel of considerable thickness, so as to insure a proper engagement with the escapement-wheel, which is made of brass with projecting teeth. The wheel itself is thin, and to insure the proper working of the teeth upon the points of the verge it is necessary that the verge shall be considerably thicker than the wheel, because of the unavoidable irregularity of the point of contact between the escapement-wheel and the points of the verge, owing to the slight play axially necessary to the escapement-wheel and to the verge. This steel verge is secured to the verge-shaft directly, and the lever also secured to the same shaft directly, or, as in some cases, the lever and verge are riveted together and then secured to the shaft. This makes the lever with the verge an expensive part of the movement. In the operation of this verge it "banks" at the root of the teeth on the wheel, the depth of the tooth limiting the play of the verge and lever.

The object of my invention is to construct the verge and lever from thin sheet-steel or equivalent metal; and it consists in the verge and lever made in one and the same piece, the working ends of the verge having banking-pins formed as a part thereof, combined with an escapement-wheel having a series of pins in its rim projecting parallel with the axis of the wheel, and upon which pins the verge works, as more fully hereinafter described.

In the accompanying illustration, A represents the balance-wheel, arranged upon a spindle, *a*, in the usual manner. B, the escapement-wheel, (shown detached in Fig. 2,) is constructed with a series of pins, *b*, projecting from its rim parallel with the axis on which the wheel revolves, these pins being spaced according to the verge which is to work upon them, and to the train of gearing between the escapement-wheel and the center shaft, that train of gearing and the relation of the escapement-wheel to it being too well-known to require detailed description in this specification.

The verge and lever, as seen in perspective Fig. 3, are made in one and the same piece, and preferably cut from thin sheet-steel. The verge in outline is the usual form of a "dead-beat" verge, and is hung upon its pivot *d* in the usual manner. The arm C extends to the balance-wheel, and so as to be operated thereby through the pin *c* on the hub of the wheel working in a fork, *f*, in the end of the lever or arm C. The arrangement of the verge in relation to the escapement-wheel is such that the ends of the verge work upon the pins *b*. Each of the arms *h h* of the verge is constructed with a banking-pin, *i*, projecting from the working-face of the arms *h*, and so as to strike upon the pins, respectively, as indicated in Fig. 1, which arrest the swing or vibration of the verge and its lever or arm C.

The operation of the movement turns the lever and the balance-wheel in the usual manner, the verge at each vibration bringing up upon the banking-pins *i* against the pins, as seen in broken lines Fig. 1.

By this construction a very large proportion of the expense of the usual verge and lever is avoided. The verge-lever may be very thin, because of the length of pins in the escapement-wheel, permitting a considerable play either of the escapement-wheel or of the verge. Hence very much less friction is produced in the escapement than in the common toothed wheel on the thick verge, so that not only is the movement cheaper but better than the usual construction.

This peculiar construction of verge may be applied to escapement-wheels of other construction, and also in which the lever is made separate from the verge.

I do not broadly claim an escapement-wheel

constructed with pins projecting therefrom parallel with its axis, as such, I am aware, is not new; but

What I do claim is—

1. In a marine clock-movement, the verge constructed with banking-pins *i i*, projecting from the working-surface of the verge, substantially as described.

2. In a marine clock-movement, the verge constructed with banking-pins *i i*, projecting from the working-surface of the verge, made in one and the same piece with the lever or arm C, substantially as described.

FREDERIC A. LANE.

Witnesses:
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