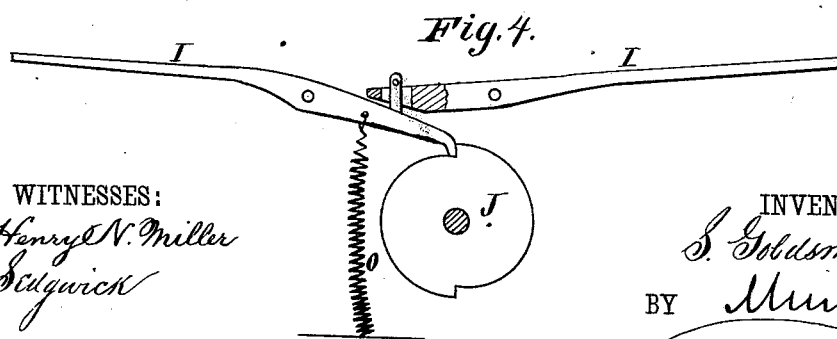
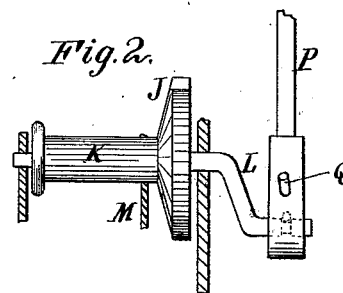
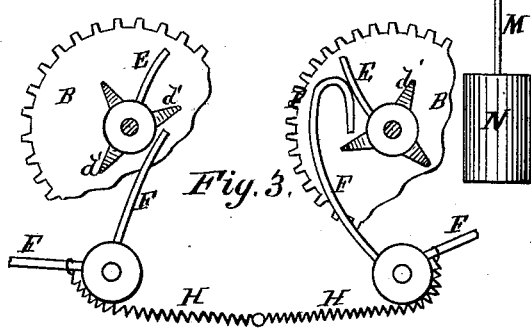
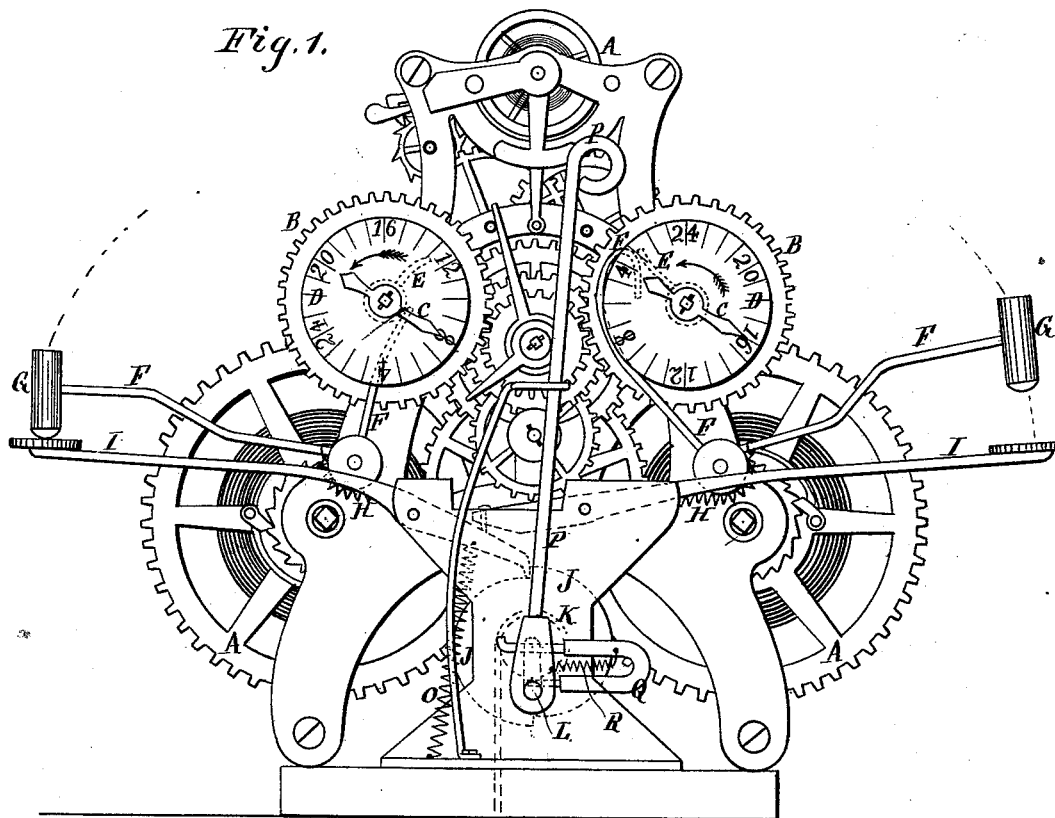


S. GOLDSMITH.
Automatic Clock Attachment for Operating Gas-Burners
No. 218,015. Patented July 29, 1879.



WITNESSES:
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UNITED STATES PATENT OFFICE.

SIMON GOLDSMITH, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN AUTOMATIC CLOCK ATTACHMENTS FOR OPERATING GAS-BURNERS.

Specification forming part of Letters Patent No. **218,015**, dated July 29, 1879; application filed June 3, 1879.

To all whom it may concern:

Be it known that I, SIMON GOLDSMITH, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Automatic Clock Attachments for Operating Self-Lighting and Self-Extinguishing Gas-Burner Attachments, of which the following is a specification.

Figure 1 is a front view of my attachment, shown as applied to a clock-work. Fig. 2 is a detail view of the drum, ratchet, crank, and connecting-rod. Fig. 3 is a detail view of the cams, bent levers, and the springs that operate the hammers. Fig. 4 is a detail view of the levers and the springs that hold, release, and stop the ratchet.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved attachment for clocks, to be connected with a self-lighting and self-extinguishing attachment for gas-burners, which shall be so constructed that the gas will be lighted and extinguished automatically at fixed times, so long as the clock continues to run, so that the only attention required will be to wind up the clock at the proper time.

The invention consists in the combination of the two gear-wheels, the two hands, the two dial-plates, the two cams, the two bent levers, provided with the hammer-heads and the springs, the two levers having their inner ends overlapped and connected together and held down by a spring, the ratchet-wheel, drum, and crank, the cord and weight or equivalent spring, and the connecting-rod, with each other and with the hour-wheel of a clock-work, for operating a self-lighting and self-extinguishing attachment for a gas-burner, as hereinafter fully described.

A represents an ordinary clock-work, and may be a day-clock, an eight-day clock, or a clock that will run for a longer time. To the frame of the clock-work A are pivoted two wheels, B, the teeth of which mesh into the teeth of the hour-wheel of the said clock-work A, or into the teeth of a wheel rigidly connected with the said hour-wheel. The wheels B are made with twice as many teeth as the hour-wheel or the wheel with which they gear, so that they will make one revolution in twen-

ty-four hours. To the outer ends of the journals of the gear-wheels B are attached hands C, which point to division-marks upon the dial-plates D. The dial-plates D are formed upon the outer ends of hubs of such a length as to fit in between the hands C and the wheels B: A spring-washer, d', is interposed between the wheels B and the inner ends of the hubs of the dial-plates D, so that the said wheels will carry the said dial-plates with them in their revolution.

This construction allows the dial-plates D to be adjusted to set them so that the gas may be lighted and extinguished at any desired time.

To the hubs of the dial-plates D are attached cams E, which, at each revolution of the said dial-plates, strike against and push back the arms of the bent levers F, which are pivoted at their angles to the frame of the clock-work A, and to the ends of their other arms are attached hammer-heads G. The end of the upper arm of one of the bent levers F is bent over into U form, as shown in full lines in Fig. 3 and in dotted lines in Fig. 1, so that both the hammers G may be raised by the action of the cams E upon the upper arms of the bent levers F. As the cams E pass from the upper arms of the bent levers F the hammers G drop by their own weight, assisted by the action of the springs H, the outer ends of which are attached to the lower arms of the bent levers F, and their inner ends are attached to the frame of the clock-work A. As the hammers G descend they strike upon the flattened upper sides of the outer ends of the levers I and force the said outer ends downward. The levers I are pivoted at a little distance from their inner ends to the frame of the clock-work A, or to supports attached to the said frame or to the clock-case. The inner ends of the levers I overlap each other, and the upper lever has a short slot formed through it to receive a pin attached to the lower lever, which pin has a key passed through or a nut screwed upon its upper end, so that the movement of either lever may move both. The lower inner end of the levers I is bent downward to engage with the ratchet-wheel J, attached to or formed upon the end of the drum K.

The ratchet-wheel J is made with two teeth,

at the distance of a semi-circumference from each other, as shown in full lines in Fig. 4 and in dotted lines in Fig. 1. The ratchet-wheel J and drum K are placed upon and attached to the shaft of the crank L, which revolves in bearings in supports attached to the frame of the clock-work A or to the clock-case. To the drum K is attached the end of a cord, M, which is wound around it, and to the other end of which is attached a weight, N, so that when the lower inner ends of the levers I are raised by the descent of either of the hammers G, and thus releasing the ratchet-wheel J, the weight N may turn the drum K, ratchet-wheel J, and crank L. The lower inner ends of the levers I are drawn down and held against the face of the ratchet-wheel J by a spring, O, so that the said drum, ratchet-wheel, and crank can make but half a revolution at any one time.

The arm of the crank L passes through a hole in the lower end of the connecting-rod P, where it is secured in place by an arm of the U-shaped pin Q, which passes through a hole in the said end of the connecting-rod P, and enters a ring-groove in the arm of the crank L. The pin Q is held in place by a spring, R, attached to it and to the rod P, and its other arm passes through a hole in the said rod P, and projects so that the said pin can be readily pushed back to release the rod P and allow it to be detached from the crank L. The detachment of the lower end of the rod P from the crank L allows the said crank to be turned

to wind up the cord M and weight N without constantly lighting and extinguishing the gas.

The upper end of the connecting-rod P is designed to be connected with the self-lighting and self-extinguishing attachment of a gas-burner, so that its movement in one direction may light the gas, and its movement in the other direction may extinguish the light.

The cord and weight M N, that rotate the drum, ratchet-wheel, and crank K J L, may be replaced by an equivalent coiled spring, if desired.

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

The combination of the gear-wheels B, the hands C, the dial-plates D, the cams E, the bent levers F, provided with the hammer-heads G and the springs H, the levers I, having their inner ends overlapped and connected together and held down by a spring, O, the ratchet-wheel, drum, and crank J K L, the cord and weight M N or equivalent spring, and the connecting-rod P, with each other and with the hour-wheel of a clock-work, A, for operating a self-lighting and self-extinguishing attachment for a gas-burner, substantially as herein shown and described.

SIMON GOLDSMITH.

Witnesses:

JACOB GOLDSMITH,

JOHANN WERNER,

WILLIAM GOLDSMITH.