No. 864,075. PATENTED AUG. 20, 1907.

J. C. BURKE.

CLOCK.

APPLICATION FILED DEC. 5, 1906.

2 SHEETS—SHEET 1.

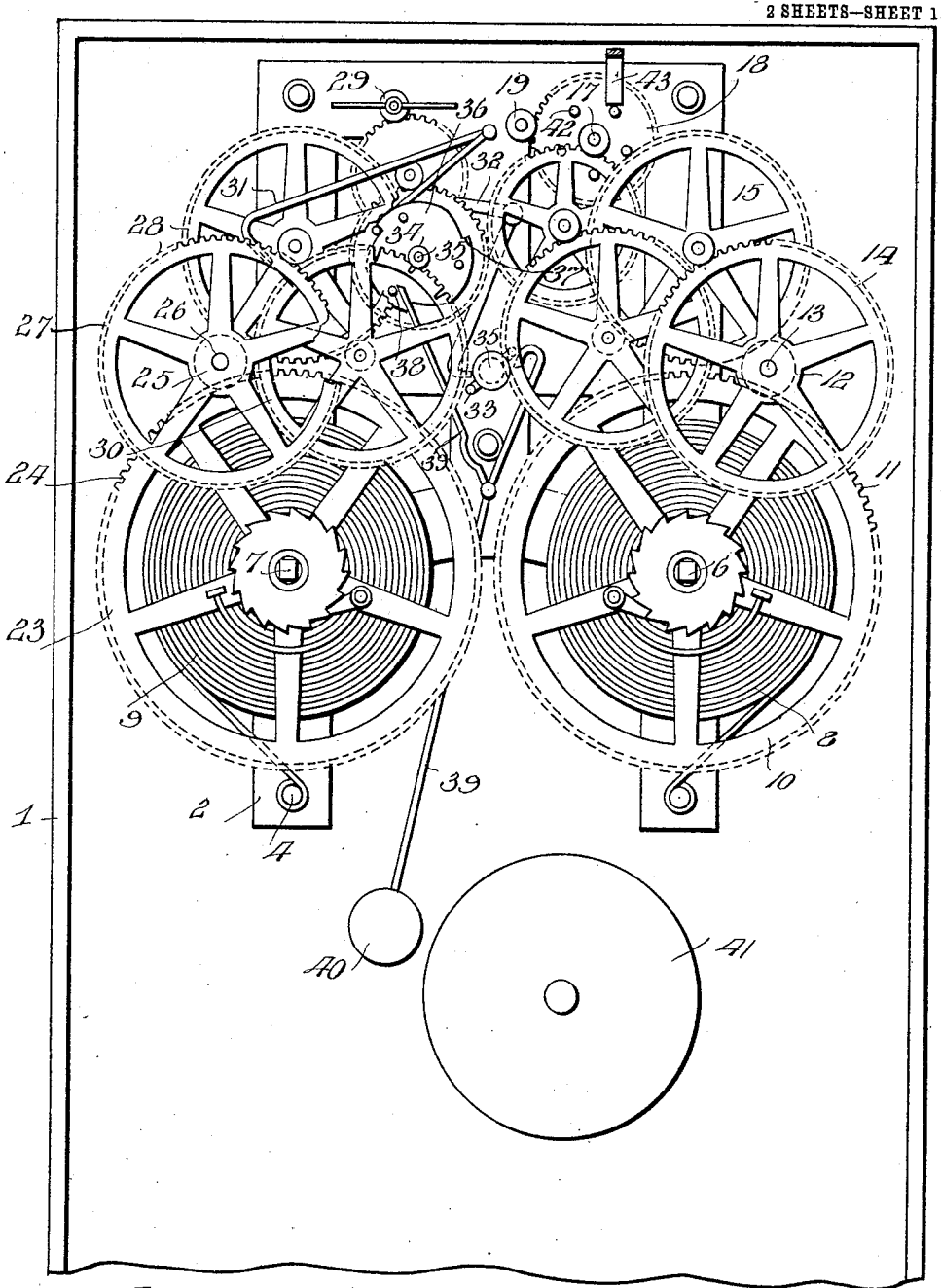

Fig. 1.

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Witnesses

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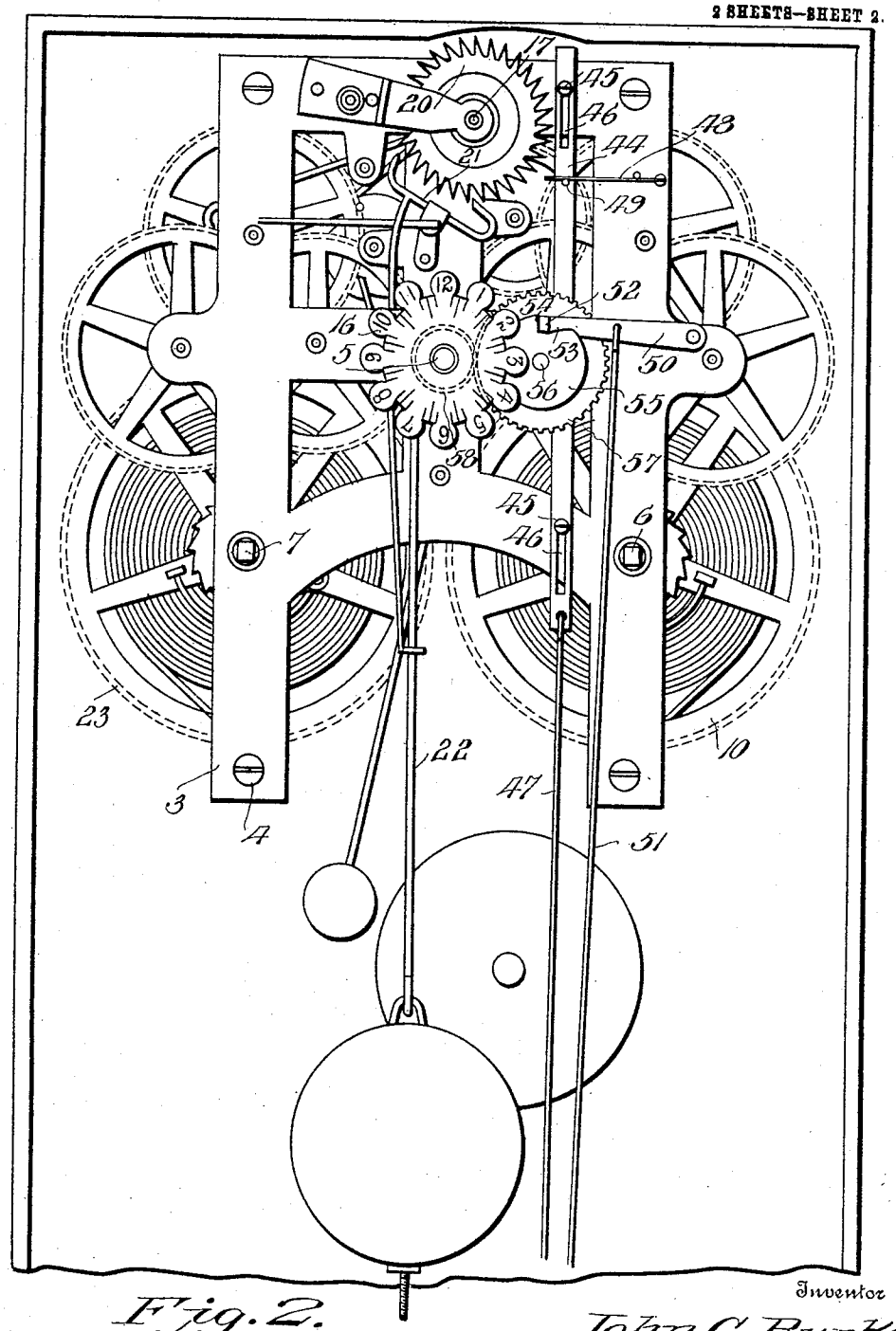

Fig. 2.

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UNITED STATES PATENT OFFICE.

JOHN C. BURKE, OF IRONTON, OHIO.

CLOCK.

No. 864,075. Specification of Letters Patent. Patented Aug. 20, 1907.

Application filed December 5, 1906. Serial No. 346,453.

To all whom it may concern:

Be it known that I, JOHN C. BURKE, a citizen of the United States, residing at Ironton, in the county of Lawrence and State of Ohio, have invented new and useful Improvements in Clocks, of which the following is a specification.

This invention relates to clocks, being especially directed to an alarm mechanism, and has for its objects to provide a comparatively simple, inexpensive device of this character wherein the alarm may be conveniently set to sound at a determined time, one in which the alarm will be released once in every twenty-four hours, and one in which the alarm will, when in action, sound intermittently during regular recurrent intervals until cut off.

With these and other objects in view, the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings: Figure 1 is a rear elevation of a clock mechanism embodying the invention. Fig. 2 is a similar view with the rear frame plate removed.

Referring to the drawings, it will be seen that the framework of the clock mechansim, which is mounted in the casing 1, comprises a front plate 2 and a rear plate 3 connected with the plate 2 by means of posts 4, there being journaled in the frame a hand-staff or arbor 5 and a pair of drive shafts 6 and 7 included respectively in the winding and striking mechanisms and equipped, as usual, with power springs 8 and 9.

Fixed on the shaft 6 and for rotation therewith under the influence of spring 8 is a master gear 10 provided with teeth 11 in engagement with a lantern pinion 12 fixed upon a staff 13 journaled in the frame and in turn carrying a gear 14 included in a train of gears 15, which operatively connect the shaft 6 with the hand-staff 5, on which is mounted an indicator dial 16 adapted for travel with the hour hand and for use in setting the alarm.

Journaled in the frame is an escapement staff 17 journaled in the train of gears 15 by means of a gear 18 and lantern pinion 19 and equipped with an escapement wheel 20 adapted for operating an escapement 21 which in turn is connected with and operates the pendulum 22, as usual in devices of this class. It may be mentioned in this connection that the number, arrangement and relative sizes of the gears and pinions included in the train of gears 15 are such that the spring 8 will, when once wound, properly operate the staff 5 throughout a period of fifteen hundred days.

Fixed upon the shaft 7 and for operation thereby under the influence of spring 9 is a master gear 23 having teeth 24 engaged with a lantern pinion 25 fixed on a staff 26 journaled in the frame and carrying a gear 27 included in a train of gears 28 for operating the wheel 29, there being included in the train of gears 28 and for operation thereby a striker wheel 30 having its periphery subdivided as usual into sets of teeth numbering from 1 to 12 and normally held against movement by means of a retaining member or lever 31 movable to releasing position through the medium of a tripping lever 32 in turn actuated by means of projections 33 on the arbor 5, while geared to the wheel 30 by means of a lantern pinion 34 is a rotary staff 35 carrying a gear wheel 36 having a plurality of peripheral teeth 37 adapted for engagement with the lever 31 and a plurality of rearwardly projecting pins 38, preferably three in number, designed to act upon lever 39 for causing the hammer 40 to strike and sound the gong 41. It is to be understood that on each half-revolution of the minute hand the striking mechanism is released for operation, and further that the number, arrangement and relative sizes of the gears and pinions included in the train of gears 28 are such that the spring 9 when wound will, in unwinding, operate the striking mechanism for a period of time corresponding to the operation of the driving mechanism.

The gear 18 is provided with a plurality of rearwardly projecting pins 42 preferably five in number, spaced equidistantly around the gear as shown and adapted to contact successively with the lower end of portion or arm 43 provided on the upper end of a reciprocatory member or bar 44 slidably mounted on the rear plate 3 by means of screws 45 entered through longitudinal slots 46 formed in the bar, the lower end of which is connected by a rod 47 with the alarm, not shown, there being fixed on the plate 3 a spring 48 arranged to bear on a pin 49 fixed to the bar 44 for pressing the latter downward.

Pivoted to the plate 3 is a tripping lever 50 connected by a rod 51 with the alarm, locking and releasing lever, not shown, the lever 50 being provided at its free end with a terminal portion or projection 52 adapted to seat in a recess 53 behind a locking shoulder 54 formed on a rotary cam 55 carried by a staff 56 journaled in the frame and connected by a gear 57 and pinion 58 with the arbor 5.

In practice, the indicating dial 16, together with the pinion 58 and hour hand, will turn with the arbor 5 twice in twenty-four hours, while the gear 57 will be turned with the arbor 56 and cam 55 once in the period named, whereby the cam 55 will, once in every twenty-four hours, actuate the lever 50 for operating the locking and releasing lever through the medium of the connection 51 to release the alarm mechanism. While the alarm is running the pins 42 on gear 18 come successively into contact with the lower end of the arm 43 for raising the bar 44 against the action of spring 48 to hold the alarm hammer out of action at regularly recurrent intervals, the arrangement being such that the hammer will be held out of action for a period of twenty seconds by each of the pins and

will operate for periods of twenty seconds each between the intervals of inaction, this intermittent action of the alarm being continued until the alarm is cut off in the usual manner.

Having thus described my invention, what I claim is:

In a device of the class described, the combination of a center arbor, a drive shaft, a train of gearing connecting the drive shaft with the arbor and including a gear provided with a plurality of pins, a trip lever, a member attached thereto and movable therewith for actuating an alarm releasing means, a cam driven from the arbor and arranged to actuate the said member, a reciprocating controller rod, an element connected with the rod for actuating an alarm hammer, means for operating the bar by the pins on the said gear to hold the element out of action at recurrent intervals, and a spring operating on the bar to hold the element in an operative position.

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

JOHN C. BURKE.

Witnesses:
J. O. HENRY,
JOHN HENRY.