G. O. LACKEY.

DOOR AND ALARM BELL.

No. 108,708. Patented Oct. 25, 1870.

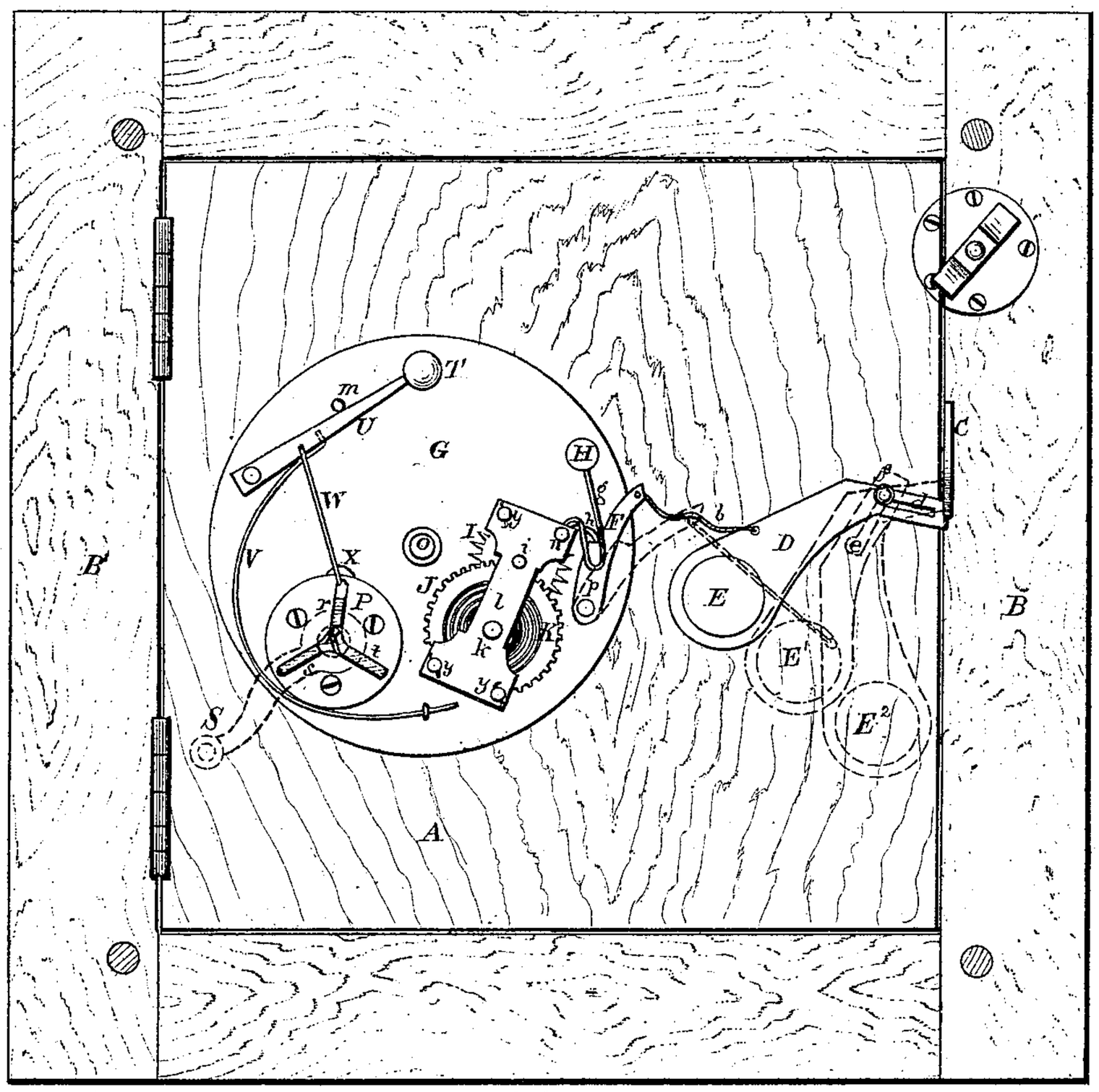

Fig. 1.

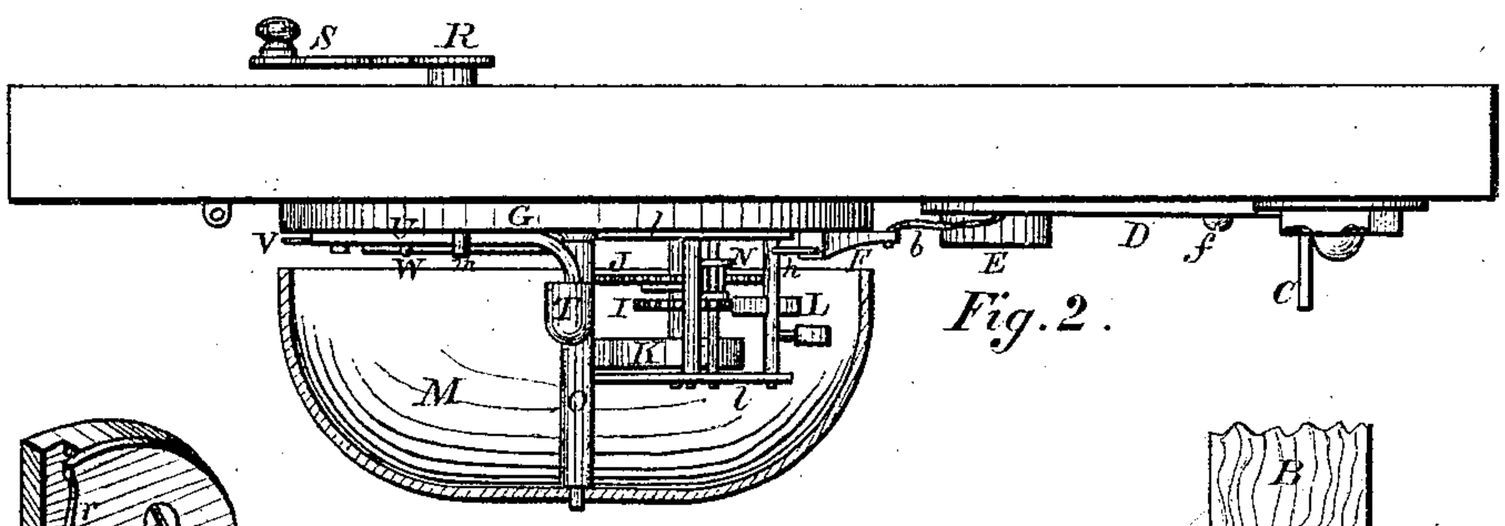

Fig. 2.

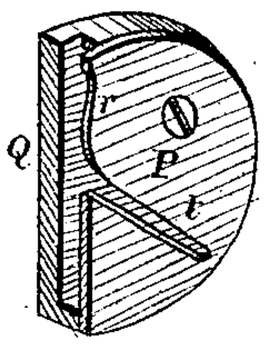

Fig. 3

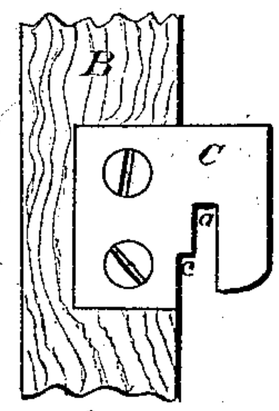

Fig. 4.

Witnesses:
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United States Patent Office.

GASWAY O. LACKEY, OF AKRON, OHIO.

Letters Patent No. 108,708, dated October 25, 1870.

IMPROVEMENT IN DOOR AND ALARM-BELLS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GASWAY O. LACKEY, of Akron, Summit county, Ohio, have invented certain new and useful Improvements in Door and Alarm-Bells; and that the following is a full, clear, and exact specification thereof.

Nature and Object of my Invention.

My invention relates to that class of door-bells which is secured to the body of the door, and is operated by a crank or knob on the outside of the door; and

The first part of my invention relates to the combination with the door-crank shaft of a wheel having two or more radial slots formed at an angle with each other in its face, and uniting at the center of said face, whereby I obtain a simple mechanism for operating the bell-hammer whenever the crank or knob on the outside of the door is turned in either direction.

The second part of my invention relates to the novel construction of a liberating and locking device which is combined with the door, and an alarm mechanism contained in the gong or bell, so that, when properly adjusted, it will liberate the alarm mechanism and lock or hold the door closed in case any person attempt to open it, thus giving an alarm in case stragglers or thieves attempt an entrance to the house.

Description of Accompanying Drawing.

Figure 1 is a view showing the application of my improvements, the gong being removed to show the working parts.

Figure 2 is a plan of the same, with the lower half of the gong shown in plan.

Figure 3 is a perspective view of one half of the wheel on the door-crank shaft.

Figure 4 is a view of the latch-piece for the door-jamb.

General Description.

A represents a door, which is hinged in the door-frame B B', and on which is secured the base, G, of the door-bell.

The bell or gong M is secured on a post, O, in the base G, and the door-crank shaft R extends through the base G and door A, and has the crank S (or a knob, if preferred) secured on the end outside of the door, as indicated by dotted lines in fig. 1, and as shown in plan in fig. 2.

The wheel P Q consists of the body Q, made in the form of a circular box, and secured on the crank-shaft R either by means of a screw or rivet, or by casting the shaft R and body Q in one piece, or in any other suitable manner.

The plate P, which forms the other part of the wheel P Q, is a sheet brass or light cast plate, in which is formed the radial slots *r*, *s*, and *t*, which are arranged at an angle of about one hundred and twenty degrees from each other, and which merge into each other at the center of the plate, as shown in fig. 1.

The plate P is secured on the body Q by one or more screws, passing through holes in the plate, as indicated, and screwing into holes or lugs in or on the body Q.

The hammer T is secured on the arm U, which is pivoted on the base G, and is forced against the bell or gong M by the spring V, which is secured on the base G, and has one end secured in a hole in the arm U, as shown in fig. 1.

The rod W has one end bent down and pivoted in a hole in the arm U, and the other end is bent down at right angles to the body of the rod, and extends through the slot *r*, where it is secured in the washer X, which is arranged underneath the plate P, and between said plate and the body Q, within the box-shaped cavity in said body.

The pin *m* is secured in the base G, and limits the forward motion of the hammer-arm U.

From this description it is seen that when the wheel P Q is rotated by means of the crank S, the bent end of the rod W will remain at the head of the slot *r* until said slot is thrown over into nearly the position now occupied by the slot *s* or *t*, (depending on the direction in which the crank was turned,) which will draw back the hammer-arm U and compress the spring V.

When the slot *r* has been brought into this position, the force of the spring V causes the bent end of the rod W to slide along the slot *r* and up the slot *s* or *t*, (depending on the direction in which the crank was turned,) which causes a forward motion of the hammer-arm U, and a blow of the hammer T on the gong M, as is readily seen.

The washer X slides along under the plate P during this forward motion, and serves to hold the bent end of the rod W in the slots *r s* or *t* in the plate P.

The alarm-mechanism is of the ordinary construction used in clocks, and consists of the plates *l l*, united by the posts *y y y*, and having the shafts *k*, *i* and *n* journaled between them.

The spring K has one end attached to a post, *y*, and the other end to the shaft *k*, and a ratchet-wheel (not shown in drawing) is secured on the said shaft *k*.

The gear-wheel J is journaled on the shaft *k*, and has a spring-pawl (not shown in drawing) on its rear face, which engages with the teeth of the ratchet-wheel on the shaft *k*, and thus transmits the power to the wheel J from the spring K when drawn up.

The wheel J meshes into the pinion N, (see fig. 2,) on the shaft *i*, and on this shaft is secured the escapement-wheel I.

The pallets L are secured on the rock-shaft *n*, and engage with the teeth of the escapement-wheel I, and the hammer-arm *g* is secured in said rock-shaft, and has the gong-hammer H at its end.

The lever F is pivoted at *p* to the base G, and has a notch near its upper end, upon which rests an arm, *h*, which is secured in the rock-shaft *n*.

The cord, wire, or chain *b* is attached to the upper end of the lever F, and its other end is attached to the liberating-piece D.

The liberating-piece D consists of a plate of metal, having a weight, E, at its lower end, and having the slot *d* and notch *e* formed in its other end, and it is secured on the door A by means of a screw, *f*, passing through the slot *d*, as shown in fig. 1.

The latch-plate C is fastened on the door-jamb B, and has the notches *c* and *a* cut in its lower edge, the notch *c* being formed close up to the jamb B, and the notch *a* extending up from the notch *c*, as shown in fig. 4.

To set the alarm mechanism, the door A is closed, and the piece D is brought up so as to bring the notch *e* over the screw *f*, and the upper end of the piece D into the notch *c* in the latch-plate C, as shown in fig. 1.

The cord *b* is thus slackened up, as shown, so that the lever F can be turned back under the arm *h*, which will prevent any motion of the rock-shaft *n*, and will allow the alarm to be wound up by means of a key inserted through a hole in the gong M onto the end of the driving-shaft *k*.

Now, if an attempt be made to open the door A, the piece D will be forced forward out of the notch *c* and will tilt up into the notch *e*, as indicated by dotted lines E^1 in fig. 1, by reason of the weight E at the lower end of said piece.

This tilting will draw on the cord *b* and pull the lever F from under the arm *h*, thus releasing the rock-shaft *n*, and giving the alarm by the hammer H on the gong M, and the tilting of the piece D into the notch *a* will, at the same time, hold the door against any attempts to open it from the outside.

When the alarm mechanism is not required, the piece D is raised up so as to free the notch *e* from the screw *f*, and is then dropped into the position indicated by dotted lines E^2 in fig. 1.

Claims.

What I claim herein as new, and of my invention, and desire to secure by Letters Patent, is—

1. The wheel P Q, provided with the plate P, having two or more radial slots *r s* formed therein, as described, in combination with the shaft R and crank or knob S, substantially as and for the purpose specified.

2. The hammer-arm U and rod W, with sliding washer X, or its equivalent, in combination with the wheel P Q, provided with the radial slots *r s*, substantially as and for the purpose specified.

3. The combination of the crank-shaft R with crank or knob S, wheel P Q with radial slots *r s*, rod W with sliding washer X, hammer-arm U with hammer T, bow-spring V, and gong M, the several parts being arranged and operating substantially as and for the purpose specified.

4. The liberating-piece D, provided with the counter-weight E, and having the slot *d* and notch *e* formed therein, substantially as and for the purpose specified.

5. The latch-piece C, having the notches *c* and *a* formed therein, as shown, substantially as and for the purpose specified.

6. The combination of the latch-piece C with notches *c a*, liberating-piece D with counter-weight E, slot *d*, and notch *e*, cord *b*, lever F, arm *h*, alarm mechanism H L I N J K, and gong M, the several parts being arranged and operating substantially as and for the purpose specified.

As evidence of the foregoing, witness my hand this 10th day of September, A. D. 1870.

GASWAY O. LACKEY.

Witnesses:

JOB ABBOTT,

AND. CHOFFIN.