(No Model.) 2 Sheets—Sheet 1.

J. H. PIERCE.

COMBINED DOOR BELL AND LETTER BOX.

No. 361,448. Patented Apr. 19, 1887.

Fig. 1.

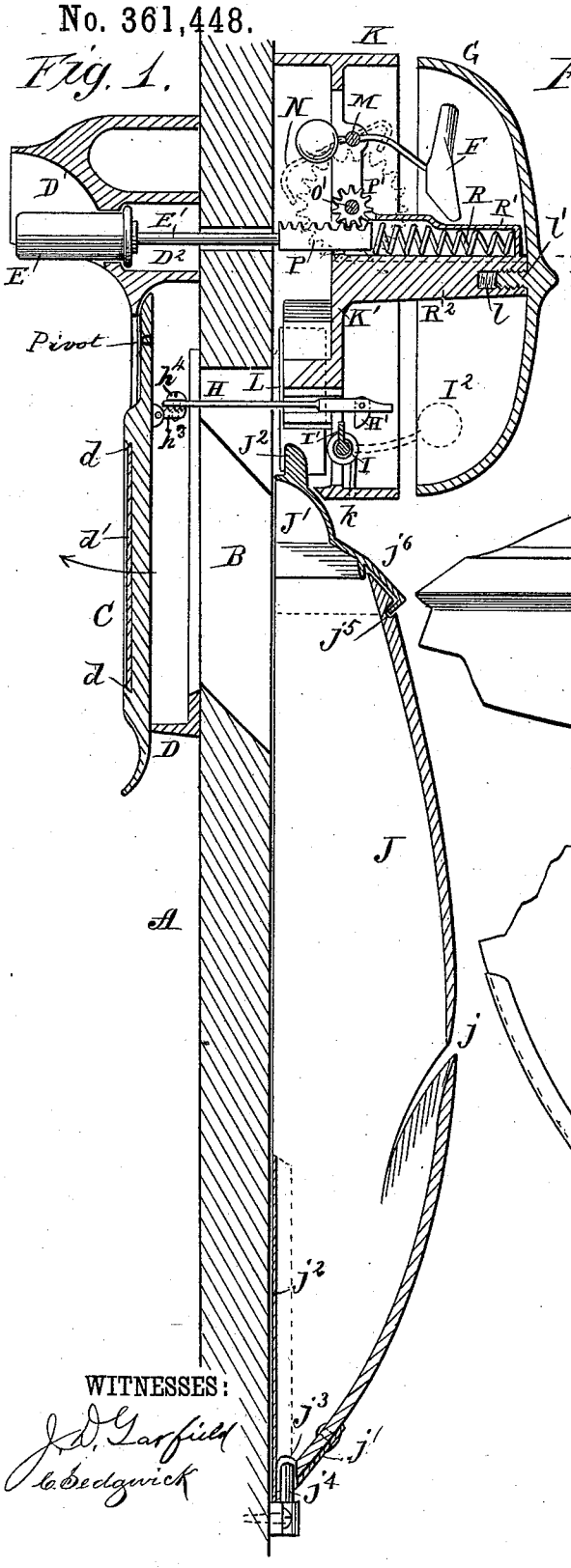
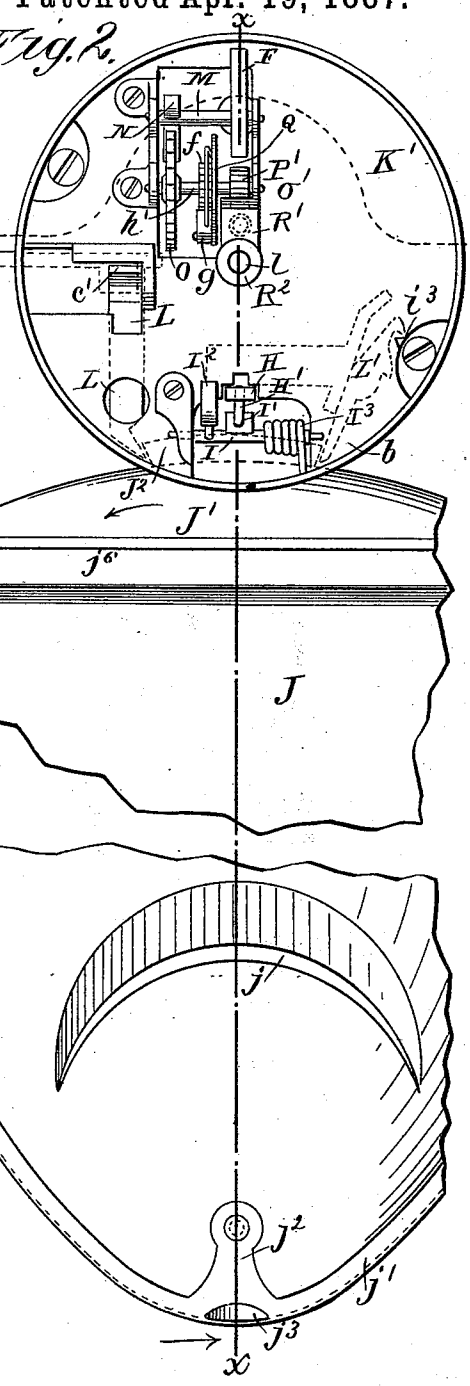


Fig. 2.



WITNESSES:

J. D. Garfield

C. Bedgwick

INVENTOR:

J. H. Pierce

BY Munn & Co

ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

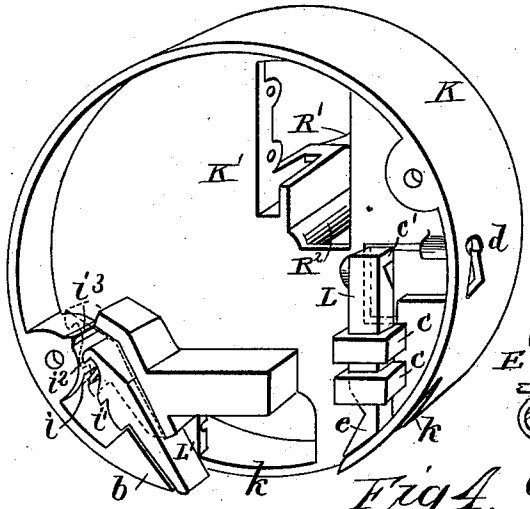


Fig. 4.

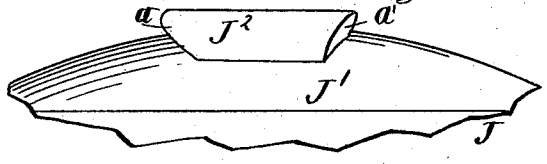


Fig. 5.

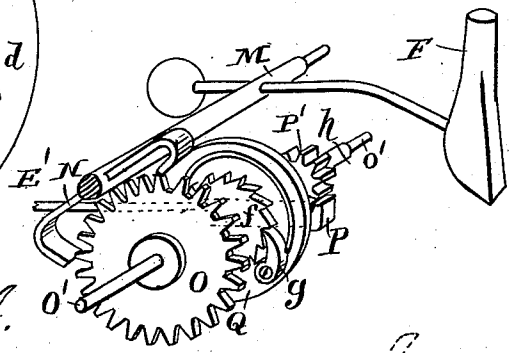


Fig. 7

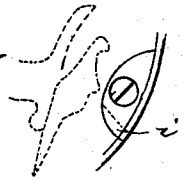
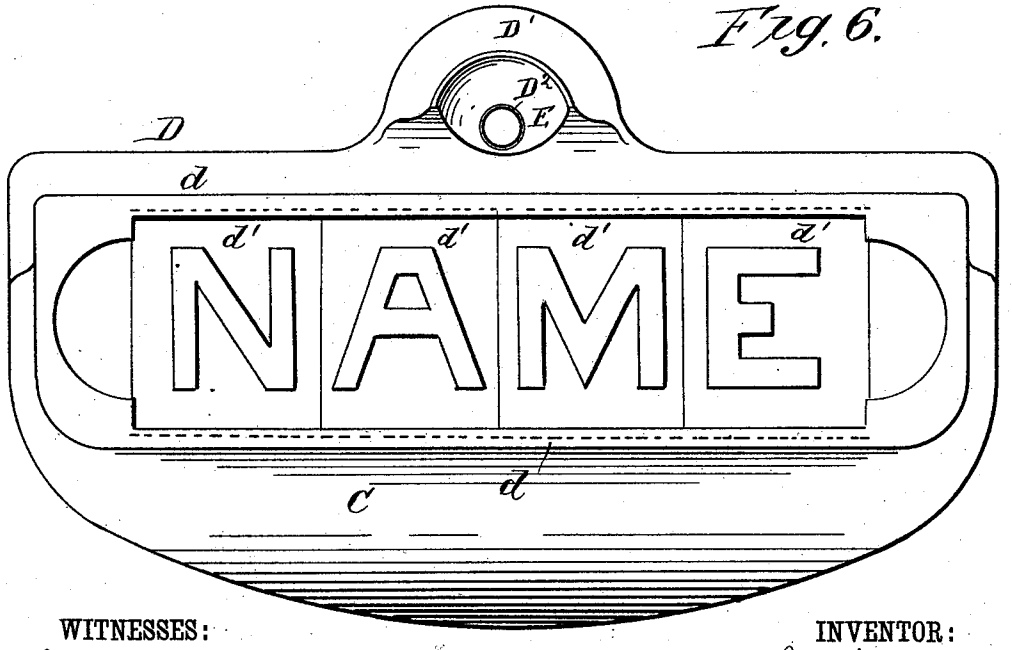


Fig. 6.



WITNESSES:

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C. Sedgwick

INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN H. PIERCE, OF OMAHA, NEBRASKA.

COMBINED DOOR-BELL AND LETTER-BOX.

SPECIFICATION forming part of Letters Patent No. 361,448, dated April 19, 1887.

Application filed May 5, 1886. Serial No. 201,184. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. PIERCE, of Omaha, in the county of Douglas and State of Nebraska, have invented a new and Improved Combined Door-Bell and Letter-Box, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of my invention, taken on the line *x x* of Fig. 2. Fig. 2 is a broken front elevation of the letter-box, bell-striking mechanism, and mechanism for locking the letter-box, the gong being removed. Fig. 3 is a perspective view of the bell-casing and mechanism for locking the letter-box in place. Fig. 4 is a detailed view of the upper end of the letter-box. Fig. 5 is a perspective view of the escapement mechanism for operating one of the bell-hammers, and Fig. 6 is a front view of the letter-box plate and casting for the same and the push-button. Fig. 7 is a detail view disclosing more fully the opening in the case, through which access may be had to the bolt by a wire or other instrument.

The invention will first be described in connection with the drawings, and then pointed out in the claims.

A represents a door, in which is formed an opening, B, for letters and other mail matter. The opening B is closed by a flap-plate, C, which is hinged in the frame D, of cast metal, surrounding the opening B. The upper part of the frame D is formed with a cup, D′, and with an aperture, D^2, to receive the push-button E, and spindle E′ for operating the hammer F, for causing it to strike the gong G when the push-botton is pressed inward, as hereinafter described.

The push-button E is made of glass, hollow, and filled with a wooden plug painted with luminous paint, so it will be visible at night.

Connected to the inner surface of the flap-plate C is the rod H, the inner end of which reaches through the door, and is provided with a hook, H′, arranged to engage with the toe I′ on the hammer-shaft I when the rod H is drawn back by opening the plate C. To the hammer-shaft I is attached the hammer I^2, and upon it is placed the spring I^3, to cause the hammer I^2 to strike the gong G a single blow when the hook H′ releases the toe I′, to indicate that letters, &c., have been dropped into the box J. The projection H′ is beveled at its inner edge to cause it to ride over the toe I′ when the flap-plate C is closed, ready to cause the striking of the gong G the next time the plate C is opened. The plate C is formed with undercut flanges *d d*, to receive sliding plates *d′ d′*, on which letters are formed, so that any name may be applied to the casting by inserting appropriately-lettered plates.

The letter-box J is made readily detachable from the door, and is formed with an opening, *j*, through which its contents may be observed. The lower edge of the box J is formed or provided with a metal strip, *j′*, to which is attached the plate j^2, that partially closes the box J to retain the letters, &c., therein, so that the box when removed from the door may be conveniently used as a tray by the servant to deliver the letters to the members of the household. The strip *j′* is formed with the recess or socket j^3, to fit upon the pin or stud j^4, attached to the door, for holding the lower end of the box J in place. The upper end of the box J is grooved, as shown at j^5, to receive and hold the metal top piece, J′, which is grooved, as shown at j^6, to fit upon the upper end of the box and give it a handsome finish, as shown in Fig. 1. To the upper central portion of the top plate, J′, is secured or formed the projection or lug J^2, the ends of which are beveled, as shown at *a a′*, Fig. 4. This lug is for locking the box J with the casing K, that is secured to the door A above the box J, and incloses the bell-striking and box-locking mechanism, hereinfter particularly described.

Various means for fastening the upper end of the box J may be used; but I prefer to form the casing K with an opening or clearance, *k*, at its lower portion to permit the projection or lug J^2 to swing laterally into and out of the casing. The inward movement of the projection J^2 into the casing K is limited by the shoulder *b*. When the bolt L′ is raised to the position shown in dotted lines in Fig. 3, the end of the projection J^2 strikes full against the shoulder *b*, and (the bolt L′ being elevated) the said projection is given a considerable play in the casing. Within the casing K, at the

entrance to the clearance *k* for the projection J^2, is placed the main locking-bolt L. This is held loosely in the staples *c c*, and its lower end is beveled, as shown at *c*, so that when the projection J^2 strikes it in closing the box J the bolt will be automatically lifted to permit the projection J^2 to pass into the casing K, and when the projection J^2 passes the bolt L it will drop of its own weight behind the projection, and thus lock the box J until a key is inserted in the key-hole *d* in the side of the casing K, and turned to lift the bolt L. To adapt the bolt L to be lifted by a key, I form near its upper end a shoulder, *c'*, for the bit of the key to strike when the key is turned. The lower end of the bolt L is shaped to form an inclined or beveled lip, *e*, that closes under the beveled end *a'* of the projection J^2, and the opposite shoulder, *b*, of the casing K is inclined to correspond with the opposite beveled end of the projection J^2.

When the bolt L' is lifted to the position shown in dotted lines, Fig. 3, and the projection J^2 is closed into the space *k*, the main locking-bolt L, when raised or lowered, will clear the end of the projection; but when the said bolt L' is lowered to the position shown in full lines, Fig. 3, the beveled end of the projection J^2 is forced to engage with the inclined lip *e* of the main locking-bolt L, so that by means of bolt L' not only the box J, but the main locking-bolt L, may be locked, so that without knowledge of the bolt L' and how to operate the same the box J cannot be opened or removed from the door. For lifting the bolt L', I form in the casing K a small almost invisible opening, *i*, into which a small wire may be inserted to engage with a shoulder, *i'*, formed upon the bolt, so by pressing slightly downward upon the wire the bolt may be lifted and the hook i^2 thereof caught upon the lip i^3 to retain it in elevated position. In order to lower the secret bolt L', a small wire is simply to be forced into the opening *i* to dislodge the bolt, when it will drop of its own weight and effect its purpose.

The hammer F is attached to a shaft, M, journaled in a diaphragm or partition, K', formed in the casing K, and upon the shaft M is secured the pallet N, which engages with the teeth of the escapement-wheel O, secured upon the shaft O', so that when the wheel O is revolved the vibration of the hammer F will be prolonged, so it will deliver a succession of blows upon the gong G, in imitation of an electric bell. The shaft O' is journaled in the said partition K' of the casing K, and is adapted to be revolved by the rack P, (secured to the push-button spindle E',) and the pinion P', secured to the sleeve *h*, placed loosely on shaft O', with which pinion the rack P engages, as shown in Fig. 1. The revolution of the shaft O', caused by pressing the push-button E, is communicated to the escapement-wheel by the ratchet *f*, attached to the shaft O', and the spring-pawl *g*, pivoted to the disk Q, secured upon the loose sleeve *h*. The back movement of the sleeve *h*, caused by the action of the spring R pressing against the inner end of the rack P, is independent of the escapement O and shaft O', so the prolonged vibratory action of the hammer F is produced as often as the push-button is pressed, and this with the use of only the single spring R.

The spring R is held in a casing or tube, R', secured or formed upon the arm R^2, formed integral with the partition K', and the outer end of the arm R^2 is screw-tapped, as shown at *l* in Fig. 1, to receive the screw or bolt *l'*, that holds the gong G in place.

The rod or wire H is attached to the plate C, preferably by the notched and pivoted plate h^3, attached to the inner surface of the plate, and the clamp-screw h^1, screwed into the plate h^3, so as to clamp the rod or wire H at any desired position to adapt it to the thickness of the door, as will be clearly understood from Fig. 1.

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

1. The gong G, hammer I^2, attached to shaft I, having lip I', in combination with the letter-box J, and the flap-plate C, hinged to close the letter-opening B and provided with the rod H, having lip H', for operating the hammer I^2, when the plate is opened, substantially as and for the purposes set forth.

2. The letter-box J, provided with a projection, J^2, at its upper end, in combination with the casing K and means for locking the box to the casing, substantially as described.

3. The casing K, provided with a sliding locking-bolt and a key-hole, in combination with the box J, provided with a locking projection, substantially as described.

4. The casing K, provided with a main locking-bolt and a secret locking-bolt, in combination with the box J, having a locking projection or lug, substantially as and for the purposes described.

5. The main locking-bolt L, having inclined lip *e*, in combination with the box J, having the projection J^2, with beveled ends, and the secret locking-bolt L', substantially as described.

6. The box J, grooved at its upper end, as j^5, in combination with the metal finishing-piece J', formed with the hollow flange j^6, to receive the end of the box, substantially as described.

7. The box J, provided at its lower end with the metal strip *j'* and plate j^2, that closes the lower part of the box, substantially as described.

8. The box J, provided with a socket at its lower end to rest upon a stud, j^4, in combination with the frame K, or casing, and means for locking the box, so that the box may be retained securely in place and readily removed from the door, substantially as described.

9. The casing K, formed with the clearance *k* and shoulder *b*, in combination with the swinging box J and projection J^2, formed

upon the upper end of the box, substantially as described.

10. The flap-plate C, hinged to close the letter-opening B and provided with the pivoted plate h^3 upon its inner surface, in combination with the rod H, the screw h^4, for securing said rod to the plate h^3, and the hammer-shaft I, and gong G, the rod H being adapted to operate the hammer-shaft, substantially as and for the purposes described.

JNO. H. PIERCE.

Witnesses:
HEBER S. IVES,
F. A. MANN.