(No Model.)

J. J. JOHNSTON.

DOOR BELL.

No. 264,884. Patented Sept. 26, 1882.

Fig. 1.

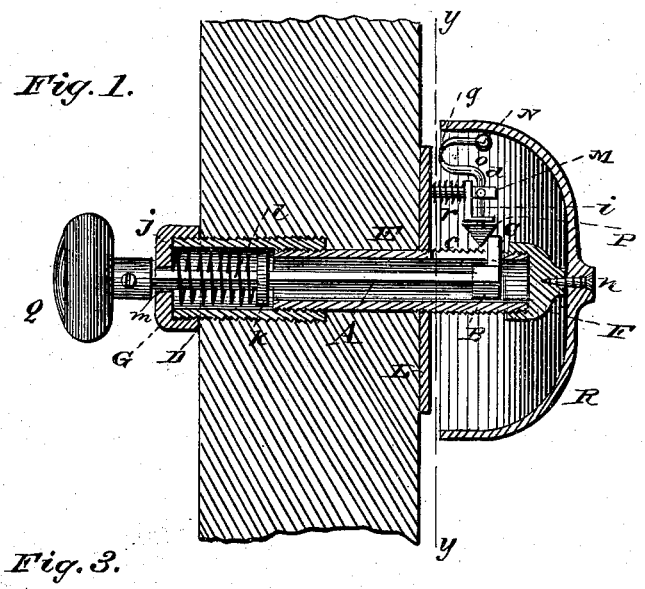


Fig. 3.

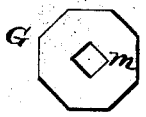


Fig. 2.

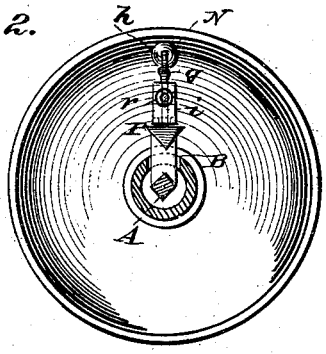


Fig. 4.

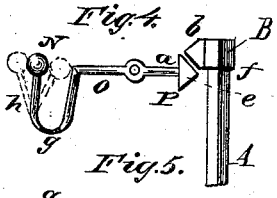
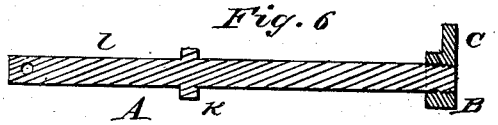


Fig. 5.

Fig. 6



WITNESSES

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JAMES J. JOHNSTON, OF COLUMBIANA, OHIO, ASSIGNOR TO THE UNITED STATES IMPROVEMENT COMPANY, (LIMITED,) OF SAME PLACE.

DOOR-BELL.

SPECIFICATION forming part of Letters Patent No. 264,884, dated September 26, 1882.

Application filed February 11, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES J. JOHNSTON, of Columbiana, in the county of Columbiana and State of Ohio, have invented a certain new and useful Improvement in Door-Bells; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement in door-bells; and it consists in the peculiar construction, combination, and arrangement of the several parts hereinafter described.

To enable others skilled in the art with which my invention is most nearly connected to make and use it, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of this specification, Figure 1 is a vertical section of the door-frame, with the several parts of the door-bell in juxtaposition with relation to each other. Fig. 2 is a vertical section of the same at line *y y* of Fig. 1. Fig. 3 is an end view of the cap for the lever-chamber. Fig. 4 is a side view of the bell-hammer and its helve. Fig. 5 is a top view of the same. Fig. 6 is a side view of the rod for operating the bell-hammer.

In the accompanying drawings, A represents the rod for operating the bell-hammer, and is constructed of malleable cast-iron, and is furnished with a detachable end piece, B, having a projection, C, with beveled sides *a b*, as shown in Fig. 4. The chamber for the rod A is constructed in two sections, D E, and made from iron tubing (such as gas-pipe) of different diameter. Said sections are furnished with screw-threads for coupling them together and for the reception of end caps, F G, and disk L, as shown in Fig. 1. The section E of the chamber for the rod A is furnished with a slot, *c*, for the projection C of the detachable end piece, B, which slot serves as a guide for said projection. The disk L has a projection, M, having a recess in its outer end, in which, at *d*, is pivoted the helve O of the bell-hammer N. On the end of the helve O is a piece, P, having beveled sides *e f*. The helve O is constructed of spring-steel, and at *g* is made thin, for the purpose of giving the part *h* a vibratory spring action, as indicated by the dotted lines in Fig. 4, which also represents the form of said helve. The projection M on disk L is furnished with a spiral spring, *r*, and a piece, *i*, made in the form of the letter L, the horizontal limb of which straddles the helve O of the bell-hammer N. The bell R is attached to the cap-piece F on the end of the section E of the rod-chamber. The rod A is furnished with a spiral spring, *j*, one end of which acts against the collar *k* on the rod A, and the other end acts against the cap-piece G. The part *l* of the rod A is square when viewed in cross-section, and fitted to a square opening, *m*, in the cap G. On the outer end of the rod A is secured a knob in the usual way, and of ordinary construction.

In hanging the bell the following is the manner of so doing: The sections D E, which form the chamber for the lever A, are screwed together. The cap G is then screwed upon the outer end of the section D. An opening is then bored in the door-frame, first by means of an auger or bit which will cut an opening the diameter of which is a little less than the diameter of the section D, including screw-threads, said opening being bored sufficiently deep to receive the section D. The operator then, by means of another auger or bit which will make an opening equal to the diameter of the section E, bores the opening for said section. The two sections, united as described, are then placed in said openings, and the operator, by means of a wrench placed on the cap G, (whose walls are hexagonal,) screws the sections "home," as shown in Fig. 1. He then screws on the section E the disk L, which, when screwed firmly home, removes the cap G, places the piece B in the section E, with the projection C in the slot *c*. He then rotates the rod A until the piece B is screwed onto its inner end, placing the spiral spring *j* over the part *l* of the rod A; then places the cap G over the part *l* and screws said cap home on the part D. He then screws the knob Q in position on the part *l;* then screws the cap F on the section E, and attaches the bell R to it by means of a screw, *n*, as shown in

Fig. 1, which completes the hanging of the bell, the operation of which is as follows: By pulling the knob Q, the bevel *a* of the projection C acts against the bevel *f* of the piece P on the end of the helve O, which will cause the piece *i* to compress the spiral spring *r* until the projection C passes the piece P. The spring *r* will then, by means of the piece *i*, throw back the helve O with force, causing a number of violent vibrations of the part *h* of the helve O, thereby causing the hammer N to strike the bell a number of times, causing a series of rings of the bell.

It will be observed that the operating mechanism is entirely inclosed by the bell R, and that the bell is attached to the hollow section E of the chamber for the rod A, which mode of attachment of the bell prevents deadening its ring or sound.

By constructing the door-bell as hereinbefore described, cheapness of construction, compactness of parts, and ease of hanging are secured.

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

In a door-bell, the combination of the chamber for the operating-rod, constructed in two sections of tubing of different diameters, and having caps G and F, the lever A, having collar *k* and detachable piece B, the disk L, having projection M, spring *r*, piece *i*, helve O, hammer N, and the bell R, all constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

JAMES J. JOHNSTON.

Witnesses:
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