No. 706,878. Patented Aug. 12, 1902.

H. C. ATKINSON.

DOOR SIGNAL OR ALARM.

(Application filed May 10, 1902.)

(No Model.)

Fig. 1.

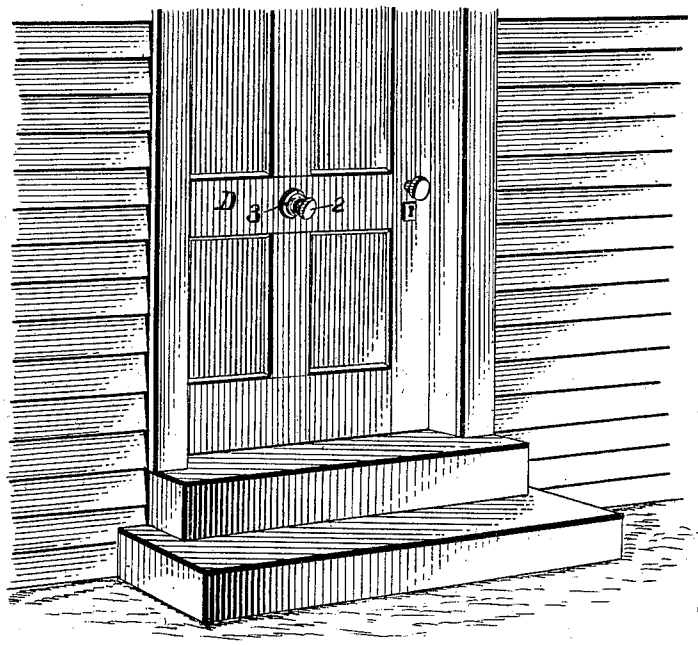


Fig. 2.

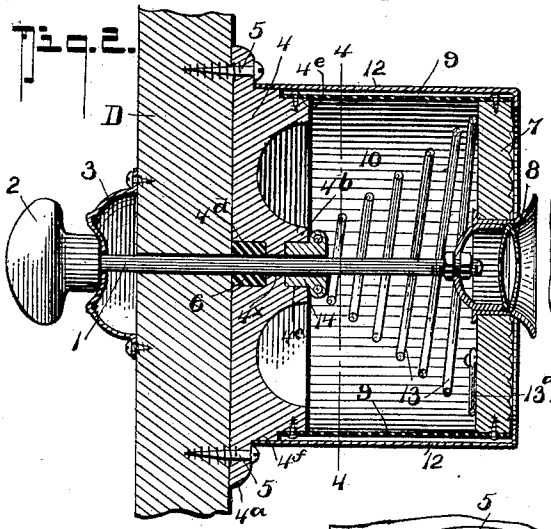


Fig. 3.

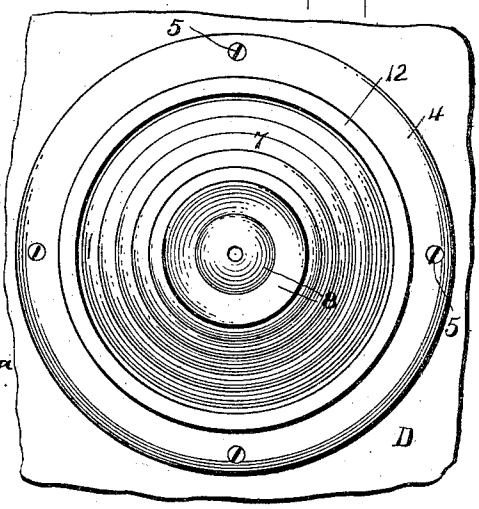
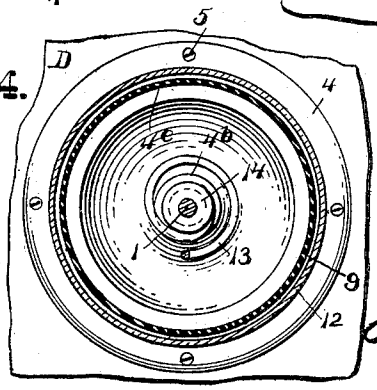


Fig. 4.



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HENRY CATE ATKINSON, OF LOUISVILLE, KENTUCKY.

DOOR SIGNAL OR ALARM.

SPECIFICATION forming part of Letters Patent No. 706,878, dated August 12, 1902.

Application filed May 10, 1902. Serial No. 106,764. (No model.)

To all whom it may concern:

Be it known that I, HENRY CATE ATKINSON, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a new and Improved Door Signal or Alarm, of which the following is a specification.

My invention is in the nature of an improved pneumatically-operated signal or alarm appliance adapted to serve as a substitute for the ordinary door-gong or electric bell; and it primarily seeks to provide an appliance for the purposes stated of a simple, economical, and durable construction, capable of being easily applied to a door or other desired place and operable by the ordinary gong-pull action.

In its general nature my invention comprehends a disk or head portion carrying a whistle or other pneumatically-operated signaling device and forming a positive part of an air-compressing means, and a pull member slidable in a suitable guide on the door, door-casing, or other object to which it is desired to attach the alarm, fixedly connected to the disk for reciprocating the same, whereby to operate the whistle in one or both directions of movement.

In its more complete nature my invention includes an air-compressing means comprising a plate adapted to be detachably secured to the inner side of the door or other object to which the alarm is to be attached having suitable provision for the passage of and guiding the pull-rod and for making an air-tight joint therearound, a reciprocally-movable member having a whistle or other pneumatically-operated signal attached thereto and movable therewith and joined with the pull-rod, and a flexible body joined with the said movable member and the fixedly-held plate; and in its still more subordinate features my invention consists in certain novel details of construction and peculiar combination of parts, all of which will hereinafter be fully explained and specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view illustrating my invention as applied to a door. Fig. 2 is a vertical longitudinal section thereof, taken practically on the line 2 2 of Fig. 1. Fig. 3 is an end view thereof. Fig. 4 is a cross-section of the same on the line 4 4 of Fig. 2.

In the drawings I have illustrated my alarm or signaling appliance attached directly to a door; but I desire it understood that the pneumatically-operated signal or alarm devices proper may be disposed at any desired point within the house and the external or pull member connected therewith by wire or other flexible connections.

As shown, the door D is apertured for the passage of the pull-rod 1, to the outer end of which is connected a pull-knob 2, held to normally seat against an ornamental escutcheon or name-plate 3.

The pneumatic devices consist of a metal plate 4, preferably circular, and of a solid body having its inner face flat to fit snugly against the inner side of the door A, to which it is attached by screws 5, passing through the annular rim 4^a, that forms a part of the plate 4.

Centrally the plate 4 has an outwardly-extending hub 4^b, provided with a socket 4^c, that communicates with the axial aperture $4^\times$ for the pull-rod, for a purpose presently explained. On the inner face in line with the socket 4^c the plate 4 has another socket 4^d, adapted to receive packing 6 for forming an air-tight joint around the pull-rod.

7 designates a disk carried on the outer end of the pull-rod, carrying a whistle or other like alarm 8, and 9 denotes a flexible connection joining the plate 4 and the disk to provide an air-holding chamber 10 between the said plate and the disk, and to provide for conveniently attaching the flexible connection 9 it is fastened at one end to the peripheral edge of the disk 7 and at the other end to an annular rim 4^e, forming a part of the plate 4 and preferably of a diameter equal that of the disk 7. The plate 4 is also provided with an annular surface 4^f for conveniently attaching a metal sheath or casing 12 for protecting the flexible body 9 and guiding the movement of the disk 7.

The disk 7 is automatically moved to its outermost position by suitable spring-actuated means, which for economy of construction and durability preferably is in the nature of a spiral spring 13, the base portion 13^a of which is nearly the diameter of the disk 7

and is firmly attached thereto to provide a solid bearing for the said disk. The apex or inner end of the spring 13 is secured to a metal sleeve 14 of a diameter to snugly fit into the socket 4^c of the plate 4, and thereby provide a simple and effective means for making fast the inner end of the spring 13.

From the foregoing description, taken in connection with the accompanying drawings, the manner in which my improvement may be used and its advantages will be readily apparent.

In operation as the knob is pulled out the disk 7 is drawn inward, and the air within the chamber 10 is compressed and forced out through the whistle or other pneumatically-operated alarm, and as the knob is released and it, together with the disk 7, returns to its normal position the whistle will again be sounded by the air drawn back through it into the chamber 10.

By the use of my invention a simple and easily-manipulated means is provided for signaling into the inside of the house that will serve as a practical substitute for the ordinary electric bells, which so readily become inert by wearing out of their battery-power and other causes, and, furthermore, it overcomes the confusion incident in the use of signal-bells in houses where telephones are also used. Its use also avoids the employment of bell-cranks and springs necessary in the ordinary house-bell.

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

1. In a pneumatic signal, an air-compressing means; comprising a stationary end and a movable end, opposing it, a flexible air-tight connection joining the two ends, an air-operated sounder mounted on the movable end, and a means for imparting motion to said movable end, as set forth.

2. In a pneumatic signal, an air-compressing means; comprising a fixedly-held end, and a movable end opposing the fixedly-held end, a flexible air-tight body joining the two ends, the stationary end having a central aperture, a pull-rod reciprocable through said aperture and connected to the movable end, said movable end carrying a whistle or like wind-sounder, substantially as shown and for the purposes described.

3. The combination with a supporting-body, apertured for the pull-rod; of a pneumatically-operated signal means, comprising a plate having a central aperture and a packing-receiving socket surrounding said aperture, a disk opposing the said plate, a whistle or like sounding device mounted in the disk, a pull-rod slidable through the apertures in the supporting-body, and the plate having the packing, the inner end of said pull-rod being connected to and supporting the disk, and a flexible air-tight connection joining the aforesaid disk and the plate, substantially as shown and described.

4. The combination with the supporting-body, apertured for the passage of the pull-rod; of the plate 4, adapted to be rigidly secured to the inner side of the supporting-body, said plate having an inwardly-extending hub provided with a socket 4^c, the disk 7, the whistle 8 carried thereon, the air-tight flexible connection joining the plate and the disk, the pull-rod joined to the disk, and adapted to pass through the socketed hub of plate 4, and the aperture in the supporting-body, and the spring 13 having a flat bearing at one end and connected to the disk 7, and a metal sleeve at the other end to fit into the socket 4^c of the plate 4, all being arranged substantially as shown and described.

5. The hereinbefore-described improved pneumatic door-signal, comprising in combination; the plate 4, adapted to be fixedly secured to the back of the door or other support, said plate having a central aperture, a socket 4^c on the rear side and a socket 4^a on the front side, the latter being for holding an air-tight packing, said plate 4 having an annular projecting rim, the disk 7, a whistle carried on said disk, a flexible air-tight body connected to the disk periphery and the annular rim of plate 4, the spiral spring having its base or large portion secured to the inner side of the disk, a metal sleeve joined to its inner or apex end, said sleeve detachably fitting the socket 4^c, in plate 4, and the pull-rod connected to the disk 7, all being arranged substantially as shown and for the purposes described.

HENRY CATE ATKINSON.

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