(No Model.)

H. LEWY.

DOOR SPRING.

No. 346,296. Patented July 27, 1886.

Fig. 1.

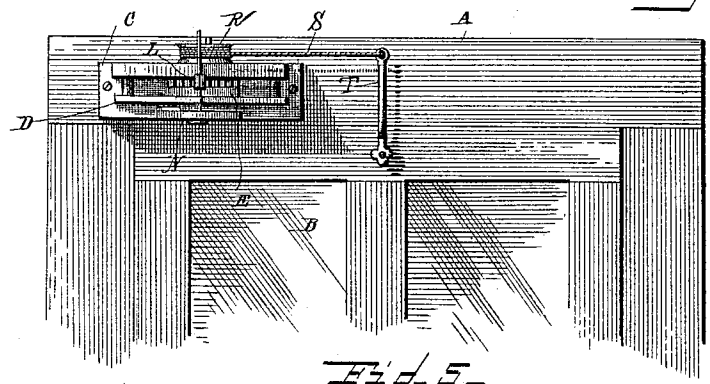


Fig. 5.

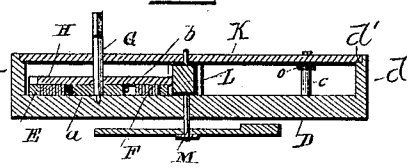


Fig. 2.

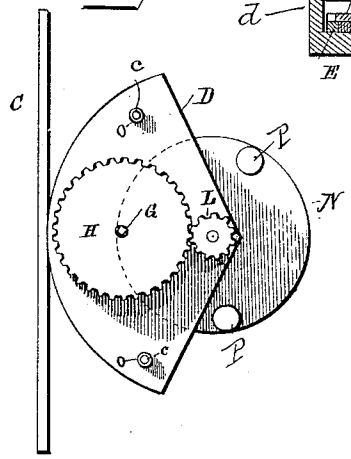


Fig. 3.

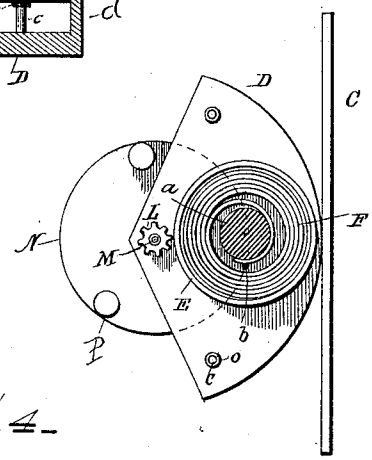


Fig. 4.

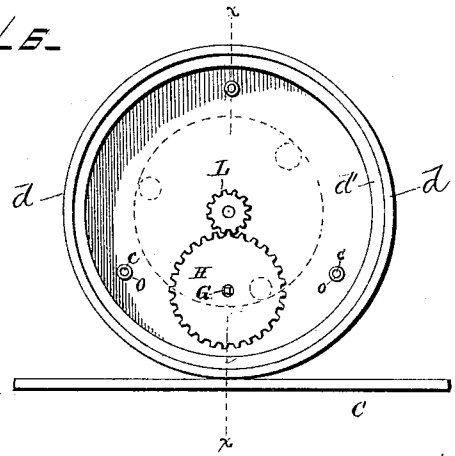


Fig. 6.

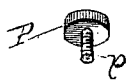
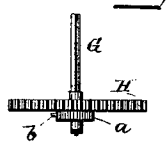


Fig. 7.



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UNITED STATES PATENT OFFICE.

HENRY LEWY, OF MONTGOMERY, ALABAMA.

DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 346,296, dated July 27, 1886.

Application filed June 18, 1886. Serial No. 205,537. (No model.)

To all whom it may concern:

Be it known that I, HENRY LEWY, a citizen of the United States, residing at Montgomery, in the county of Montgomery and State of Alabama, have invented certain new and useful Improvements in Door-Springs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of door-closers which are intended to close a door without slamming or closing the same violently; and it has for its object to provide a simple, durable, and inexpensive device for this purpose; and it consists of the parts and combinations of parts hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a view of my improved device in position; Fig. 2, a plan view with the top plate removed; Fig. 3, a like view with the main gear-wheel removed; Fig. 4, a plan view, the top plate removed, showing a modified construction of the casing; Fig. 5, a sectional view of the same on the line *x x*, Fig. 4, with the top plate in position; and Fig. 6 and 7, detail views.

Similar letters refer to similar parts throughout the several views.

A represents the upper part of a door-casing, and B the upper part of a door. To one side of the door-casing, immediately above the door, I secure, by screws or otherwise, the bracket C of my improved door-closer. This bracket consists simply of a plate of metal provided with perforations near each of its ends, and is preferably cast integral with the lower or bottom plate, D, of the device, although it may be secured thereto in any other desired manner. In the center of plate D a barrel or drum, E, is formed, either by casting it therewith or welding or otherwise securing it thereto, which projects above the surface of the plate a sufficient distance to receive within it the flat coiled spring F, the outer end of which is securely fastened in any suitable manner to the inner surface of the barrel. Projecting from plate D, near its edge, and at suitable distances apart, are short hollow posts *c*, which are interiorly screw-threaded, and provided with collars *o* a short distance from their upper ends. At about the center of plate D, within the barrel E, a bearing is provided for the reception of the reduced and rounded lower end of shaft G of the main gear-wheel H. The upper end of this shaft is square in cross-section, as clearly shown in Fig. 7. To the shaft G a collar, *a*, is secured in any suitable manner immediately above its lower end, and from this collar a short pin, *b*, projects, over which the inner slotted end of the spring F is hooked, to retain said spring in position, so that it will be wound and unwound when shaft G is turned.

L is a small pinion-wheel, which meshes with the wheel H, and is turned thereby. The shaft M of pinion L has its bearing in plate D, and its lower end extends down through and beyond the same, so that a balance-wheel, N, may be secured to and rotate with the shaft without touching the bottom of plate D. This wheel N is formed with screw-threaded perforations at regular distances around its edge for the weights P, which have screw-bolts *p* projecting from their under sides to screw in the perforations in balance-wheel N, thus permitting the use of different-size weights to suit heavy and light springs and doors. By this means it will be understood the force exerted on a door by the spring to close the same will be regulated or governed, and the impetus of the door checked, so that it will close easily and without slamming.

K is the top plate, which is provided with perforations to correspond with the posts *c*, secured to the upper side of plate D, the upper ends of said posts extending or fitting in the holes or perforations in the plate, and the latter resting on the collars *o* of the posts, and the plate being held securely thereto by screws passing through the perforations and into the posts.

R is a grooved pulley-wheel, having a square opening in its center, into which enters the upper end of shaft G. To this wheel a rope or chain, S, is secured by being passed through a hole in the side of the pulley, entering the bottom of the groove. The rope or chain is connected to an arm, T, projecting from the side of the door.

As shown in Figs. 1, 2, and 3, the upper and lower plates, K D, are flat semicircular pieces of metal, which, when in position, have an open space between them, while in Figs. 4

and 5 I show the upper and lower plates, K D, as circular, the plate D having a flange, *d*, around its periphery, said flange being recessed at *d'* for the reception of plate K, which is held in place by means of the screws and posts *c*. This latter construction excludes the dust from the springs and wheels H and L, and for that reason is preferable.

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

1. The combination, in a door-spring, of the coiled spring F, the gear-wheel H, pinion-wheel L, the balance-wheel N, having screw-threaded perforations, and the removable weights P, having screw-bolts *p*, substantially as and for the purpose described.

2. The hereinbefore-described door-spring, consisting of the bracket C, the lower plate, D, provided with the posts *c*, having shoulders or collars *o*, the barrel or drum E, the coiled spring F, the shaft G, collar *a*, having the pin *b*, gear-wheel H, shaft M, pinion L, balance-wheel N, weights P, upper plate, K, grooved pulley R, cord or chain S, and suitable means for connecting said cord or chain to a door, all as and for the purpose set forth.

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

HENRY LEWY.

Witnesses:
J. T. MOSES,
H. C. MOSES.