

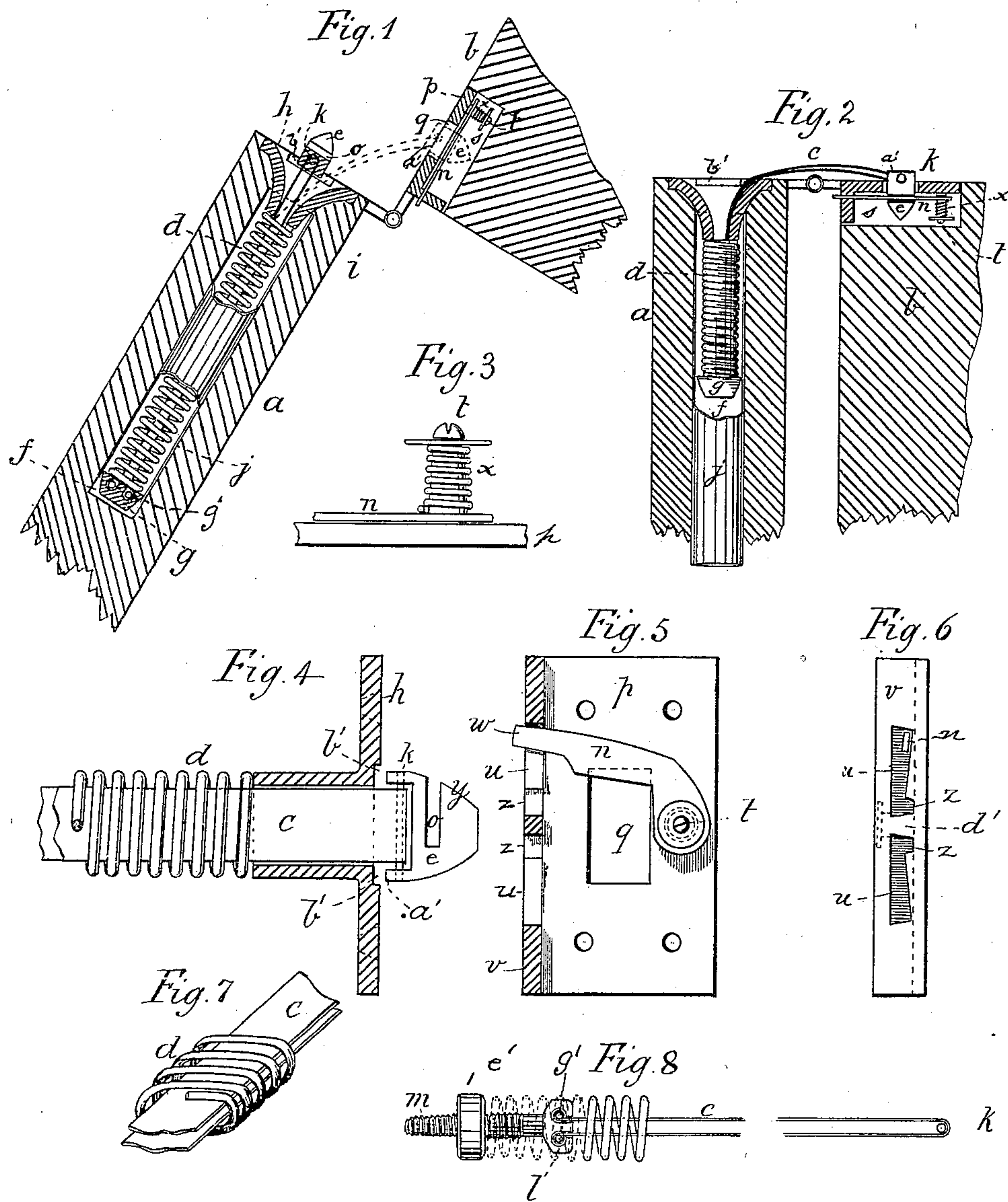
(No Model.)

I. W. MOORE.

DOOR SPRING.

No. 271,650.

Patented Feb. 6, 1883.



WITNESSES:

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IRA W. MOORE, OF NEW YORK, N. Y., ASSIGNOR TO THOS. C. BACH, OF
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DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 271,650, dated February 6, 1883.

Application filed September 4, 1882. (No model.)

To all whom it may concern:

Be it known that I, IRA W. MOORE, a citizen of the United States, and residing at New York city, in the county and State of New York, have invented new and useful Improvements in Door-Springs, of which the following is a specification.

My invention relates to a door-spring consisting of a coiled spring and a ribbon-spring contrived to be fitted in a socket in the edge of the door or jamb, and connected to a plate attached, say, to the jamb, the spring being located in the door, which is the preferable way; and the invention consists of an improved contrivance of devices for detachably connecting the spring, so that its operation may be suspended at any time when it may be desired; and it also consists of improvements in the ribbon-spring device and in the coiled spring, all as hereinafter fully described, reference being made to the accompanying drawings, in which—

Figure 1 is a horizontal section of the door and jamb through the spring device, the door being opened to right angles with the jamb. Fig. 2 is a similar section, the door being opened back to the side of the wall. Fig. 3 is a detail of the detaching device in plan view. Fig. 4 is a vertical section of part of the spring device. Fig. 5 is a sectional elevation of the angle-plate employed in the device for detachably connecting the spring. Fig. 6 is a side elevation of the plate of Fig. 5. Fig. 7 is a perspective view of a modified form of the coiled spring; to be used when powerful springs are required for thin doors; and Fig. 8 is a plan of the ribbon-spring with an attachment for an adjusting device. In this example the spring is located in the door *a* and the detachable connection is made with the jamb *b*; the said spring consisting of the metal ribbon or strip *c* and the coiled wire *d*, with a head, *e*, and being inserted in the socket *f* of the door, with a compression cap or washer, *g*, at the inner end and the mouth-plate *h*, with shoulder *i*, at the outer end, the springs being inclosed in a metal case or tube, *j*, or not, as desired. To avoid making holes in the end of the ribbon-spring *c*, for riveting it together around the pivot *k*, I propose to make it double, doubling it around the pivot *k* of head *e*, and

connecting the two ends to the cap *g* by coiled heads *g'* thereof, fitted in a slot or slots of the cap, as shown, or in any approved way to avoid perforating it for rivets, which greatly weakens the metal, requiring much thicker or wider ribbons for a given amount of strength.

When I wish to provide for adjusting the tension of the coiled spring *d*, I connect it with the head *l* of a screw-threaded stem or shank, *m*, on which to screw a nut, *e'*, against the end of the coiled spring.

For the detachable connecting device for making the connection of the spring with the jamb *b* and disconnecting it, I propose to employ a lever-latch, *n*, together with a notch, *o*, in the head *e*, the said latch being located on the back of the plate *p*, attached to the jamb, and having a hole, *q*, through which the head projects into a cavity, *s*, in the edge of the jamb, behind said plate. The lever is pivoted on a stud-pin, *t*, back of the hole *q*, and extends across the upper part of said hole, out through a slot, *u*, in the flange *v* of plate *p*, sufficiently to be taken at the end *w* between the thumb and finger to shift it up and down to raise it out of notch *o* and press it down therein. The stud *t* has a coiled spring, *x*, applied to it to press the latch against the side of the plate *p* with sufficient force to produce friction of the latch against the plate to hold the latch up after detaching the spring, so that said latch will not drop and connect the spring when it is not wanted to do so, nor obstruct the entry of head *e* through hole *q*; but to prevent damage to the latch, in case it should fall, the head is beveled at *y* to allow the point to enter under the latch and raise it up. A notch, *z*, is made in the side wall of slot *u*, and at the lower end of the same, where the latch bears when the spring is connected, in which the spring holds the latch, so that it cannot be shifted up by any slight touch that might disconnect the spring when the door is open.

When the door is closed the shoulders *a'* of the head are stopped and rest on the ledges *b'* of the mouth-plate *h*, so as to relieve the latch *n* of the pressure of the spring to allow the latch to be shifted out of the notch *z* and be easily raised out of notch *o*; also to retain the head *e*, after the latch is disconnected with the notch *o*; coincident with the latch for enabling

the connection to be made again simply by pressing the latch down, and also to enable the tension of the spring to be set for any required stress when the door is closed without shifting the spring-head out of the position in which it must rest to receive the latch *n* when the spring is to be connected to the jamb by the latch. The ledges *b'* are extended to a greater breadth than the width of the head *e*, and said head is tapered sidewise, as shown in Fig. 1, to enable it to have sufficient lateral play to enter the hole *q* properly, in case the door should sag on its hinges or the parts be imperfectly fitted in the first place.

For making the plate *p* reversible, to apply alike to right or left handed doors, it is provided with two slots *u*, arranged in reverse of each other and with reference to the center point, *d'*, and the pivot *t* of the latch *n* is located in the plane of the transverse center of hole *q*, so that the latch, being taken off and reversed on the pin, will work alike to the other side of hole *q* and in the other slot *u*.

When it is desired to apply a powerful spring, *d*, to a thin door, I propose to make the coil in the oval form represented in Fig. 7, to extend the dimension of the spring lengthwise of the door and contract it in the transverse direction.

What I claim, and desire to secure by Letters Patent, is—

1. The combination, with a door-spring, substantially as described, of a detachable connecting device consisting of a lever-latch, *n*, and a notched head, *e*, of said spring, substantially as described.

2. In a detachable connecting device for

door-springs, the spring-head *e*, having shoulders *a'*, bearing against ledges *b'* of the mouth-plate, substantially as described, to relieve the connecting-latch *n* of the pressure of the spring when the door is closed and retain the spring-head in the connecting position, as set forth.

3. The combination, in a door-spring device, of the jamb-plate *p*, having the reversely-arranged slots *u* in the flange *v*, and the latch *n*, reversible on a pivot, *t*, located relatively to said slots, and the hole *q* for the spring-head, substantially as described.

4. The combination, with the latch *n* of a door-spring device, of a flanged jamb-plate, *p*, having slot *u* for the latch, with a notch, *z*, in its wall, in which the latch is secured by the tension of the spring, substantially as described.

5. In a door-spring device, having a ribbon spring or strip, *c*, and a coiled spring, *d*, the said ribbon-spring doubled and looped around the pivot *k* of the spring-head, together with solid or imperforate end fastenings, *g'*, substantially as described.

6. The combination of an adjusting screw-threaded attachment, *m*, having slotted head *i*, with the ribbon-spring *c* and coiled spring *d* of a door-spring device, said ribbon-spring having solid or imperforate end fastenings, *g'*, substantially as described.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

IRA W. MOORE.

Witnesses:

W. J. MORGAN,
S. H. MORGAN.