# DE WITT C. KING.

## Improvement in Door-Springs.

No. 128,891. Patented July 9, 1872.

Fig. 1.

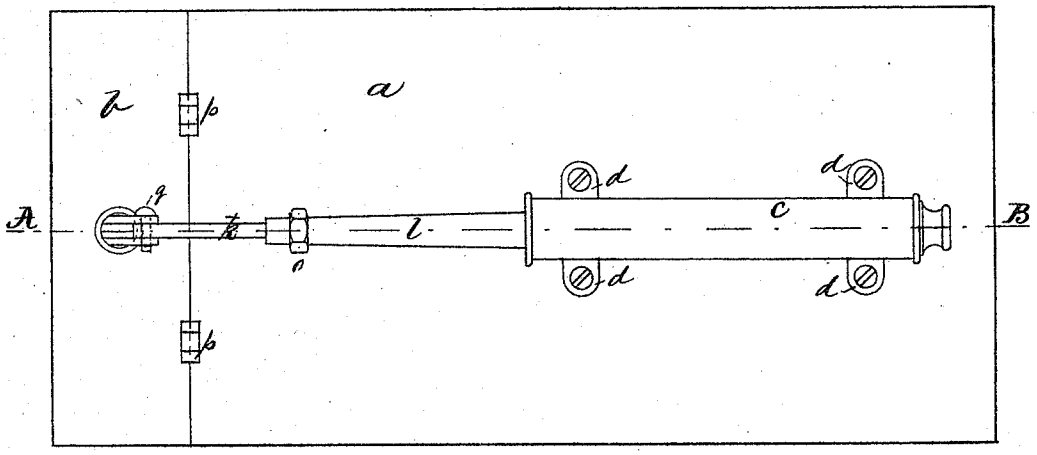



Fig. 2.

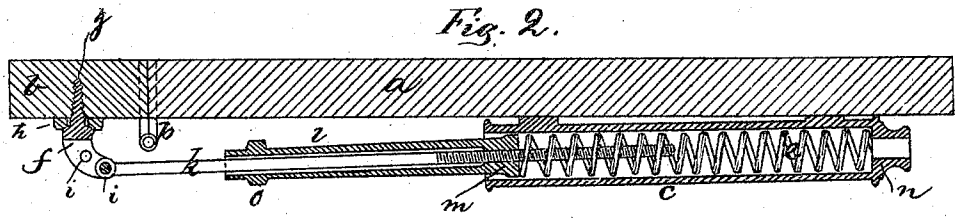
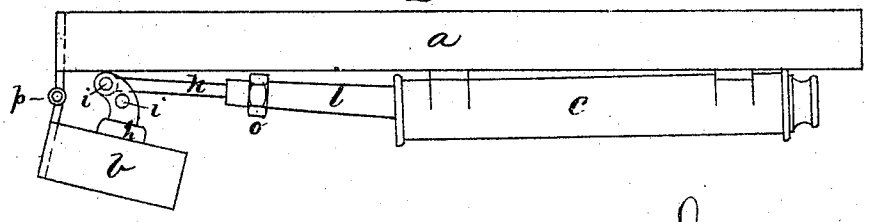



Fig. 3.




Witnesses:

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# UNITED STATES PATENT OFFICE.

DE WITT CLINTON KING, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN DOOR-SPRINGS.

Specification forming part of Letters Patent No. 128,891, dated July 9, 1872.

I, DE WITT CLINTON KING, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Door-Springs, of which the following is a specification:

*Nature and Objects of the Invention.*

The nature of my invention relates to certain improvements in door-springs, consisting in the employment of a bored-out cylinder, containing a coiled spring pressing against a piston provided with a projecting sleeve. Through the said piston is screwed a rod that is attached, hinged, or otherwise to a suitable curved bracket, that is secured to the door-frame; the said curved bracket projects with its lower part through a spherical bored-out washer that embraces the base of the said bracket in a manner and for the purpose as will now be fully shown and described.

On the drawing, Figure 1 is a front elevation. Fig. 2 is a central longitudinal section over the line A B as taken on Fig. 1. Fig. 3 is a ground plan of the door, frame, and spring, shown in a position as when the door is fully open.

Similar letters refer to similar parts whenever they occur on the different parts of the drawing.

*a* on the drawing is made to represent the door, gate, &c., and *b* is the frame to the same. To the door *a* is attached a metallic cylinder, *c*, by means of screws going through ears *d d d d* cast on the outside of the cylinder *c*, as shown. A coiled spring, *e*, is guided and made to operate in the cylinder *c*, as represented in Fig. 2. To the frame *b* is attached a curved bracket, *f*, provided in its lower end with a screw, *g*, whereby it may be firmly attached to the frame *b*. The screw *g* projects through a washer, *h*, that is made with a concave seat on which the lower part of the bracket *f* rests, as shown. The lower part of said bracket *f* is made convex, so as to fit the concavity in the washer *h*.

By this arrangement I am able to attach the bracket *f* in any desired inclination to the frame *b* without interfering with any moldings that may exist on the frame *b*. The curved bracket *f* is forked in its upper end, and provided with one or more holes, *i i*, to which the connecting-rod *k* is hinged in a manner as shown. The connecting-rod *k* projects through a tapering sleeve, *l*, provided with a head, *m*, in its rear end, through which the rod *k* is screwed, by which arrangement the sleeve *l m* may be screwed forward or back over the rod *k* for the purpose of increasing or decreasing the strength of the coiled spring *e*. The said spring *e* rests with one end against the bottom *n* of the cylinder *c*, and with its other end against the head *m* of the tapering sleeve *l*, as shown in Fig. 2. The sleeve *l* is provided with a polygonal projection, *o*, cast on it, by the arrangement of which the sleeve *l* may be turned by means of an ordinary wrench when needed.

The door or gate *a* is made to move on hinges *p p* in the ordinary way.

By removing the pin *q* that connects the bracket *f* to the rod *k*, said rod *k* may be disconnected from the bracket *f*, and the rod *k*, sleeve *l*, and spring *e* can then easily be taken away, as may be desirable on sundry doors during the summer season.

As will be seen from the above the only thing to be disturbed for the purpose of disconnecting the spring is one small pin, *q*, without the need of removing the bracket *f* or the cylinder *c* that may remain on the door and frame till the spring may be wanted for use again.

When the door is full open, as shown in Fig. 3, the action of the coiled spring will continue to keep the door open, as the bracket *f* is higher than the hinges *p p*, by the arrangement of which a pull back takes place on the door as soon as the pin *q* comes over the dead-center of the hinges *p p*.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim:

An improved door-spring, consisting of the hollow cylinder *c* containing the spring *e*, and having a sleeve, *l*, through which works the connecting-rod *k*, which rod is hinged to a curved bracket, *f*, convex at its lower part, and fitting into a concave seat in the washer *h* interposed between it and the door-frame, all constructed, arranged, and operating as described and shown, for the purpose set forth.

DE WITT CLINTON KING.

Witnesses:
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