

(Model.)

D. G. SMITH.

DOOR SPRING.

No. 247,123.

Patented Sept. 13, 1881.

Fig. 1.

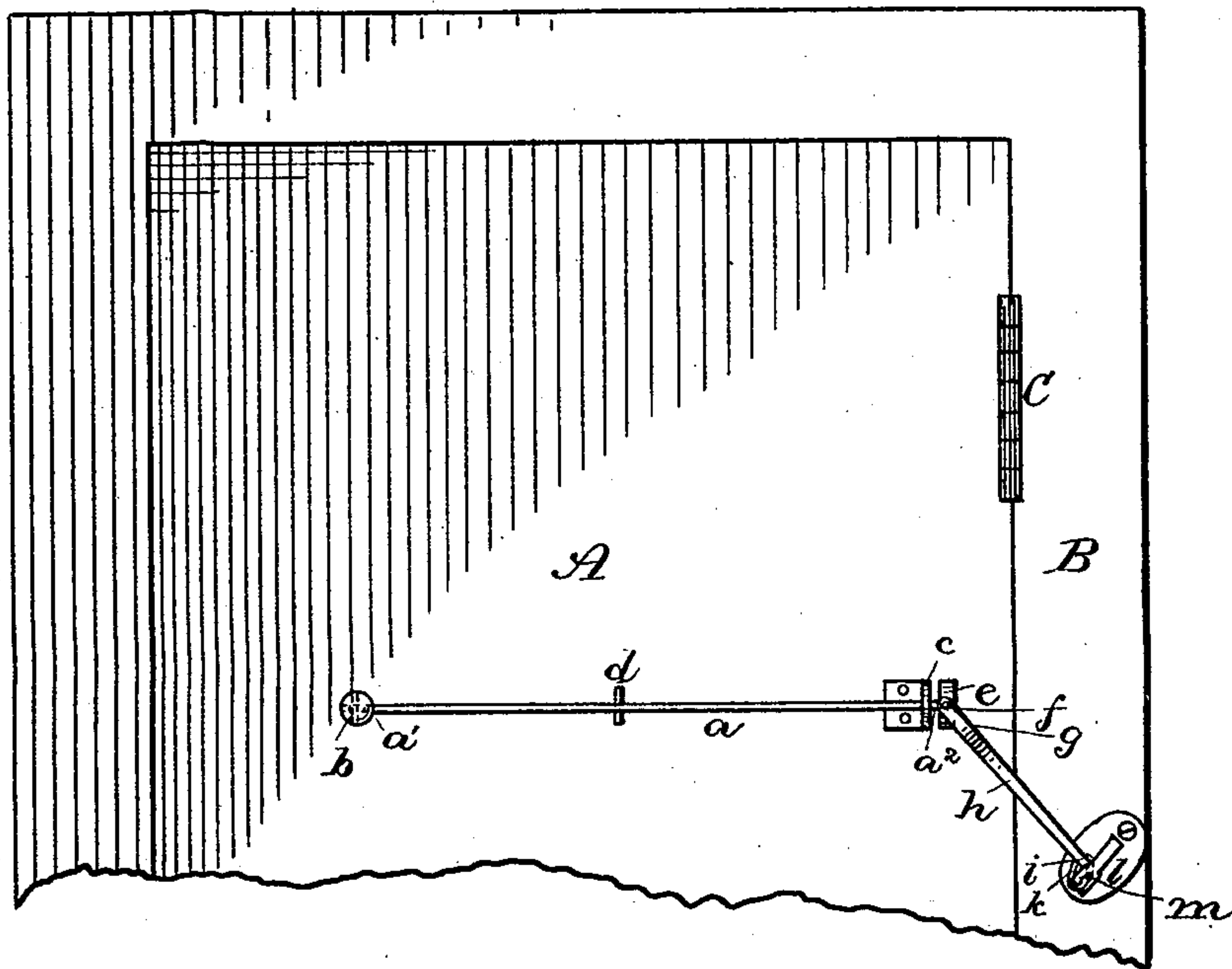


Fig. 2.

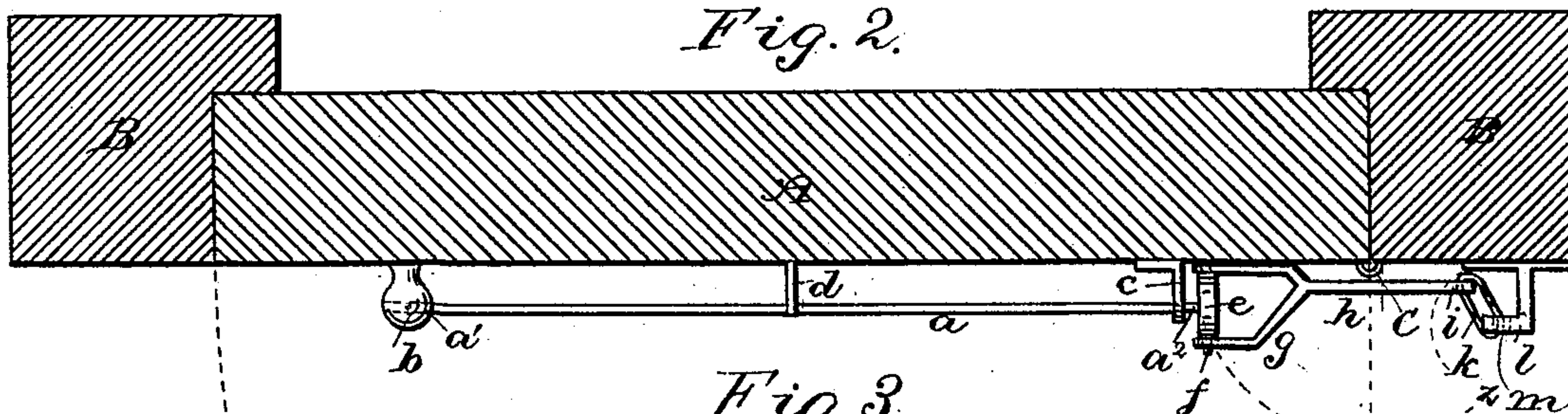
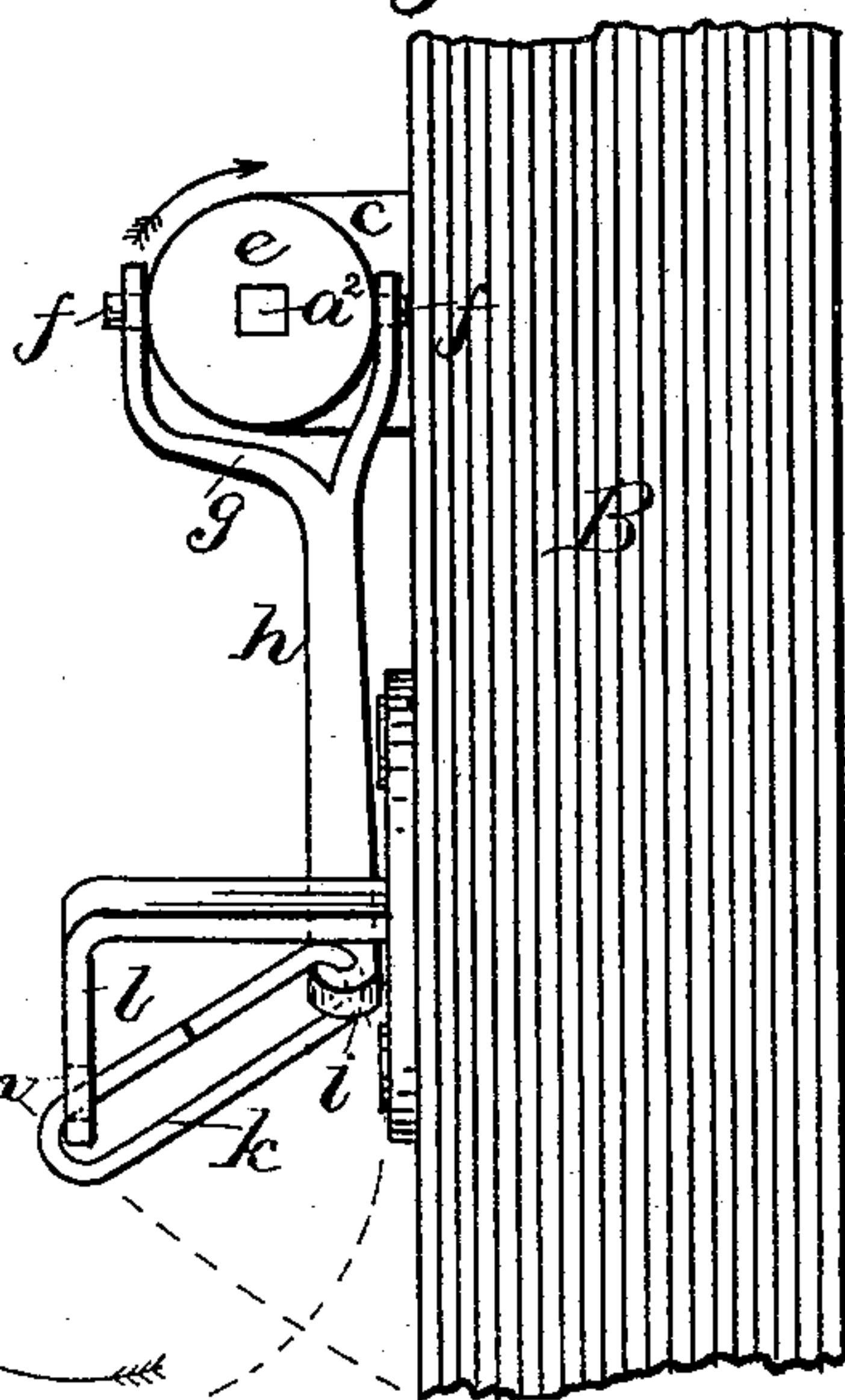


Fig. 3.



Witnesses:

J. W. Garner
John Johnson

Inventor:

David G. Smith
by Howard A. Kun
his attorney

UNITED STATES PATENT OFFICE.

DAVID G. SMITH, OF CARBONDALE, PENNSYLVANIA.

DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 247,123, dated September 13, 1881.

Application filed June 15, 1881. (Model.)

To all whom it may concern:

Be it known that I, DAVID G. SMITH, a citizen of the United States of America, residing at Carbondale, in the county of Lackawanna and State of Pennsylvania, 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in springs for doors; and it consists in attaching a steel rod or other suitable spring to a door and connecting it to an arm or casting on the door-jamb in such a manner as to cause the torsion of the spring caused by twisting it to keep the door either open or shut after having passed a certain point, as will be more fully described hereinafter.

The accompanying drawings illustrate my invention.

Figure 1 is a front elevation of a portion of a door with my improvement attached. Fig. 2 is a top-plan view, showing the door in section and open in dotted lines. Fig. 3 is an end view, looking in the direction indicated by the arrow in Fig. 1.

Like letters of reference indicate like parts in all the figures.

A represents the door, of which B is the jamb, the door being hinged at C. To any suitable portion of the door the spring *a* is attached, having its outer end, *a'*, rigidly secured to the lug or projection *b*, the inner end of the rod *a*² being free to turn when the rod is twisted, the rod having a suitable bearing, *c*, and another midway of its length at *d*. To the inner end of the rod *a* is rigidly secured a disk, *e*, having lugs *f* upon opposite sides, to which the forked end *g* of the connecting-rod *h* is hinged, as shown. Through the lower end, *i*,

of the rod *h* is passed a link, *k*, which connects the connecting-rod *h* to the bracket *l*, secured to the door-jamb, the opposite end of the link to that which is connected to the arm *h* being passed through an elongated hole or slot, *m*, made in the end of the bracket-arm *l*.

In the operation of my device, as the door is opened and the spring *a* twisted, the lower end of the rod *h*, attached to the link *k*, will be carried downward, describing the arc of a circle, as shown by dotted lines in the drawings. When the door passes the point at right angles with the door-frame, the link *k* allowing the rod *h* to approach the door, the spring *a* will untwist, and in so doing will force the door wide open, holding it in that position. There will then be no tension upon the spring. As the door recedes from the lower end of the rod *h*, attached to the link *k*, in the act of closing, the tension upon the spring will be renewed and increased until the door passes the right-angle line. By the action of the door, in carrying the rod *h* back to its normal position, (in which it is aided and guided by the link *k*,) the spring untwists with more force than if the end of the rod *h* were stationary and no link used.

I am aware of Patent No. 179,824, July 11, 1876, issued to J. B. Starkweather, for improvement in door-springs, and I do not claim anything in said patent.

Having thus described my invention, I claim—

In a door-spring, the link *k*, pivoted in the slot *m* of the bracket-arm *l*, and to the connecting-rod *h*, through the hole *i*, operating to relieve the tension upon the spring *a* when the door is open, and giving greater power to the spring when the door is closing, substantially as set forth.

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

DAVID G. SMITH.

Witnesses:

HENRY J. BAER,

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