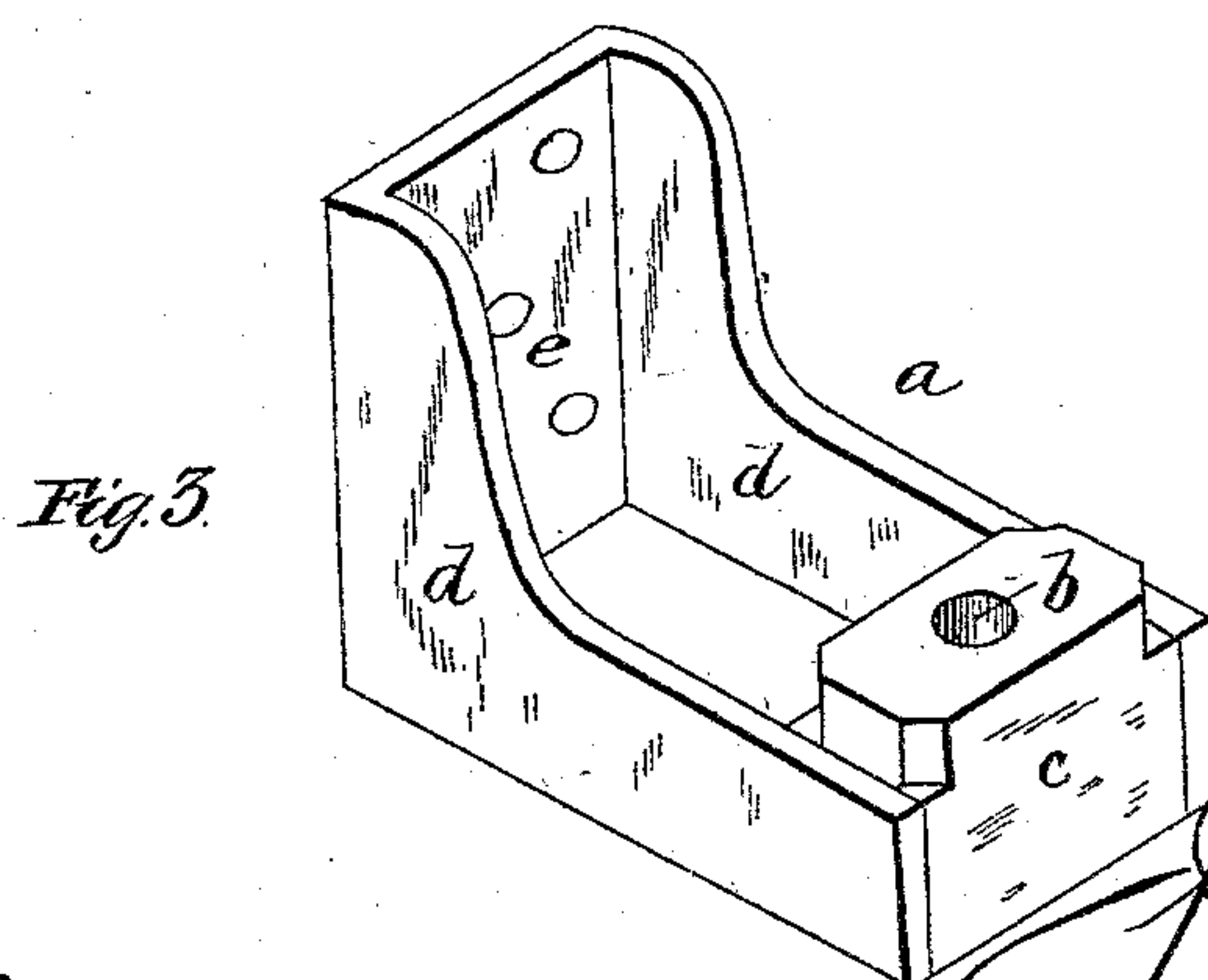
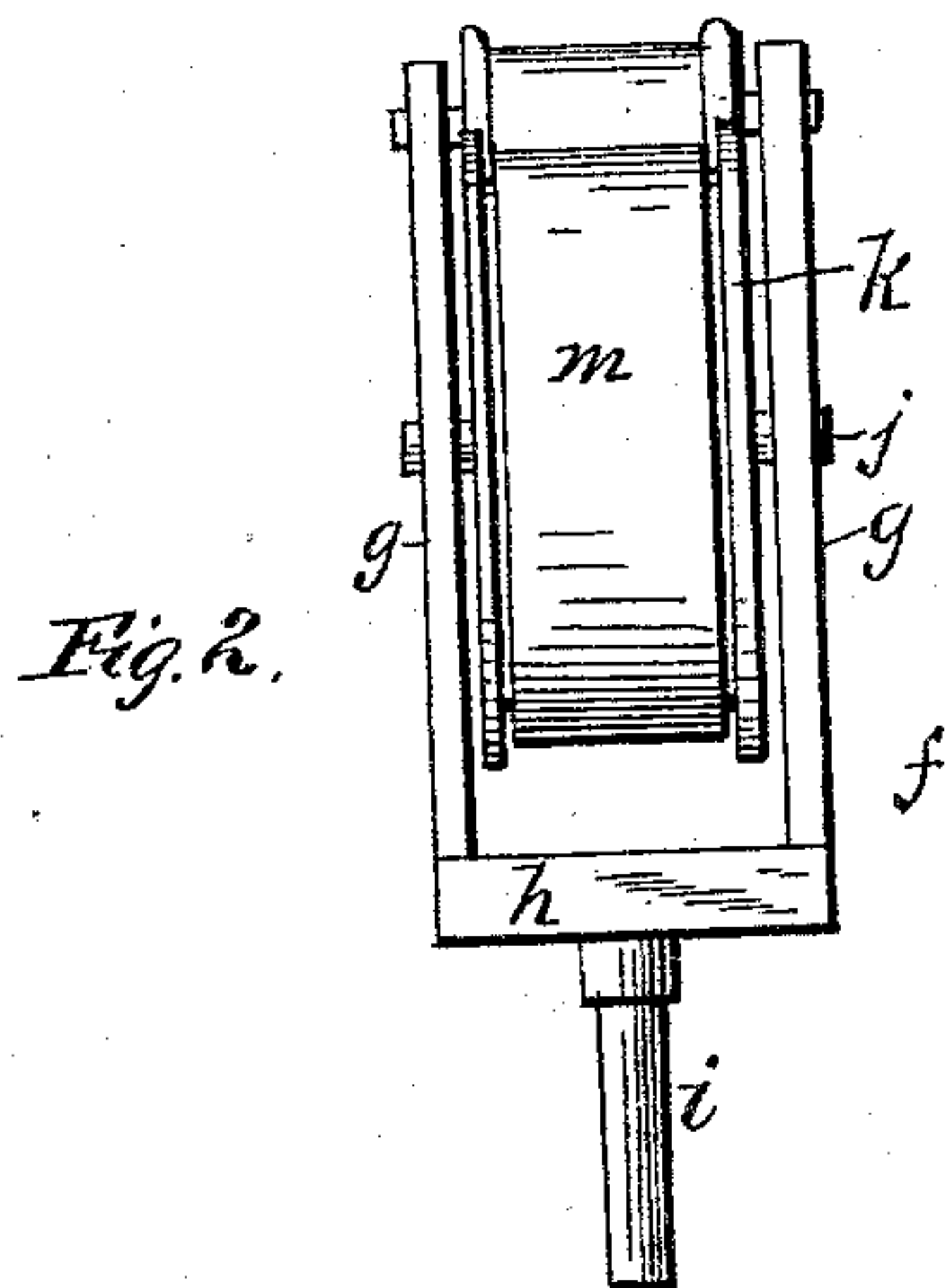
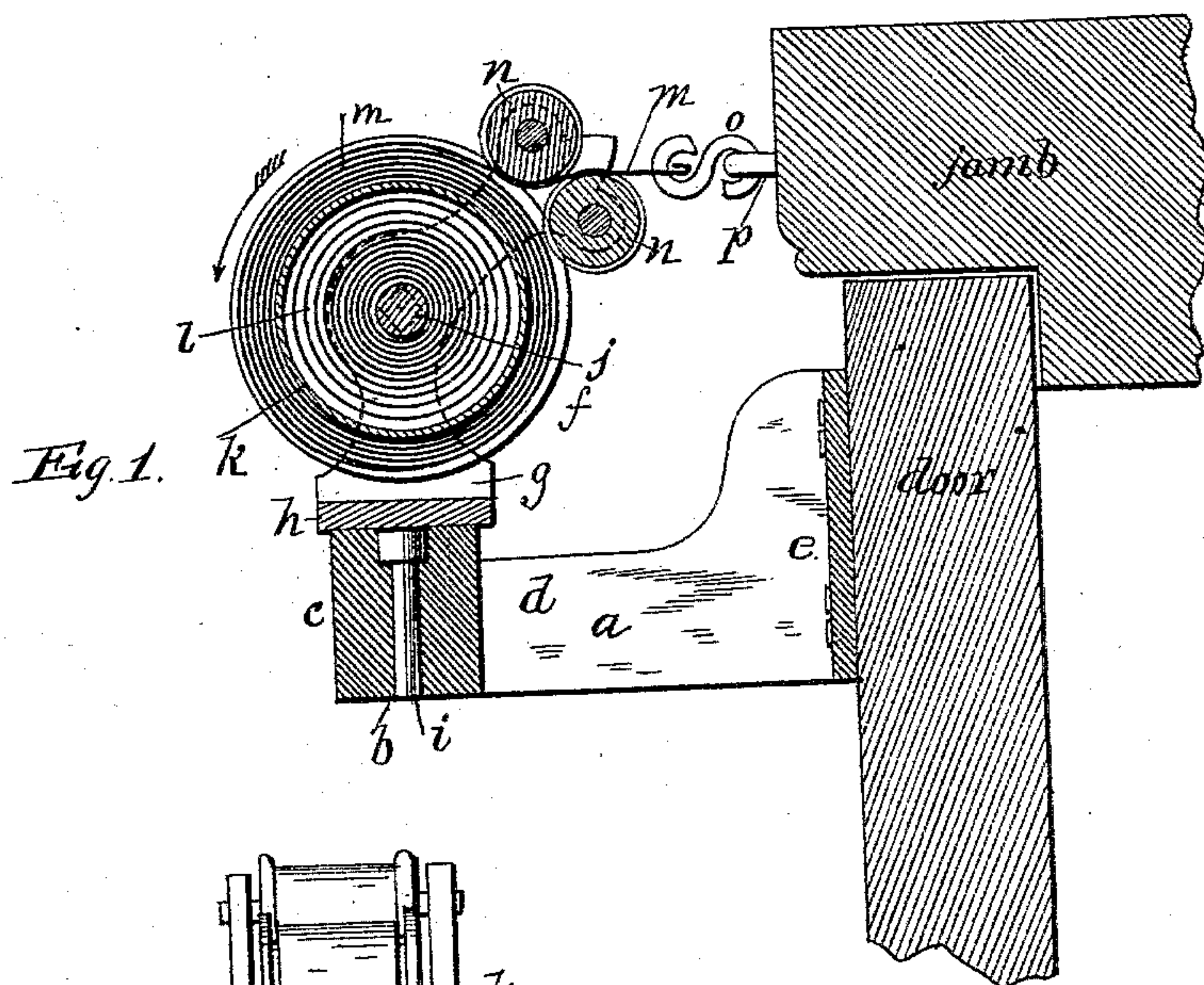


(No Model.)

J. H. WILLIAMS.  
DOOR SPRING.

Patented Apr. 9, 1889.

No. 401,319.



Witnesses.

M. P. McKee,  
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# UNITED STATES PATENT OFFICE.

JOHN H. WILLIAMS, OF WATERLOO, IOWA.

## DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 401,319, dated April 9, 1889.

Application filed December 26, 1888. Serial No. 294,579. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. WILLIAMS, a citizen of the United States, residing at Waterloo, in the county of Black Hawk and State of Iowa, have invented certain new and useful Improvements in Door-Closers; and I do 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 the letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a vertical section and partial elevation of a device which embodies my invention, and showing also sections of a door and door-jamb. Fig. 2 is an end elevation of the door-closing spring and its frame. Fig. 3 is a perspective view of the bracket which supports the door-closing spring.

My invention relates to that class of devices which operate constantly to close a door when opened.

For this purpose my improvements consist in the following construction and combination of parts, a detailed description of which will first be given, and the points of novelty then set forth in the claim.

In the drawings, *a* represents the spring-supporting bracket. *b* is the bearing or journal which receives the pintle of the spring-carrying frame. This bearing *b* is the only essential feature of this bracket—that is to say, it may be made of any form or shape desired, so long as it has a bearing for the pivoted spring-frame, and be otherwise suitable for the purpose. This bracket *a* consists of a bearing-block, *c*, side arms, *d*, and a rear wall, *e*, provided with screw-holes for attaching it to a door or door-jamb. It may be made of one or more pieces.

*f* is a frame in which are hung the operating parts of my improved door-closer. *g g* are the two sides of the frame.

*h* is the connecting base-plate, and *i* is the pintle or bearing, which is pivotally seated in the bracket *a*.

*j* is a non-rotatable shaft hung in the sides of the frame.

*k* is a rotating drum mounted on shaft *j*.

*l* is a coiled spring, one end of which is fastened to the stationary shaft or arbor *j*,

and the other or outer end secured to the drum.

*m* is a thin metallic ribbon or band, one end of which is fastened to the exterior or circumference of the drum, and is coiled thereon, and the other attached to the door or door-jamb.

In an upward extension of the sides of the spring-carrying frame are mounted anti-friction rolls *n n*, through which the ribbon passes. The extension-sides serve as a guide to prevent the ribbon slipping off the drum. There may be one or two rolls, *n n*, and they may be rotatable or not. *o* is an eye or hook by means of which the ribbon may be secured to the eye or hook *p* in the door-jamb or door.

In the drawings I have shown the bracket attached to the door and one end of the ribbon to the door-jamb; but it should be understood that I may reverse this arrangement and affix the bracket to the jamb and the ribbon to the door.

Instead of the metallic ribbon I may use a strap of leather or other fabric, or a cord, (wire, if desired,) or a chain. This change will be readily understood.

In operation, when the door is opened, the pivoted spring-carrying frame *f* adjusts itself automatically to the constantly-varying angle of the door and jamb, when the door is in motion, either in opening or closing. This swiveling movement of the frame *f* on the bracket results in a steady straight pull or tension upon the wire-ribbon, preventing any tendency of its "buckling." A dust-cap may be placed over the frame *f*. The spring and its drum and frame may be of any known design suitable for the purpose.

What I claim is—

In a door-closer, the combination of a bracket having a bearing therein, a drum-carrying frame swiveled in the bracket, a drum mounted in the frame, a ribbon, cord, or the like wound upon the drum, and a spring attached to the drum and frame, all substantially as set forth.

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

JOHN H. WILLIAMS.

Witnesses:

H. D. WILLIAMS,  
J. E. SEDGWICK.