

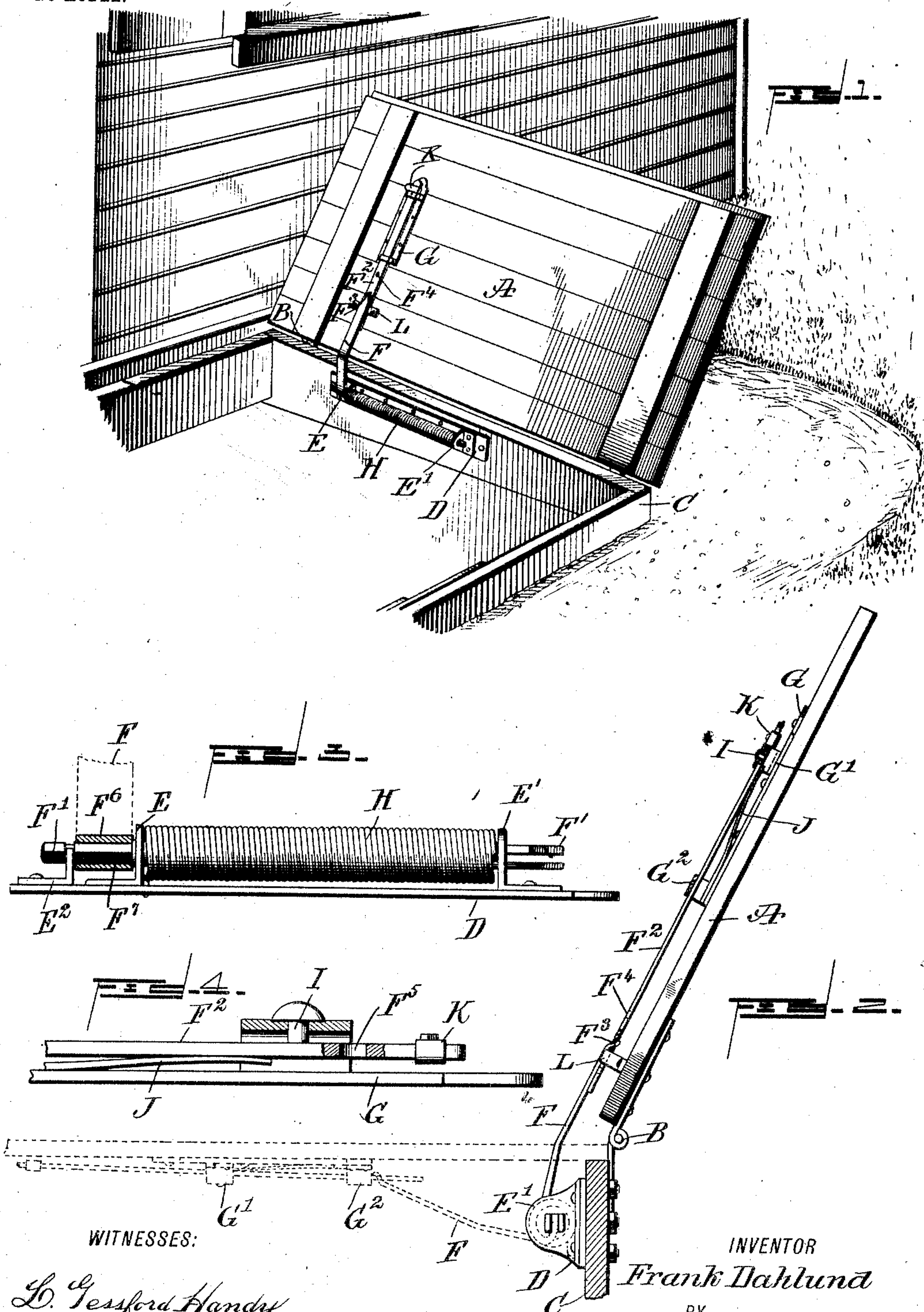
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F. DAHLUND.  
DOOR BRACE.

APPLICATION FILED JULY 13, 1904.

NO MODEL.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## DOOR-BRACE.

SPECIFICATION forming part of Letters Patent No. 776,892, dated December 6, 1904.

Application filed July 13, 1904. Serial No. 216,364. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK DAHLUND, a citizen of the United States, and a resident of Esmond, in the county of Benson and State of North Dakota, have invented a new and Improved Door-Brace, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved brace for trap-doors, such as used in cellars and other places, arranged to permit of conveniently swinging the door upward into an open position and to automatically hold it therein.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the improvement as applied. Fig. 2 is an enlarged sectional side elevation of the same. Fig. 3 is a plan view of the bracket attached to the cellar-door casing and the spring for the arm, the fulcrum end of which is shown in section; and Fig. 4 is a sectional side elevation of the keeper on the door and the spring-pressed extension-arm locked in position on the keeper.

The door A, on which the improvement is applied, is connected by hinges B to the door-casing C, provided on its inside, adjacent to the hinged end of the door A, with a bracket D, having bearings E and E', in which the pivot F' of an arm F is journaled, the said arm F having an extension F<sup>2</sup>, slidably engaging bearings G' and G<sup>2</sup> on a keeper G, bolted or otherwise fastened to the under side of the door A, as plainly illustrated in Figs. 1 and 2. On the pivot F' for the arm F is coiled a torsion-spring H, secured at one end to the bracket D and fastened at its other end in a slot or recess formed in the pivot F', so as to bring the arm F under sufficient pressure to assist a person by swinging the door A into an open position by the spring H uncoiling correspondingly. The extension F<sup>2</sup>

is adjustably held on the arm F, and for this purpose the free end of the latter is provided with a pin F<sup>3</sup>, engaging one of a series of apertures F<sup>4</sup>, formed in the extension F<sup>2</sup>, to allow of moving the extension F<sup>2</sup> farther out on the arm F or farther in, according to the width of the door A, on which the device is to be used.

When the door is in a closed position, as indicated in dotted lines in Fig. 2, then the bearing G<sup>2</sup> of the keeper G extends close to the free end of the arm F, and when a person lifts the door A then the extension F<sup>2</sup> slides in the bearings G' and G<sup>2</sup> and the spring H assists the upward swinging motion of the door to relieve the person of some of the weight of the door when swinging the latter open, it being understood that the tension of the spring H is regulated so as to be somewhat less than the force required to swing the door A open.

In order to lock the door A when swung into a raised position, as illustrated in Figs. 1 and 2, the following device is provided: On the bearing G' of the keeper G is secured a pin I, adapted to engage an aperture F<sup>5</sup>, formed in the extension F<sup>2</sup>, and the under side of the latter is pressed on by a spring J, secured to the keeper G, so that when the door A swings into an open position and the extension F<sup>2</sup> slides downward in the keeper G then the aperture F<sup>5</sup> finally moves in register with the pin I and is engaged by the latter as the extension F<sup>2</sup> is pressed outward by the spring J, and hence the extension F<sup>2</sup> is locked to the keeper and the door A is held automatically in an open position. On the outer end of the extension F<sup>2</sup> is secured a handle K, adapted to be pressed by the operator to disengage the pin I from the aperture F<sup>5</sup> whenever it is desired to again swing the door A back into a closed position. The handle K is so located relative to the aperture F<sup>5</sup> as to form a stop adapted to abut against the bearing G' at the time the aperture F<sup>5</sup> moves into register with the pin I. Thus the door A cannot be swung farther open than to the desired inclined position, as indicated in Figs. 1 and 2, this position being determined by adjusting the extension F<sup>2</sup> correspondingly on



the arm F and fastening the bracket D in the desired position on the door-casing C.

In order to allow regulating the tension of the spring H, the pivoted end or heel F<sup>6</sup> of the arm F is formed with a polygonal bore for removable connection with the polygonal portion F<sup>7</sup> of the pivot F' to allow of turning the latter after the arm is removed until the pivot is under the desired tension of the spring H. The pivoted end F<sup>6</sup> of the arm F is held against accidental displacement on the polygonal portion F<sup>7</sup> of the pivot by an angular keeper E<sup>2</sup>, removably fastened by a bolt or screw to the bracket D, it being understood that the fulcrum end F<sup>6</sup> of the arm extends between the bearing E and the keeper E<sup>2</sup>, as plainly indicated in Fig. 3. In order to properly guide the arm F, a guideway L is secured to the door A, as shown in Figs. 1 and 2.

The device is very simple and durable in construction, is not liable to easily get out of order, and can be readily adjusted to suit different sizes of doors, as well as the weight thereof, to permit of a person conveniently swinging the door into an open or closed position without exerting much physical power and to automatically lock and hold the door in an open position until it is desired to again close the door.

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

1. A door-brace comprising a bracket for

attachment to the casing of the door, a swing-arm having its pivot journaled in the bracket, said swing-arm also having an adjustable extension, a torsion-spring pressing said pivot, a keeper for attachment to the door and slidably engaged by said extension, a pin on the keeper for engaging an aperture in the extension, a spring on the keeper pressing said extension, and a handle on the extension for pressing the latter and disengaging the pin from said aperture, said handle constituting a stop for limiting the movement of the extension on swinging the door to open position.

2. A door-brace comprising a bracket for attachment to the door-casing, a swing-arm having its pivot journaled in the bracket, the said swing-arm having an adjustable extension, a torsion-spring pressing the said pivot, a keeper for attachment to the door and slidably engaged by the said extension-arm, a pin on the keeper, for engaging an aperture in the extension, a spring on the keeper, pressing the said extension, and a handle on the extension for pressing the latter and disengaging the pin from the said aperture.

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

FRANK DAHLUND.

Witnesses:

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