

No. 705,405.

Patented July 22, 1902.

J. HORSFIELD.  
WINDOW OPENER.

(Application filed Apr. 3, 1902.)

(No Model.)

Fig. 1

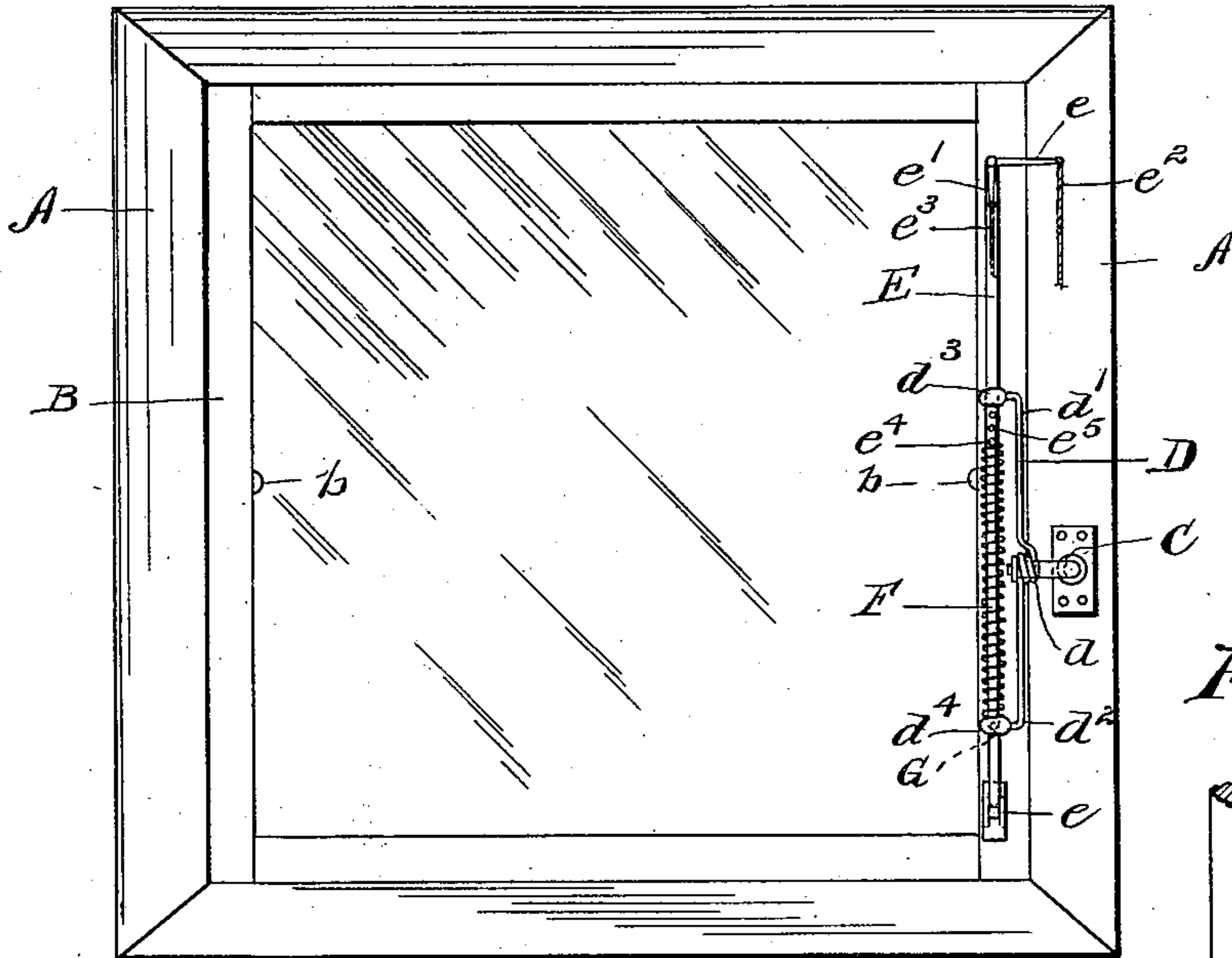


Fig. 2

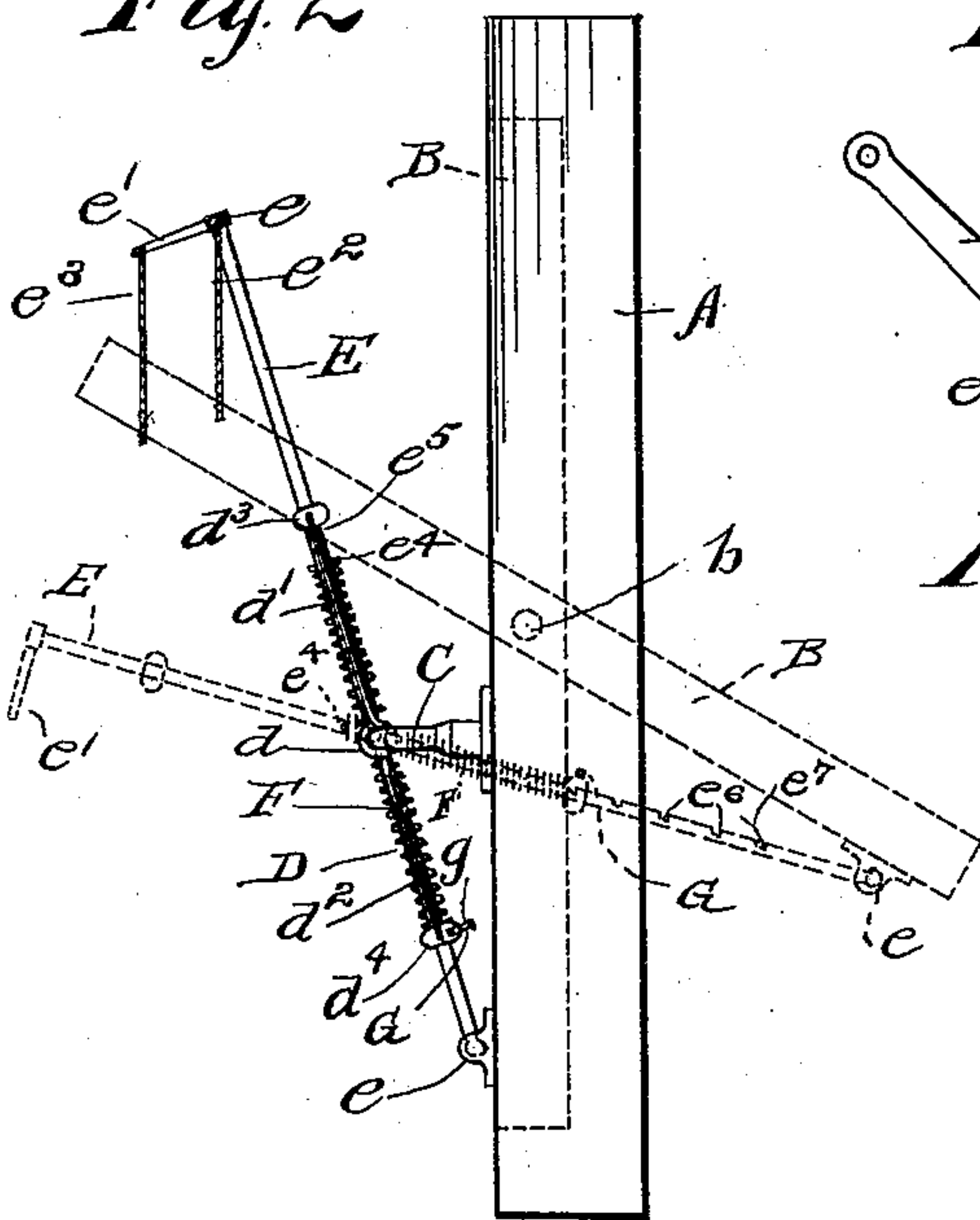


Fig. 3

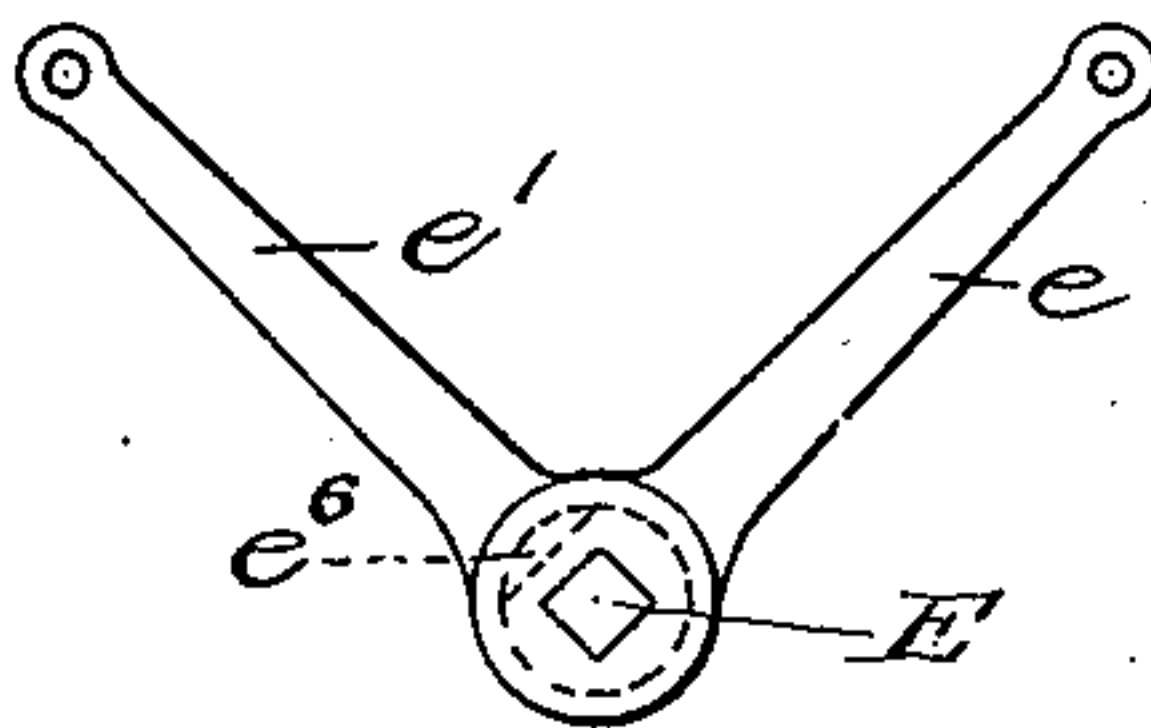


Fig. 4

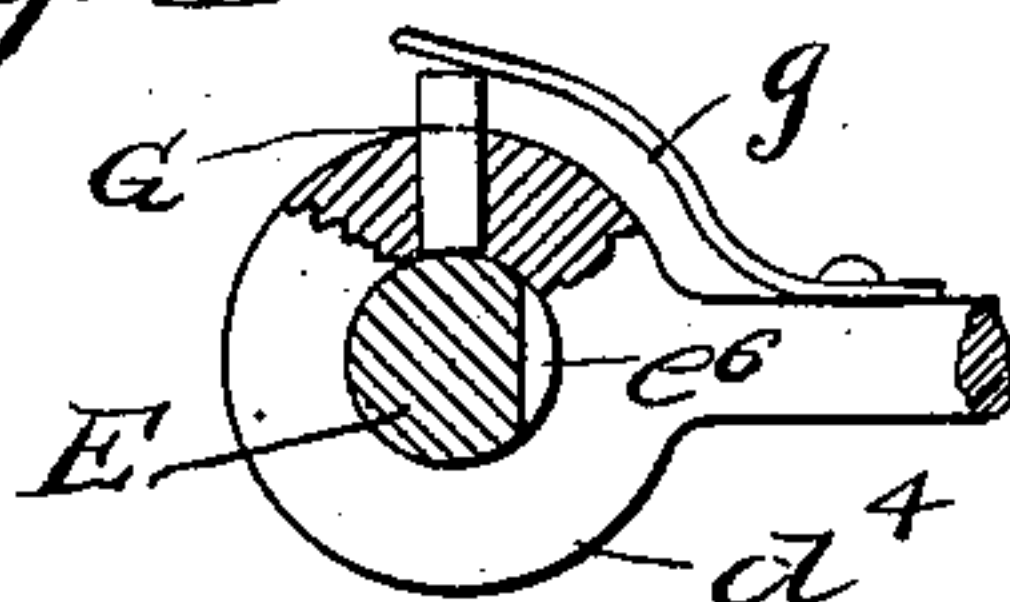


Fig. 5

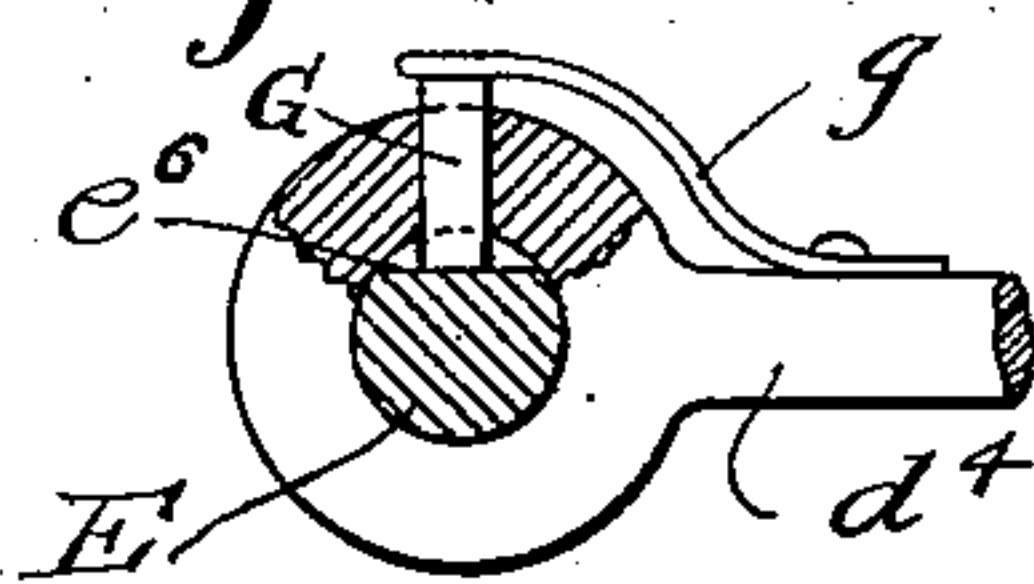
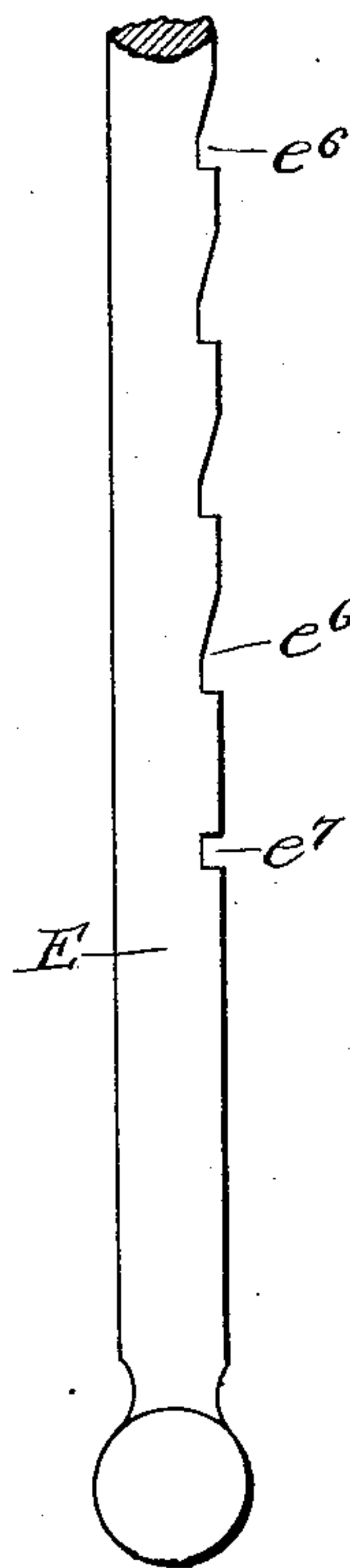


Fig. 6



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## WINDOW-OPENER.

SPECIFICATION forming part of Letters Patent No. 705,405, dated July 22, 1902.

Application filed April 3, 1902. Serial No. 101,287. (No model)

*To all whom it may concern:*

Be it known that I, JOHN HORSFIELD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Window-Openers, of which the following is a specification.

Although for convenience this device is designated as a "window-opener," it is adapted to perform the additional functions of locking the window at any desired point closing the window, and in case of fire automatically releasing and closing the window. Its objects are to provide a device of this character that will be simple in construction and efficient in operation.

In the accompanying drawings, illustrating a device embodying this invention, Figure 1 is an elevation of a window provided with the opener. Fig. 2 is a side elevation of the same, showing in dotted lines the window opened. Fig. 3 is a detail of the bell-crank. Figs. 4 and 5 are details showing the operation of the locking-pin. Fig. 6 is a detail of the notched opening-rod.

A represents an ordinary window-frame, in which a sash B is pivoted at *b*. A gooseneck bracket or bearing C is secured to the frame a short distance below the pivot. A cross-arm or swinging bracket D is supported by bearing on the bracket C and is readily swung thereon. For economy of manufacture the cross-arm D is made of stiff wire or rod with a coil *d* to engage the bearing on the bracket C and arms *d'* *d''* terminating in loops *d'''* *d''''* at right angles thereto to form bearings for a rod E upon which they slide. The lower end of this rod is secured to the sash at a short distance below the bracket C by a ball-and-socket bearing *e*, and the upper end is provided with a bell-crank having arms *e* and *e'* for the attachment of pull-cords *e''* *e'''*. A compression-spring F, coiled about the rod E, bears against the lower loop *d'* of the cross-arm and against a pin *e''* in the rod, and its tension may be regulated by having two or more holes *e'''* for the pin *e''*. In the lower loop *d''* of the cross-arm D is a hole *d'''*, in which is a pin or catch G, which is pressed against the rod E by a spring *g* and is adapted to engage with notches *e''''* in the rod E. These notches may be of any desired shape, but are

preferably of ratchet form, as shown, and there may be a special notch *e'''''* for the pin G to engage when the window is closed in order to lock it. For ordinary window-openers the pin G is made of steel; but it may also be made of fusible metal to allow the window to shut automatically in case of fire or when the heat becomes sufficient to melt the pin.

The operation of this device is as follows: When the window is to be opened, the cord *e''* is pulled. This turns the rod E and throws the notches out of engagement with the pin G. A further pull draws the end of the rod down, compresses the spring F, and opens the window. When it is opened the desired amount, a pull on the cord *e'''* turns the rod, throws the notches into engagement, and locks the window open. When it is desired to close the window, the cord *e''* is again pulled, which throws the notches again out of engagement, and the spring closes the window. If it is desired to lock it closed, the cord *e'''* is given a slight pull, which throws the notch *e'''''* into engagement.

If the pin G is made of fusible metal, as above suggested, it is apparent that upon its being melted it will release the notch and allow the spring to close the window.

An important feature of this apparatus which is obvious is its adaptability to windows of any height, as it simply requires a longer pull-cord to operate it. It may also be made in various styles, and although not shown, pins might be placed on the rod to engage with a slot in the lower bearing of the cross-arm, and various alterations in the details of construction will readily suggest themselves as coming within the scope of this invention.

I claim—

1. A frame a bracket on said frame, a cross-arm pivoted to said bracket, a sash pivoted in said frame, a rod secured to said sash co-acting with said cross-arm, a spring to be given a tension by the movement of said rod in the opening of the sash, and a catch co-acting with said rod to lock the sash.

2. In combination with a frame and pivot-window, a bracket on said frame, a cross-arm pivoted to said bracket, a rod slidably engaging lugs or bearings on said arm and secured to said window-sash by a ball-and-socket

hinge, a spring on said rod engaging one of the bearings on said arm and an adjustable pin or stop on said rod, a spring-pressed catch in one of said lugs adapted to engage notches  
5 on said rod, and a bell-crank on said rod.

3. In combination, a frame, a pivoted sash in said frame, a bracket on said frame, a cross-arm, provided at its ends with bearings, pivoted to said bracket, a rod, secured to said  
10 sash by a universal-joint hinge, adapted to engage with said bearings on the cross-arm, a

spring engaging with said rod and said cross-arm, a fusible metal catch or pin adapted to hold said rod in adjustable positions, arms on said rod and cords secured to said arms where- 15  
by said rod may be turned to operate the catch and drawn down to open the window.

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Witnesses:

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