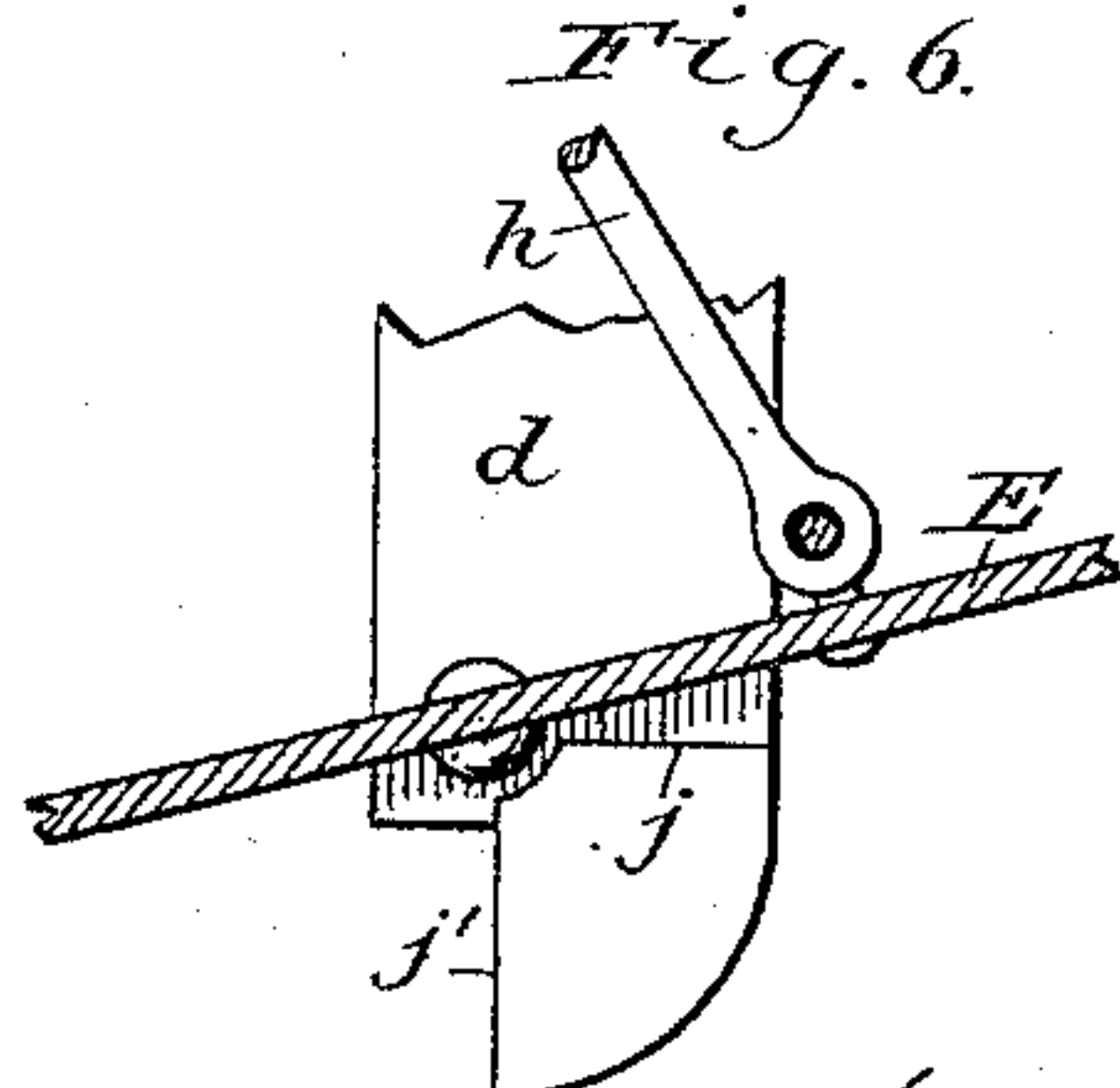
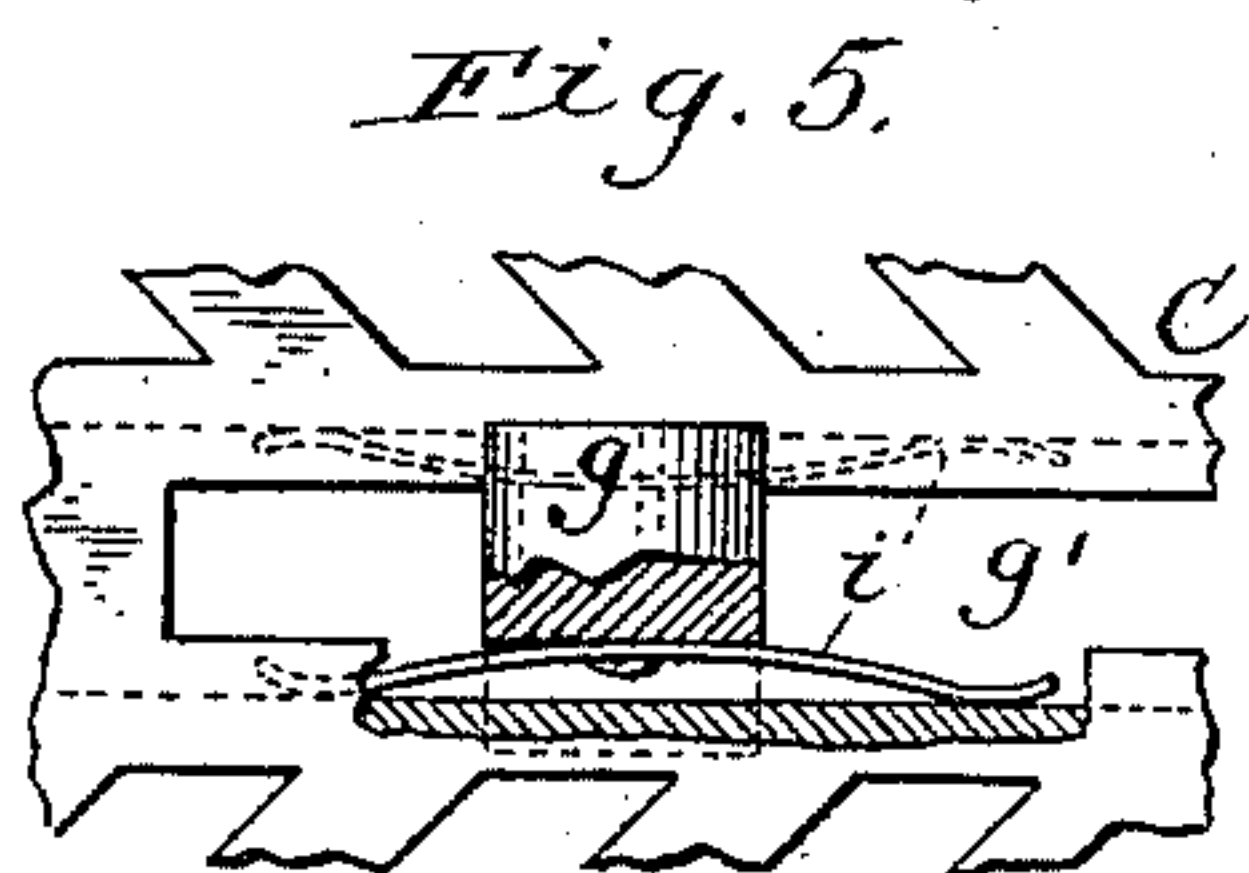
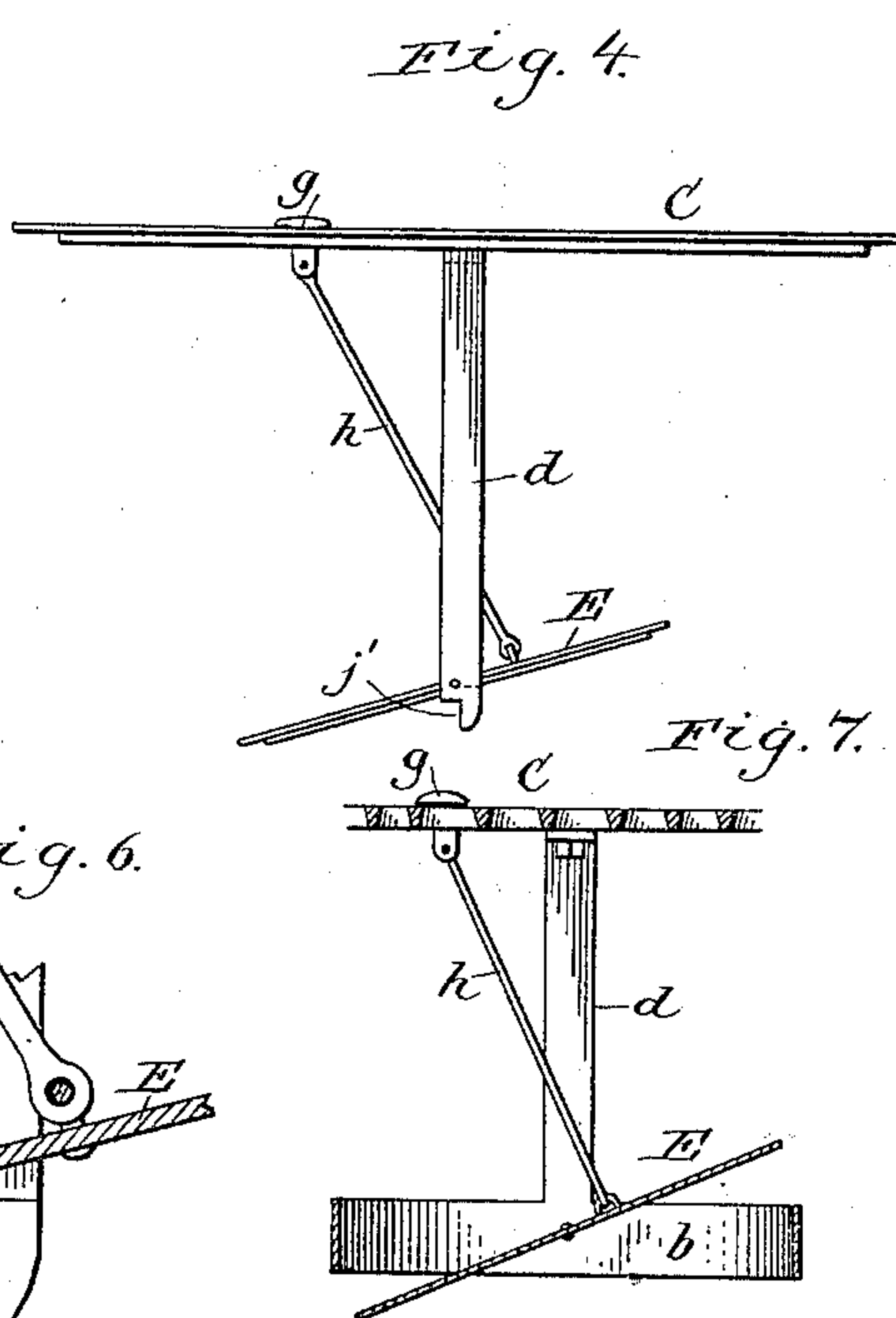
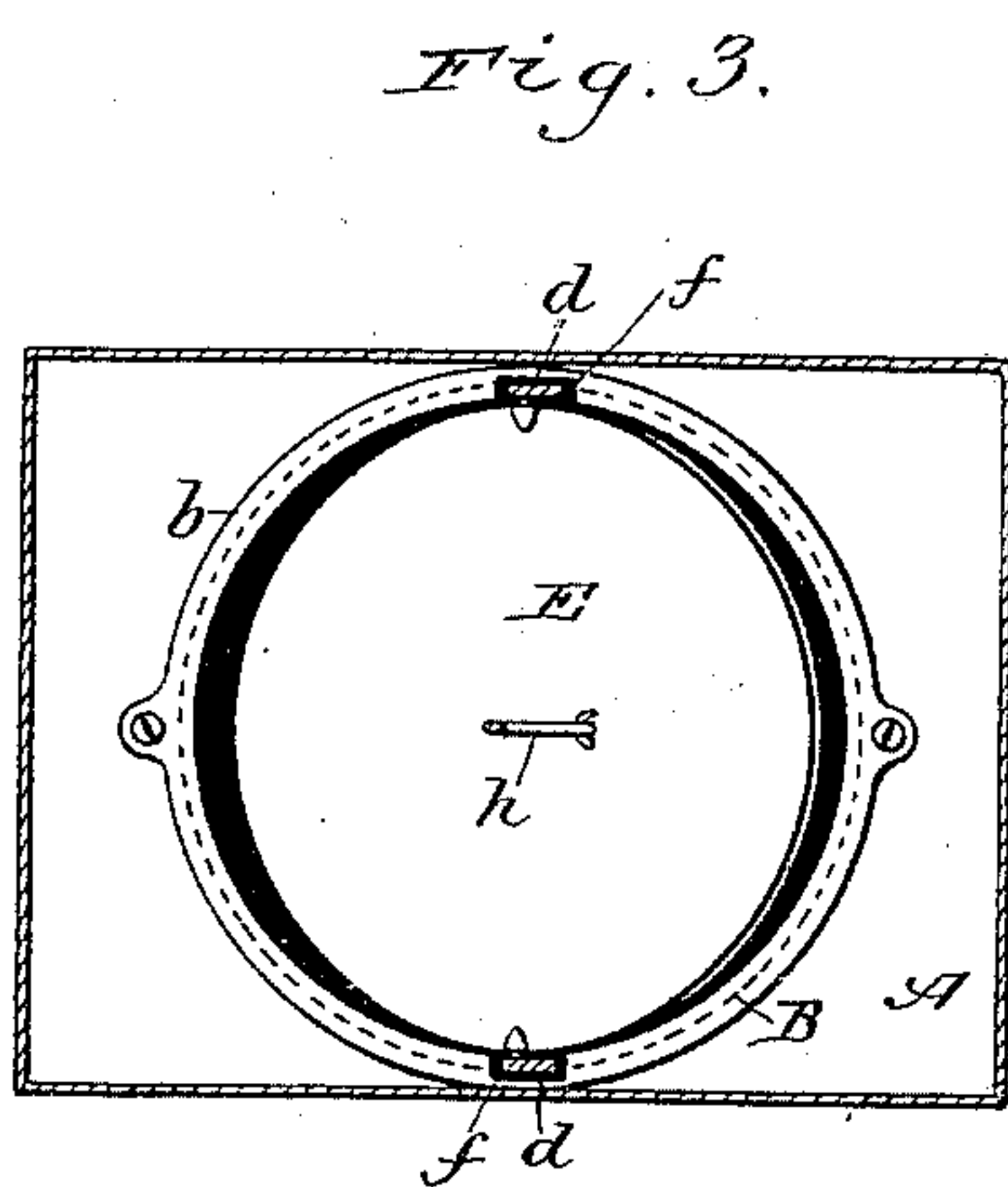
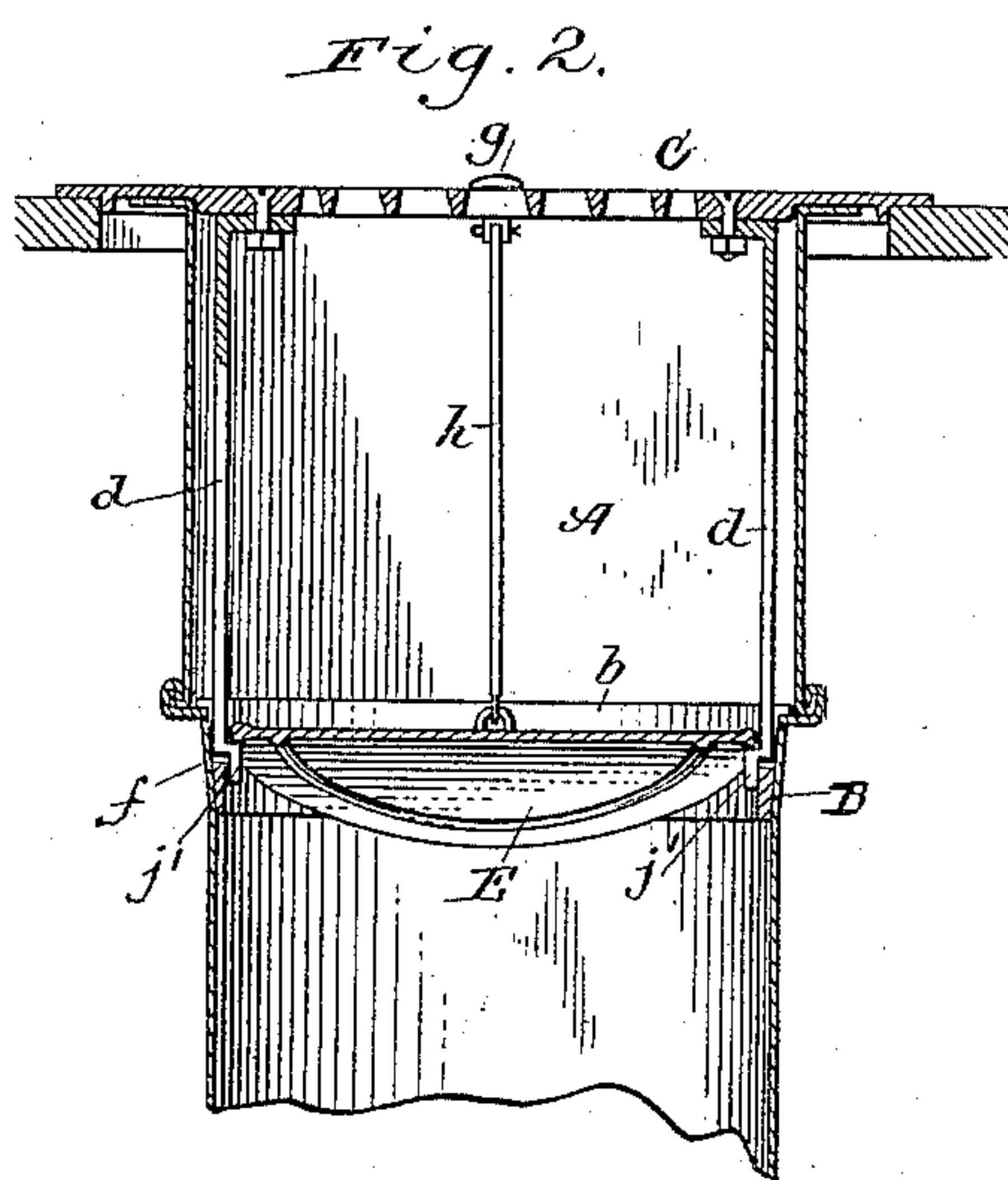
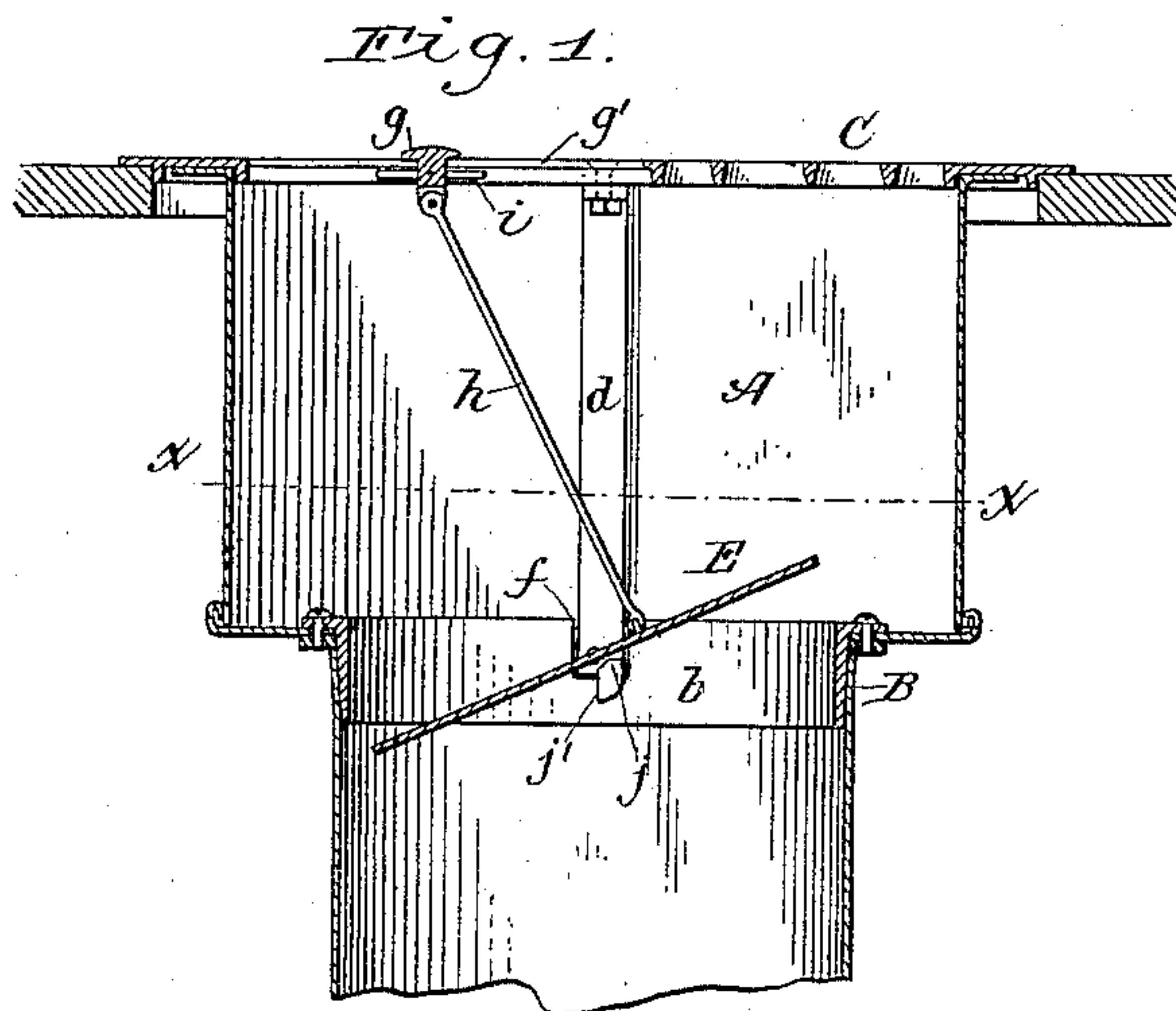


(No Model.)

H. K. TALLMAGE.  
HOT AIR REGISTER.

No. 405,620.

Patented June 18, 1889.



Chas. Buchheit.  
Fred. C. Geyer. } Witnesses.

H. K. Tallmage Inventor.  
By Wilhelm Hornum.  
Attorneys



# UNITED STATES PATENT OFFICE.

HORACE K. TALLMAGE, OF BUFFALO, NEW YORK.

## HOT-AIR REGISTER.

SPECIFICATION forming part of Letters Patent No. 405,620, dated June 18, 1889.

Application filed March 28, 1889. Serial No. 305,051. (No model.)

*To all whom it may concern:*

Be it known that I, HORACE K. TALLMAGE, a citizen of the United States, and a resident of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Hot-Air Registers, of which the following is a specification.

This invention relates to that class of hot-air registers in which a pivoted damper is arranged in the lower portion of the register-box, so that when the register is closed the heat is shut off from the register-box, whereby the danger of fire by the ignition of the surrounding wood-work is avoided. A register of this kind is described and shown in Letters Patent of the United States, No. 363,181, granted to me May 17, 1887.

The object of my present invention is to construct the register in such a manner that the top plate can be conveniently removed and replaced when it is desired to clean the register without the necessity of disconnecting the damper-operating mechanism from the top plate in removing the latter.

The invention consists to that end in suspending the damper and its operating devices from the removable top plate of the register, as will be hereinafter more fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical section of my improved register. Fig. 2 is a vertical section thereof at right angles to Fig. 1. Fig. 3 is a horizontal section in line *x x*, Fig. 1. Fig. 4 is a detached view of the top plate of the register and connecting parts. Fig. 5 is a fragmentary top plan view of the top plate, partly in section, showing the means whereby the sliding button is held in position. Fig. 6 is a fragmentary section of the damper and one of its supporting-arms, on an enlarged scale, showing the shoulder or stop, whereby the tilting movement of the damper is limited. Fig. 7 is a fragmentary vertical section of a modified construction of the register.

Like letters of reference refer to like parts in the several figures.

A represents the rectangular box of the register having in its bottom the usual ring or collar B, which fits into the furnace flue or pipe, and C is the top plate of the register ar-

ranged at the upper end of the box A. In the collar B of the register-box is preferably secured a cast-iron ring *b*.

*d d* represent two supporting-arms secured at their upper ends to the under side of the top plate C, near opposite edges thereof, and depending into the register-box A.

E represents the pivoted damper arranged in the opening in the bottom of the register-box, and journaled between the lower ends of the depending arms *d d*, as clearly shown in the drawings. The upper edge of the ring *b* is recessed to receive the lower ends of the supporting-arms *d*, as shown at *f* in Figs. 1 and 3. By seating the supporting-arms in the recessed ring the lower ends thereof are stiffened and firmly held in place.

*g* represents a sliding button or knob moving in a longitudinal slot or way *g'* in the top plate C, and *h* is a rod connecting the damper with said sliding button. The connecting-rod *h* is pivoted at its lower end to the damper on one side of the center thereof, and at its upper end to the shank of the button *g*.

*i* represents flat metallic springs secured centrally to opposite sides of the shank of the sliding button *g*, and bearing with their free ends against the adjacent sides of the slot or way *g'*. These springs by their frictional contact with the sides of the slot hold the button at any desired point of the slot, while at the same time permitting the button to be moved back and forth in the slot. By sliding the button toward either end of its slot the damper E is opened or closed.

*j j'*, Fig. 6, represent stops or shoulders arranged at the lower ends of the supporting-arms *d d* at right angles to each other, or nearly so, whereby the tilting movement of the damper is restricted in either direction by the damper striking said stops. These stops or shoulders may be cast on the arms *d*, as shown, or they may be formed by separate plates riveted or otherwise secured to the arms.

As the damper with its supports and tilting mechanism is suspended from and carried by the top plate of the register, the top plate can be readily lifted from the register-box with these parts, when it is desired to clean the register, without requiring any of



the parts to be disconnected from the top plate in removing the latter or to be connected therewith upon replacing the top plate. Upon removing the top plate the register-box is  
 5 free and unobstructed and easy of access.

If desired, a sheet-metal ring may be used in place of the cast-iron ring *b*, or the ring may be entirely omitted. In case a sheet-metal ring is used it is preferably connected  
 10 to the lower ends of the supporting-arms *d d*, so as to fit into the collar *B* and surround the damper, as represented in Fig. 7. This ring is employed to insure a proper fit of the damper in the register, as the sheet-metal ring of an  
 15 ordinary register-box is sometimes not perfectly circular, in which case the damper would not fit closely therein in the absence of the ring.

I claim as my invention—

20 1. In a hot-air register, the combination, with the register-box and a damper arranged in the lower portion thereof, of a removable top plate arranged at the upper end of the register-box and carrying the damper and its  
 25 supports, substantially as set forth.

2. In a hot-air register, the combination, with the register-box and a damper arranged in the lower portion of said box, of a removable top plate arranged at the upper end of the  
 30 register-box and supporting-arms depending from the top plate and carrying the damper, substantially as set forth.

3. In a hot-air register, the combination, with the register-box and a damper arranged  
 35 in the lower portion of said box, of a removable top plate arranged at the upper end of

the register-box, supporting-arms depending from the top plate and carrying the damper, and stops or shoulders arranged on said arms, whereby the tilting movement of the damper  
 40 is limited, substantially as set forth.

4. In a hot-air register, the combination, with the register-box and a damper arranged in the lower portion of said box, of a removable top plate arranged at the upper end of  
 45 the register-box, supporting-arms depending from the top plate and carrying the damper, a shifting button or knob arranged on the top plate, and a rod connecting the damper with said shifting button, substantially as set forth. 50

5. In a hot-air register, the combination, with the register-box, of a top plate arranged at the upper end of said box, a pivoted damper arranged in the lower portion of the register-box, a shifting button sliding in a way in the  
 55 top plate and provided with friction-springs, and a rod connecting said button with the damper, substantially as set forth.

6. In a hot-air register, the combination, with the register-box having an opening in  
 60 its bottom, of a recessed collar fitted in said opening, a top plate arranged at the upper end of said box and having depending supporting-arms fitting in the recesses of said collar, and a damper pivoted between said  
 65 arms, substantially as set forth.

Witness my hand this 25th day of March, 1889.

HORACE K. TALLMAGE.

Witnesses:

JNO. J. BONNER,  
 FRED. C. GEYER.