

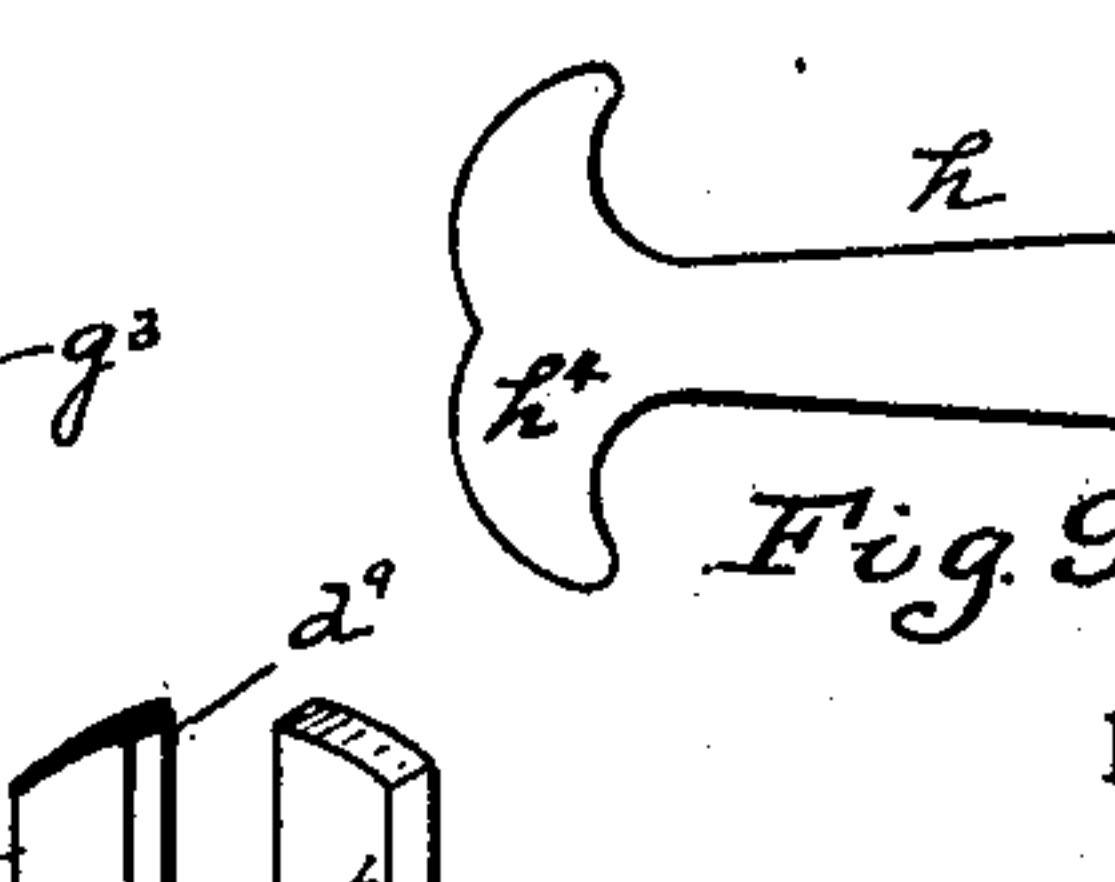
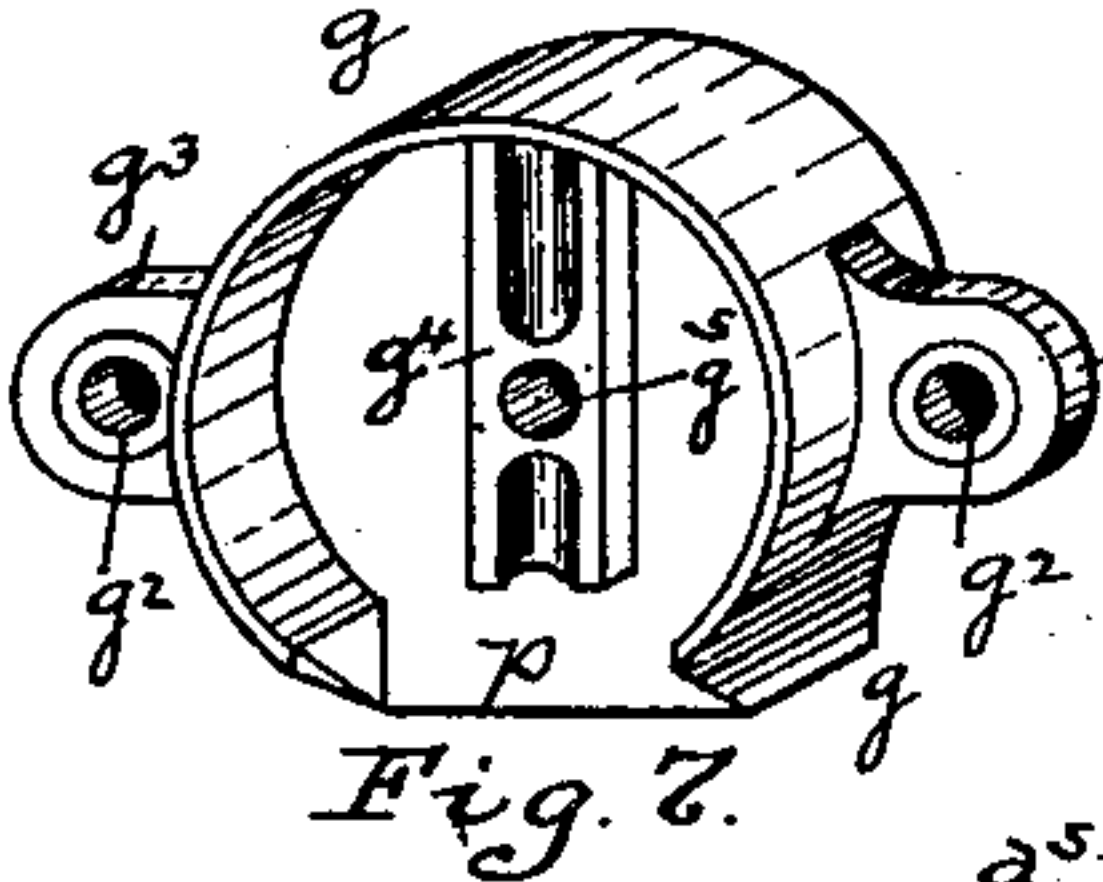
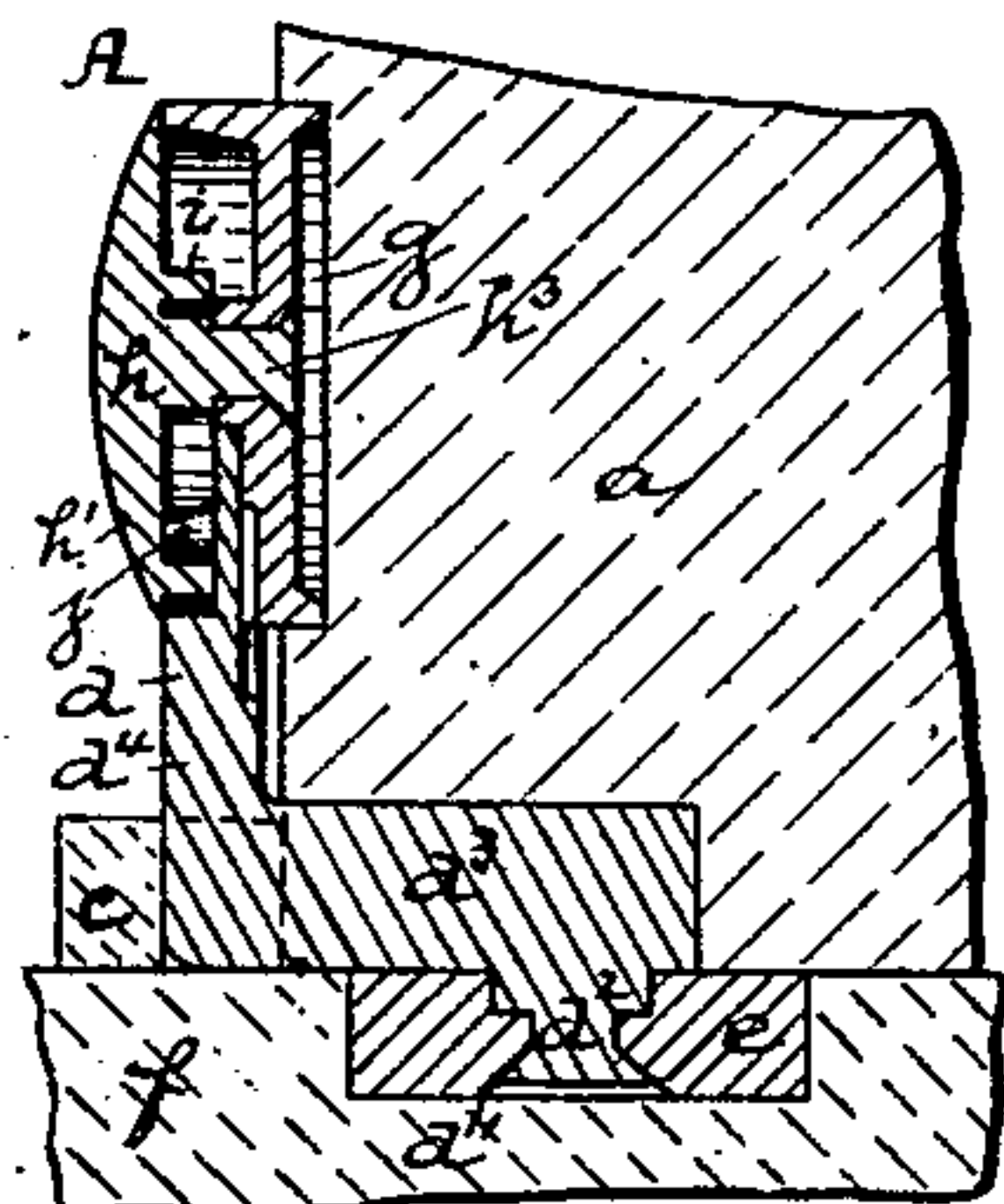
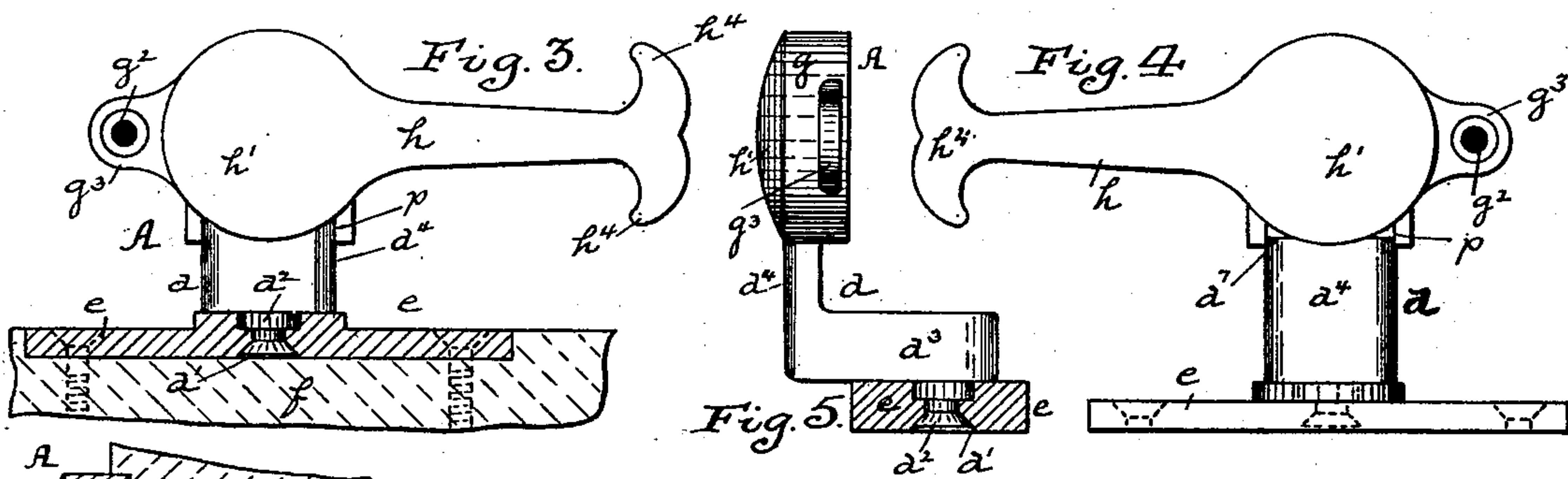
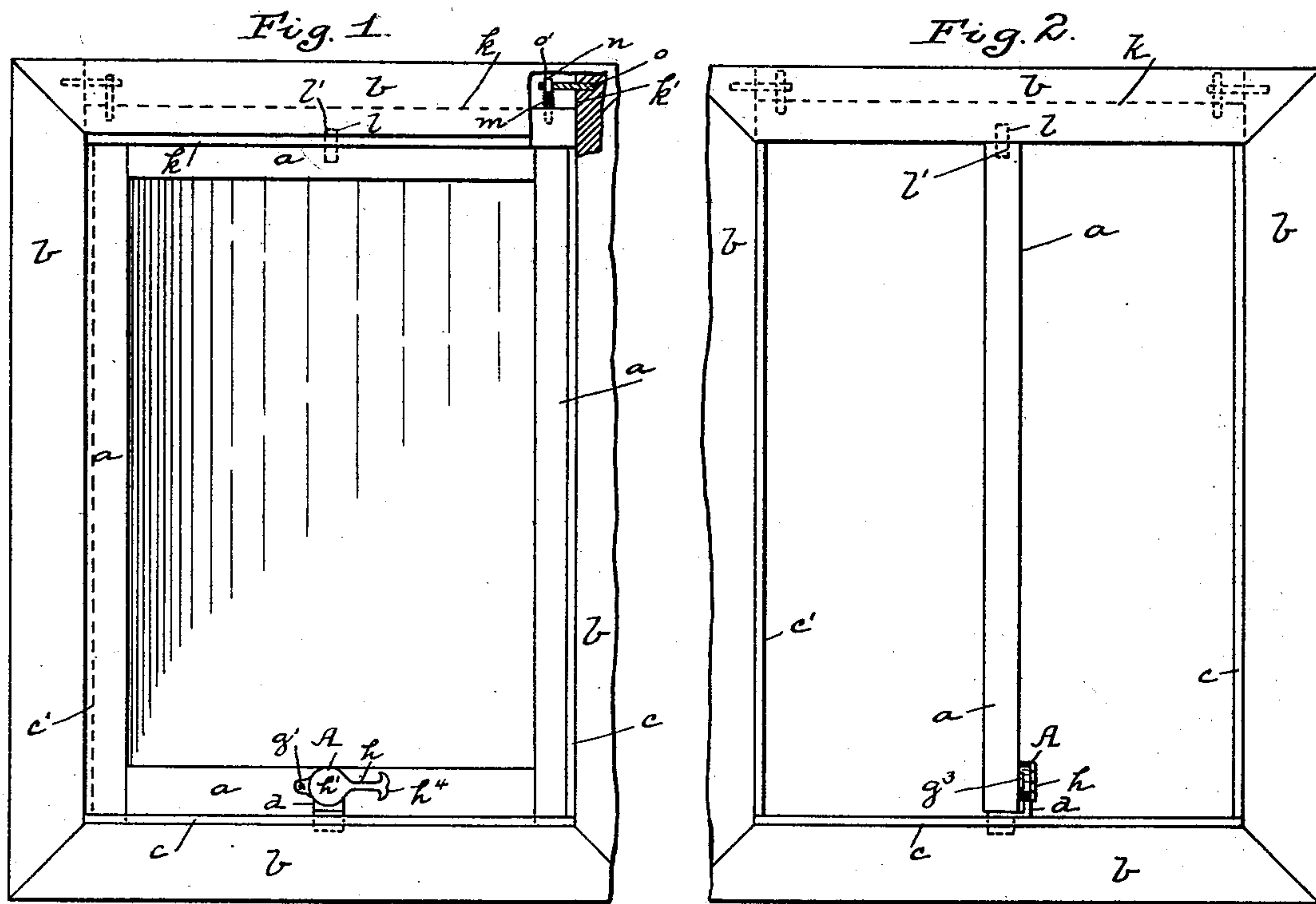
(No Model.)

D. P. HOPKINS.

DEVICE FOR RAISING OR LOWERING SWINGING SASHES.

No. 509,376.

Patented Nov. 28, 1893.



WITNESSES.
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UNITED STATES PATENT OFFICE.

DAVID P. HOPKINS, OF ALLEGHENY, PENNSYLVANIA.

DEVICE FOR RAISING OR LOWERING SWINGING SASHES.

SPECIFICATION forming part of Letters Patent No. 509,376, dated November 28, 1893.

Application filed December 8, 1892. Serial No. 454,473. (No model.)

To all whom it may concern:

Be it known that I, DAVID P. HOPKINS, a resident of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Devices for Raising or Lowering Swinging Sashes; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to sash raisers, and has special reference to a device for raising and lowering swinging sash.

The main difficulty with the sash raisers heretofore used was that they were very large and cumbersome, required long levers to operate them which generally marred or spoiled the appearance of the window. The sash usually had to be cut away to a large extent to allow the sash raiser to fit therein, and the operating lever generally pressed down on the window sill, rubbing and marring the appearance of the same.

The object of my invention is to overcome these objections, and to provide a sash raiser which is small, neat and compact in appearance, and one that can be applied to any swinging window without the employment of a long lever to operate the same, and yet one which is capable of great lifting power and strength.

To these ends my invention consists, generally stated, in combining with a sash frame, having a plate in the window sill thereof, a sash having a sash raiser secured thereto formed of a bearing piece carried by the sash and having a pivot engaging with the plate on the window sill, a box or case sliding on the bearing piece, and an eccentric or cam mounted in the box and adapted to move the same upon the bearing piece.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a plan view of a swinging sash and frame having my improved sash raiser applied thereto. Fig. 2 is a like view showing the sash raised and in another position. Fig. 3 is a side view of my improved sash raiser showing it in its normal position. Fig.

4 is a like view showing it in its raised position. Fig. 5 is an end view of the same. Fig. 6 is a vertical central section through the same. Fig. 7 is a perspective view of the box or receptacle. Fig. 8 is a perspective view of the bearing piece, and Fig. 9 is a perspective view of the operating lever.

Like letters herein indicate like parts in each of the views.

My improved sash raiser A is shown in the drawings as applied to the swinging sash *a* which is hung in the window frame *b*, said window frame being provided with the usual strips *c c'*, the strip *c'* being on the outside of the window frame *b*. The sash raiser A is shown as preferably attached to the bottom of the swinging sash *a* and has the bearing piece *d* which is pivoted at *d'* to the plate *e* on the window sill *f* by means of the pin *d²*, said pin *d²* forming one of the pivots on which the swinging sash *a* swings. The bearing piece *d* has the horizontal portion *d³* and the vertical portion *d⁴* extending up into the box or case *g* of the sash raiser A, said box or case *g* containing the mechanism for operating the sash raiser A and being attached to the swinging sash *a* by means of screws *g'* passing through holes *g²* in the lugs *g³* on said box or case. The box or case *g* has an opening *p* at its bottom through which the parts enter, and a guide *g⁴* is formed in the center of the box or case *g*. This guide *g⁴* fits in the opening *d⁹* between the vertical guide arms *d⁵ d⁶* on the bearing piece *d* and acts to guide the box or case *g* as it slides in its movement in raising and lowering the sash *a*. In order to operate the sash raiser and move the box or case *g* and with it the sash *a*, there is provided the operating lever *h* which has the enlarged head *h'* for covering the box or case *g*, while extending out from the inner face *h²* of this enlarged head *h'* is the pivot pin *h³* which passes through an opening *g⁵* in the guide *g⁴* and box or case *g* and acts to hold the parts composing the sash raiser together, and the bearing piece *d* sliding in the box or case *g* forms a bearing for the turning of the lever *h*, while the said pin *h³* is clinched to the back of the box or case *g*. For the purpose of raising and lowering the sash *a* the en-

larged head h' of the operating lever h has on its inner face h^2 the eccentric or cam i , the said eccentric or cam i being formed as part of said operating lever h . Fitting on the inner face i' of the eccentric or cam i is the lug or pin j formed as part of the vertical guide arm d^5 of the bearing piece d , while the outer face i^2 of the eccentric or cam i bears and travels on the projecting face d^7 on the vertical portion d^4 of the bearing piece d . The vertical portion d^4 of the bearing piece d is cut away, as at d^8 , so that the guide g^4 on the box or case g can slide therein. The swinging sash a has the follower k resting on its top; said follower k sliding in guides k' in the window frame b , the said swinging sash a being pivoted at l to the follower k by means of the pin l' shown in dotted lines Fig. 1. The follower k fits tightly down on top of the swinging sash a in order to prevent any air entering the apartment when the sash is closed, this follower k being held down on said swinging sash a by the springs m on each side of the follower k . The springs m fit around rods n rigidly secured to the follower k , while the other ends of the rods n pass loosely through openings o' in the lugs or bars o . These lugs or bars o extend out from the guides k' in the window frame b , and the springs m being interposed between said lugs or bars o and the top of the follower k allow the follower to move up and down with the swinging sash. A handle h^4 is provided on the end of the lever h for convenience in operating.

As illustrated in Fig. 1, the sash raiser A is shown in its normal position with the swinging sash a closed. When it is desired to open the swinging sash a , all that is necessary is to grasp the handle h^2 with one hand and turn the lever h to the left, when the pin j on the vertical arm d^5 of the bearing piece d will travel around on the inner face i' of the eccentric or cam i until it reaches the most remote point on the eccentric or cam i from the pivot pin k on the lever h , this pivot pin k acting as a journal bearing. The outer face i^2 at the same time travels on the projecting face d^7 on the bearing piece d , the pin j , inner face i , projecting face d^7 , and outer face i^2 , acting to raise the box or case g through the medium of the bearing piece d , and through the guide g^4 contained in the box or case g sliding in the vertical guide arms $d^5 d^6$ on the bearing piece d , and so raise the swinging sash a and follower k , compressing the springs m against the lugs or bars o and allowing the rods n to pass through the openings o' in said lugs or bars o . The swinging sash a will then be above and clear of the strip c on the window sill f , when the swinging sash a will be free to swing on the pin d^2 on the bearing piece d and the pin l' on the follower k . The swinging sash a can be closed and locked by swinging it back to close the window and turning the lever h back to the right, allow-

ing the pin j to travel back on the inner face i' of the eccentric or cam i and the outer face i^2 on the projecting face d^7 of the bearing piece d until the pin j reaches the nearest point on the eccentric or cam i to pivot pin k^2 , so lowering the box or case g on the sash a through its guide g^4 engaging with the vertical guides $d^5 d^6$ on the bearing piece d , and so lowering the sash a down on the window sill f . The follower k drops down with the swinging sash a on account of the release of pressure on the springs m , so lowering the follower with the sash.

When my improved sash raiser is in use, no air can get into the apartment when the window is closed, on account of placing the window strips on both the outside and inside of the window frame, and the follower being held tightly down on the sash. The sash raiser is easily operated and the position of the sash can be regulated and locked in any position desired. The parts composing the same are simple, strong in their construction, and capable of great lifting power.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with a sash frame having a plate in the window sill thereof, a sash having a sash raiser secured thereto formed of a bearing piece carried by the sash and having a pivot engaging with the plate on the window sill, a box or case sliding on the bearing piece and an eccentric or cam mounted in the box and adapted to move the same upon the bearing piece, substantially as and for the purposes set forth.

2. In sash raisers, the combination with a bearing piece carrying a pivot, of a box or case having a guide-way therein, a vertical guide on said bearing piece moving in the guide way and an operating lever having an eccentric or cam engaging with the vertical guide, substantially as and for the purposes set forth.

3. In sash raisers, the combination with a bearing piece, of a box or case having guide ways therein, vertical guide arms on said bearing piece moving in said guide-ways, and a lug or pin on one of said vertical guide arms engaging with an eccentric or cam on the operating lever, substantially as and for the purposes set forth.

4. In sash raisers, the combination with a bearing piece, of a box or case having a guide-way therein, a vertical guide on said bearing piece moving in said guide-way, a lug or pin on said vertical guide engaging with the inner face of a projecting eccentric or cam on the operating lever, and a projecting face on said bearing piece engaging with the outer face of said eccentric or cam, substantially as and for the purposes set forth.

5. In sash raisers, the combination of a window frame, a sash mounted on vertical pivots within said frame, the lower pivot being

formed of a box or case having a guide-way
therein, a bearing piece mounted therein, and
carrying the pivot pin, and an eccentric
mounted in the case and engaging with the
5 bearing piece to raise or lower the sash there-
on, substantially as and for the purposes set
forth.

In testimony whereof I, the said DAVID P.
HOPKINS, have hereunto set my hand.

DAVID P. HOPKINS.

Witnesses:

J. N. COOKE,

WM. J. MARTIN.