

No. 709,237.

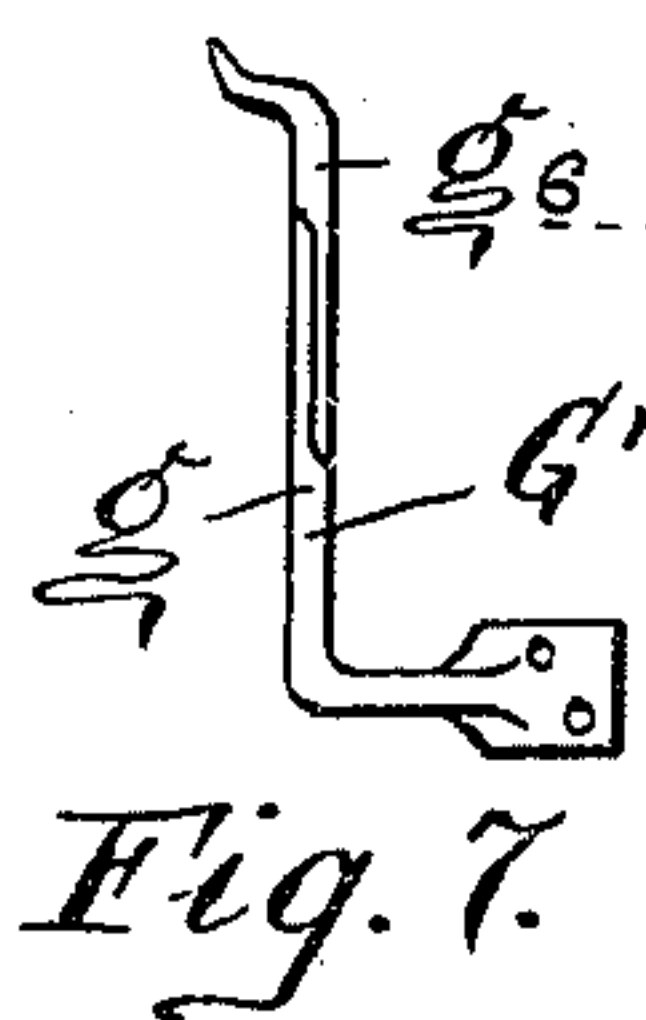
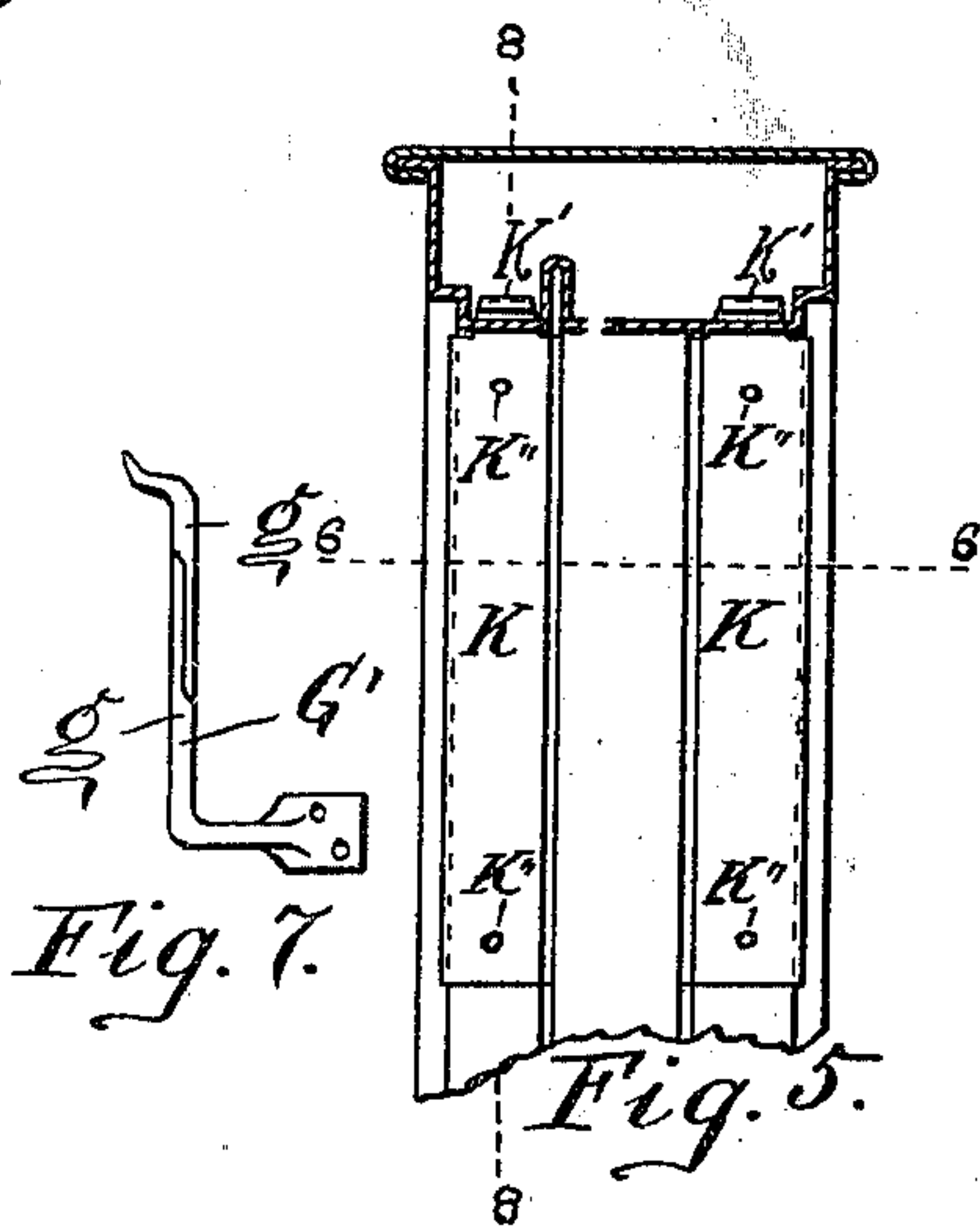
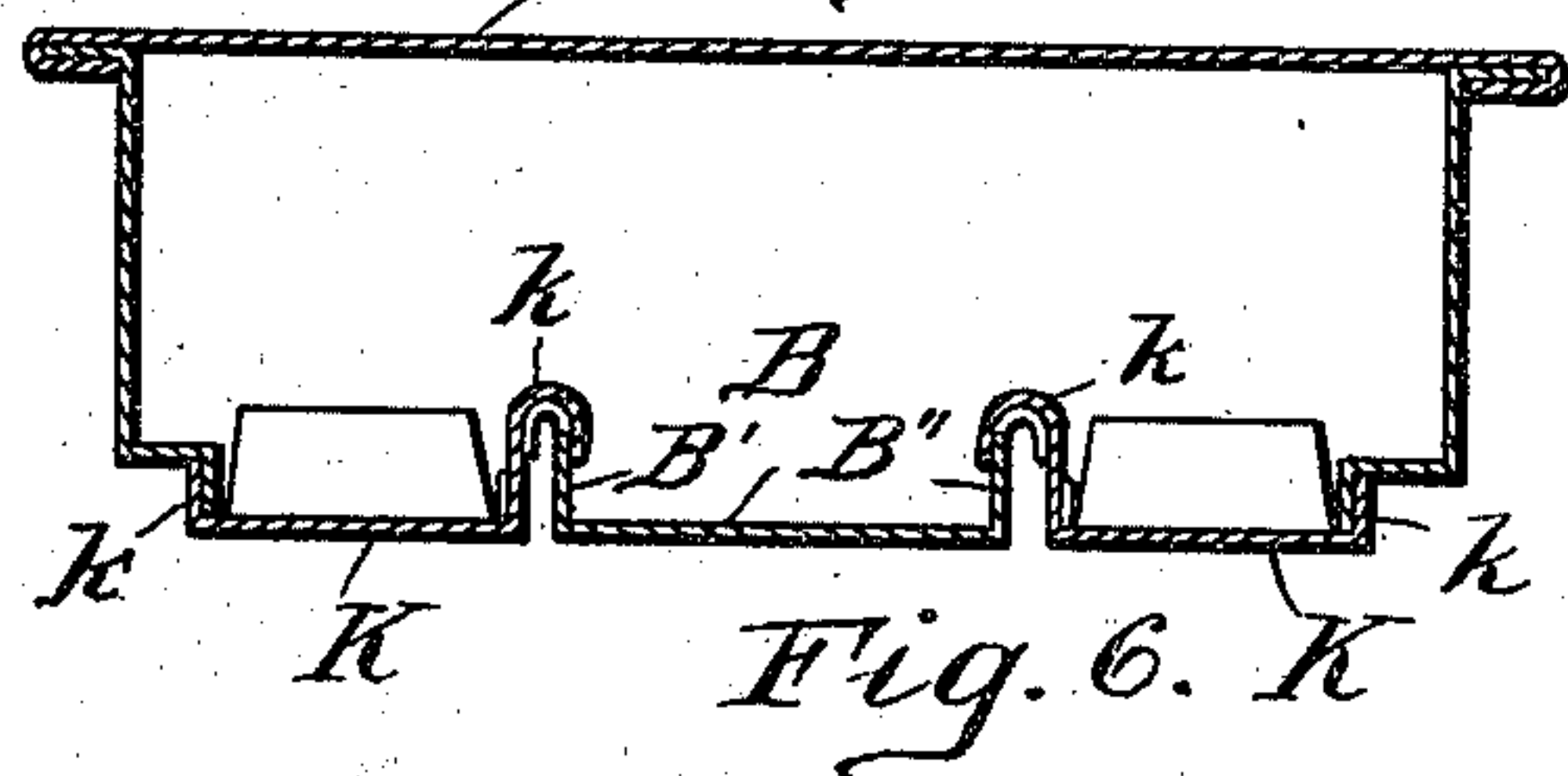
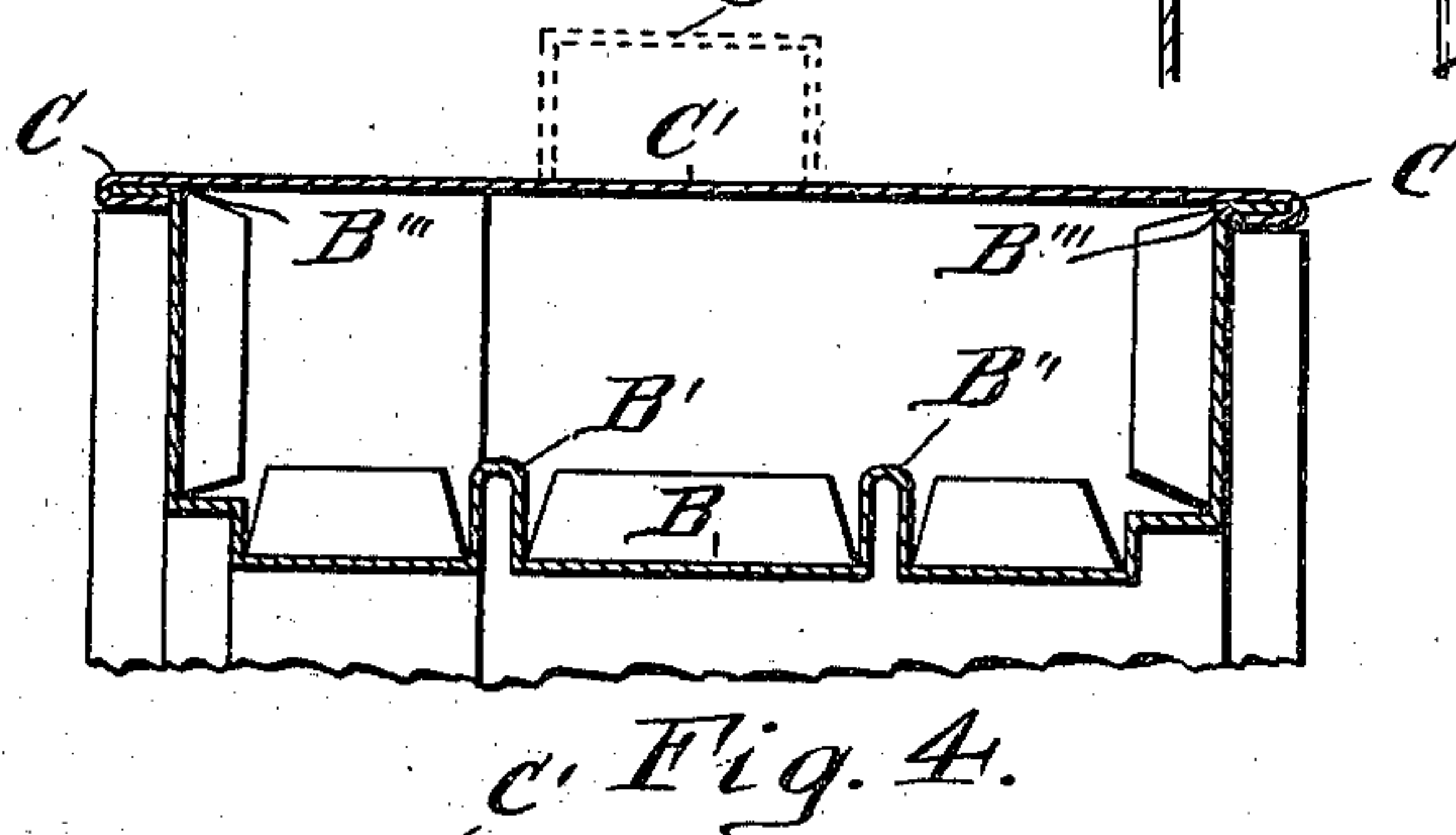
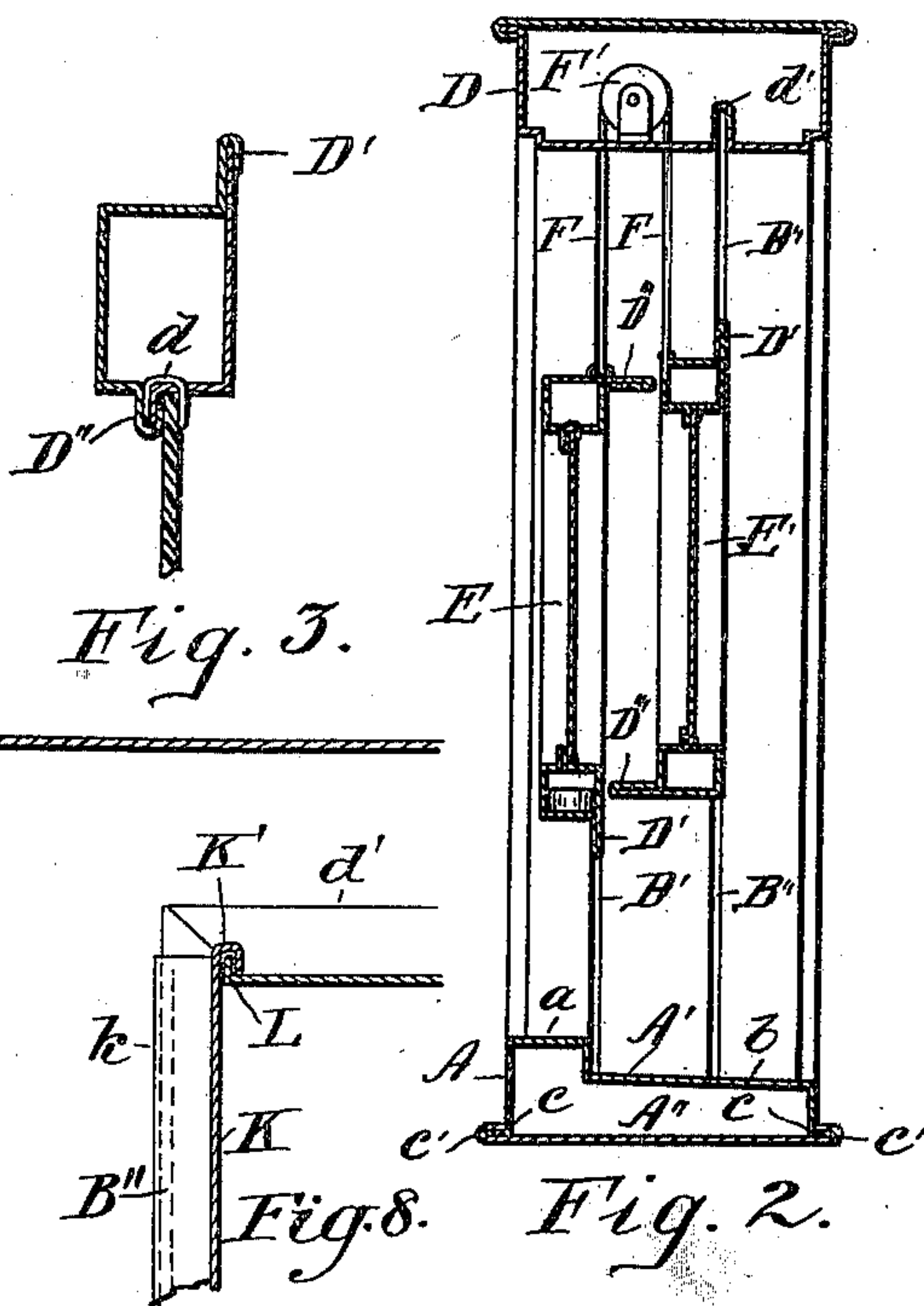
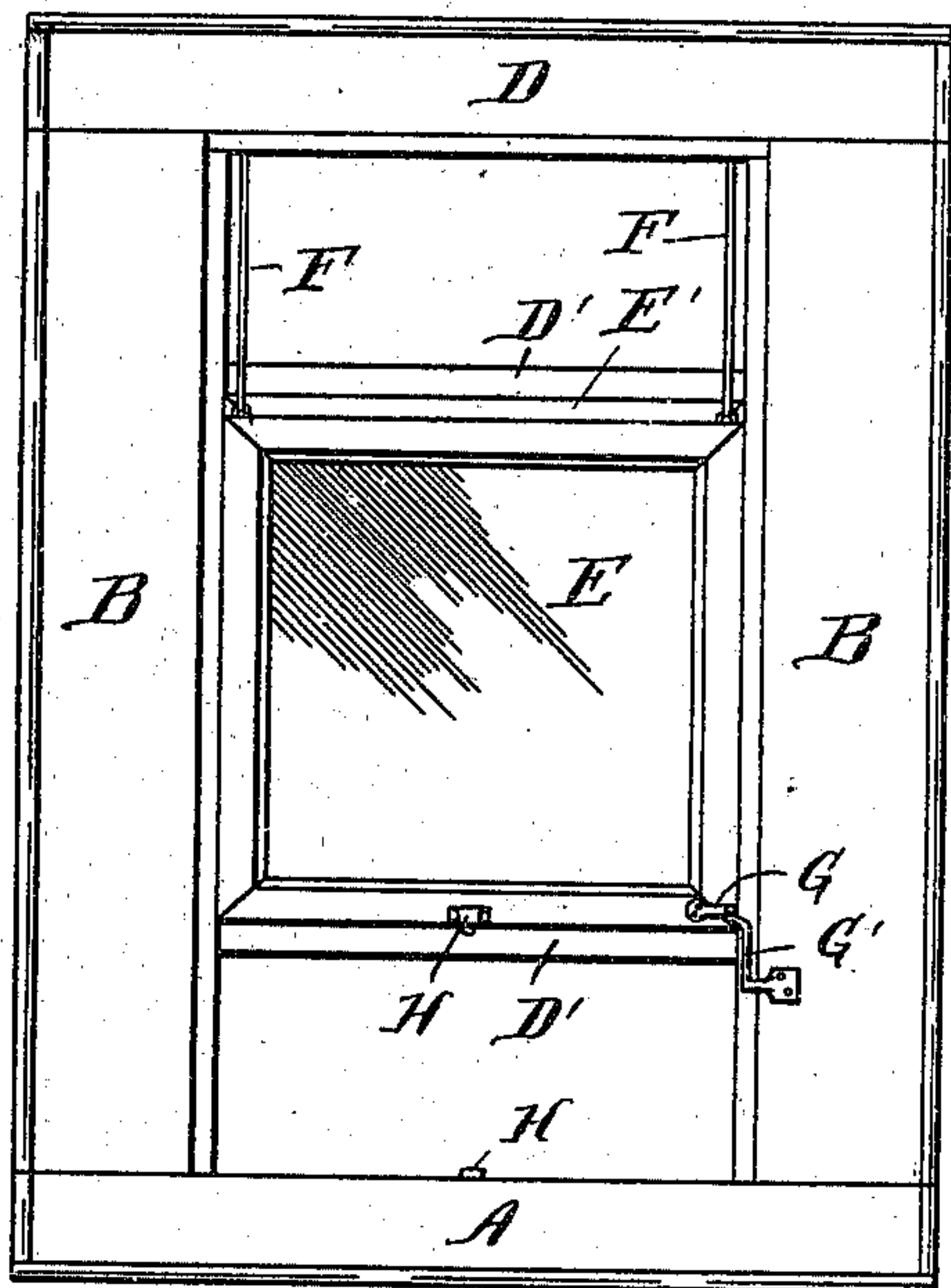
Patented Sept. 16, 1902.

W. R. MUDD.

METAL WINDOW AND WINDOW FRAME.

(Application filed Apr. 5, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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METAL WINDOW AND WINDOW-FRAME.

SPECIFICATION forming part of Letters Patent No. 709,237, dated September 16, 1902.

Application filed April 5, 1901. Serial No. 54,534. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. MUDD, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Metal Windows and Window-Frames, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form part of my specification.

My invention relates to hollow metal windows and window-frames; and its object is to furnish a window that shall be weatherproof, dust-proof, and fireproof.

My improved window-frame is so constructed that it may be put in the place of a wooden frame which has previously been built in the wall without removing any of the masonry. It is strong, simple, and economical in construction. Its various advantages will appear more fully as I proceed with my specification.

Like letters of reference indicate like parts in the drawings.

Figure 1 is a front elevation of my improved window. Fig. 2 is a vertical section through the same. Fig. 3 is a sectional detail of the sash. Fig. 4 is a cross-section of the jamb. Fig. 5 is a partial elevation of the right-hand jamb looked at from the center line of the window. Fig. 6 is an enlarged view in cross-section on line 6 6 of Fig. 5. Fig. 7 is a detail view to be described later, and Fig. 8 is a cross-sectional view taken on line 8 8 of Fig. 5.

My improved frame is preferably made of sheet-iron with the different parts riveted together.

A is the sill, which is made in two parts, the upper part A', formed so as to have a portion *a* in front higher than the rear portion or drip *b* and having flanges *c c*, and the lower part A'', which is simply a flat strip provided with tongues *c' c'* at each side, in which the flanges *c c* of the upper part fit, the two being securely riveted together. This construction gives the sill a flat bearing on the masonry.

The jambs of the window are in section as shown in Fig. 4. B is the jamb, which is made in one piece and provided with vertical slots or grooves B' B'', running from the sill to the lintel. The jamb is provided with flanges B''' B''', which are adapted to be engaged by tongues C on a piece C', which is of

the shape shown in Fig. 4. This describes the jamb as it is when fixed in the wall. In erecting my window the lintel and sill are suitably connected to the jamb B, as will be presently described, before the piece C' is attached to the jamb. When my improved window is intended to replace old window-frames and it is not desired to disturb the masonry, the piece C' before the tongues C are formed is nailed or otherwise fastened to the masonry at the side of the opening for the window. The frame is then slipped into the opening, with the flanges B''' bearing against the plate C'. In this position the plate C' at both sides extends beyond the flanges B'''. The extensions are then bent over, so as to embrace the said flanges B''', as described. In case my windows are intended to be applied to a new building, however, I prefer to form the plate C' with a hollow offset C'', as shown in dotted lines, which is suitably embedded in the masonry.

D is the lintel of the window. (Seen in section in Fig. 2.) Its construction is similar to that of the sill, except that it is provided with a groove *d'*, which is adapted to register at each end with the grooves B'' in the jambs.

The sash-frame is rectangular in cross-section, as seen in Fig. 3, and it is provided with flanges D' and D''. The sides, top, and bottom of the sashes are preferably each made in two pieces, suitably bent in shape so as to lock together and form the flanges D' and D''. The sides and top and bottom are then fastened together at the ends in any convenient manner. The glass of the window, preferably of any usual fireproof kind, rests against the flange D'' and is held in place against the same by small pieces or clips *d* at various points, as seen in Fig. 3. Said clips *d* may be soldered or otherwise attached to the flanges D'' and then bent down over the pane or they may be detached U-shaped pieces of sprung metal adapted to be slipped over the flange and pane, and thereby securely hold the latter in place.

The lower sash E is provided with the flange D' at its sides and bottom, while the upper sash E' is provided with the flange D' at its sides and top. At the bottom of the upper sash and at the top of the lower sash said flanges D' are made at right angles to the plane of the window-frame to form offsets

D''', so that when the window is closed the offset on the lower sash will engage the offset on the upper sash, and thus prevent any dust, weather, or fire from entering at this point.

5 When in place in the window, the flanges D' on the sashes slide in the grooves B' and B'' in the jamb, and when the windows are closed said flange of the top sash engages with the corresponding groove d' in the lintel, while

10 said flange in the bottom sash fits closely behind the portion *a* of the sill. It will thus be readily apparent that no dust, rain, or fire can enter through the window when it is closed. The sashes are connected together at

15 each side by means of chains F F', which pass up over pulleys F' F', mounted in the lintel, as seen in Fig. 2. The sashes as thus constructed would balance each other and would stand at any position in which they were put;

20 but in order to make them close automatically in case of fire I weight the lower sash and provide a catch G on the lower sash, which is adapted to engage with a similar catch G' on the jamb of the window, the said catch G to

25 be of hook shape or other suitable structure to engage catch G'. (Shown on an enlarged scale in Fig. 7.) The catch G' is made in two pieces *g g*, which are soldered together, as seen in Fig. 7. When the lower sash is

30 pushed up, the upper sash of course comes down, and the two are held in the position shown in Figs. 1 and 2 by means of the catches G G'. Should there be a fire, however, the heat would soon melt the solder connecting

35 the two pieces of which the catch G' is composed and the overweight in the lower sash would cause the two sashes to close, the one falling and the other rising, and thus prevent any fire from getting in through the window.

40 A suitable snap-lock H, of any construction, with its parts respectively attached to the sill and the lower sash, automatically locks the windows in their closed position when the lower sash descends. It is clear that both

45 sashes may be connected to weights in the usual manner, with each sash having fusible connection with the jamb and the weights so arranged that when the connections are fused the two sashes will close, said sashes of

50 course being suitably weighted.

The lintel and sill extend the full width of the window-opening, while the jambs rest on the sill and support the lintel. The lintel is preferably fastened to the jambs by means of

55 double seams, and the jambs are suitably riveted in any convenient manner to the sill. The high upset portion *a* of the sill prevents any rain from running in at that point.

To provide for admitting the sashes into

60 the frame, sections of one jamb extending from the top down for a distance something greater than the height of the sash are cut away, and pieces of a section, as shown in Figs. 5 and 6, are formed having suitable

65 flanges *k k* at the sides adapted to engage and slide on corresponding flanges in the jamb. To support these sections or removable pieces

K K in place, the metal of the lintel is turned up, as shown at L in Fig. 8, and that portion of the removable strip which coincides with

70 the face of the jamb is extended upward and turned over into a hook K' to engage the turned-up portion L of the lintel at the inside corner of the window. At the bottom the removable strip simply rests upon the cut-away

75 portion of the jamb-face, the face of the jamb and the face of the section coinciding. I provide the pieces K with small eyelets K'', one at the top and one at the bottom of each, in which may be inserted a pin or hook for raising the pieces K K when it is desired to take

80 them out in order to slip in or take out a sash.

It will be readily understood that my sashes instead of being connected together, as shown in the drawings and as described, may be

85 counterbalanced by weights in the usual manner. In this case of course there could be no arrangement for automatically closing the windows in case of fire.

Having thus described my invention, what

90 I desire to claim as new and to cover by Letters Patent is—

1. A window made of hollow metal, having sashes provided with flanges, and a frame provided with grooves in which said flanges fit,

95 the sashes having offsets adapted to engage each other when closed, said grooves, flanges and offsets being so arranged relatively to each other, that when closed the window is impervious to dust, rain or fire, said frame

100 being provided with sections having flanges, said sections adapted to be removably fitted in the frame and held or suspended therein by means of a hooked or turned-over portion engaging a flanged portion of the lintel, sub-

105 stantially as described.

2. A window made of hollow metal, having frame and sashes, the sashes having flanges and the frame having grooves in which said flanges fit, offsets on the sashes adapted to

110 engage each other when the sashes are closed, a chain connecting the sashes and supported on a pulley mounted in the lintel, an overweight in the lower sash, a catch adapted to support the lower sash, said catch having

115 fusible connection with the jamb, all substantially as and for the purpose described.

3. A window made of hollow metal, having a frame and sashes, the sashes having flanges and the frame having grooves in which said

120 flanges fit, offsets on the sashes adapted to engage each other when the sashes are closed, chains mounted on pulleys on the lintel suitably arranged so as to support said sashes, catches adapted to support said sashes, the

125 catches having fusible connection with the jamb and the sashes being suitably weighted, so that upon the fusion of the connections to the jamb, the sashes will close automatically, substantially as described.

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