

No. 753,665.

PATENTED MAR. 1, 1904.

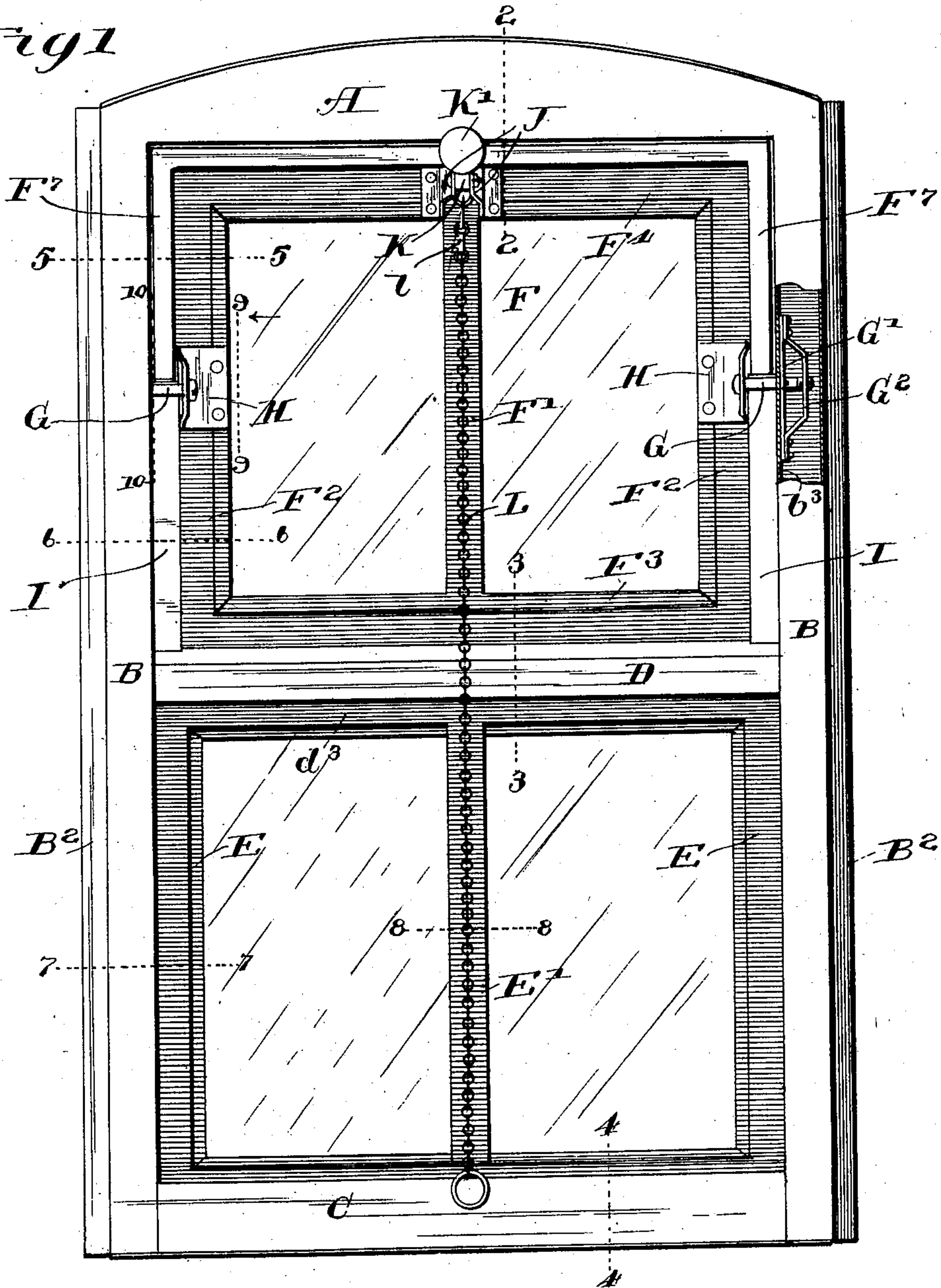
H. E. BROWN.
WINDOW.

APPLICATION FILED FEB. 18, 1903.

NO MODEL.

4 SHEETS—SHEET 1.

Fig 1



Witnesses:-
Carl H. Crawford
George R. Wilkins

Inventor:-
Herman E. Brown
by Poole & Brown
his Attorneys

No. 753,665.

PATENTED MAR. 1, 1904.

H. E. BROWN.
WINDOW.

APPLICATION FILED FEB. 18, 1903.

NO MODEL.

4 SHEETS—SHEET 2.

Fig 2

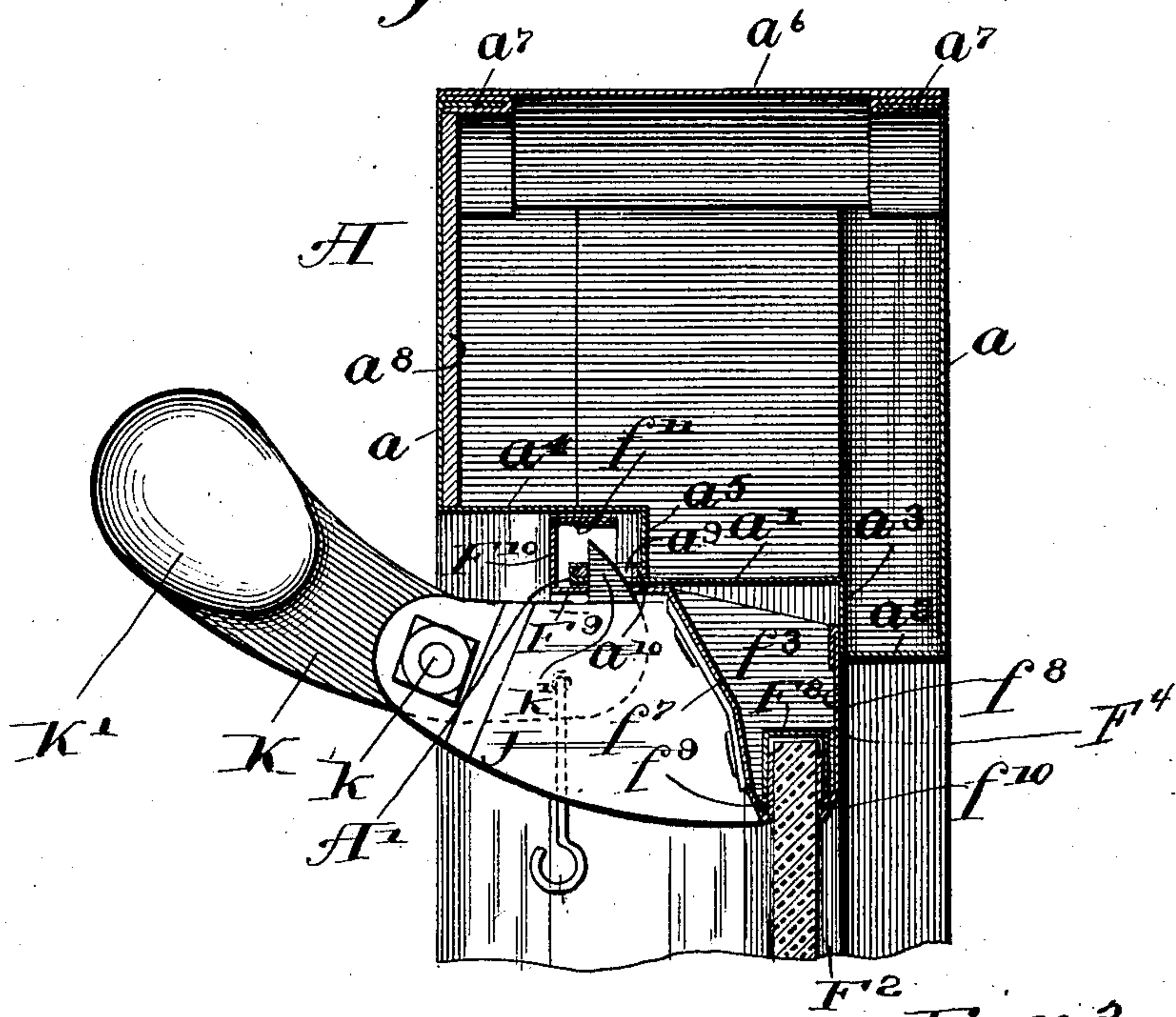


Fig 3

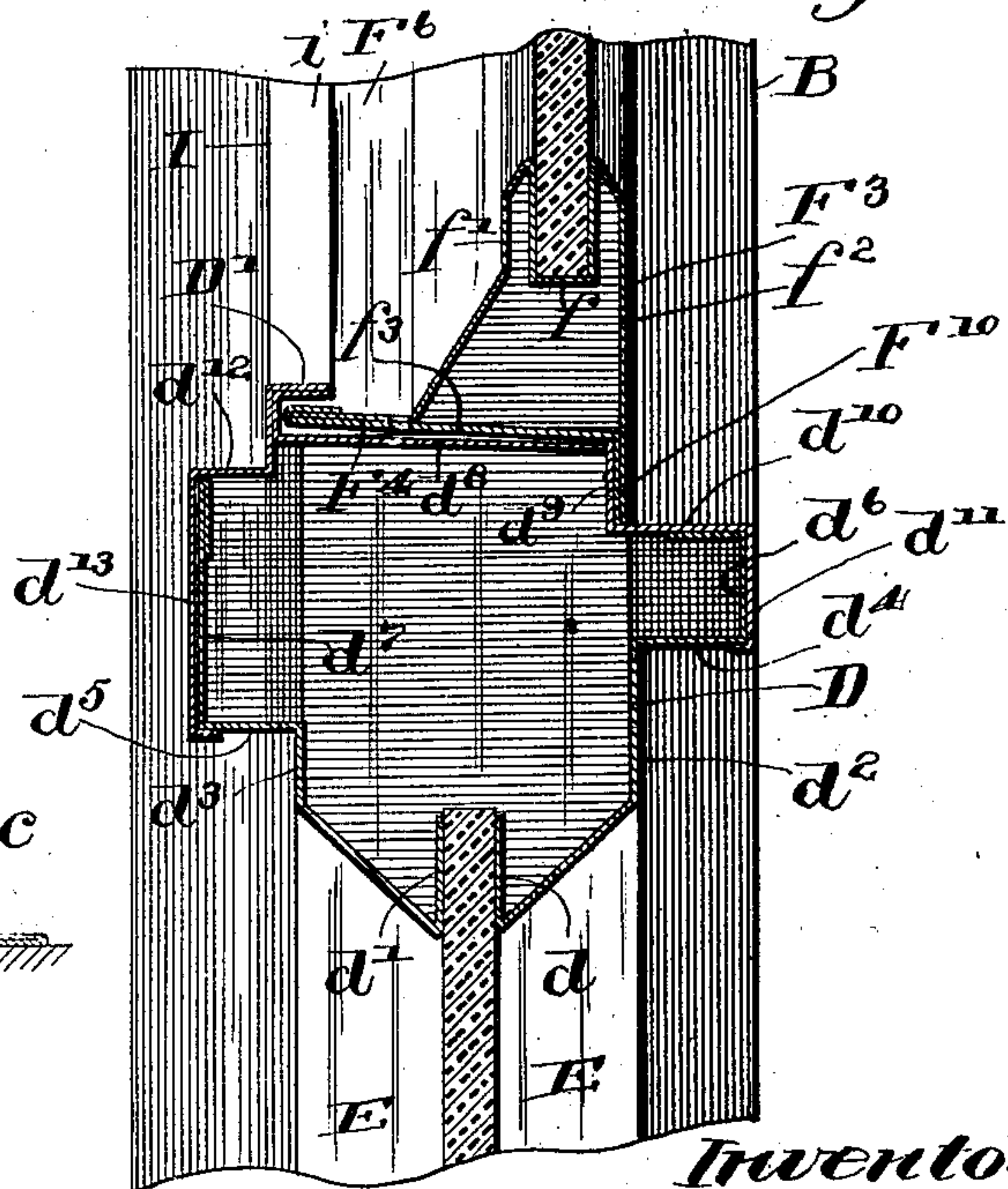
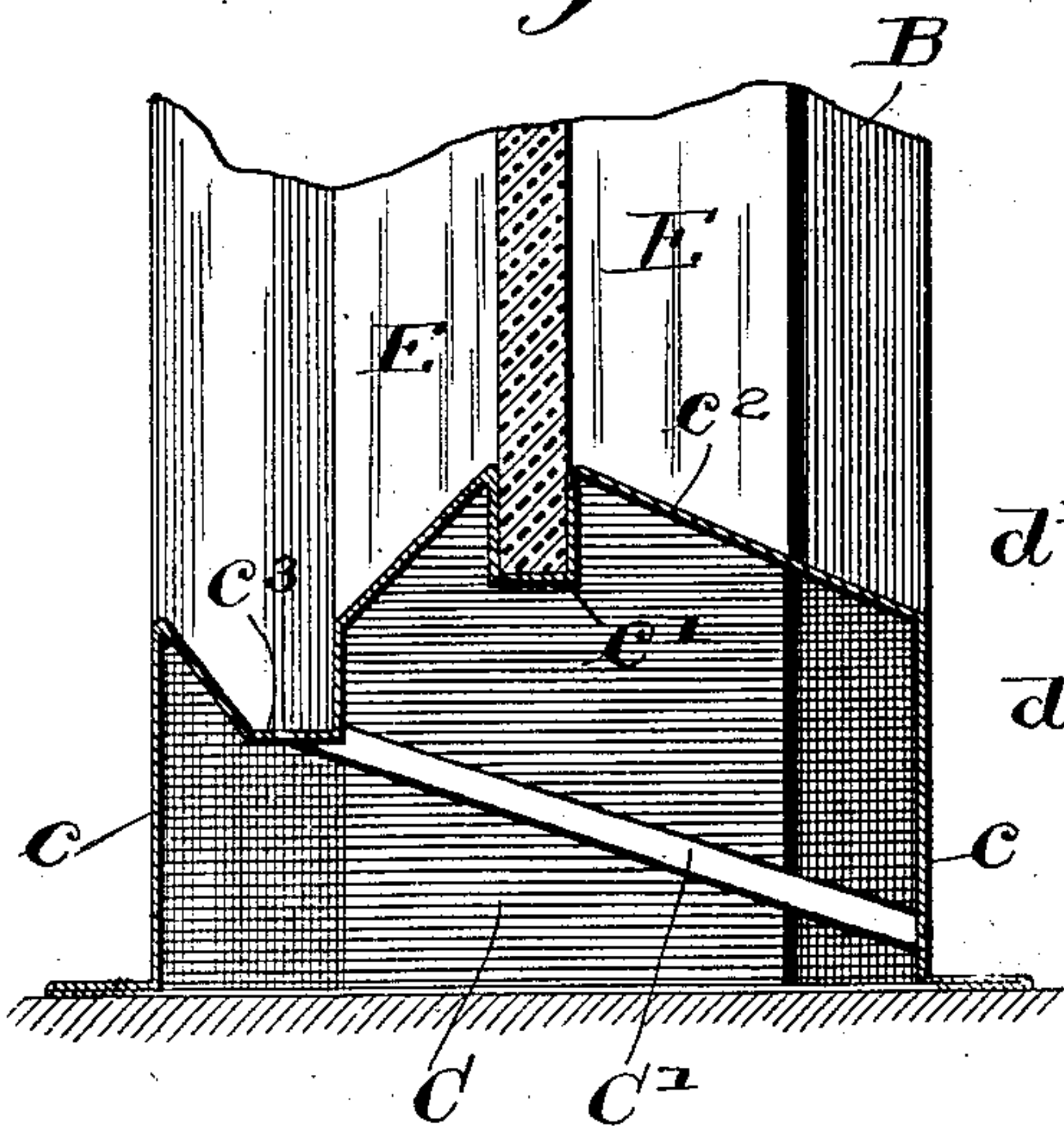


Fig 4



Witnesses:
Carl H. Crawford
George R. Wilkins

Inventor:
Herman E. Brown
by *Pool & Brown*
his Attorneys

No. 753,665.

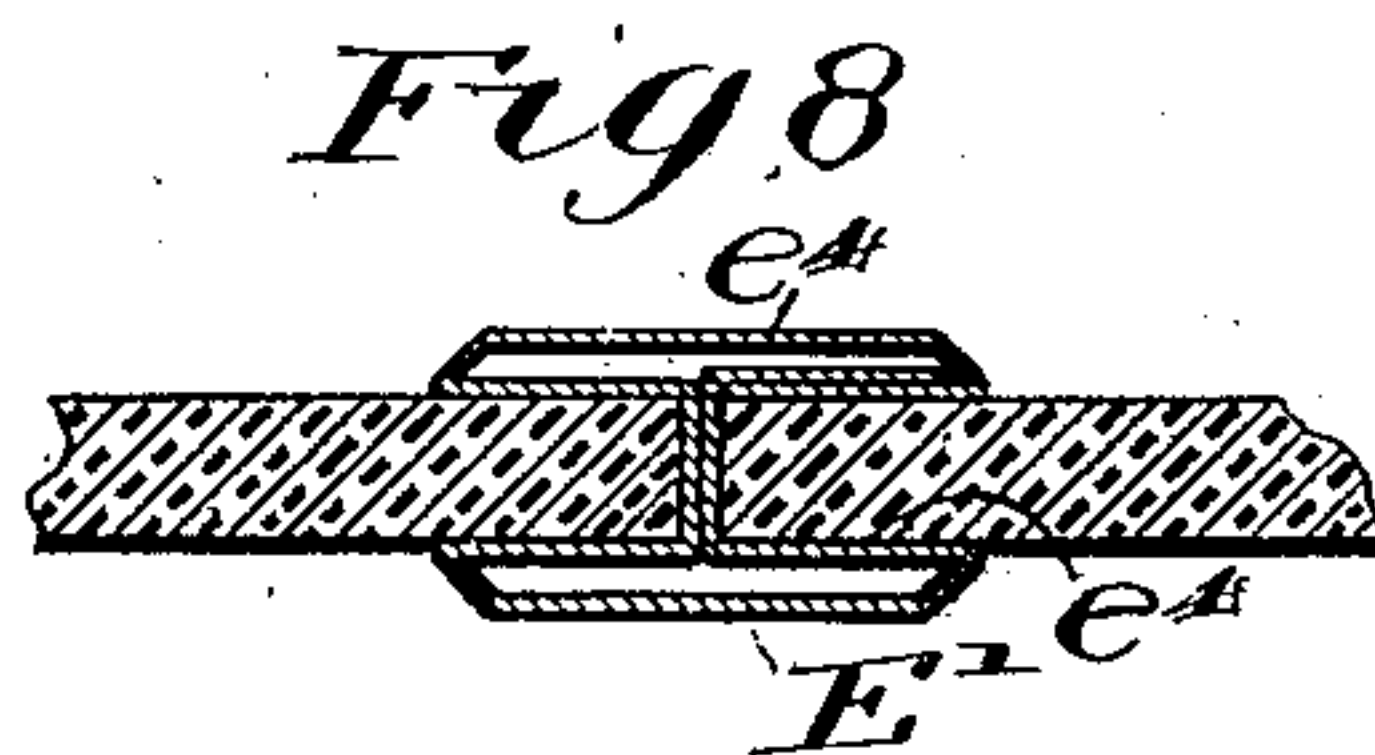
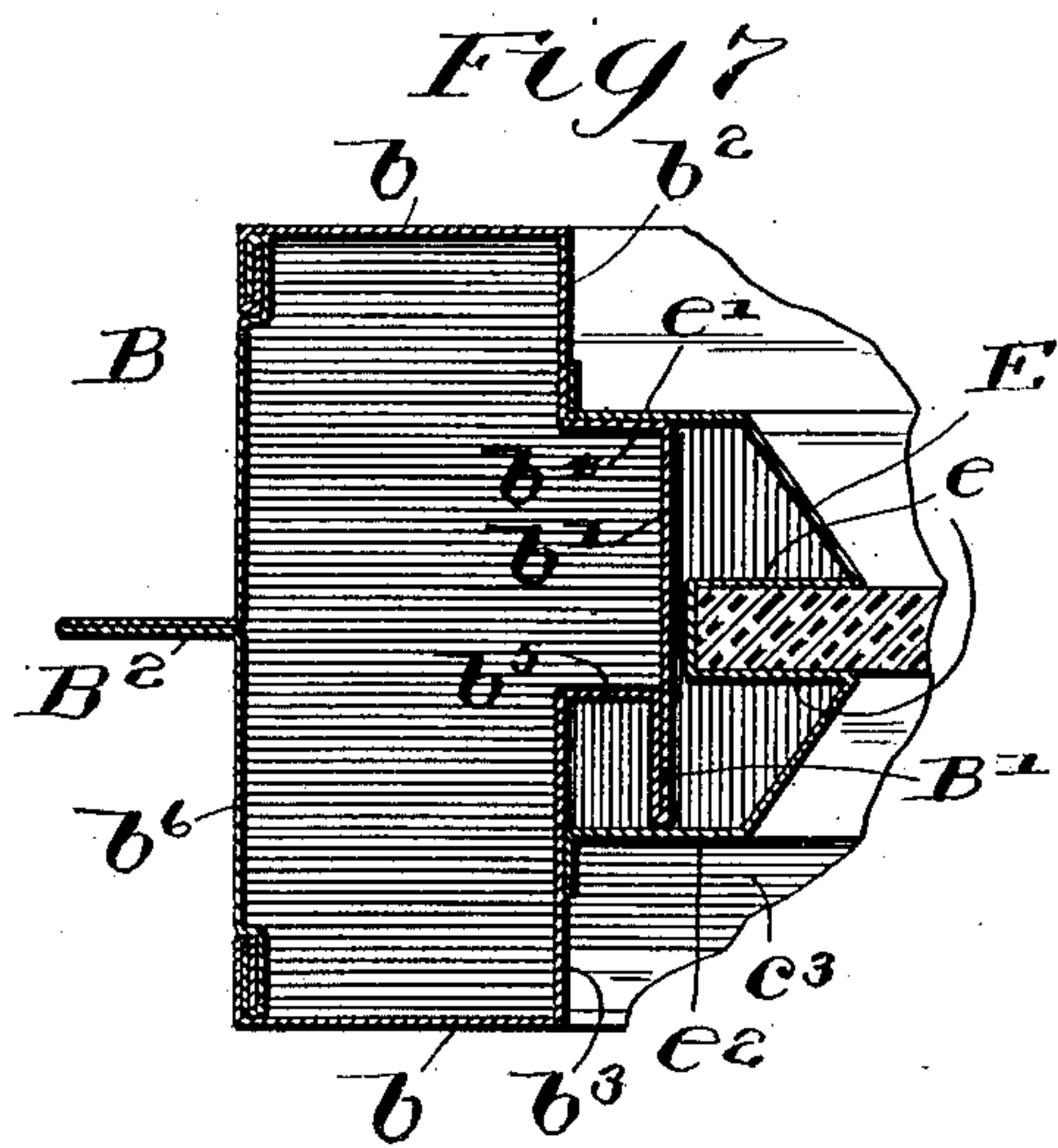
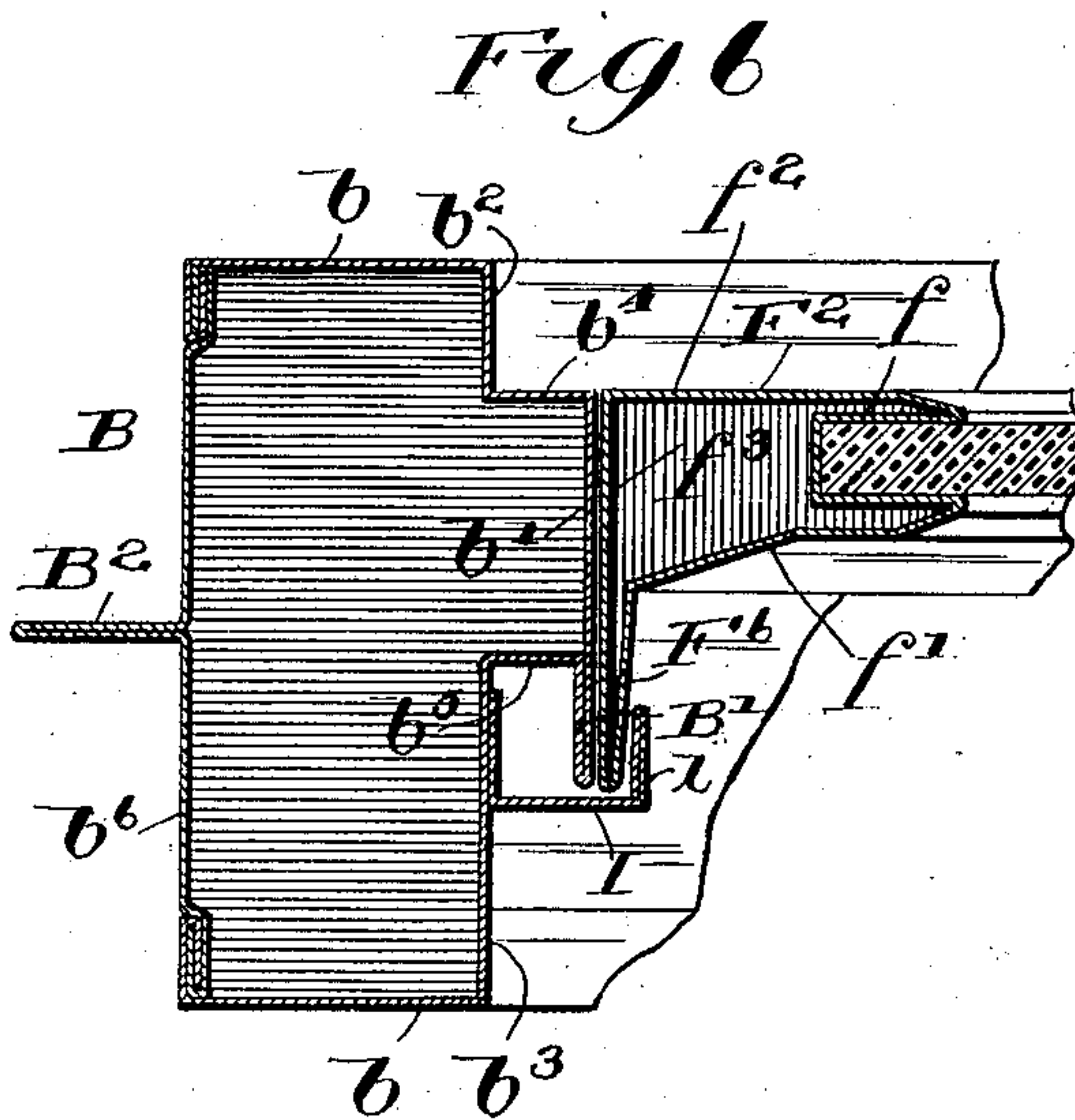
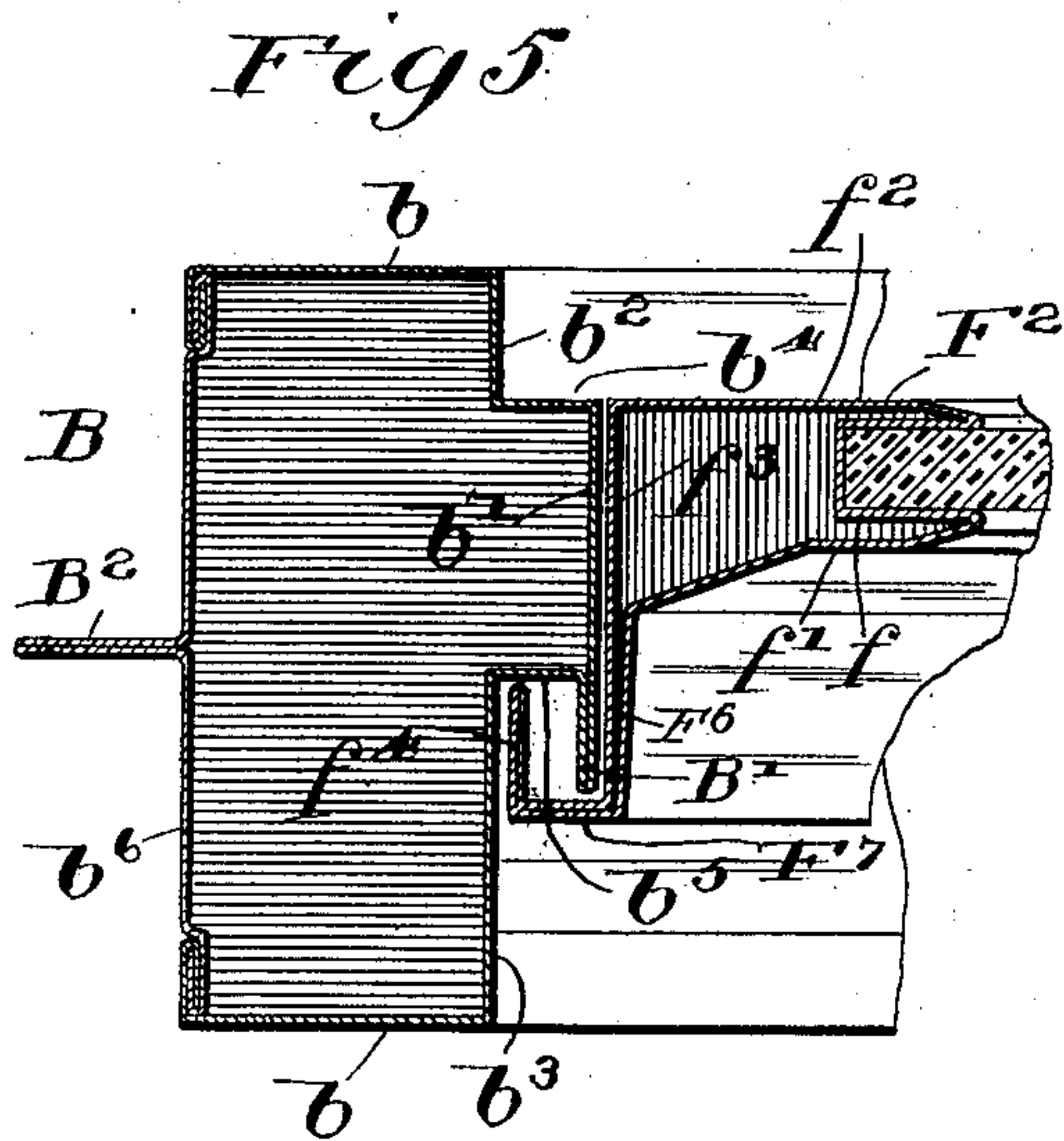
PATENTED MAR. 1, 1904.

H. E. BROWN.
WINDOW.

APPLICATION FILED FEB. 18, 1903.

NO MODEL.

4 SHEETS—SHEET 3.



Witnesses:-
 Carl H. Crawford
 George R. Wilkins

Inventor:
Herman E. Brown
by Poole & Brown
his Attorneys

No. 753,665.

PATENTED MAR. 1, 1904.

H. E. BROWN.
WINDOW.

APPLICATION FILED FEB. 18, 1903.

NO MODEL.

4 SHEETS—SHEET 4.

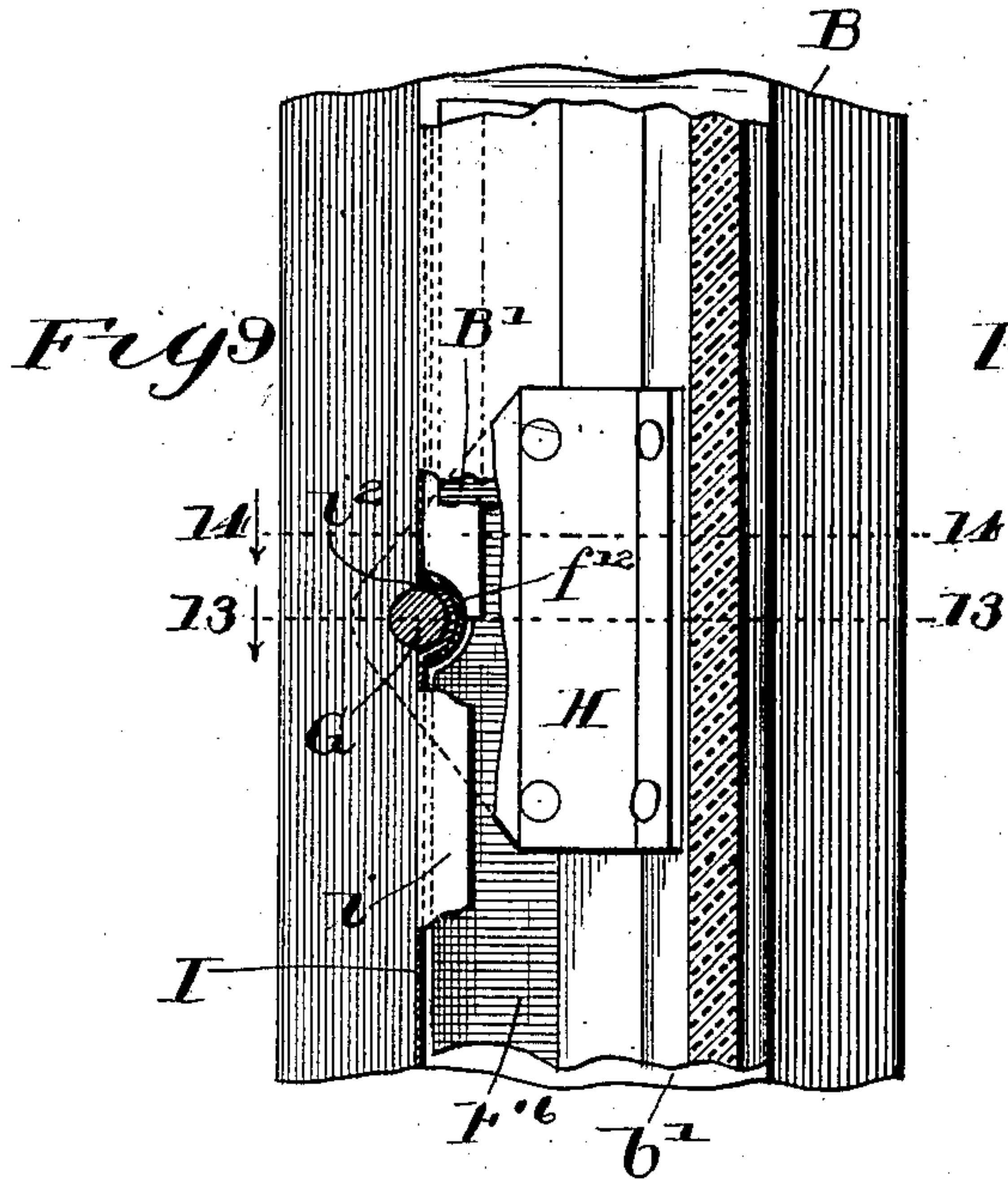


Fig 10

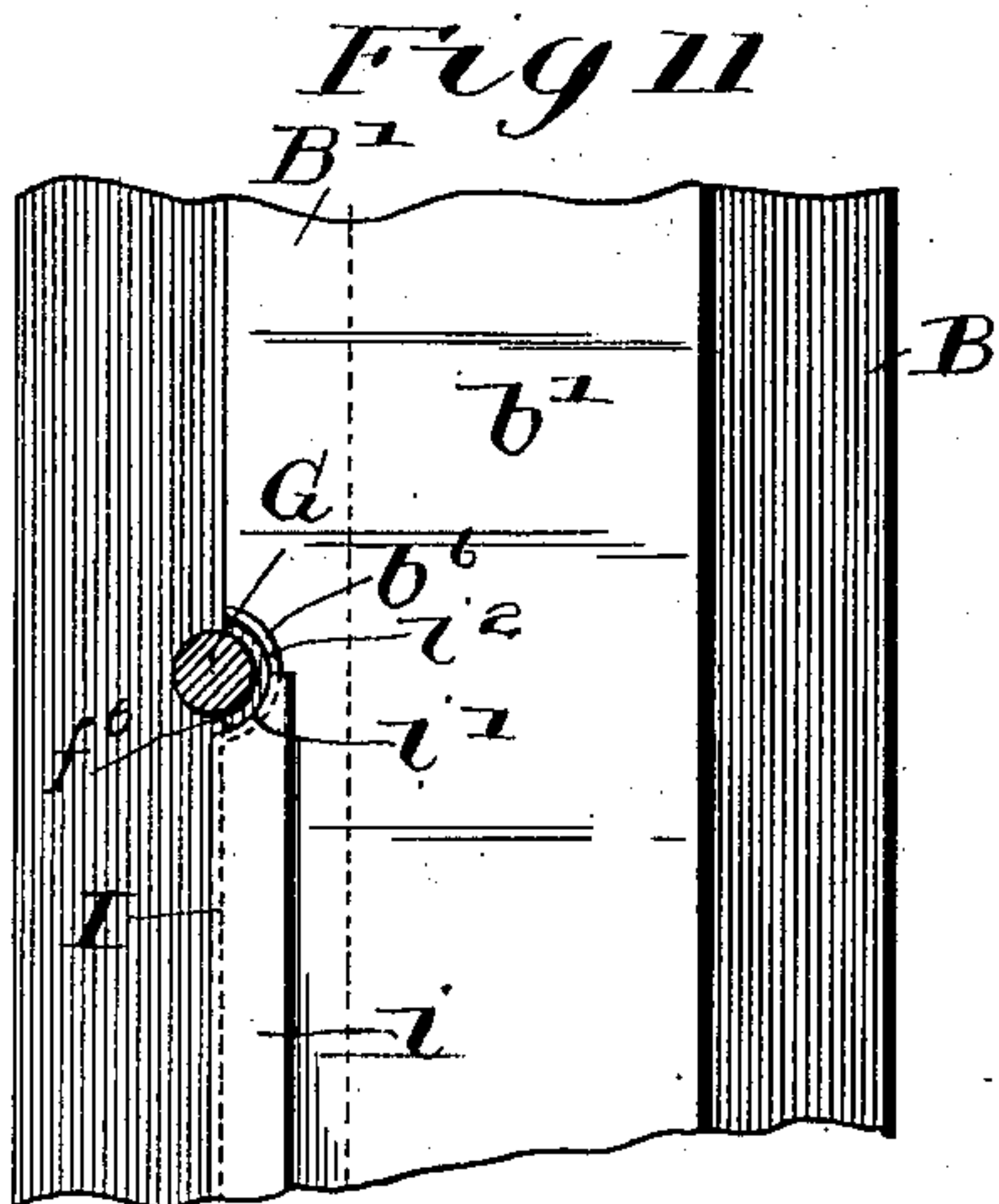
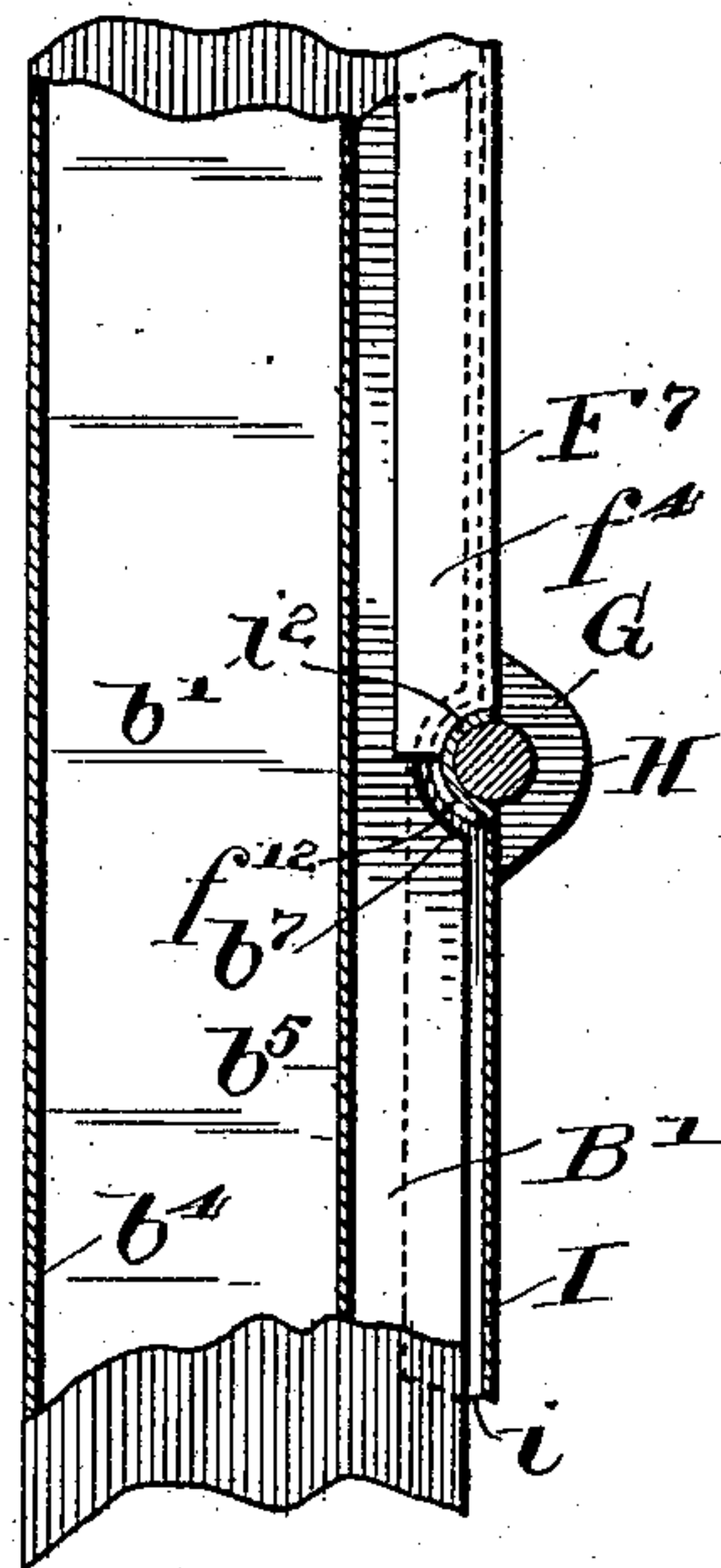
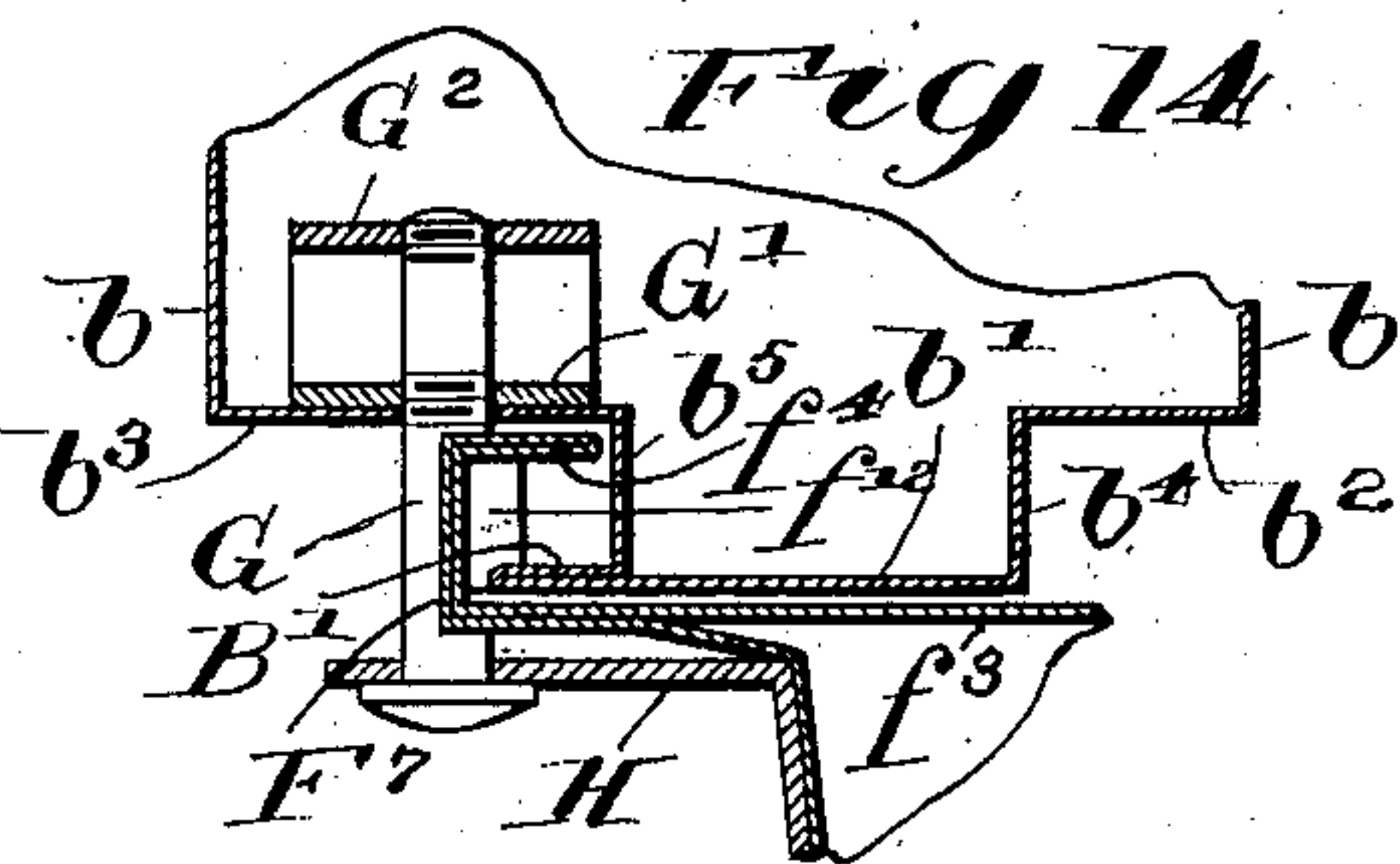
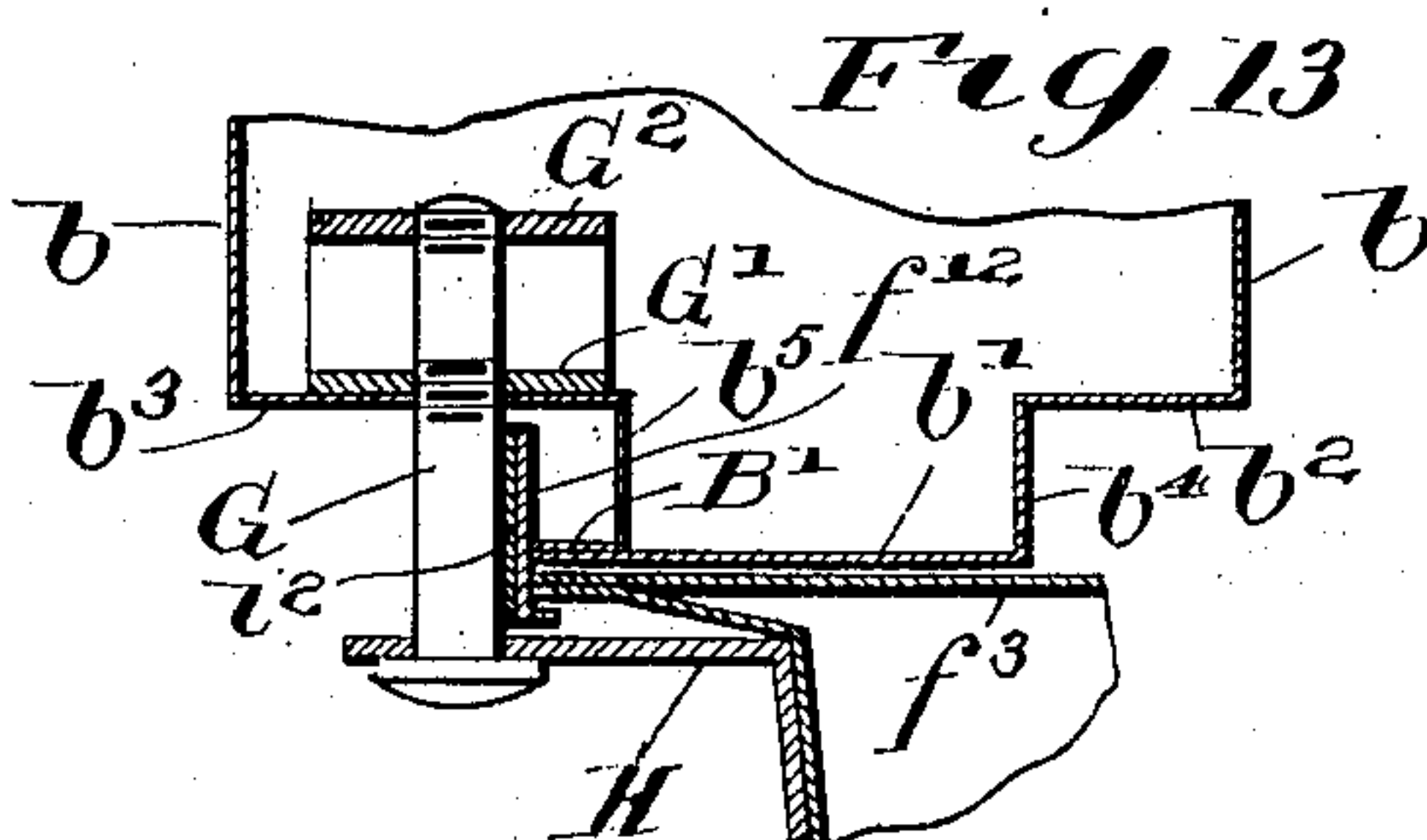
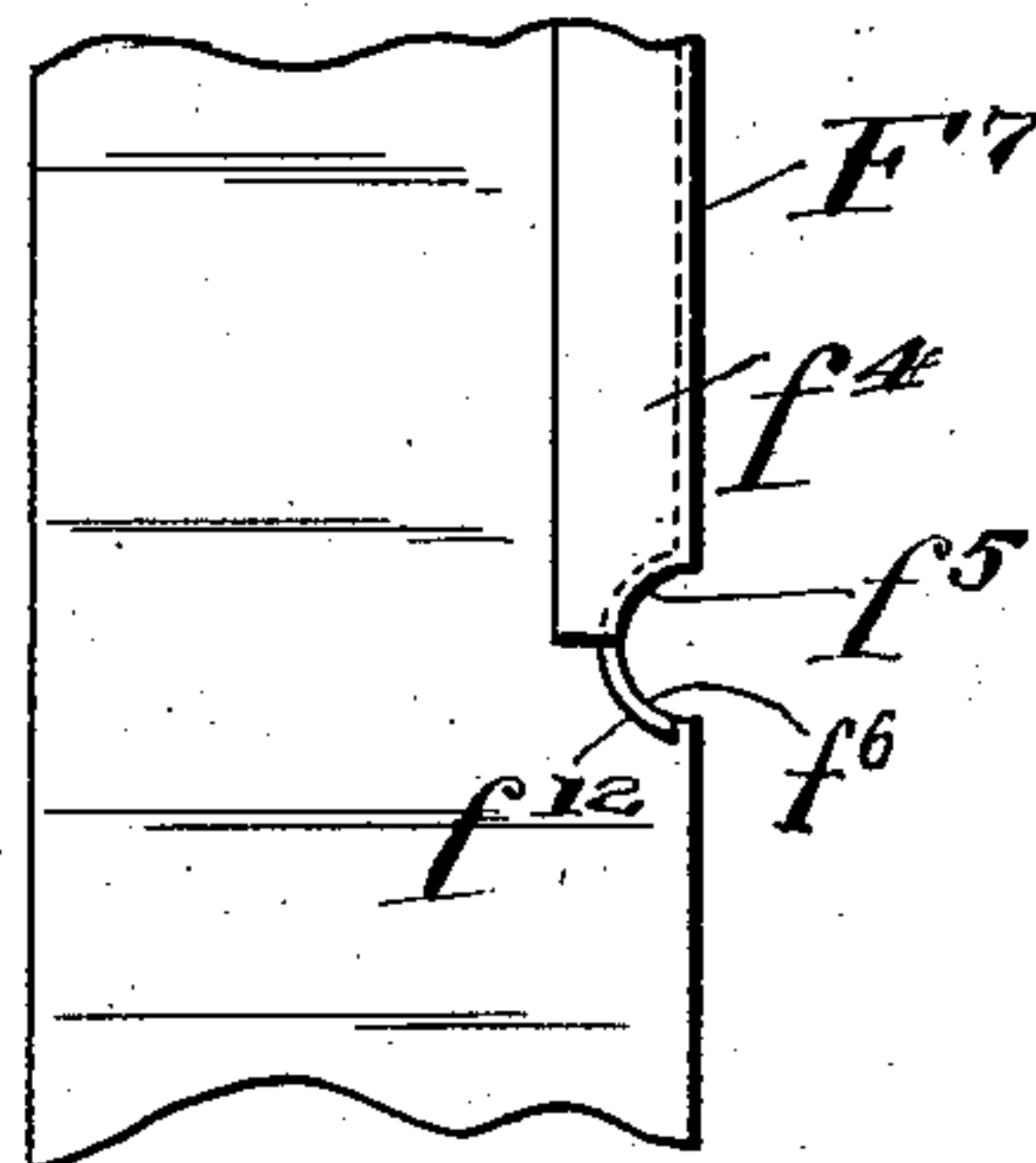


Fig 12



Witnesses:
Carl M. Crawford
George R. Wilkins

Inventor:
Herman E. Brown
by Pooler & Brown
his Attorneys

UNITED STATES PATENT OFFICE.

HERMAN E. BROWN, OF CHICAGO, ILLINOIS.

WINDOW.

SPECIFICATION forming part of Letters Patent No. 753,665, dated March 1, 1904.

Application filed February 18, 1903. Serial No. 143,946. (No model.)

To all whom it may concern:

Be it known that I, HERMAN E. BROWN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
 5 Improvements in Windows; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form
 10 a part of this specification.

This invention relates to sheet-metal or fire-proof windows such as are used in warehouses, factories, and like structures, and it includes improved features of construction in the win-
 15 dow frame and sash, in means for pivotally supporting and locking swinging sash, in means for affording weatherproof joints between a swinging sash and its frame, and other details of construction in such windows.

20 The invention consists in the matters hereinafter described, and pointed out in the appended claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a view in front elevation of a window frame and sash embody-
 25 ing my invention. Fig. 2 is a sectional view, taken on line 2 2 of Fig. 1, of the top member of the frame and of the top sash-bar of the upper or swinging sash. Fig. 3 is a sectional
 30 view, taken on line 3 3 of Fig. 1, of the horizontal member of the frame which separates the lower from the upper part of the window. Fig. 4 is a sectional view, taken on line 4 4 of Fig. 1, of the lower horizontal member of the
 35 frame. Fig. 5 is a horizontal section, taken on line 5 5 of Fig. 1, of the frame and swinging sash at a point above the pivot of the said sash. Fig. 6 is a horizontal section, taken on
 40 line 6 6 of Fig. 1, of the frame and swinging sash at a point below the pivot of the latter. Fig. 7 is a horizontal section through the side member of the frame and the side bar of the lower sash, taken on line 7 7 of Fig. 1. Fig.
 45 8 is a cross-section of the central bar or mullion of the sash, taken on line 8 8 of Fig. 1. Fig. 9 is a sectional elevation, taken on line 9 9 of Fig. 1, showing the construction of the parts of the sash and frame adjacent to the
 50 pivot of the swinging sash. Fig. 10 is a like sectional elevation taken on line 10 10 of Fig. 1. Fig. 11 is a face view of the part of the

frame adjacent to the pivot of the swinging sash. Fig. 12 is a face view of the outer edge of the sash adjacent to the pivot thereof. Fig. 13 is a detail cross-section taken on line 13 13
 55 of Fig. 9. Fig. 14 is a detail cross-section taken on line 14 14 of Fig. 9.

As shown in said drawings, A indicates the top member, B B the side members or jambs, and C the bottom member or sill, of the win-
 60 dow-frame. The frame is provided with a horizontal cross-bar or frame member D, which separates the upper from the lower part of the window-opening. In the frame above the member D is an upper swinging sash F.
 65 The lower sash is shown as formed by projecting parts of the frame members, its side bars E E being, however, made separate from and attached to the side uprights of the frame. Said lower sash is provided with a central
 70 sash-bar or mullion E'. The upper sash has a like mullion F'. The upper sash is supported so as to swing on a vertical axis by means of two pivot-studs G G, which pass at their inner ends through brackets H H on the
 75 sash and are secured at their outer ends in the frame.

Now referring to the features of construction in the frame illustrated the same is made as follows: The top member A is of hollow
 80 or tubular form and consists of sheet metal which is bent to form two side walls *a a* and an inner wall, which latter is itself bent to form an intermediate part *a'* about equal in width to the top edge of the sash and against
 85 which the latter fits, an outer inwardly-offset part *a²*, which forms a vertical shoulder *a³*, against which the upper margin of the sash bears when the sash is closed, and an inner part *a⁴* adjacent to the inner face of the frame,
 90 which is offset outwardly from the said intermediate part *a'* and is connected with the latter by an upright part *a⁵*, which forms a laterally-facing shoulder on the frame just above the top of the sash. The top or outer wall of the
 95 upper member A is shown as formed by a separate piece *a⁶* of sheet metal, which is joined at its side margins to the lateral walls *a a*. The joints between the upper margins of said walls *a a* and the piece *a⁶* are formed by bending
 100 inwardly the upper edges of said walls *a a*, so as to form flanges *a⁷ a⁷*, and by folding the

marginal parts of said piece a^6 inwardly against itself and then downwardly and outwardly around and under the said flanges a^7 a^7 , as clearly seen in Fig. 2.

5 The upright side members B B of the frame are made as follows: Each side member is made of sheet metal and of tubular form, the sheet metal being bent to form inner and outer lateral walls b b , Figs. 5, 6, and 7, an intermediate inwardly-facing wall b' about as wide as thickness of the sash and within which the latter fits, and parts b^2 b^3 , which are offset outwardly from the intermediate part b' and are joined at their outer edges to the lateral walls b b and are connected with the intermediate wall b' by means of laterally-facing parts b^4 b^5 , which form laterally-facing shoulders on the frame. The parts b' and b^4 b^5 form, in effect, flat inwardly-projecting wide ribs, which extend from top to bottom of the upright frame members along the inner faces of the same. At the inner edge of the intermediate inwardly-facing wall b' the metal is bent and folded upon itself, so as to form a flange B' , which projects from the outer laterally-facing wall or shoulder b^5 in the same plane with the inwardly-facing intermediate wall b' . The exterior walls of said upright frame members are formed by separate pieces or strips b^6 , which are joined at their side edges by folded seams to the lateral walls b b , said pieces b^6 preferably being folded along the center lines thereof to form outwardly-extending flat flanges B^2 , which enter the brickwork surrounding the frame to hold the latter in place.

The lower or sill member C of the frame is arranged to form a groove to receive the lower edges of the glass in the lower sash, and therefore forms both the lower member of the frame and the lower bar or member of said lower sash. As clearly seen in Fig. 4, the sheet metal which constitutes said lower member is bent to form lateral walls c c , an intermediate grooved or U-shaped part c' to receive the lower edge of the glass, and a part c^2 , which slopes from the grooved part downwardly and outwardly to the upper margin of the lateral walls c . The part of the said lower member between the inner lateral wall c and the groove c' is shaped or bent to form a depressed part c^3 , which constitutes a groove or channel to retain water of condensation which may accumulate on the inner surface of the glass. To permit escape of such water to the outside of the frame, a small drainage-pipe C' may lead from the bottom of the channel c^3 outwardly through the outer wall c of the lower frame member.

60 The horizontal dividing member D of the frame constitutes also the upper member of the lower sash and is made hollow or tubular while its lower portion is provided with a slot to receive the upper edge of the glass of the lower sash, adapted for the insertion

and removal of the glass therethrough. Said lower part of the member D consists of two strips of sheet metal, the lower and inner or adjacent edges of which are bent upwardly parallel with each other, so as to form two flanges d d' , between which the upper edge of the glass is held and which form the slot through which the glass is inserted and removed. The said strips are also bent to form two laterally-facing walls d^2 d^3 , the upper margins of which are joined to horizontal walls d^4 d^5 , which are extended outwardly and then bent upwardly to form vertical, outwardly, and inwardly facing walls d^6 d^7 . The top of the horizontal member D consists of a piece of sheet metal bent to form a flat intermediate part d^8 , which is slightly inclined downwardly and outwardly and which, at the outer face of the frame, is extended downwardly to form a laterally-facing wall d^9 and then extended horizontally to form a part d^{10} , which rests on the top edge of the vertical outer wall d^6 . The marginal part d^{11} of the top piece of the member D is bent downwardly over the outer face of the wall d^6 and its lower edge is bent inwardly beneath the lower surface of the wall d^4 , said parts d^4 , d^6 , d^{10} , and d^{11} forming a rib, which extends across the outer face of the said member D. The inner marginal part of the top piece is bent downwardly from the inner edge of the wall d^8 and then inwardly to form a horizontal wall d^{12} , which rests on the top edge of the inner vertical wall d^7 . The inner marginal part d^{13} of the top piece is carried downwardly inside of the wall d^7 and its lower edge is bent under the horizontal wall d^5 . The parts d^5 and d^7 , together with the parts d^{12} and d^{13} , which are bent around or over the same, constitute a rib, which extends across the inner face of the member D. The said ribs on the inner and outer faces of the said cross-piece D serve to stiffen and strengthen the said member, and especially to give stiffness to the two strips constituting the lower portion thereof.

From the above it will be understood that the top part of the member D is generally of inverted-U shape and is fitted over the rib portion of the two strips which form the lower portion of said member D and is secured thereto by the inwardly-bent lower edges of the said top part which embrace said rib portion.

At the inner edge of the top wall d^8 the metal of the top piece is folded upon itself and extended to form a flange D' , which rises from the level of said wall d^8 and is then extended outwardly, so as to form a recess or groove which faces or opens toward the lower part of the swinging sash F and forms part of the devices for making a weatherproof joint between the sash and the frame member D.

As before stated, the bottom and top mem-

bers of the lower or stationary sash are, in fact, formed by the bottom member C and intermediate member D of the frame, but the side members of the sash are formed by separate pieces E, attached to the side members of the frame, although inasmuch as said side members of the sash are permanently attached to the frame, strictly speaking, the window illustrated has no lower sash as a feature distinct and separate from the frame. Each of said side members E consists of a piece of sheet metal bent into channel form and shaped at its central part to form a U-shaped portion e , Fig. 7, adapted to receive the edge of the glass. The side portions of the said side members are parallel with each other and form inner and outer lateral walls e' e'' . As before stated, the side frame members are provided with parts b' , b'' , and b''' , forming a broad rib, which extends lengthwise of the same and having at its inner face a flange B'. The channel-shaped members E E are adapted to fit over the said ribs and their flanges; the said walls e' e'' conveniently having outwardly-turned marginal flanges, which are soldered or otherwise attached to the walls b'' b''' of the frame. The lateral walls e' e'' are arranged in the same planes with the walls d'' d''' of the frame member D, so that these parts give the appearance of a sash.

The mullion E' is formed by a single piece of sheet metal bent to form two U-shaped parts, which form two oppositely-opening grooves and exterior covering parts e^4 e^5 , which extend the full width of the mullion and join the U-shaped parts with each other.

The glass is inserted in the lower part of the window by removing the top piece of the cross-piece D of the frame (which can be easily accomplished by bending outwardly the lower margin of the said top piece) and slipping the panes of glass through the cross-piece into the grooves provided to receive it. Now referring to the swinging upper sash and the means illustrated for making weatherproof joints between the same and the frame these parts are made as follows: The lower and side sash-bars F^2 and F^3 , Figs. 2, 5, and 6, are of tubular form and substantially alike in cross-sectional shape, each consisting of a U-shaped part f , adapted to receive the edge of the glass and which projects into the hollow interior of the bars, inwardly and outwardly facing lateral walls f' f'' , and an external or marginal wall f^3 . The inner walls f' and marginal walls f^3 are extended in the planes of the latter, so as to form relatively wide flanges F^4 and F^6 . In the case of the lower bar F^3 the flange F^4 is flat and is made of such width that when the sash is closed it enters within the groove formed by the flange D', Fig. 3. The marginal wall f^3 and the flange F^4 in the case of the said lower bar F^3 are inclined to correspond with the inclination of the top surface of the frame cross-piece D, this construc-

tion being necessary to permit the free edge of the flange to pass over the cross-piece in the swinging movement of the sash. The inclination of the flange on the lower sash-bar, moreover, forms a trough-shaped groove or channel adapted to receive water of condensation from the inner face of the glass. Escape of this water to the outside of the window may be provided for by means of a small drainage-opening in the said flange. The said lower bar F^3 of the sash is further provided at its outer or weather face with a depending flange F^{10} , which is formed by a folded extension of the metal forming the outer lateral wall f'' and marginal wall f^3 of said lower bar. Said flange extends downwardly from the sash over the outwardly-facing wall or shoulder d'' of the frame cross-bar D, and thus prevents rain being driven into the joint between the sash and cross-bar when the sash is closed.

Now referring to the construction of the side bars F^2 F^3 of the sash, the same is shown in Figs. 5 and 6 and is as follows: In their parts below the pivots of the sash said side bars are provided with marginal flanges F^6 , arranged in the same planes with the marginal walls f^3 and formed by extensions of said walls f^3 and outwardly-bent extensions of the inner walls f' , Fig. 6. Said flanges F^6 terminate near the margins of the flanges B' on the frame. To provide for weatherproof joints below the pivots of the sash, flanged strips II are attached to the inner faces of the walls b'' b''' of the frame, said strips being located closely adjacent to the flanges B' B' and extending inwardly past the said flanges and having their flanged edges i extended toward the sash-bars, so as to form between said flanges B' B' and the flanges i on the strips grooves adapted to receive the edges of the sash-flanges F^6 F^6 when the sash is closed.

Above the sash-pivots the flanges F^6 F^6 on the sash are made much wider than in their parts below the pivots and are bent outward in the plane of the sash and then bent inwardly, Fig. 5, so as to form secondary flanges F^7 F^7 , the in-turned margins f^4 of which enter the grooves on the frame formed by the flanges B' B', said flanges F^7 , together with the main flanges F^6 , forming channels or grooves on the sash which receive said flanges B' B' on the frame when the sash is closed. Weatherproof joints are thus formed between the upper part of the sash and the sides of the frame.

The construction illustrated in the sash-pivots G G and parts adjacent thereto is as follows: The brackets H H, which support the said pivots, are made of angular form and have base portions which are riveted to the inner faces of the sash-bars, the bracket-arms extending from the bars inside of the flanges F^6 F^6 . Said brackets H H turn on the pivots G G, which latter are secured at their outer ends in the frame. For rigidly attaching the outer ends of the pivots to frame, Figs. 1 and

13, a flat metal bar G' is attached to the face of the wall b^3 of the frame inside of the hollow interior of the latter, and a second bar G^2 , provided with offset ends, is secured to the bar G' and to said wall b^3 , the central parts of said bars G' and G^2 being separated, as shown. Said bars G' and G^2 are apertured for the passage of the pivot which has screw-threaded engagement therewith.

The arrangement of the pivots G and of the flanges I and F^7 on the frame and sash at the points at which they meet each other is shown in Figs. 9 to 14. The said flanges I and F^7 are provided at their meeting ends with cylindrically-curved parts i^2 and f^{12} , which are concentric with the pivotal axis of the sash and which overlap and slide on each other as the sash swings, said parts being made of such length that they will remain overlapped when the sash is swung to or past a horizontal position. Each pivot G is located with its central axis about in line with the planes of said flanges, as clearly seen in Figs. 9 and 10, and the upper end of the main or flat portion of the flange or strip I of the frame reaches into contact with and extends at the rear of and partially around the cylindric surface of the pivot.

The construction described in the cylindric overlapping meeting ends of the flanges I and F^7 obviously affords tight joints between said parts both when the sash is closed and open.

The end of the inturned margin f^4 of the flange F^7 will be provided with a curved notch f^5 , Fig. 12, adapted to fit the cylindric part i^2 , and the upper end of the inturned margin i of the flange or strip I is provided with a curved notch i' , which fits the curved surface of the pivot. The edge of the frame-flange B' is provided with a semicircular notch b' , Fig. 10, to receive the cylindric part f^{12} , and the edge of the sash-flange F^6 is provided with a semicircular notch f^6 , Figs. 12 and 13, for the same purpose.

The top horizontal bar F^4 of the sash, Fig. 2, consists of separate longitudinal inner and outer strips f^7 and f^8 , having at their lower edges inwardly-turned parallel flanges f^9 f^{10} , which form between them an open slot through which the glass may be inserted in the sash, the upper edges of the strips f^7 and f^8 being unconnected, so as to leave the top of the upper sash-bar open for such insertion of the glass. Provision is, however, made for closing the space between the flanges f^9 f^{10} and for connecting the lower ends of the strips f^7 f^8 with each other after the glass is inserted, consisting of a strip F^8 of inverted-U shape, the side portions of which are adapted to fit over and embrace said flanges f^9 f^{10} . Said strip F^8 is removable, so that it can be taken out and replaced at any time for insertion and removal of the glass.

The inner strip f^7 of the top sash-bar is bent and extended horizontally, so as to form a flange F^9 , which corresponds in position and

purpose with the flanges F^6 F^6 on the side bars, and the marginal part of the flange F^9 is bent upwardly to form a secondary flange F^{10} , corresponding with the secondary flange F^7 on the side bars, the edge f^{11} of said flange F^{10} being again bent inwardly or toward the plane of the sash to form a groove or channel like that on said side bars. Such groove or channel is adapted to receive a flange A' , which projects from the shoulder a^5 as an extension of the wall a' and which corresponds with the flanges B' on the side members of the frame. A weatherproof joint is thus provided at the top of the sash, like those formed at the parts of the side bars above the sash-pivots.

An automatically-acting lock or latch is provided for holding the sash in its closed position, the same being constructed as follows: J J are two bearing-brackets which are attached to and project from the inner face of the upper bar F^4 of the sash. Between said brackets is pivoted a latch-lever K , the pivot k of which is parallel with the face of the sash. Said lever is provided at its outer end with a weight K' . On the inner end of said lever, beneath the flange F^9 , is an upwardly-projecting spur k' . Said spur has an oblique inner edge and an abrupt or vertical outer edge. In the flange F^9 is an aperture through which the latch-spur projects. The weight holds the lever in position, with the spur projecting upwardly above the flange. In the flange A' of the frame is formed an aperture a^9 , adapted to receive the upper end of the spur when the sash is closed, the outer margin of said aperture being located in position to engage the outer abrupt surface of the spur at such time, and thereby hold the sash from being opened. In order to give sufficient strength and rigidity to the part of the flange A' in which the aperture a^9 is formed, a reinforcing-plate a^{10} is inserted and secured between the folded parts of the metal of the frame which form said flange.

Attached to the latch-lever K , near its inner end, is an actuating-chain L , by means of which the said inner end of the lever may be drawn down, so as to release its spur from engagement with the flange A' . Said chain L serves both to release the latch and to also draw the top of the sash inwardly in opening the same. Said chain will also be used to hold open the sash by engagement of its lower end with a suitably-located hook or the like. The chain is shown as provided with a fusible link l , so that the sash will be released and allowed to close in the case of fire within the building, as heretofore commonly used for fireproof windows. The pivot of the lever K is so arranged that the outer end of the lever will be brought against the inner face of the frame and act as a lever to aid in opening the sash when the inner end of the lever is drawn downwardly and outwardly by the chain, and the lateral wall a of the frame above the lever

is stiffened by reinforcing-strip a^8 , applied to the inner surface of the same. Such reinforcing-strip prevents the sheet metal of the frame from being dented or otherwise injured by contact of the latch-lever therewith in opening the sash.

I claim as my invention—

1. A sheet-metal window-frame embracing upright tubular side members having on their inner walls inwardly-projecting, wide, longitudinal ribs provided with flanges which extend laterally from the ribs in the planes of the inner faces of said ribs, a stationary cross-piece extending between said side members of the frame, a swinging sash pivoted between the side members and provided with laterally-extending flanges which cooperate with the flanges on the side members of the frame to form weatherproof joints, and stationary sash members consisting of strips of sheet metal bent into channel form and provided with a central U-shaped part which forms a groove to receive the glass, the lateral walls of said stationary sash members being wide enough apart to receive between them the said ribs and the flanges thereon, and the said lateral walls being attached at their margins to the inner faces of the frame members at both sides of said ribs.

2. A cross-piece for a sheet-metal window-frame, the lower part of which consists of two parallel strips separated at their lower edges by an opening or slot adapted to receive the edge of the glass and the upper marginal parts of which are bent horizontally outward and upward to form rib-like projections on both sides of said cross-piece and the top of which consists of a piece of sheet metal which is bent into channel form and the lateral walls of which are bent outwardly and then downwardly around the rib-like projections on the two strips which constitute the lower portion of said cross-piece.

3. A sheet-metal window-frame embracing upright tubular side members having on their inner walls, inwardly-projecting wide longitudinal ribs provided with flanges which extend laterally from the ribs in the planes of the inner faces of said ribs, and are formed by a portion of the metal of the rib which is folded upon itself and extended to form said flange, a swinging sash pivoted between the side members and provided with laterally-extending flanges which are parallel with the said flanges on the side members of the frame when the sash is closed, and flanged strips which are attached to the inner faces of the said side members of the frame and extend inwardly past the said flanges on said side members, and the flanges on which overlap the said flanges on the side members of the frame, and form therewith grooves to receive the flanges on the sash.

4. A sheet-metal window-frame embracing upright tubular side members, having on their

inner walls inwardly-projecting, wide, longitudinal ribs provided with flanges which extend laterally from the ribs in the planes of the inner faces of said ribs and are formed by folded extensions of the sheet metal constituting the ribs, a swinging sash pivoted between the side members and provided with laterally-extending flanges which are parallel with the said flanges on the ribs of the side members when the sash is closed, said sash being provided above the pivots thereof with extensions of the lateral flanges, which, when the sash is closed, extend toward the inner face of the side members of the frame and then toward the ribs thereon between the said inner faces of the frame and the flanges on said ribs, and said frame members being provided below the pivots of the sash with flanged strips which are secured to the inner faces of the said frame members and extend inwardly therefrom past the free edges of the said flanges on said ribs and then extend parallel with the flanges on the ribs so as to form grooves or channels to receive the flanges on the lower part of the sash when said sash is closed.

5. The combination of a sheet-metal frame and a pivoted sash, the side members of the frame and the sash being provided above and below the pivotal axis of the sash with flanges and grooves or channels to receive the flanges and the sheet-metal parts which form the grooves on the frames and sash being provided at their meeting ends with cylindrically-curved parts which are concentric with the pivotal axis of the sash, and which overlap and slide one upon the other, so as to maintain tight joints in all positions of the sash.

6. The combination of a sheet-metal frame, a pivoted sash and cylindric pivot-rods which extend between brackets on the sash and the side members of the frame, said side members of the frame and the sash being provided with flanges and grooves or channels to receive the flanges, which are oppositely arranged above and below the sash-pivots and the sheet-metal parts which form the grooves or channels being provided at their meeting ends with cylindrically-curved parts which are concentric with the pivots and which overlap each other and in the case of the parts on the frame members, fit against and extend partially around said pivots; said cylindrically-curved parts on the sash having sliding contact with those on the frame.

7. The combination with a tubular sheet-metal frame member and a tubular sheet-metal sash, a pivotal connection between the same consisting of brackets attached to the sash and provided with apertures for the passage of the pivots, pivots inserted through said brackets and two separated pivot-supporting bars attached to the inner surface of the tubular frame, said pivot-rod having screw-threaded engagement with both of said bars.

8. The combination of a frame, a pivoted sash, the top member of the frame having an outwardly-extending flange and the top bar of the sash having a laterally-projecting flange
5 which is bent upwardly and then inwardly to form a groove adapted to receive the flange on the frame, and said flanges on the top member of the frame and the top bar of the sash having latch-engaging holes which coincide in
10 position when the sash is closed, and a latch-lever pivoted between its ends to the top bar of the sash so as to swing in a plane at right angles to the face of the sash, said latch-lever

having at its outer end a weight and at its inner end an upwardly-projecting spur which is adapted to pass through the said holes in the flanges of the top bar and frame. 15

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 12th day of February, 20 A. D. 1903.

HERMAN E. BROWN.

Witnesses:

C. CLARENCE POOLE,
GERTRUDE BRYCE.