

No. 693,594.

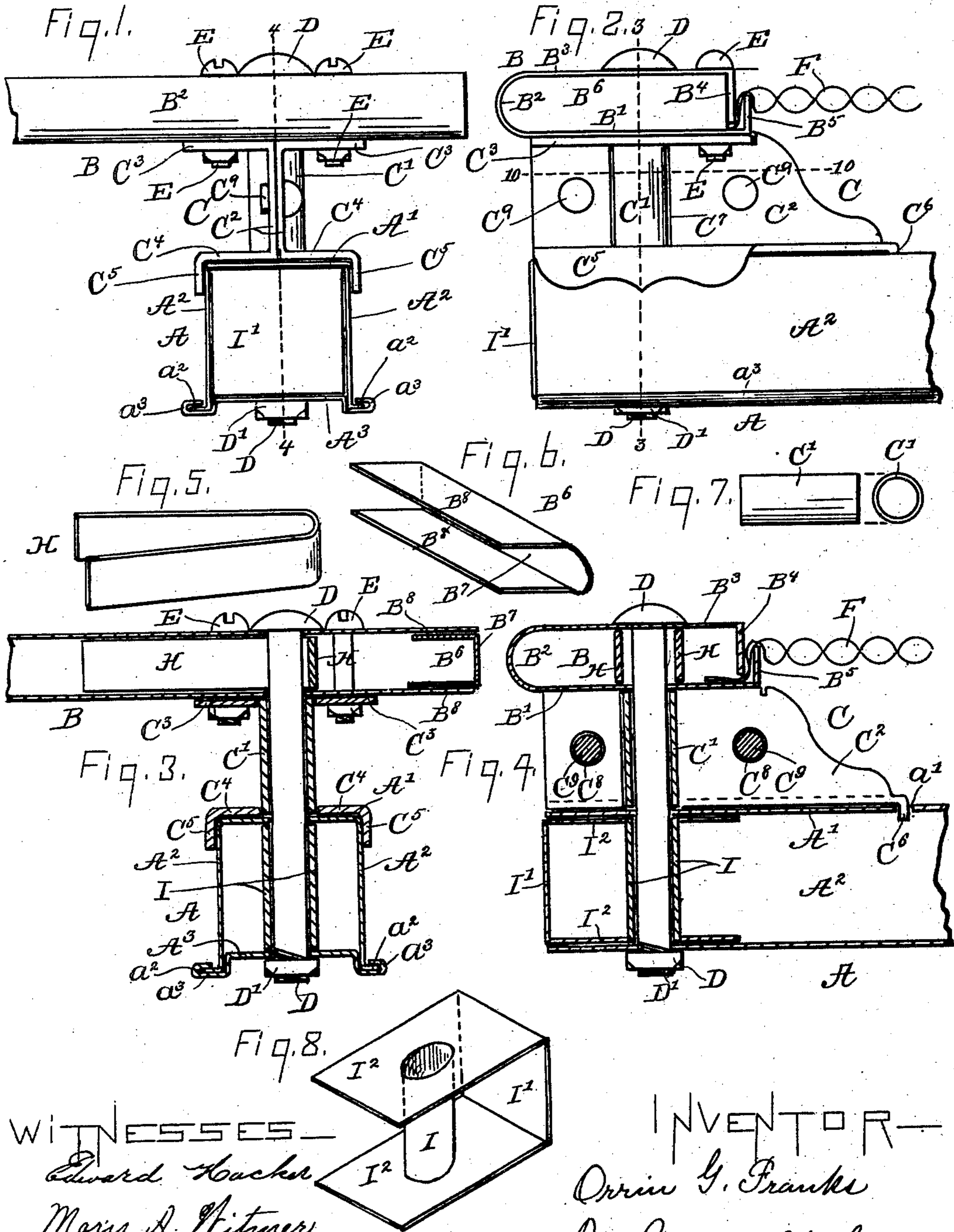
Patented Feb. 18, 1902.

O. G. FRANKS.
BED BOTTOM.

(Application filed Apr. 29, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES—
Edward Hucker
Mary A. Hucker

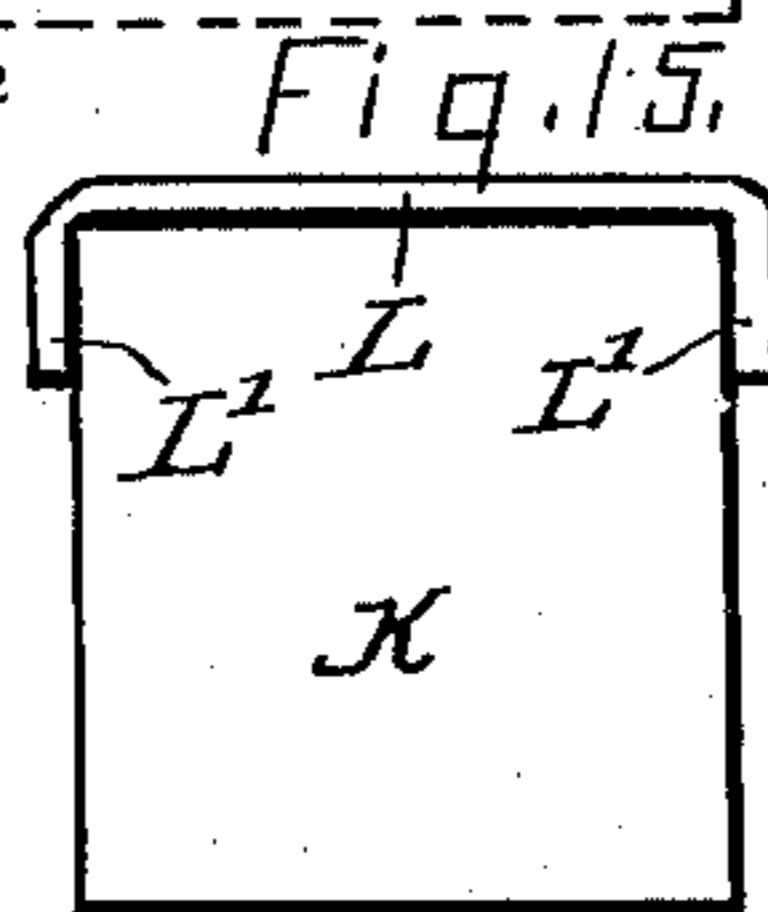
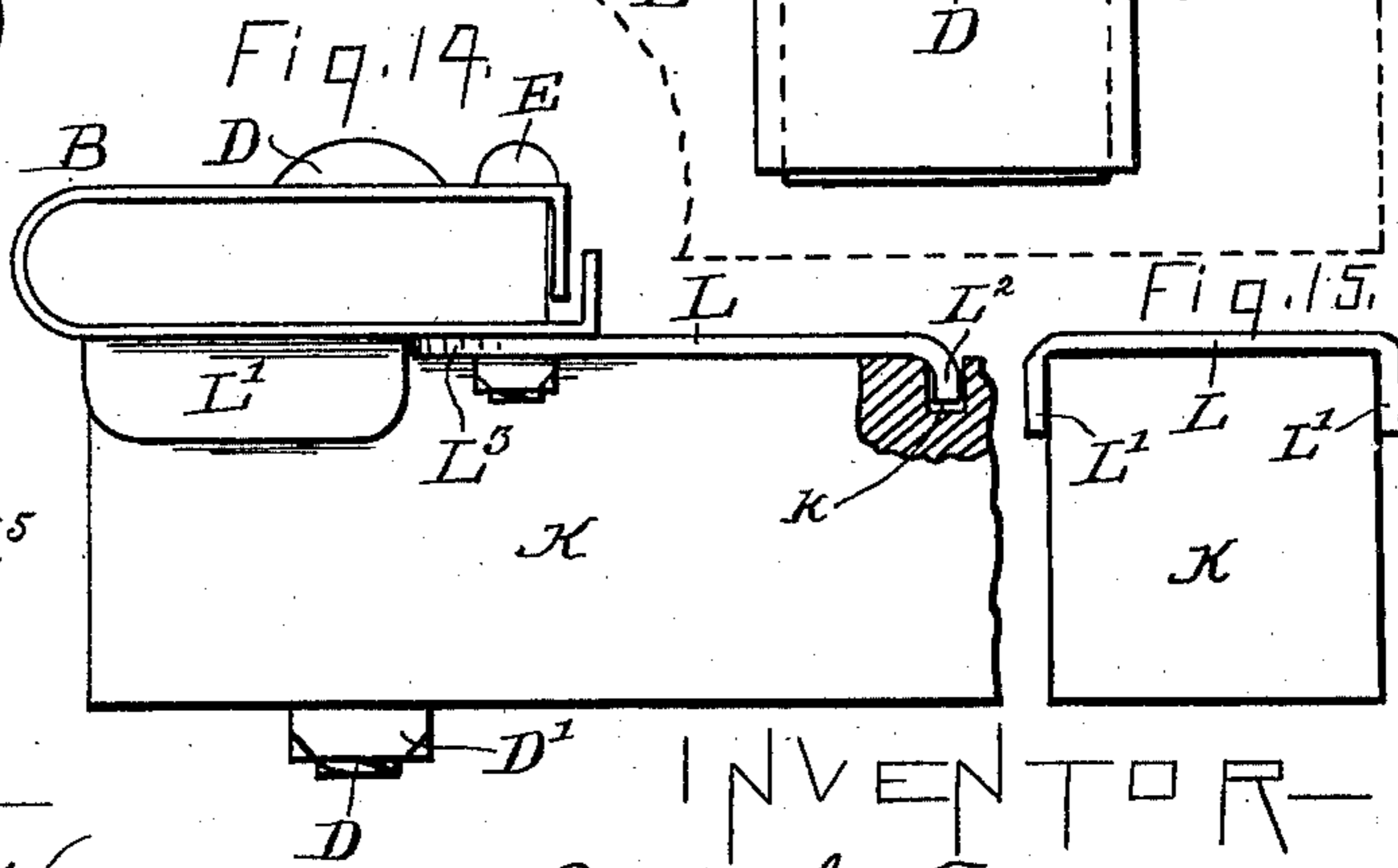
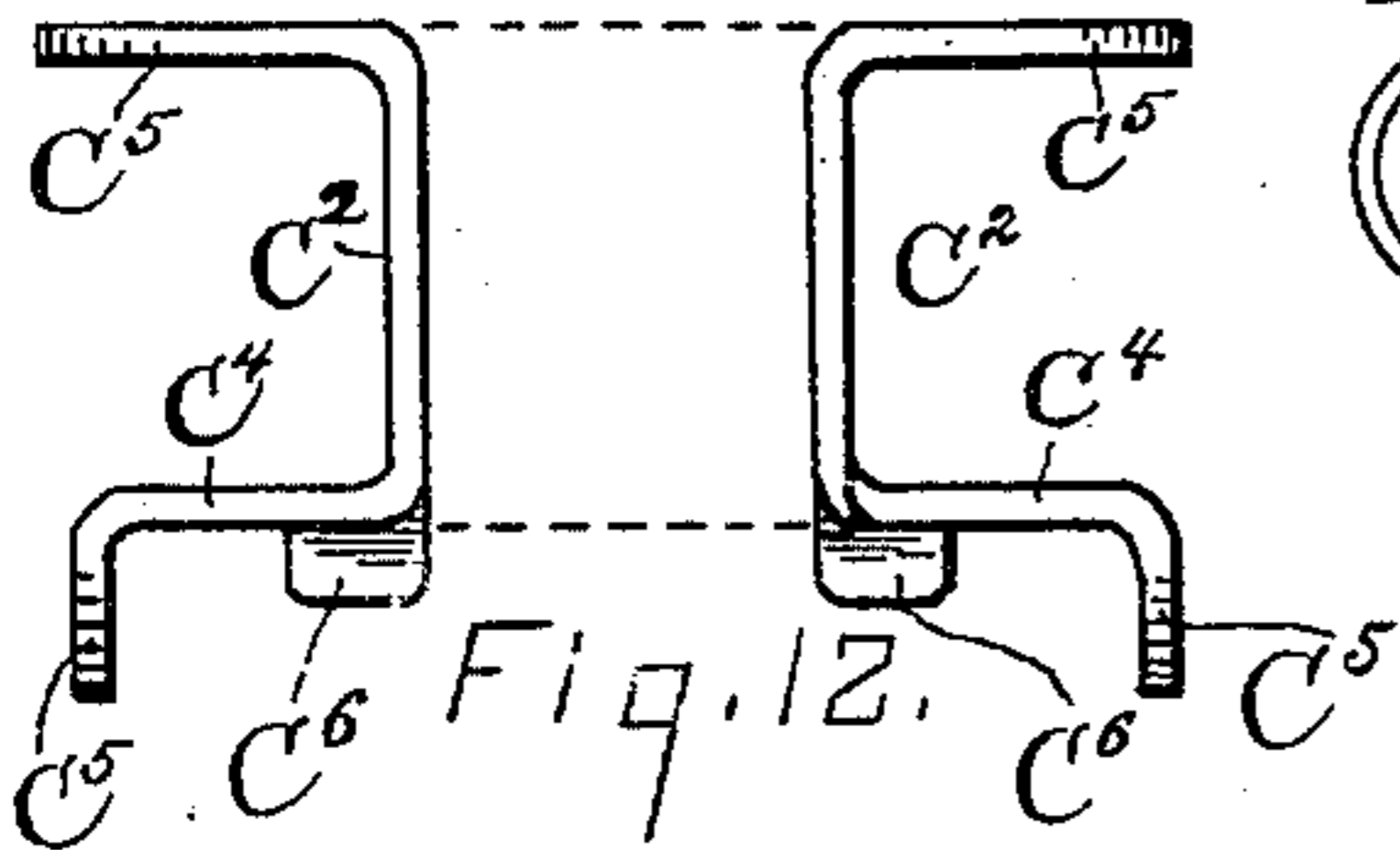
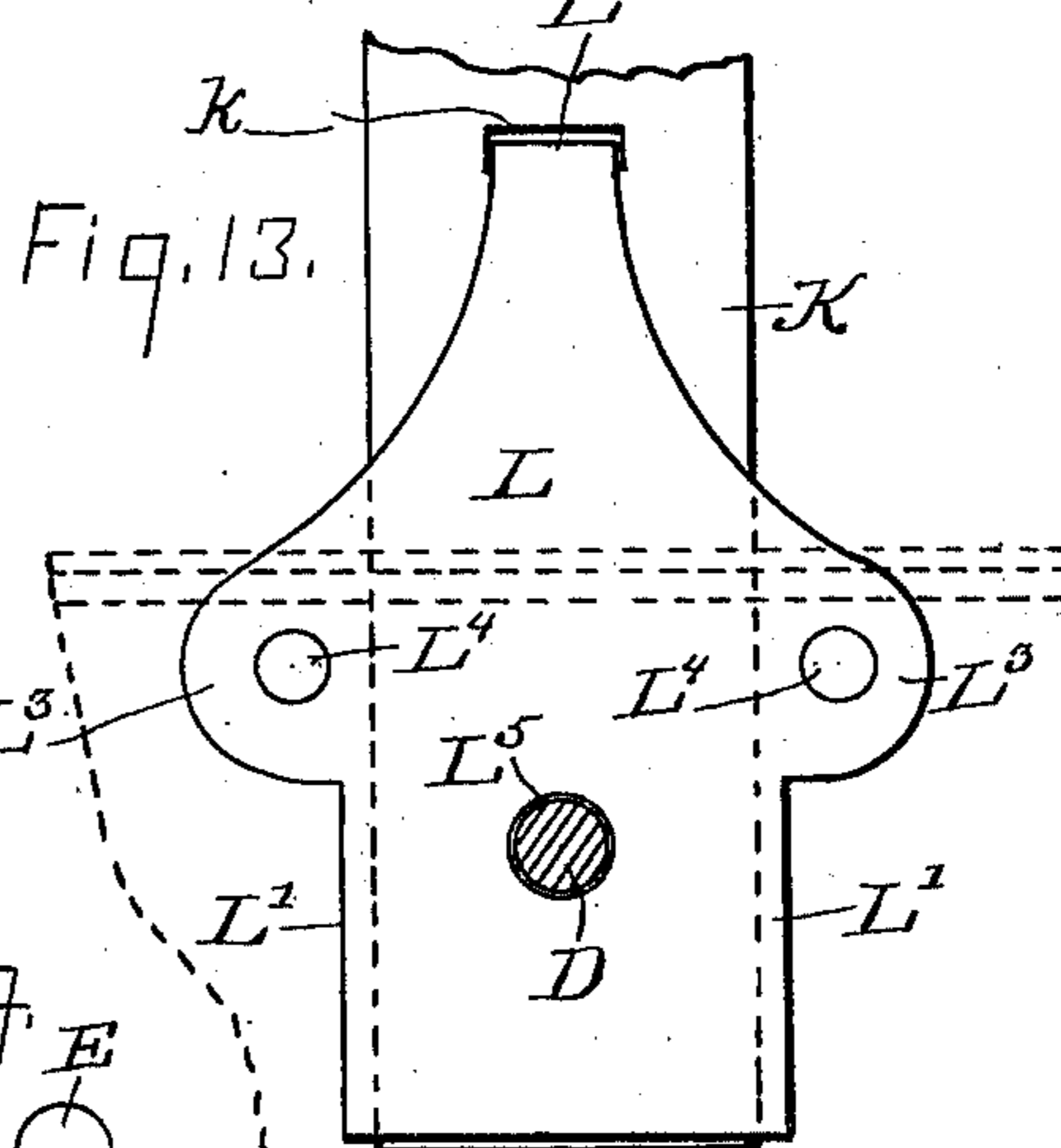
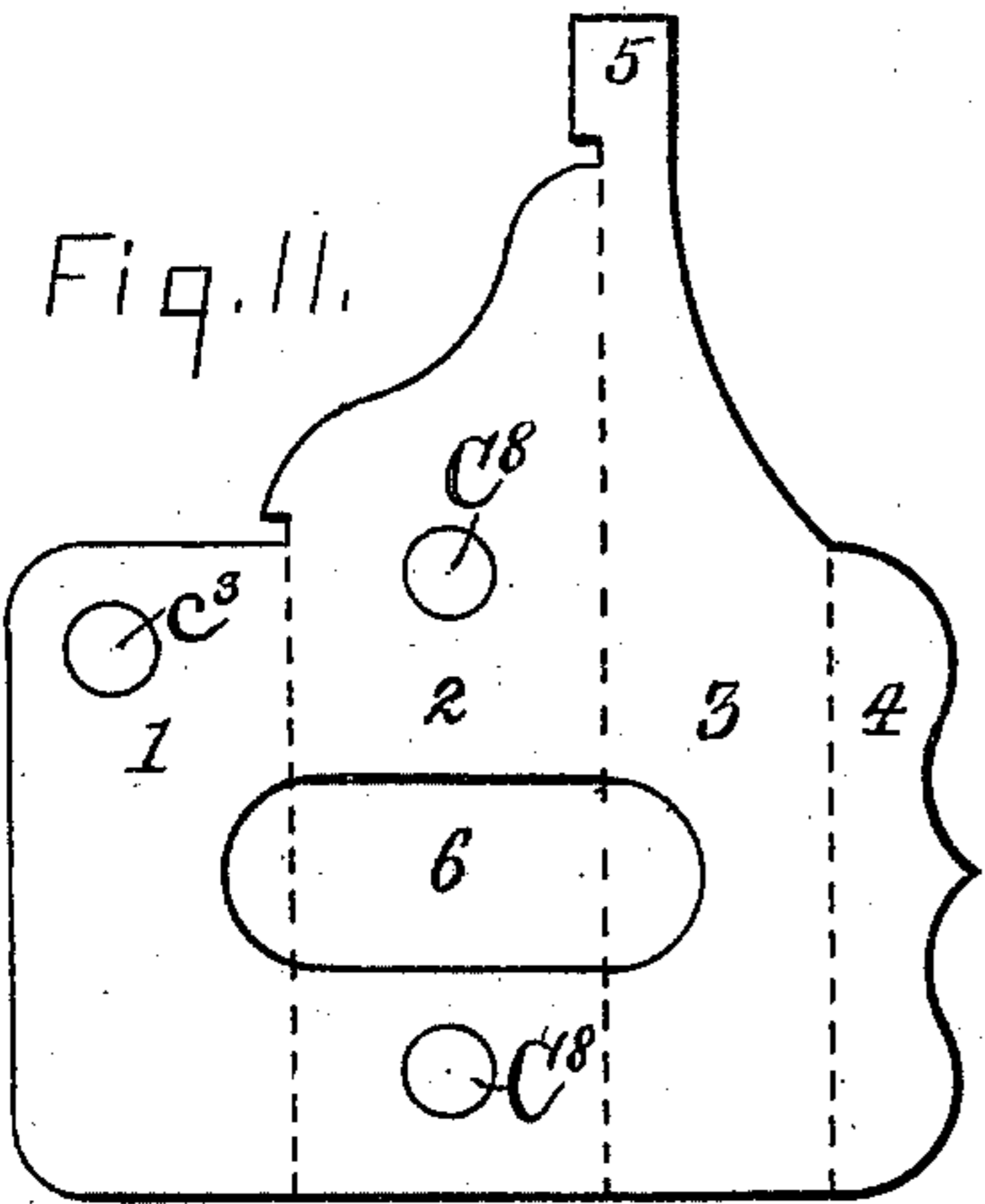
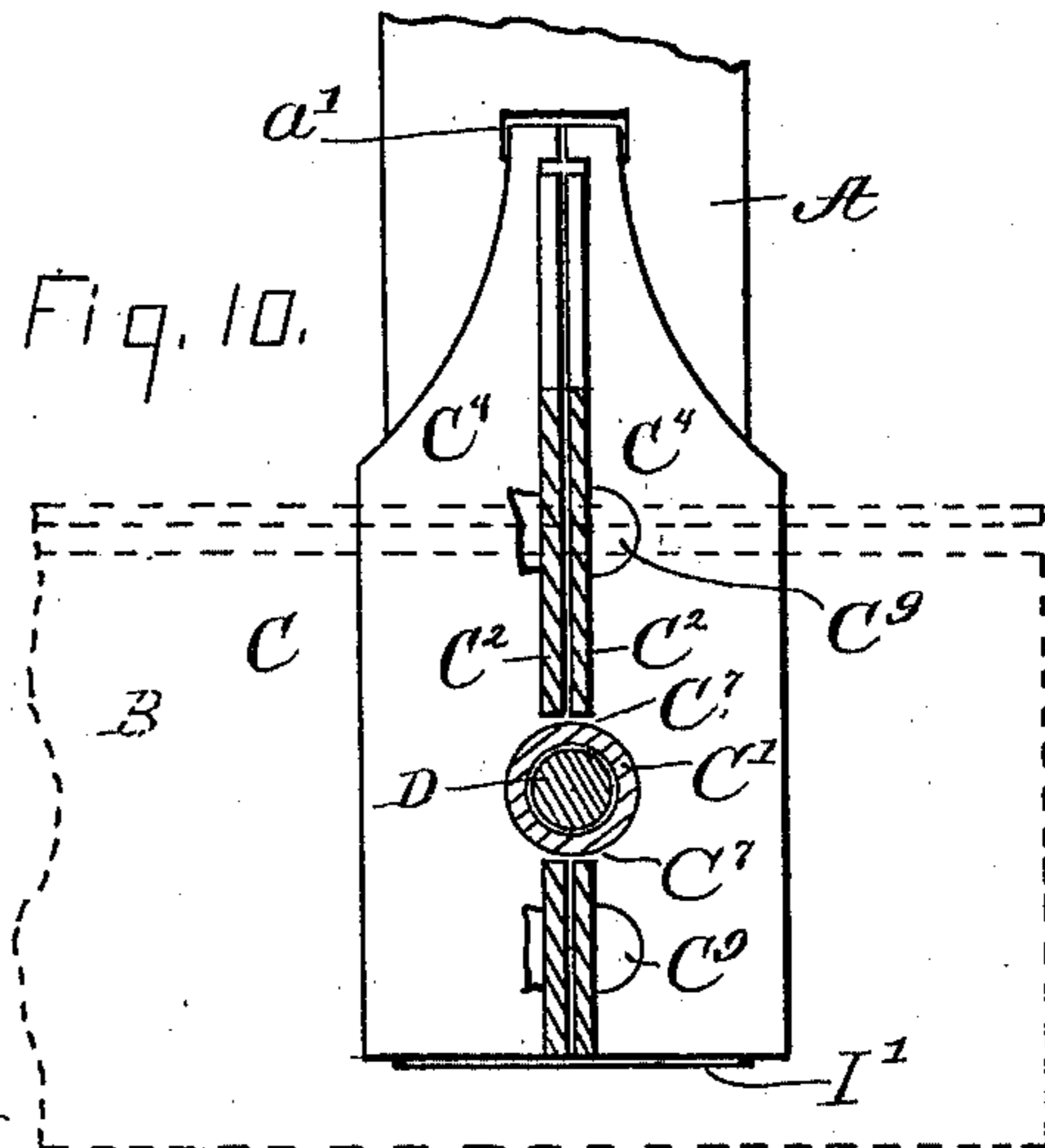
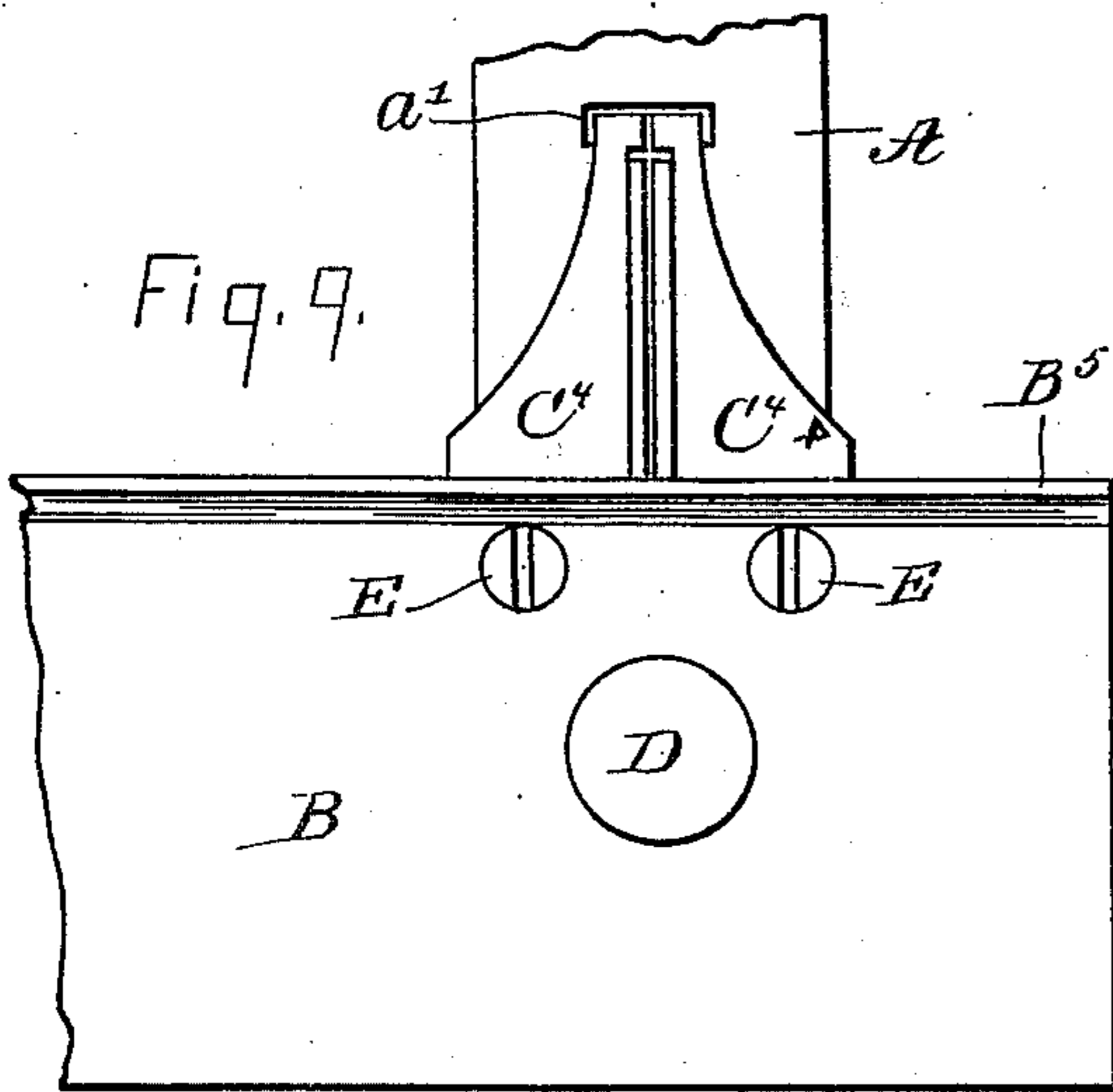
INVENTOR—
Orrin G. Franks
By Cyrus Kehr
Atty.

O. G. FRANKS.
BED BOTTOM.

(Application filed Apr. 29, 1901.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES
Edward Hacker
Mary A. Hittner

INVENTOR—
Orrin G. Franks
By Cyrus Kehr
Atty.

UNITED STATES PATENT OFFICE.

ORRIN G. FRANKS, OF BUFFALO, NEW YORK.

BED-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 693,594, dated February 18, 1902.

Application filed April 29, 1901. Serial No. 57,855. (No model.)

To all whom it may concern:

Be it known that I, ORRIN G. FRANKS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Bed-Bottoms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

My invention relates particularly to the frames of bed-bottoms embodying a stretched fabric forming the surface of the bed-bottom.

The object of the invention is to produce a frame which may be manufactured at a low cost and which shall be light and yet possess strength and durability.

In the accompanying drawings, Figure 1 is an elevation of a portion of the end of a bed-bottom embodying my invention. Fig. 2 is a side elevation of the portion of the bed-bottom shown by Fig. 1. Fig. 3 is a vertical section in the line 3 3 of Fig. 2. Fig. 4 is a vertical section in the line 4 4 of Fig. 1. Fig. 5 is a perspective of a reinforcing-piece which is placed within the end rail. Fig. 6 is a perspective of a piece used for closing the ends of the end rails. Fig. 7 is a side and end elevation of a hollow cylinder used as a part of the riser-block or connecting member used to join the end and side rails. Fig. 8 is a perspective of a device for reinforcing the side rail and closing the end of said rail. Fig. 9 is a plan of the construction shown by Figs. 1 and 2. Fig. 10 is a horizontal section on line 10 10 of Fig. 2. Figs. 11 and 12 are detail views of parts of the riser-block. Figs. 13, 14, and 15 are views of a modification in which the riser-block is modified into a mere fastening-plate, Fig. 13 being a plan, Fig. 14 a side elevation, and Fig. 15 an end elevation, of a side rail.

Referring to said drawings, A is one of the two side rails of an ordinary rectangular bed-bottom frame, and B is one of the end rails of such a frame. As the general construction of such frames is well understood by those familiar with this art, I deem it unnecessary to

add to the drawings a view of such a frame in its entirety. The drawings illustrate the construction at one corner of such a frame, and it is to be understood that the remaining three corners may be identical with the one shown.

C is a connecting member or riser-block, which is placed between the side rail A and the end rail B for the purpose of connecting the end rail and side rail and giving suitable elevation to the end rail. A bolt D extends through the end rail, riser-block, and side rail and binds these parts together. In addition to the bolt D two bolts E E extend through the end rail and through the upper portion of the connecting member or riser-block and serve the double purpose of binding the front portion of the end rail to the riser-block and clamping the fabric of the bed-bottom to the end rail.

All the parts, as illustrated by the drawings, are made of sheet metal, preferably relatively thin sheet-steel.

The side rail A is composed of the upper web A' and the two side webs A², the latter having lateral flanges a², and the bottom A³ having folded edges a³, extending around the flanges a². The main portion of the web A³ may extend above the lower edges of the webs A², as shown in the drawings. The folds a³ may be suitably pressed into engagement with the lateral edges a², or these parts may be soldered or brazed to each other.

The riser-block C is preferably a composite structure consisting of three pieces, the first of which is the tubular piece C', which is shown in elevation in Figs. 1, 2, and 7, in vertical section in Figs. 3 and 4, and in transverse section in Fig. 10. One end of said tube rests upon the upper web of the rail A and the other end rests against the lower face of the end rail. Said riser-block consists, further, of two plates C², which are identical, excepting that the parts of one are reversed with reference to the similar parts of the other, so that the two parts constitute a right-hand and left-hand member of the complete block. These parts C² are made by first stamping out of sheet metal blanks like that shown by Fig. 11. The portion 1 of each such blank is then bent laterally to form the wing C³, the portion 3 is bent laterally to form the foot C⁴, the width of the lower face of the foot C⁴ be-

ing equal to one-half of the width of the upper face of the side rail, the portion 4 is bent downward to form the vertical flange C⁵, and the front end 5 of the blank is bent downward to form the lug C⁶. The opening 6 in the blank is of proper width and length to form the opening C⁷ to receive the tube C' when said plate is put into position upon the side rail, with the flange C⁵ bearing against the lateral face of the side rail and the opposite portion of said plate reaching to the middle of the upper face of the said side rail. When the two plates C² are brought into position, the holes C⁸, extending transversely through said plates, will register and may receive rivets C⁹ for binding said plates rigidly together. The lugs C⁶ at the front ends of the plates C² extend into a slot a' in the upper web of the side rail, said slot being preferably just large enough to receive said lugs, to the end that said lugs and the adjacent portion of the riser-block may be held against horizontal movement. Since the plates C² are joined rigidly by said rivets and said flanges C⁵ bear against the opposite sides of the side rail, it follows that said flanges prevent lateral movement of the rear portion of the riser-block.

It will be observed that the one form of blank will answer for making plates C² in right or left hand form, the form being varied by reversing the direction of the parts in bending the blanks.

The body of the end rail B consists of a single piece of sheet metal folded upon itself to form the flattened bottom B', a back B², and a top B³. The edge of the top is bent downward to form a flange B⁴ and the edge of the bottom is bent upward to form a flange B⁵, substantially perpendicular to the bottom B' lapping over the flange B⁴. The end edge of the bed-bottom fabric F extends between the flanges B⁵ and B⁴ and beneath the latter. A bolt E extends through the top B³ and the bottom B' adjacent to said flanges and presses the flange B⁴ downward, so as to compress the fabric F between said flanges and between said flange B⁴ and said bottom B'. Said end rail virtually forms a clamp which grips or clamps the edge of the fabric when the bolts E are tightened, the fabric being folded on two lines—to wit, along the edge of the flange B⁵ and along the edge of the flange B⁴. Said bolts E also extend through holes c³ in the wings C³ of the plates C², whereby said riser-block is firmly bound to the front portion of the end rail. Said bolts aid in preventing the end rail from turning in a horizontal plane upon the block. That the riser-block is prevented from turning similarly upon the side rail by means of the lugs C⁶ and the flanges C⁵ has already been explained.

An end-closer B⁶ (shown in perspective by Fig. 6 and in cross-section in Fig. 3) is used for closing the end of the rail B. Said end-closer consists of the upright portion B⁷ and the two wings B⁸, extending horizontally from

the horizontal margins of said upright portion. The area of said upright portion B⁷ conforms in size and shape to the internal cross-sectional area of the rail B, one end of the portion B⁷ being rounded to conform to the interior of the back of the rail. With the wings B⁸ in advance said closer is pushed into the end of the rail until the portion B⁷ and the end of the rail are approximately flush. The wings B⁸ may be divergent, so that they must be sprung toward each other for insertion, to the end that they may after insertion bear against the inner faces of the walls of the rail sufficiently to retain the closer in place, or the closer may be inserted before the bolts D and E are tightened.

The bolt D extends through the end rail B and through the tube C' of the riser-block and through the side rail. At the lower end of said bolt there is a nut D'. When said nut is drawn, the strain of the bolt tends to draw the end rail and the side rail toward each other. The riser-block C tends to keep said rails apart. The principal resistance offered by the riser-block comes from the tube C'. The wall of said tube is relatively thick, and its ends rest directly upon the upper face of the side rail and against the lower face of the end rail. To keep the end rail from being compressed by the action of said bolt, a reinforcing-piece H (illustrated by Fig. 5) is placed within said rail, with its faces in the vertical position, the height of said reinforcing-piece being sufficient to fill the space between the upper and lower walls of the end rail, as shown in Figs. 3 and 4. It is obvious that the reinforcing-piece H might be a tube similar to the tube C'; but I prefer the piece H because it has a more extended bearing upon the walls of the end rail and tends to prevent the bending of such walls when the strain is in a plane which is vertical and parallel to the end rail. To prevent the compression or collapsing of the said rail A, a tube I, similar to the tube C', is placed around the bolt D within said side rail, the length of said tube being sufficient to make contact with the upper and lower webs of the side rail. While said tube I may be a distinct piece, I prefer to unite it with another piece which shall serve to close the adjacent end of the side rail. Said end-closer consists of the vertical end piece I' and the horizontal wings I². The tube I extends through the wings I² at such distance from the end piece I' as to bring the latter flush with the end of the side rail when said end-closer has been inserted properly to allow the bolt D to extend through the tube I. It will be observed that under this construction the end-closer serves as a convenient means for putting the tube I into proper location and position within said side rail and that the bolt D is made to serve as a means for fastening the end-closer within the side rail. It will be understood that the side rail may be solid. In Figs. 13, 14, and 15, K is such a rail.

When it is not desired to elevate the end rail, the connecting member or riser-block C may be so modified as to be only as high as the thickness of the sheet metal from which it is made. Such a member is indicated by L in Figs. 13, 14, and 15. Said member L consists of a single piece extending entirely across the side rail. At its rear end it has flanges L', corresponding to the flanges C⁵, and at its front it has a single lug L², extending into a hole $\frac{1}{2}$ and corresponding to the two lugs C⁶ on the pair of plates C². Horizontal wings or lobes L³ have holes L⁴, corresponding to the holes c³ of the plates C². A hole L⁵ receives the bolt D. The operation of this modification will be readily understood from the drawings.

I claim as my invention—

1. In a bed-bottom frame, the combination of an end rail consisting of a piece of sheet metal folded upon itself and having its bottom flattened and having its edges bent to form overlapping flanges substantially perpendicular to said bottom, and bolts for forcing the upper and lower walls of said rail toward each other, substantially as described.

2. In a bed-bottom frame, the combination of an end rail consisting of a piece of sheet metal folded upon itself and having its edges bent to form overlapping flanges, bolts for forcing the upper and lower walls of said rail toward each other, and end-closers inserted into the ends of said rail, substantially as described.

3. In a bed-bottom frame, the combination of an end rail consisting of a piece of sheet metal folded upon itself and having its edges bent to form overlapping flanges, bolts for forcing the upper and lower walls of said rail toward each other, and sheet-metal end-closers inserted into the ends of said rail, substantially as described.

4. In a bed-bottom frame, the combination of an end rail consisting of a piece of sheet metal folded upon itself and having its edges bent to form overlapping flanges, bolts for forcing the upper and lower walls of said rail toward each other, and sheet-metal end-closers consisting of an upright portion and horizontal wings extending laterally from the edges of said upright portion, substantially as described.

5. In a bed-bottom frame, the combination of an end rail consisting of a piece of sheet metal folded upon itself and having its edges bent to form overlapping flanges, bolts for forcing the upper and lower walls of said rail toward each other, and end-closers having an upright portion rounded at one end and provided with lateral wings, substantially as described.

6. In a bed-bottom frame, the combination with a side rail and an end rail, of a connecting member interposed between said side rail and end rail and having a horizontal portion resting on said side rail, flanges extending downward over the sides of said side rail, and

lugs extending into the upper face of said side rail, substantially as described.

7. In a bed-bottom frame, the combination of a side rail, an end rail, and a connecting member interposed between said side rail and said end rail and having a horizontal portion resting on said side rail, flanges extending down the sides of said side rail, and horizontal wings having holes for receiving bolts, substantially as described.

8. In a bed-bottom frame, the combination of a side rail, an end rail, and a connecting member interposed between said rails and having a flat portion resting upon said side rail, flanges extending downward over the sides of said side rail, wings having holes for receiving bolts, and lugs extending into the upper face of the side rail, substantially as described.

9. In a bed-bottom frame, the combination of a side rail, an end rail, and a connecting member interposed between said rails and having a horizontal portion extending across said side rail and having lateral flanges extending downward over the sides of said side rail, and lugs extending into the upper face of the side rail, and a central opening, and a bolt extending through said rails and through said opening, substantially as described.

10. In a bed-bottom frame, the combination of a side rail, an end rail, and a composite connecting member interposed between said rails and having a horizontal portion extending across the upper face of the side rail and having flanges extending downward over the sides of the side rail, and having lugs extending into the upper face of the side rail, substantially as described.

11. In a bed-bottom frame, the combination of a side rail, an end rail, and a composite connecting member interposed between said side rail and said end rail and having a horizontal portion resting on said side rail, flanges extending down the sides of said side rail, and horizontal wings having holes for receiving bolts, substantially as described.

12. In a bed-bottom frame, the combination with the side rail and end rail of a composite connecting member interposed between said rails and having a flat portion resting upon said side rail, flanges extending downward over the sides of said side rail, wings having holes for receiving bolts, and lugs extending into the upper face of the side rail, substantially as described.

13. In a bed-bottom frame, the combination with a side rail and an end rail, of a composite connecting member interposed between said rails and having a horizontal portion extending across said side rail and having lateral flanges extending downward over the sides of said side rail, and lugs extending into the upper face of the side rail, and a central opening, and a bolt extending through said rails and through said opening, substantially as described.

14. In a bed-bottom frame, the combination

with a side rail and an end rail, of a sheet-metal connecting member interposed between said rails and having a horizontal portion extending across the upper face of the side rail, and having wings provided with holes for receiving bolts, substantially as described.

15. In a bed-bottom frame, the combination with a side rail and an end rail, of a sheet-metal connecting member interposed between said rails and extending horizontally across the upper face of the side rail and having wings with holes for receiving bolts, and having a vertical opening extending through the body of said member, and a bolt extending through said rails and member, substantially as described.

16. A blank for forming connecting members for bed-bottom frames, substantially as herein described, said blank consisting of sheet metal, and having a portion adapted to be bent to form a flange to extend over the side of the side rail and having another portion adapted to become a foot and having another portion adapted to become a wing, and having an aperture for receiving a bolt, and having another portion adapted to be bent to constitute a lug to extend into the upper face of the side rail, substantially as described.

17. A blank for forming connecting members for bed-bottom frames, substantially as herein described, said blank consisting of a plate of sheet metal comprising the parallel portions, 1, 2, 3, and 4, and an end portion, 5, and having suitable apertures for bolts or rivets, substantially as described.

18. A blank for forming connecting members for bed-bottom frames, substantially as herein described, said blank consisting of a plate of sheet metal comprising the parallel portions, 1, 2, 3, and 4, and having suitable substantially circular apertures for receiving bolts or rivets, and having an elongated aperture extending across the part, 2, substantially as described.

19. A blank for forming connecting members for bed-bottom frames, substantially as herein described, said blank consisting of a plate of sheet metal comprising the parallel portions 1, 2, 3, 4, and an end portion, 5, and having suitable substantially circular apertures for receiving bolts or rivets, and having an elongated aperture extending across the part, 2, substantially as described.

20. A connecting member for a bed-bottom frame, said member comprising two pieces having suitably-joined upright portions, C^2 , horizontal portions, C^4 , and vertical flanges, C^5 , extending downward over the portions, C^4 , and having lateral wings, C^3 , and depending lugs, C^6 , substantially as described.

21. A connecting member for a bed-bottom frame, said member comprising two pieces having suitably-joined upright portions, C^2 , horizontal portions, C^4 , and vertical flanges, C^5 , extending downward from the portions, C^4 , and having lateral wings provided with vertical bolt-holes, substantially as described.

22. A connecting member for bed-bottom frames, said member comprising a horizontal foot portion having depending flanges, a vertical portion rising from said foot portion, and lateral wings at the upper portion of said vertical portion, and an opening extending centrally through said connecting member, substantially as described.

23. In a bed-bottom frame, a composite metallic connecting member consisting of a vertical tube and a pair of pieces each having a vertical portion and an upper and a lower lateral portion, substantially as described.

24. In a bed-bottom frame, the combination with a side rail and an end rail, of a connecting member located between said side rail and said end rail, and having lateral flanges extending downward over the sides of said side rail, and having an upright portion, and lateral wings at the top of said upright portion, and having a central opening extending through said connecting member and a tubular part seated within said opening, and a bolt extending through said rails and said tubular part, substantially as described.

25. In a bed-bottom frame, a rail consisting of two pieces of sheet metal, one of said pieces forming the top and sides of said rail and having at its lower edges lateral flanges, and another piece of sheet metal constituting the bottom of said rail and extending upward between said sides and having lateral folded flanges extending around and over the first-mentioned flanges, substantially as described.

26. In a bed-bottom frame, a rail consisting of two pieces of sheet metal, one of said pieces forming the top and sides of said rail and having at its lower edges lateral flanges, and another piece of sheet metal constituting the bottom of said rail and having lateral folded flanges extending around and over the first-mentioned flanges, and said top and bottom having each a bolt-hole in the same vertical line, a vertical reinforcing-tube within said rail and in line with said hole, substantially as described.

27. In a bed-bottom frame, a rail consisting of two pieces of sheet metal, one of said pieces forming the top and sides of said rail and having at its lower edges lateral flanges, and another piece of sheet metal constituting the bottom of said rail and having lateral folded flanges extending around and over the first-mentioned flanges, said top and bottom having each a bolt-hole in the same vertical line and a vertical reinforcing-tube located within said rail in line with said holes and an end-closer, substantially as described.

28. In a bed-bottom frame, a rail consisting of two pieces of sheet metal, one of said pieces forming the top and sides of said rail and having at its lower edges lateral flanges, and another piece of sheet metal constituting the bottom of said rail and having lateral folded flanges extending around and over the first-mentioned flanges, said top and bottom having each a bolt-hole in the same vertical line

and a vertical reinforcing-tube and an end-closer combined with said reinforcing-tube, substantially as described.

29. In a bed-bottom frame, the combination
5 with a hollow rail consisting of suitably-
joined, longitudinally-extending pieces of
sheet metal and having bolt-holes located
one above the other, of a vertical reinforcing-
tube located transversely within said rail
10 in line with said holes, substantially as de-
scribed.

30. In a bed-bottom frame, the combination
with a hollow rail consisting of suitably-
joined, longitudinally-extending pieces of
15 sheet metal and having bolt-holes located
one above the other, of a vertical reinforcing-
tube located within said rail in line with said
holes and an end-closer combined with said
tube, substantially as described.

20 31. In a bed-bottom frame, the combination
with an end-closer comprising the parts, I', I²,

I², of a reinforcing-tube, I, substantially as
described.

32. In a bed-bottom frame, the combination
of a hollow side rail, a reinforcing-tube lo- 25
cated transversely within said rail, a connect-
ing member comprising a reinforcing-tube,
an end rail, and a bolt extending through
said end rail and said reinforcing-tubes, sub-
stantially as described. 30

33. In a bed-bottom frame, a sheet-metal
rail, a bolt, D, extending through said rail,
and a reinforcing-piece, H, located lengthwise
within said rail and extending around said
bolt, substantially as described. 35

In testimony whereof I affix my signature,
in presence of two witnesses, this 22d day of
April, 1901.

ORRIN G. FRANKS.

Witnesses:

FRANCIS K. KERNAW,
MAULSBY KIMBALL.