

(No Model.)

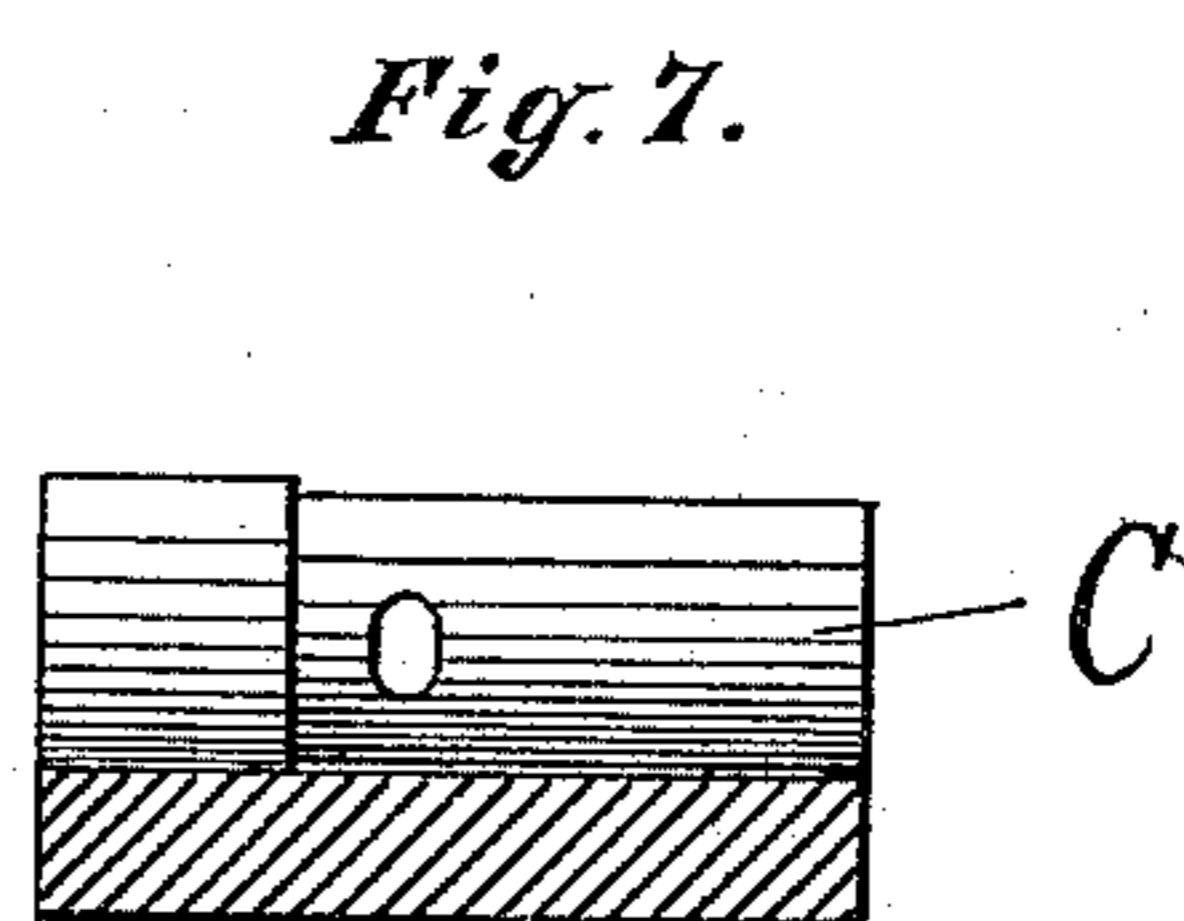
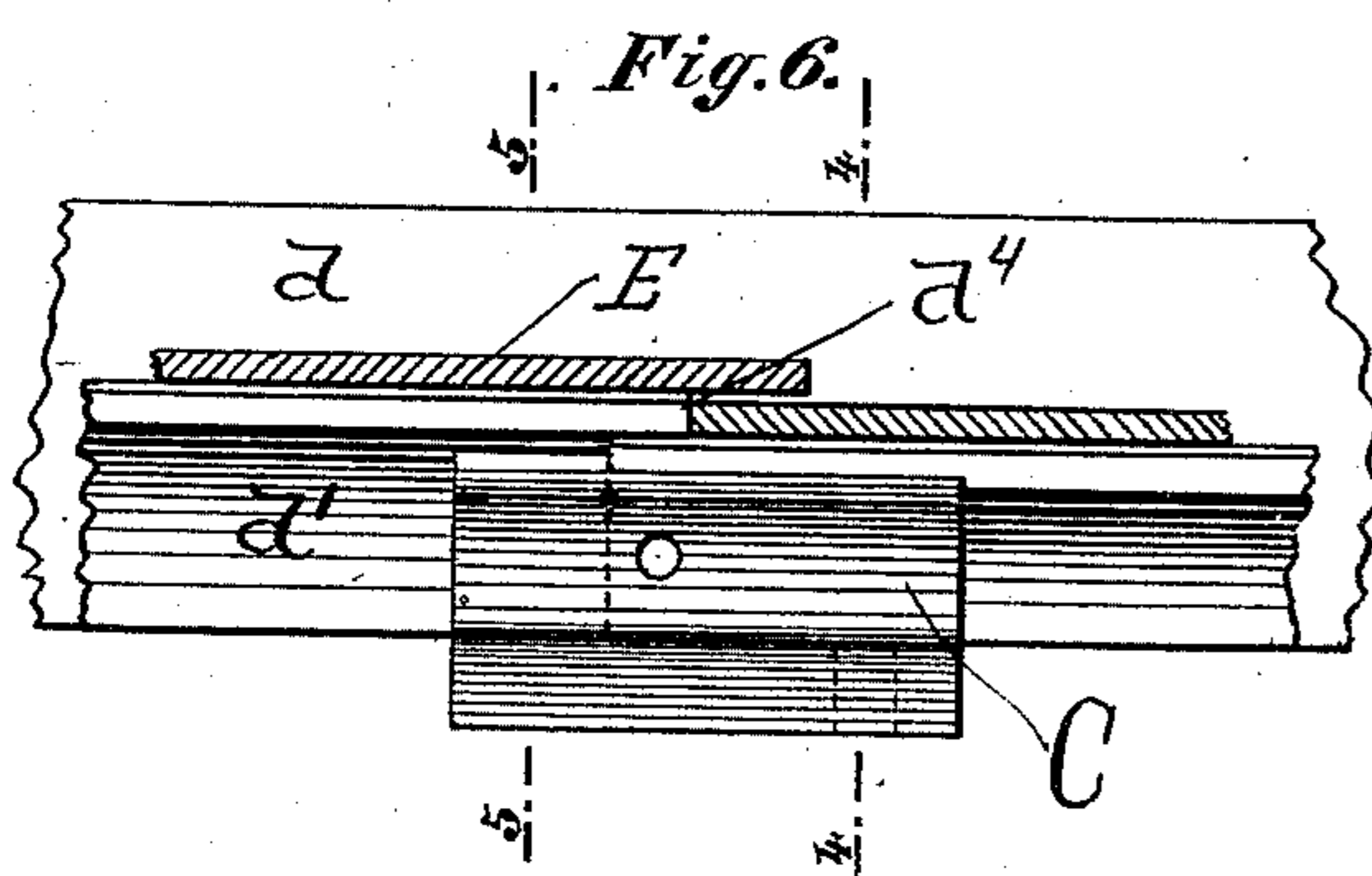
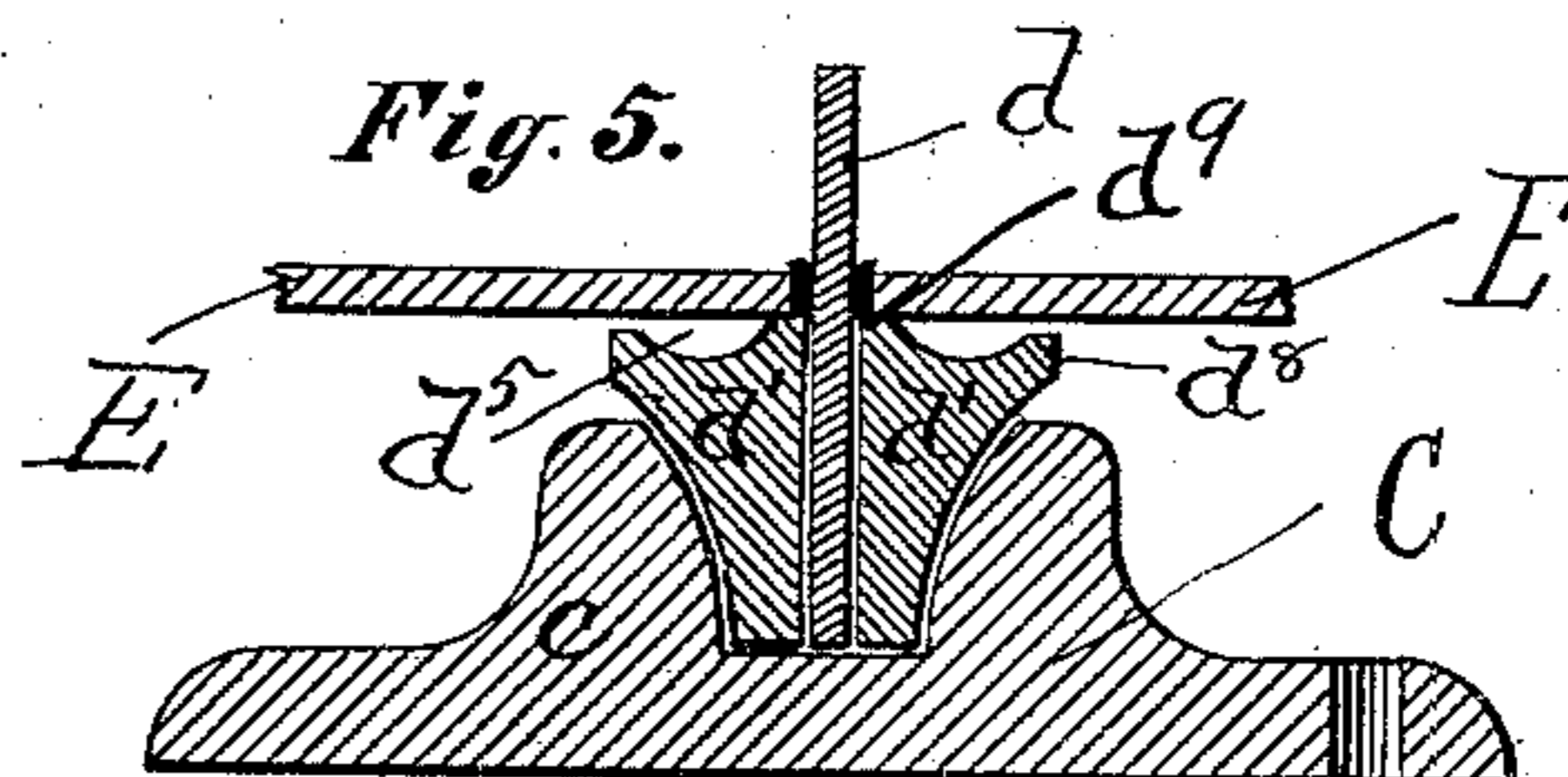
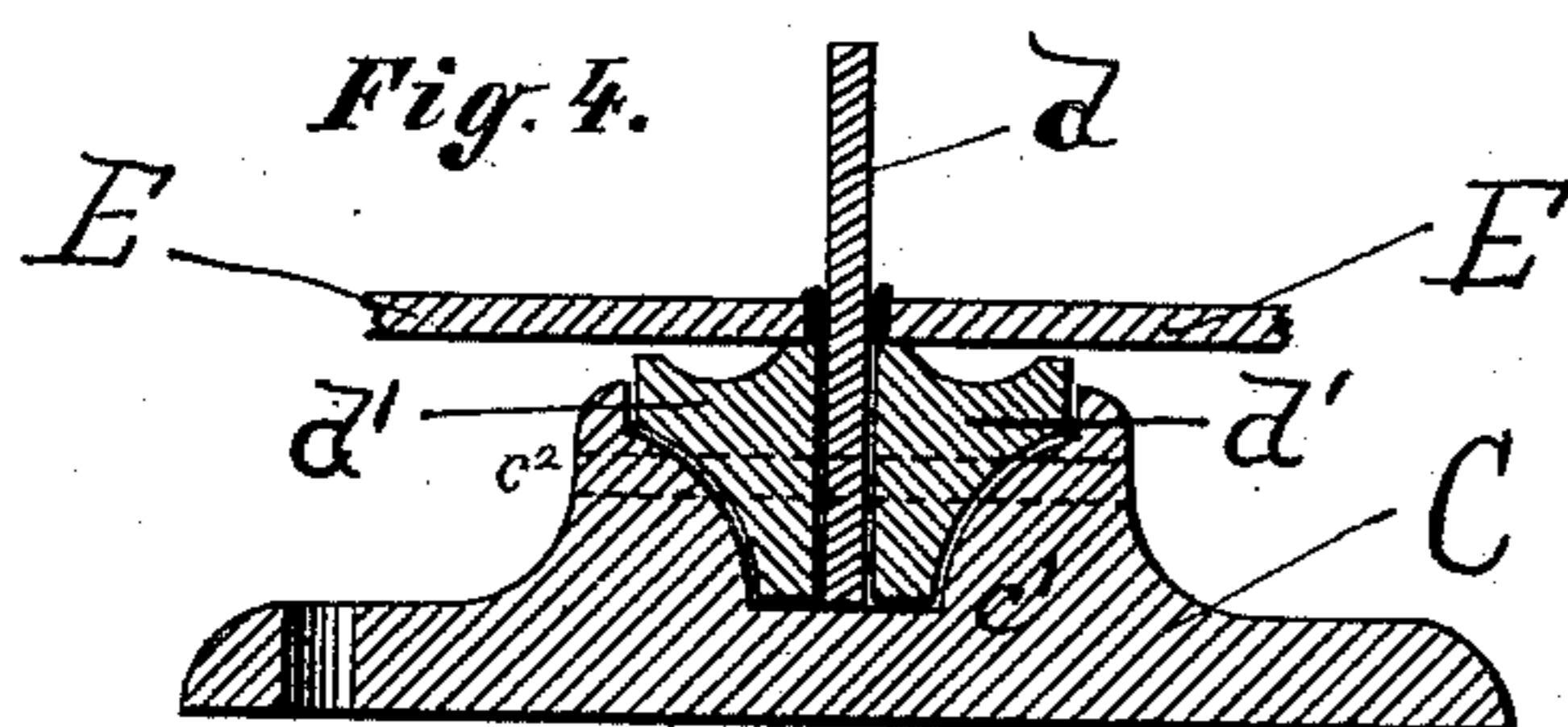
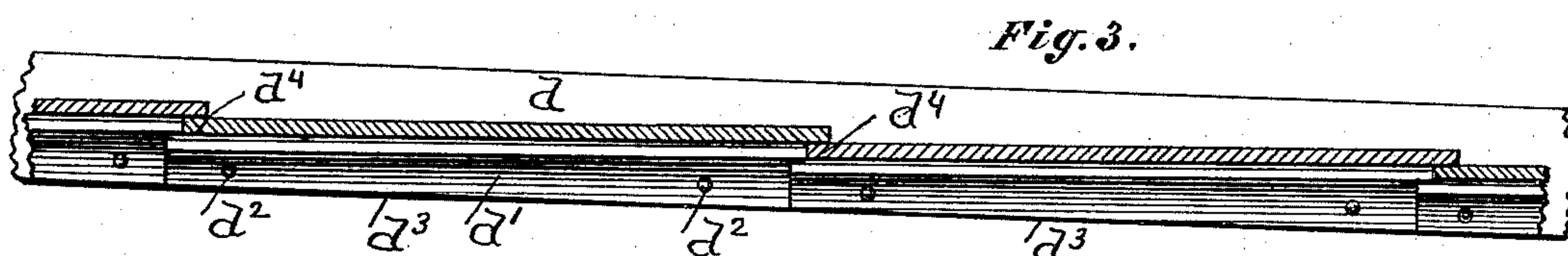
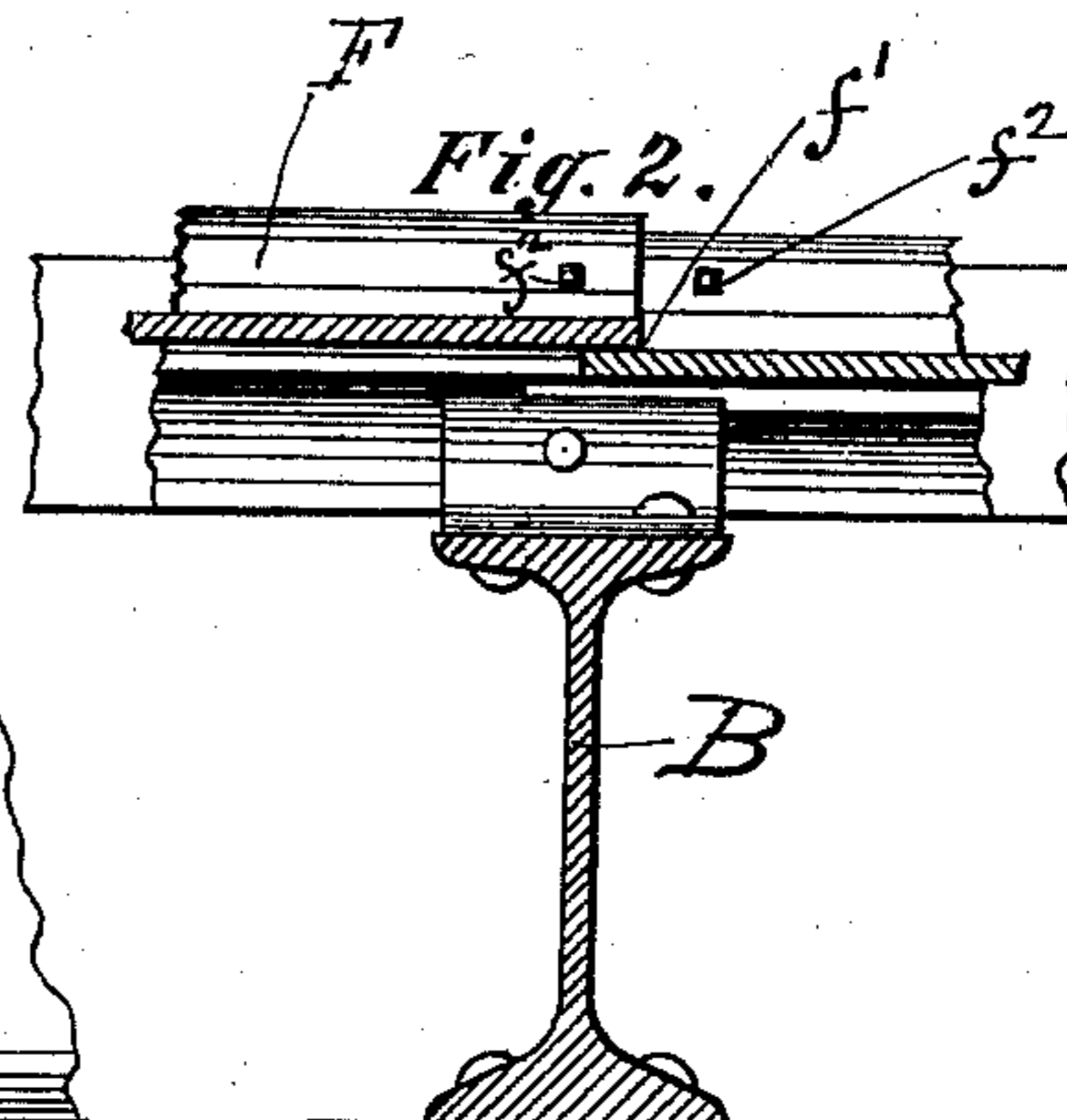
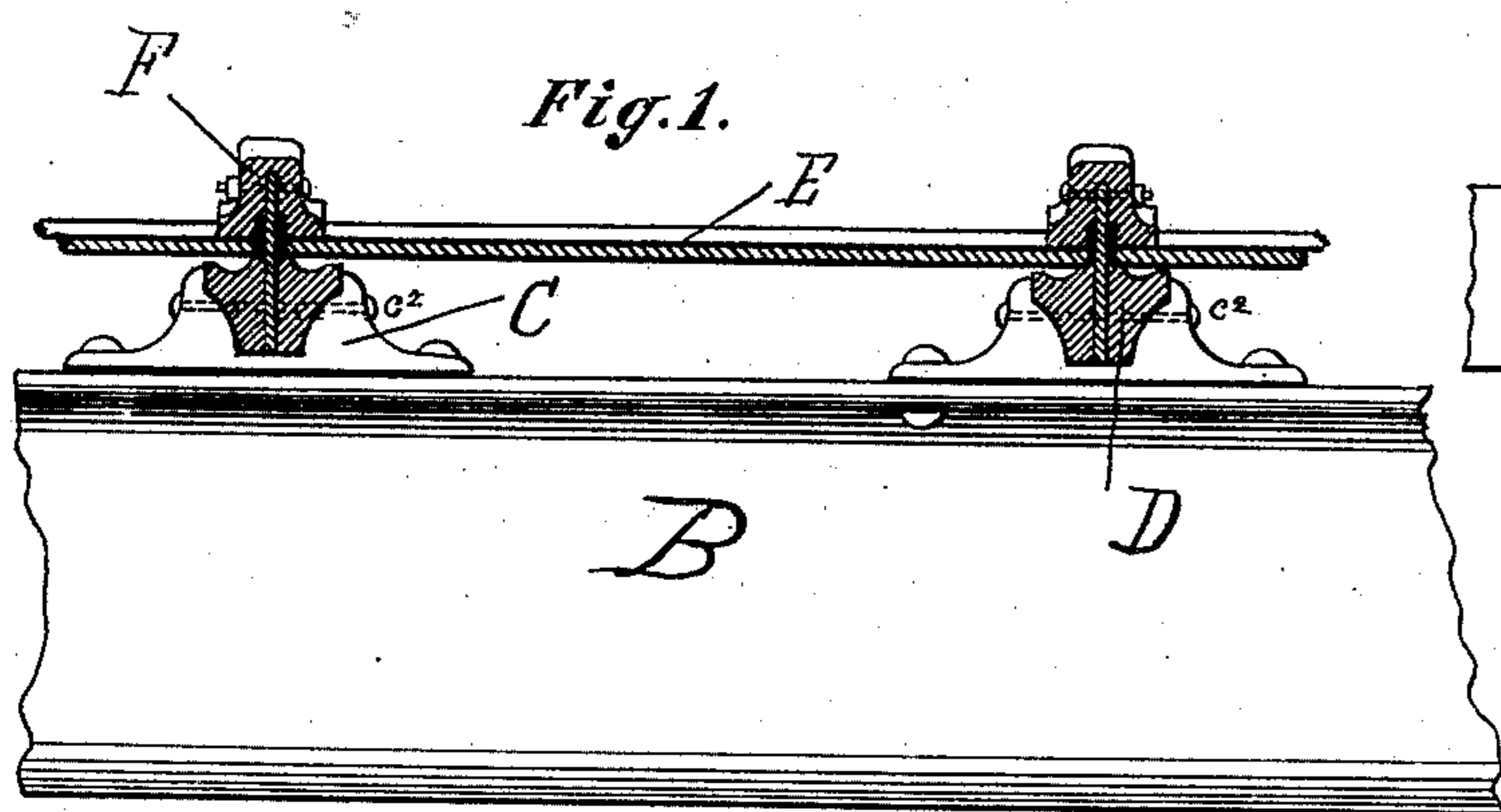
2 Sheets—Sheet 1.

H. A. STREETER.

SASH BAR.

No. 316,582.

Patented Apr. 28, 1885.



Witnesses:

H. M. Munday.

Chas. Baur.

Inventor:

Herbert A. Streeter

by Munday Everts & Adcock  
his Attys.

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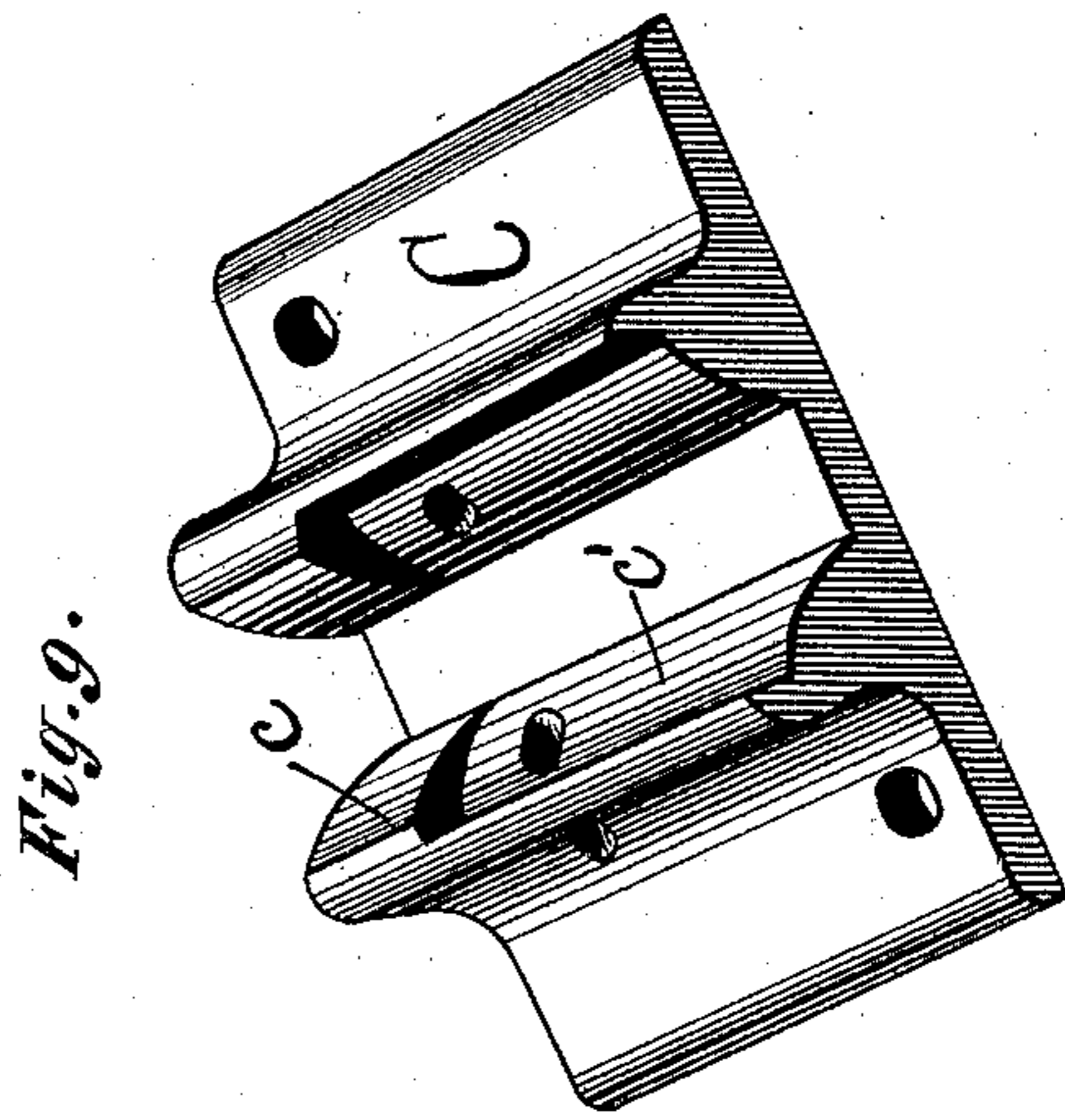
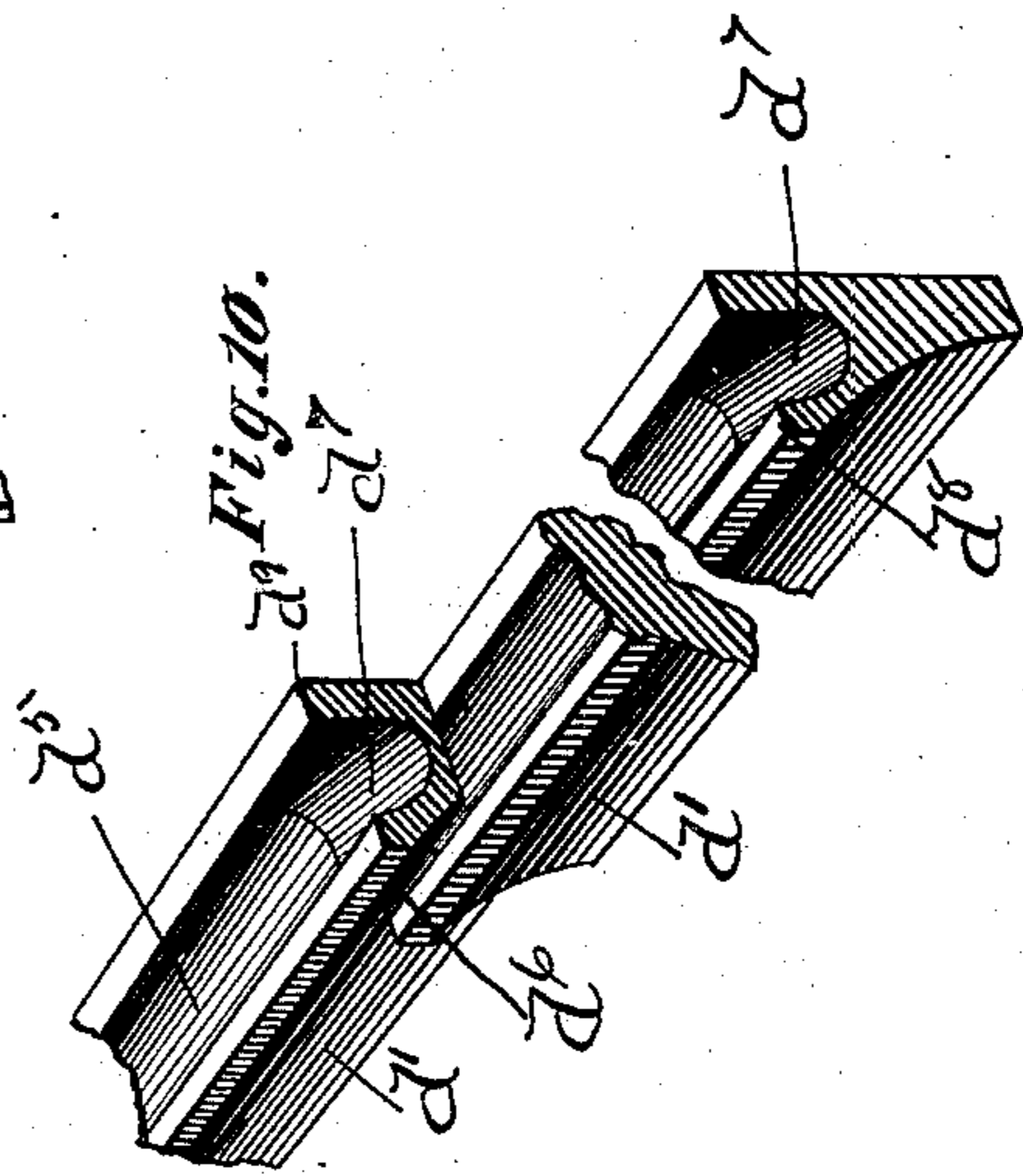
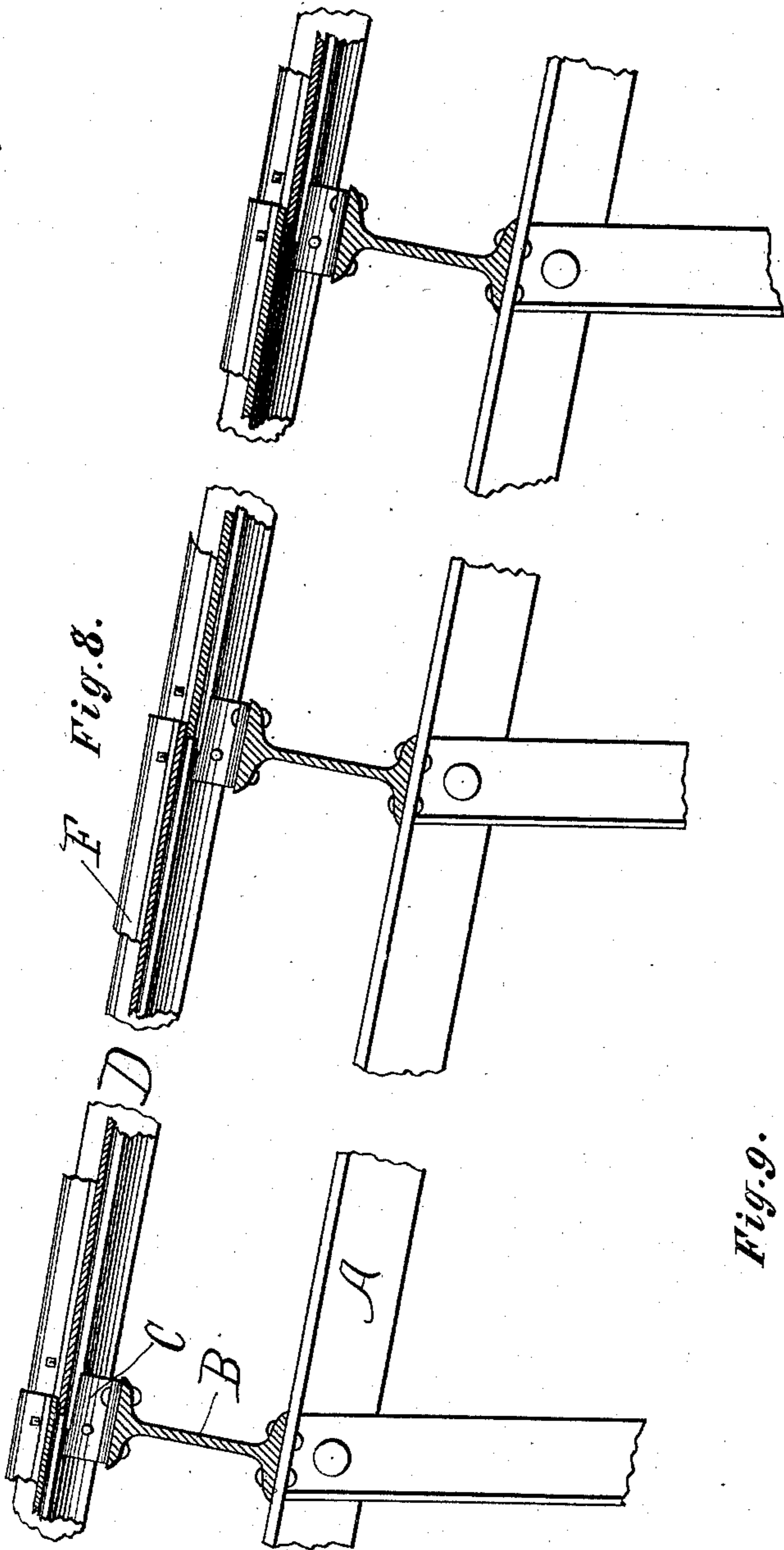
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# UNITED STATES PATENT OFFICE.

HERBERT A. STREETER, OF CHICAGO, ILLINOIS.

## SASH-BAR.

SPECIFICATION forming part of Letters Patent No. 316,582, dated April 28, 1885.

Application filed February 13, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, HERBERT A. STREETER, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Sash-Bars, of which the following is a specification.

This invention relates to sash-bars for supporting the panes of glass in skylights or glass roofs.

The object of the invention is to provide a sash-bar of a cheap and simple construction having the requisite strength and stiffness to resist both vertical and lateral strains, and whereby the panes or plates of glass while overlapping each other at their ends may yet lie flat and be supported throughout their whole length upon the sash-bars.

It also consists in providing the sash-bars with gutters or channels to conduct away the water of condensation that may collect on the under side of the glass.

It also consists in providing and combining with the sash-bar a suitable chair to support the same upon the cross-beams of the roof, and whereby the structure as a whole may be given great strength and rigidity.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a cross-section of a sash-bar embodying my invention. Fig. 2 is a longitudinal section through one of the cross-beams of the roof. Fig. 3 is a side elevation of the sash-bar, showing the plates of glass laid thereon in section. Fig. 6 is a side elevation of the chair, and Figs. 4 and 5 are cross-section, on lines 4 4 and 5 5 of Fig. 6. Fig. 7 is a longitudinal section of the chair. Fig. 8 is a longitudinal section of part of a roof. Fig. 9 is a perspective view of the chair, and Fig. 10 is a perspective view of a portion of the sash-rail, showing the gutter or channel.

In said drawings, A may represent a rafter or longitudinal beam of the roof, Fig. 8; B, the cross-beams upon which the sash-bars are supported; C, the sash-bar chairs; D, the sash-bars, and E the plates of glass laid thereon. The chairs C are secured by suitable rivets or bolts to the cross-beams. The sash-bars D are composed of a vertical web or bar,  $d$ , preferably made of wrought-iron, and the

wings or side bars,  $d'$ , secured to said vertical web by suitable rivets or bolts,  $d^2$ . The side bars or wings,  $d'$ , are preferably made of cast-iron, and taper from one end to the other the thickness of the plates to be laid thereon, so that while the bottom edges,  $d^3$ , of the sash-bars will be in line, as shown in Fig. 3, offsets  $d^4$  equal to the thickness of the glass will be formed at the ends of adjoining wings or side rails,  $d'$ . By this means it will be seen that the overlapping plates E will lie flat upon the wings  $d'$  and be supported throughout their whole length without any chinking up with putty, &c., as heretofore.

The wings  $d'$  are furnished with gutters or channels  $d^5$  to carry off the water of condensation which may collect on the under surface of the glass when the same covers a room or inclosed space; and in order to make these channels continuous I provide the deeper end of the side rail with a shoulder or offset,  $d^6$ , so that the same will overlap the narrow end of the adjoining side rail, as shown in Fig. 10. The extreme end of the channel should also be tapered or gored out, as shown at  $d^7$ , so that the abutting plate of glass will not prevent the water flowing from one side rail to the next.

The chair C conforms in cross-section to the cross-section of the sash-rail, one part,  $c$ , of the same being adapted to fit and receive the wider or deeper end of the wings  $d'$ , and the other part,  $c'$ , conforming in cross-section to the narrower end of the side rails,  $d'$ , as shown in Figs. 4, 5, and 9.

The sash-bar D is or may be secured to the chairs by pins or bolts  $c^2$ , as shown in dotted lines in Fig. 4.

The outer lip or edge,  $d^8$ , of the wings  $d'$  is made slightly lower than the inner edge or ledge,  $d^9$ , thereof, so that the glass or plate resting on the latter will leave an opening for the passage of water into the groove  $d^3$  over said outer lip,  $d^8$ .

I prefer to make the wings or side plates,  $d'$ , of just the length of the plates of glass designed to be laid thereon, as this is ordinarily the more convenient construction; but it is obvious that these wings or side rails may be made the length of two or more plates of glass, in which case the offsets  $d^4$  would be cast at the desired points to form the overlapping

joints. It is also preferable to locate the chairs at the joints between the ends of adjacent side rails, but they may of course be located immediately, if desired, in which case the chair

5 would have the same cross-section at each end.

Where the plates or glass are laid abutting each other instead of overlapping, the offsets  $d^4$  will of course not be required to be used.

On porticos or outdoor work the channels for  
10 carrying off the water of condensation may not be required. While my invention, therefore, consists in part in these features, it is not limited to them.

The vertical rib or web  $d$ , which should be  
15 made of ordinary wrought or bar iron, gives great strength to the sash-rail to resist a vertical strain, while the side rails or wings,  $d'$ , which may be either cast or rolled, not only afford a smooth and good bearing for the glass,  
20 but also serve to give great stiffness and lateral strength to the sash-bar. The chairs, which are securely bolted to the cross-beams of the roof, not only serve to hold the sash-bars securely in position, but also add greatly to the  
25 strength and rigidity of the sash-bars and to the roof as a whole.

While the ribs  $d$  are preferably made of bar-iron and the wings or side rails,  $d'$ , of cast-iron, I do not, of course, desire to be limited  
30 to the use of any particular material for either; and though my invention is specially designed and adapted as a means of supporting plates of glass in skylights or roofs, it may, however, be used for supporting other plates  
35 for various purposes.

F is a cap, having a groove fitting over the web or bar  $d$ , which serves to cover and protect the joints and secure the glass plates in position. It also serves to stiffen and strengthen  
40 the sash-bar. It is provided with offsets  $f'$  to fit the overlapping plates of glass E. This cap is secured to the web or bar  $d$  by rivets or bolts  $f^2$ . The cap is preferably made of cast metal, though it may be rolled or otherwise  
45 formed.

The wrought-iron bars  $d$  can of course be made of any desired length, and I ordinarily make them continuous for the whole length of the incline or pitch, as the strength of the roof  
50 is thereby increased.

For use upon domes or curved roofs, the bars  $d$  may be bent or curved to conform thereto, and the side rails cast of the proper curved shape.

55 My sash-bars being made of solid bars and

castings, are very strong and rigid, and in many instances will serve as or take the place of the usual rafters or frame-work of the roof.

I claim—

1. The sash-bar consisting of a vertical rib 60 or web,  $d$ , provided with side rails,  $d'$ , having offsets  $d^4$  to permit the plates lying thereon to overlap, substantially as specified.

2. The sash-bar consisting in the combination of vertical web or bar  $d$ , of wrought or 65 bar iron, with cast-iron tapering side rails,  $d'$ , having offsets  $d^4$  to permit the plates lying thereon to overlap, substantially as specified.

3. The sash-rail consisting of the web  $d$ , of wrought or bar iron, and cast-iron side rails, 70  $d'$ , secured thereto and furnished with grooves or channels  $d^5$ , the outer edge or lip,  $d^8$ , of said side rails being lower than the inner edge upon which the plates rest, substantially as specified.

4. The combination of wrought-iron bar  $d$  75 with cast-iron side rails,  $d'$ , having channels  $d^5$ , said side rails having shoulders  $d^6$  at one end overlapping the opposite end of the adjacent side rail, substantially as specified. 80

5. The combination of the sash-rail with a chair for supporting the same, substantially as specified.

6. The combination of the cross-beams B, chairs C, secured thereto, and sash-rails fit- 85 ting therein, substantially as specified.

7. The combination of chair C with sash-rail D, consisting of vertical bar  $d$ , provided with side rails or projections,  $d'$ , substantially 90 as specified.

8. The combination of bar  $d$ , tapering side rails,  $d'$ , and chair C, having part  $c$  conforming to the smaller end of said side rails, and part  $c'$  conforming to the larger end of said side rails, substantially as specified. 95

9. The combination of bar  $d$ , tapering side rails,  $d'$ , chair C, and overlapping plates E, substantially as specified.

10. The combination, with bar  $d$ , provided with side rails,  $d'$ , of cap F, fitting over said 100 web, substantially as specified.

11. The combination, with bar  $d$ , provided with side rails,  $d'$ , having offsets  $d^4$ , of cap F, having offsets  $f'$ , substantially as specified.

HERBERT A. STREETER.

Witnesses:

H. M. MUNDAY,  
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