

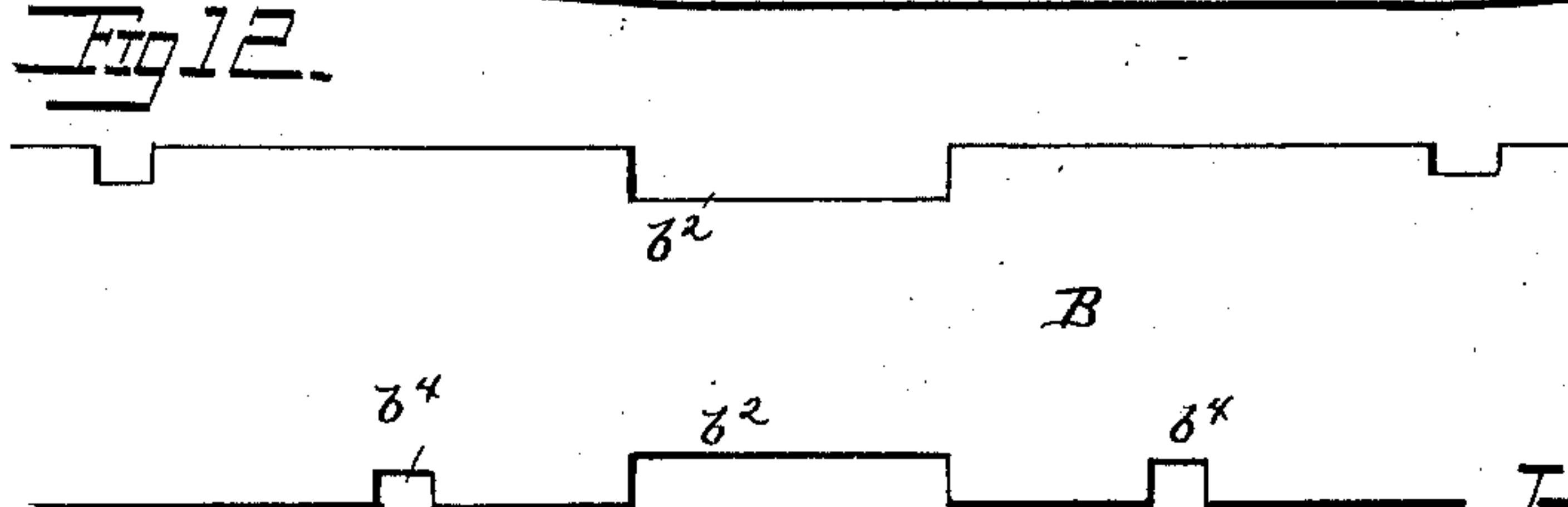
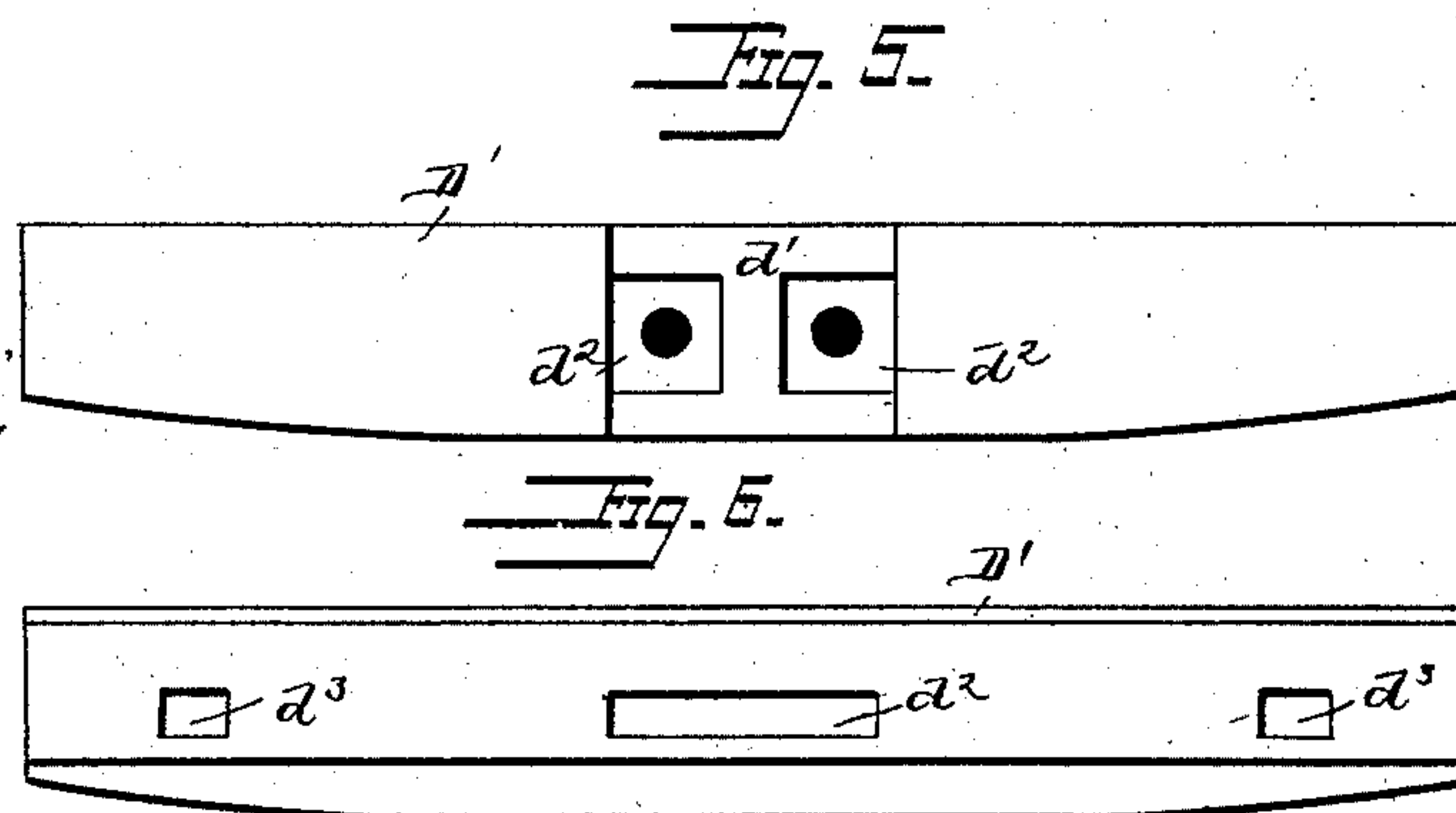
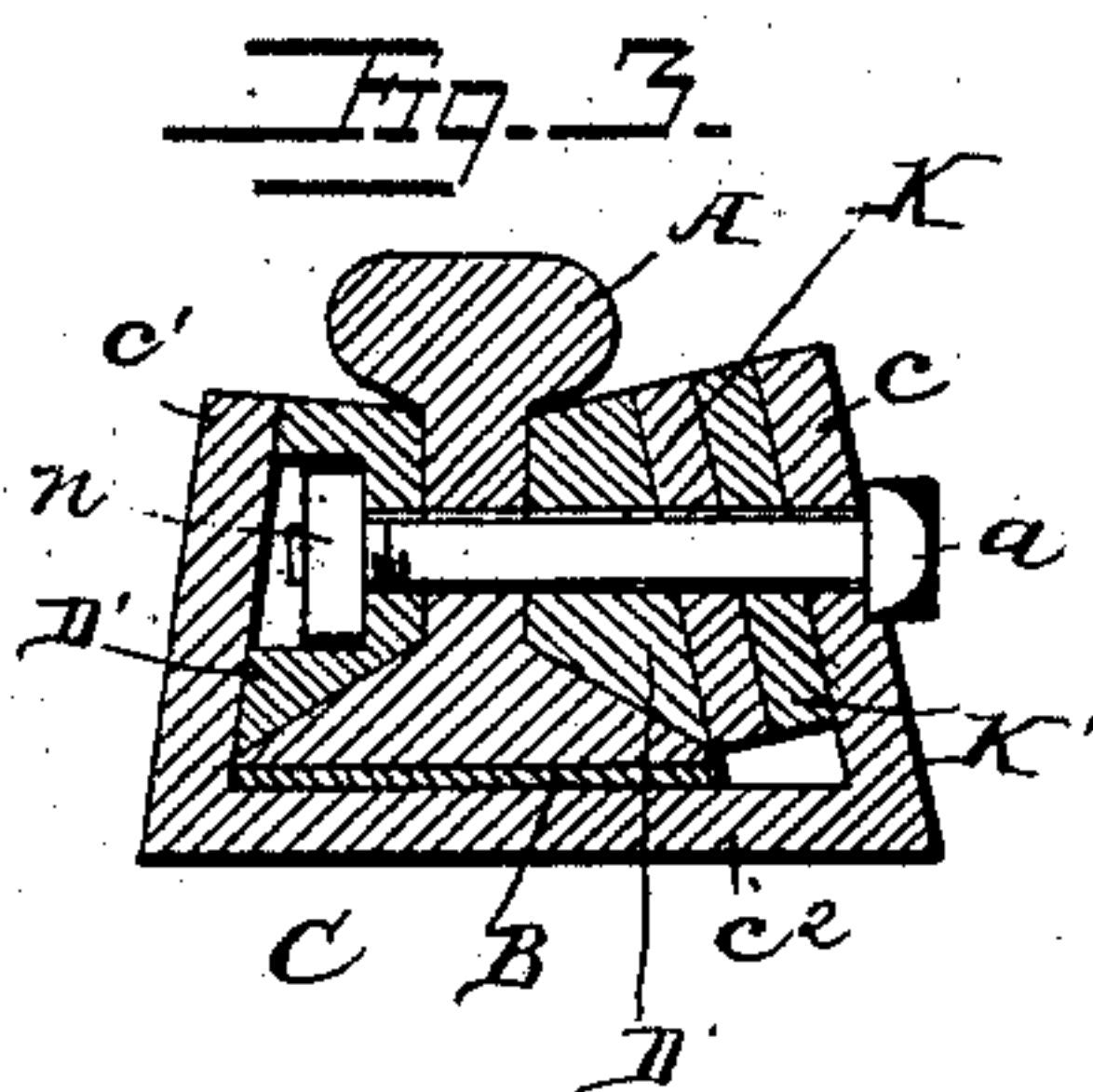
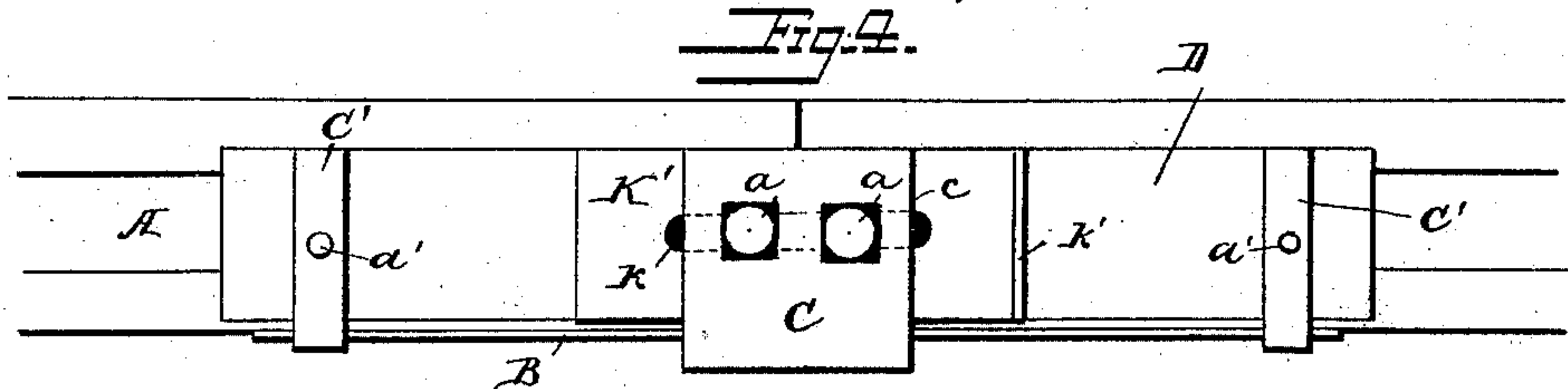
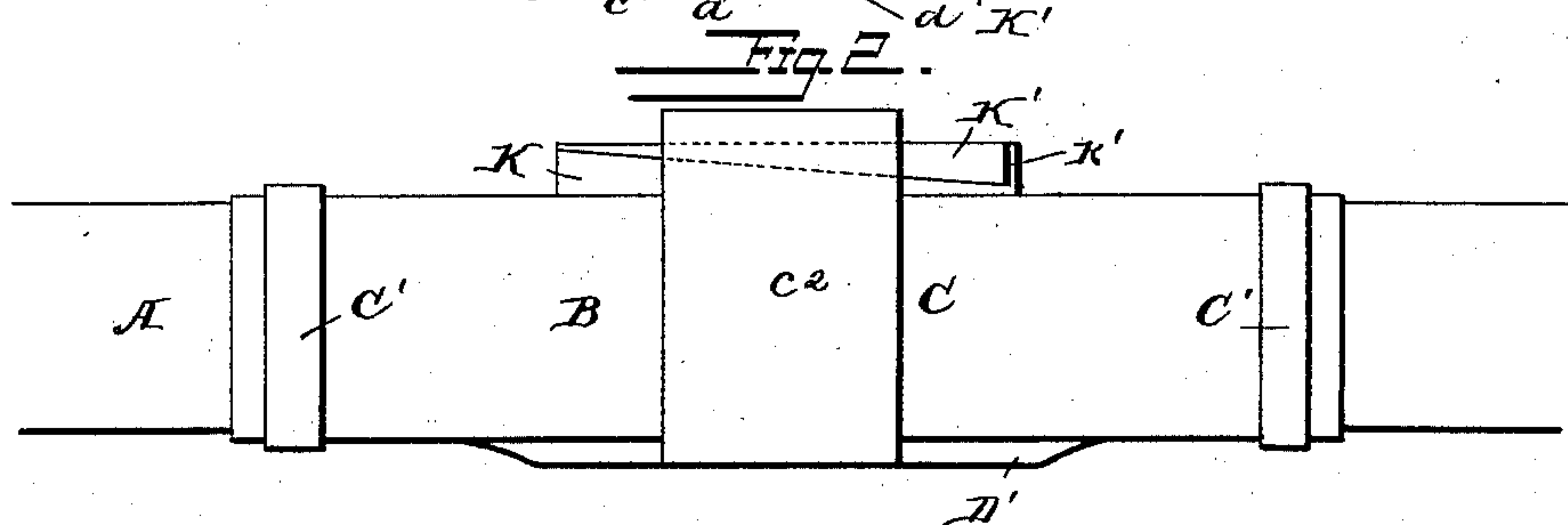
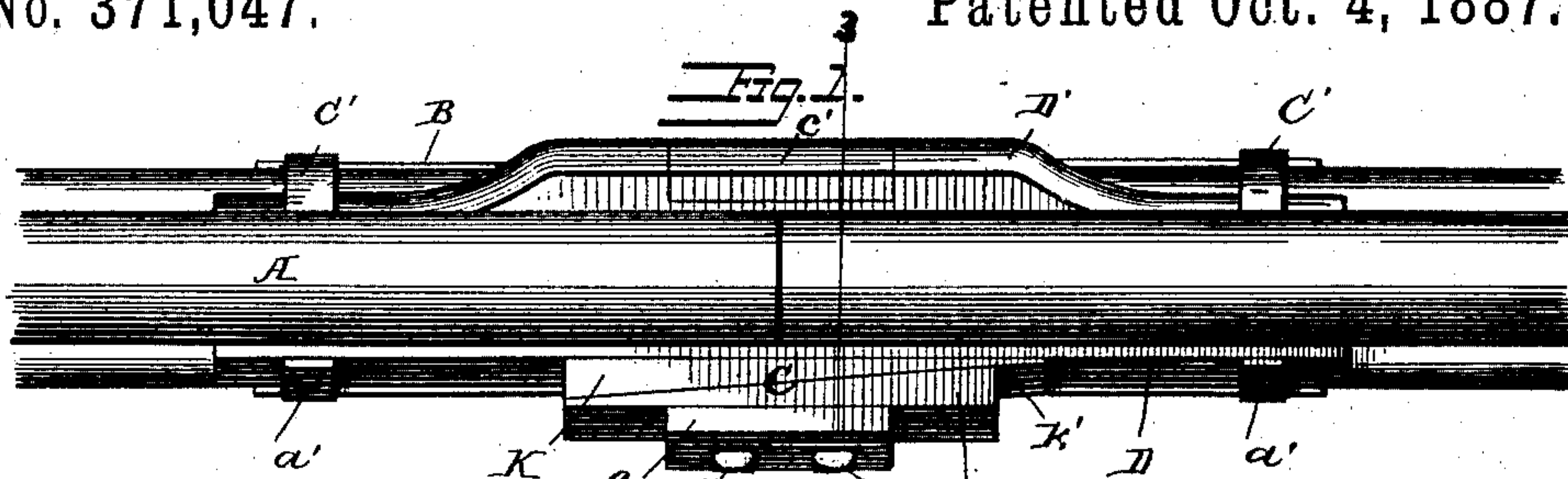
(No Model.)

3 Sheets—Sheet 1.

A. H. EGE.
RAIL JOINT SUPPORT.

No. 371,047.

Patented Oct. 4, 1887.



Attest:
J. G. Hinkel Jr.
J. S. Barker

Inventor:
Alexander H. Ege
by J. H. & J. H. Merriam
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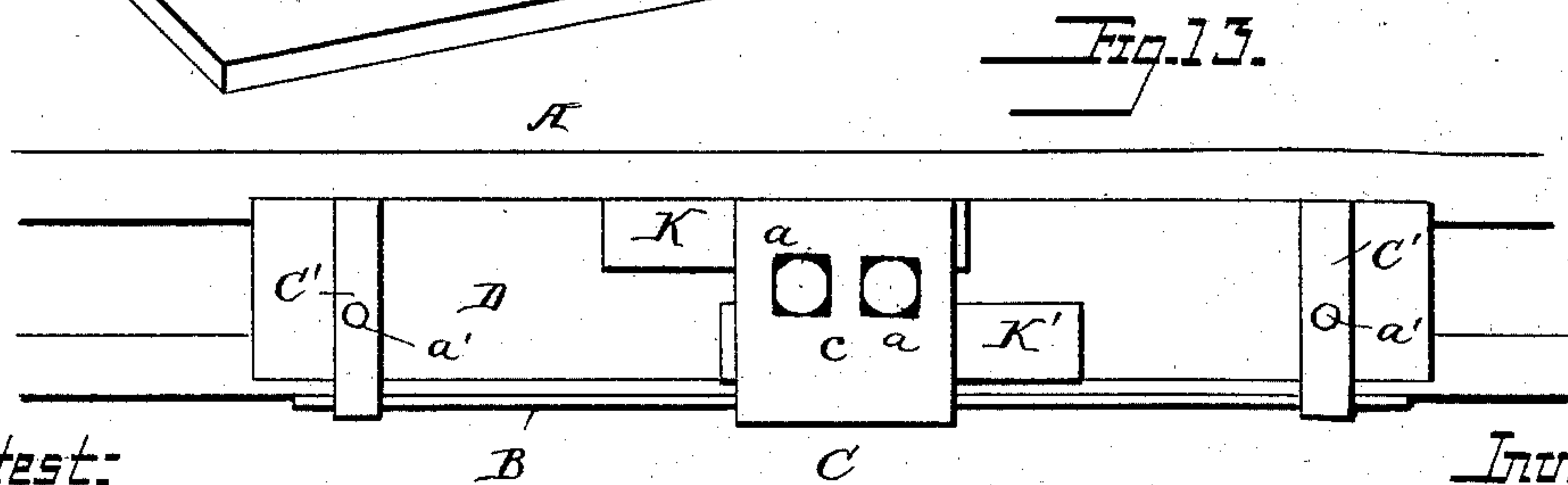
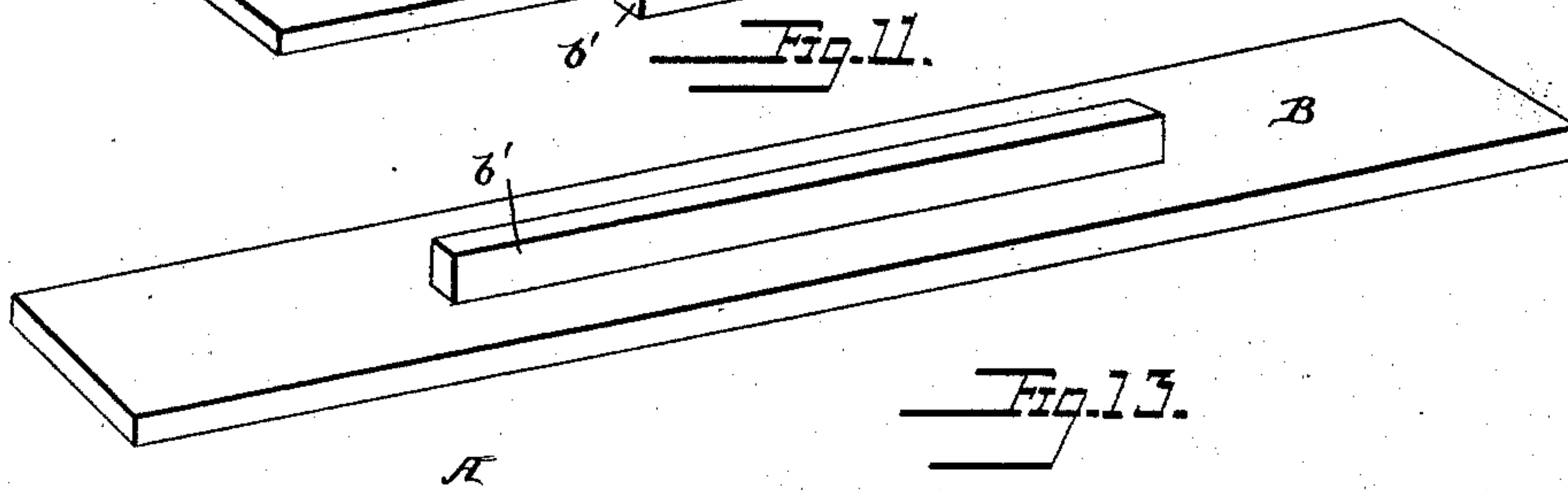
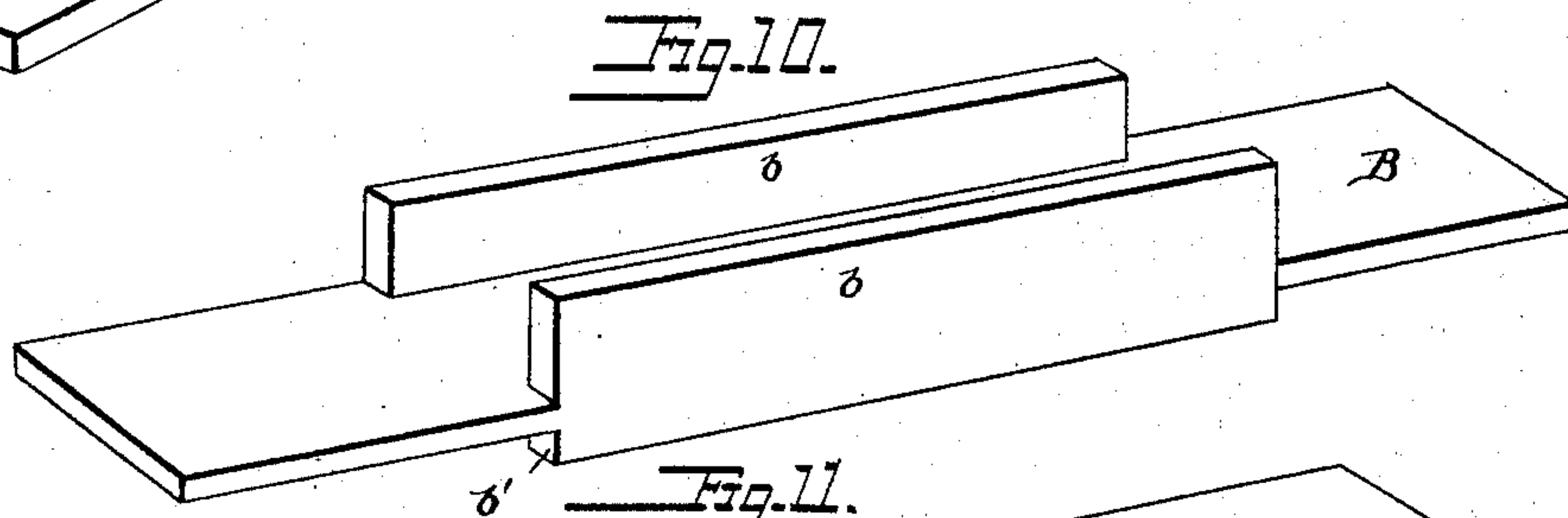
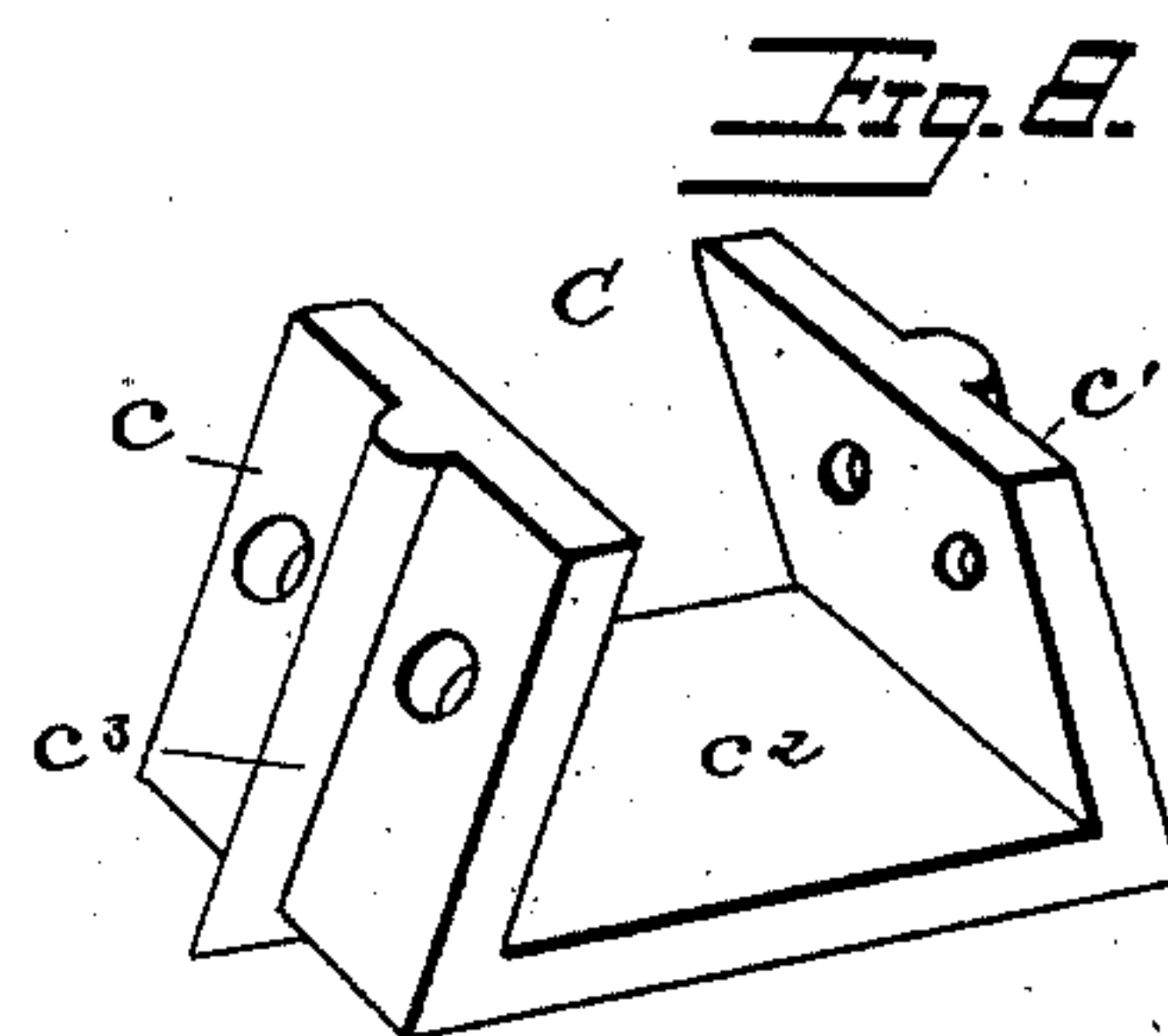
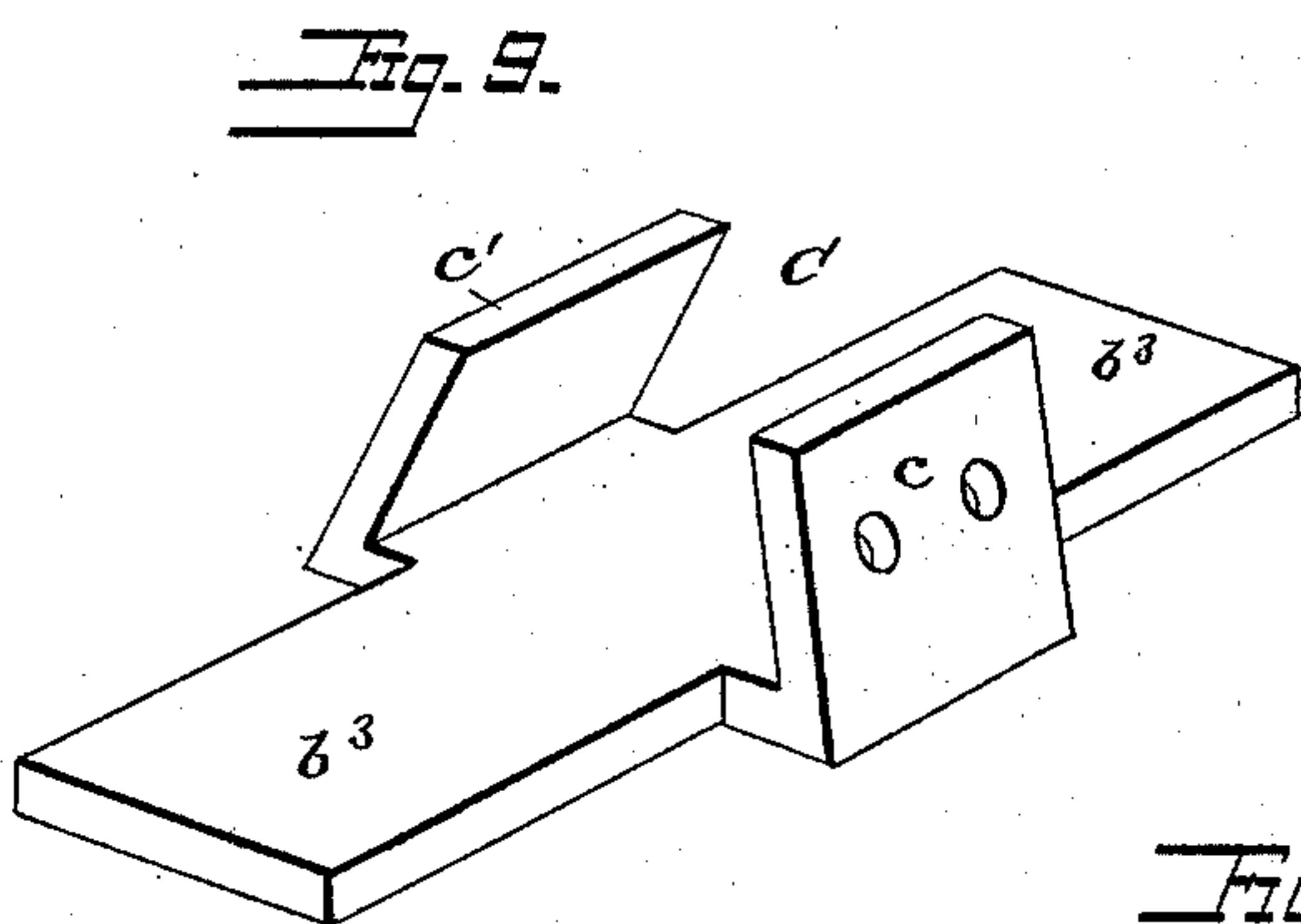
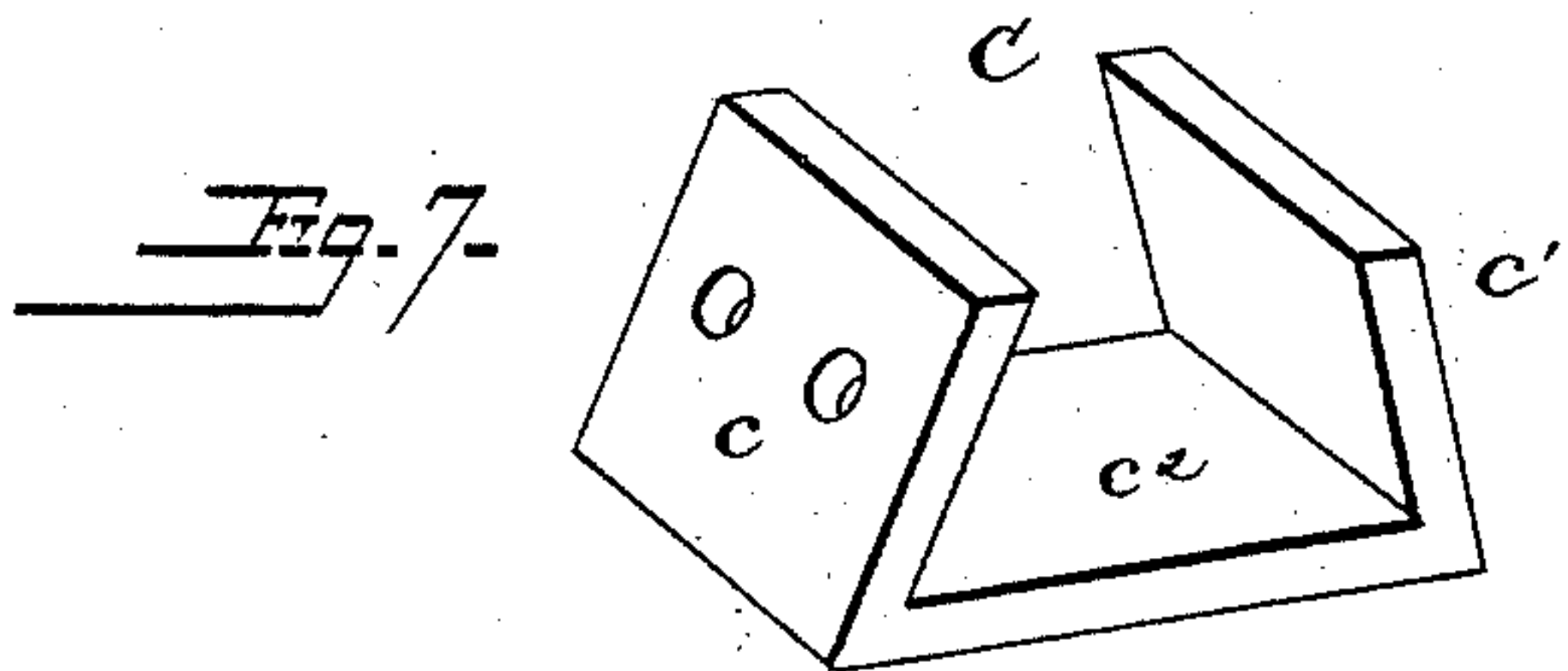
(No Model.)

3 Sheets—Sheet 2.

A. H. EGE.
RAIL JOINT SUPPORT.

No. 371,047.

Patented Oct. 4, 1887.



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Jno. G. Minkel, Jr.
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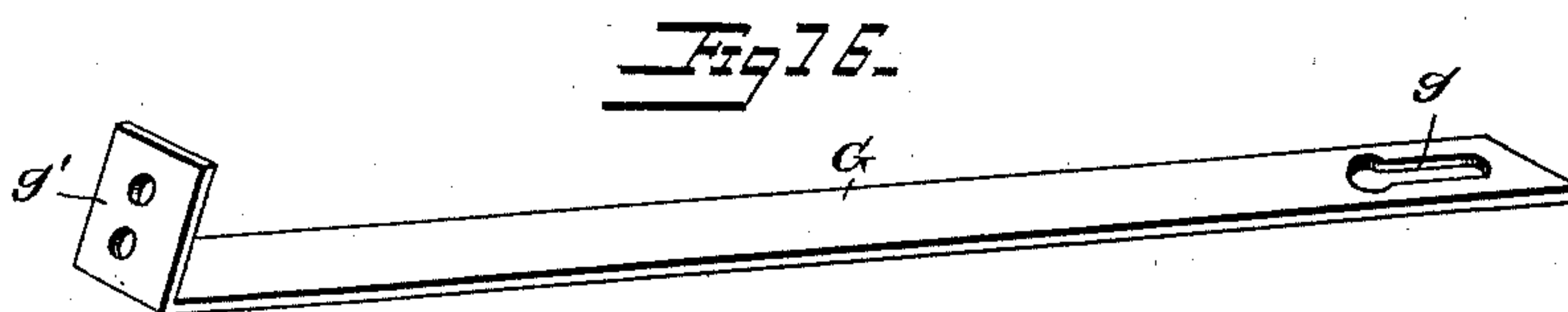
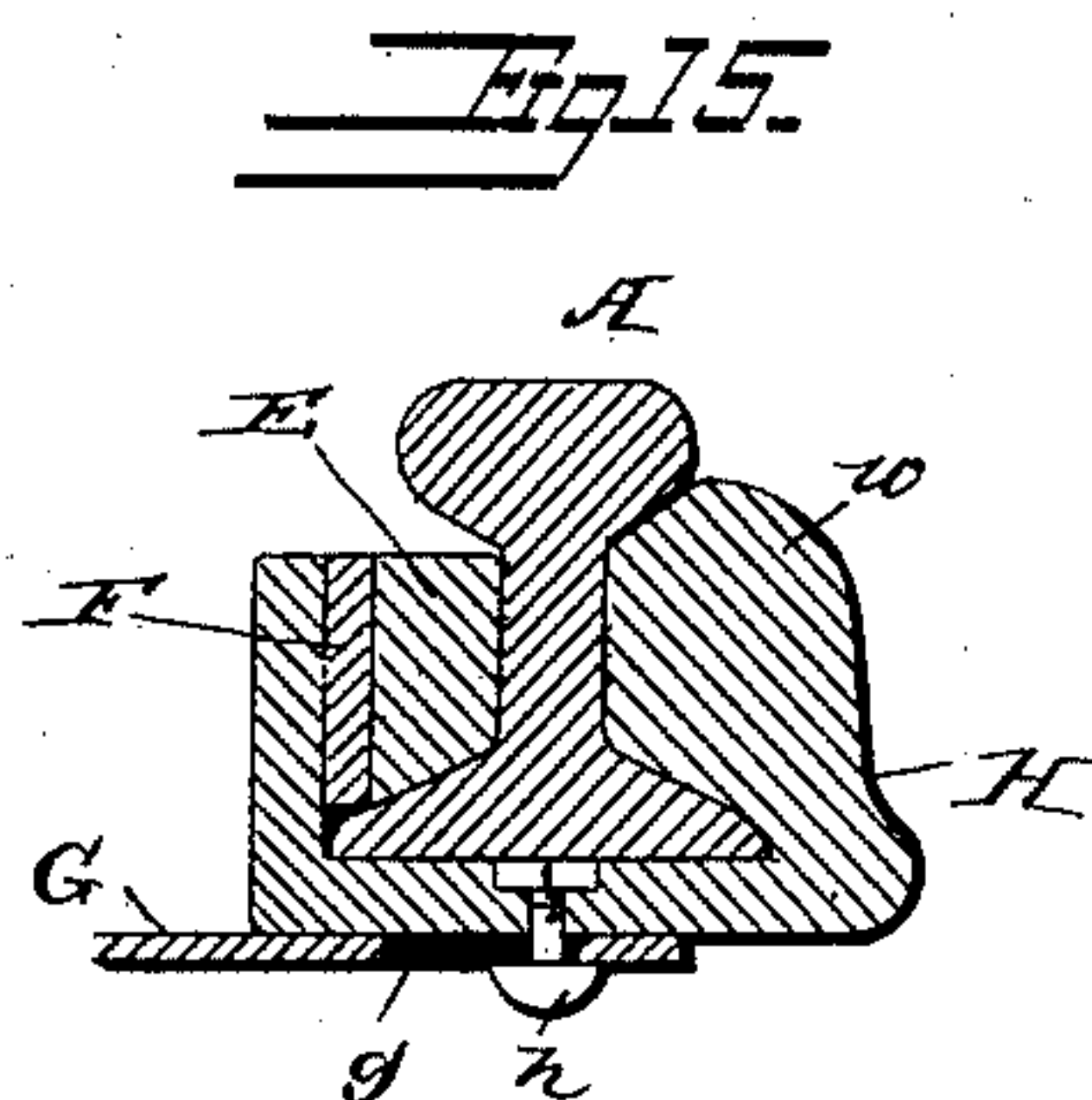
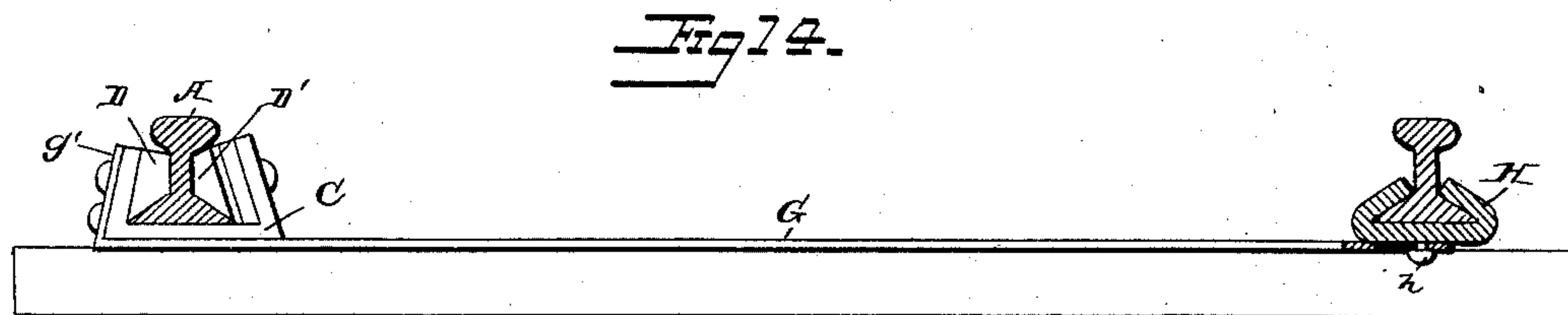
(No Model.)

3 Sheets—Sheet 3.

A. H. EGE.
RAIL JOINT SUPPORT.

No. 371,047.

Patented Oct. 4, 1887.



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UNITED STATES PATENT OFFICE.

ALEXANDER H. EGE, OF MECHANICSBURG, PENNSYLVANIA.

RAIL-JOINT SUPPORT.

SPECIFICATION forming part of Letters Patent No. 371,047, dated October 4, 1887.

Application filed June 21, 1887. Serial No. 242,027. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER H. EGE, a citizen of the United States, and a resident of Mechanicsburg, in the county of Cumberland and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Joint Supports, of which the following is a specification.

My invention relates to certain improvements in rail-joint supports adapted to sustain the joint under the weight of a train, and also to certain improvements adapted to afford a convenient and efficient bearing for the attachment of a lateral supporting connecting-bar adapted to unite the two rails of the track, and thereby prevent their spreading.

To accomplish these ends, the invention consists of certain parts, to be hereinafter fully described and claimed.

Referring to the drawings, Figure 1 is a top plan view of a rail-joint support embodying my invention. Fig. 2 is a bottom view of the same. Fig. 3 is a transverse section taken on the line 3 3, Fig. 1. Fig. 4 is a side view. Fig. 5 is a side view of the inner side piece. Fig. 6 is an inner or face view of a side piece of somewhat different construction. Fig. 7 is a perspective view of the U-shaped binding-clamp. Figs. 8 and 9 illustrate different forms of the binding-clamp. Figs. 10, 11, and 12 are views of different forms of bottom or sole plates. Fig. 13 is a side view of a slightly modified form of the joint. Fig. 14 is a cross-section of track, illustrating the connecting-bar which I employ for uniting the opposite rails to prevent spreading thereof. Fig. 15 is a cross-section, enlarged, of a somewhat different form of clamp for uniting the connecting-bar to the rail. Fig. 16 is a perspective view of the connecting-bar detached. Fig. 11 is stated to be a bottom face view, and hence rib *b'* is on the under side of the sole-plate.

In the drawings, A A represent the contiguous ends of two rails, resting, preferably, on a sole-plate, B, which latter may be of any desired construction and is of such length as to properly support the rails at this point, it preferably having its ends resting upon two contiguous cross-ties. In Figs. 1 and 2 this sole-plate is shown as consisting of a simple plate of metal of the desired size. In Fig. 10 the central portion of the sole-plate is

shown to be of H shape, it having upward-projecting wings or flanges, between which the rails are confined, and also downward-projecting flanges *b'*, which gives strength to the plate. In Fig. 11, which shows the bottom face of another form of sole-plate, a simple strengthening-rib, *b'*, is employed.

The side plates, which lap the joint and are employed in place of the ordinary fish-plates, are represented by the letters D D', they being secured together, as well as to the rails and to the sole-plate, when the latter is employed, by means of a U-shaped binding-clamp, C, and clamping-bolts *a*.

The plate or bar D', on the inner or wheel-flange side of the joint, fits snugly in the groove or channel between the tread and flange portions of the rails. It is preferably thicker than an ordinary fish-plate at its central portion and tapers toward its two ends, it being cut away centrally to form a seat, *d'*, for the upturned end or flange of the clamp C. As will be seen from an examination of Fig. 5, which is an outer face view of bar D', the bottom of recess or seat *d'* is provided with seats or sockets adapted to receive the nuts *n*, with which bolts *a* engage, and to prevent their turning. The above construction of part D' is that which I prefer when it is formed of cast metal; but when rolled it is necessarily of the same sectional size throughout, and the seat for the nut *n* will be a continuous groove, as will be readily understood.

The bar or plate D, which lies on the side of the rails opposite to D', is quite similar in construction to an ordinary fish-bar.

The binding-clamp C consists of the bottom plate, *c'*, lying below the rails, and the sole-plate B, when the latter is employed, and the two upwardly-projecting flanges *c c'*, which are inclined at unequal angles relatively to the bottom plate, (see Figs. 3, 7, and 9,) so that the one *c'* may rest in the recess *d'*, while the other portion, *c*, lies parallel to but at a short distance from the outer inclined face of the bar D, between which and the flange are inserted the wedges K K'. The outer flange, *c*, of the clamp, the bar D, the abutting ends of the rails, and the bar D' are all provided with apertures, which, when the parts are in proper working position, register to permit the passage of bolts *a*, which engage with the nuts

n , whereby the parts are united. In the construction shown in Fig. 5 the walls of recesses d^2 prevent the nuts from turning, while the flange c' of the clamp confines them in said recesses and prevents their being tampered with or becoming lost should the bolt be removed.

It will be readily understood that two clamps C might be employed in place of the one shown, one being used for each bolt and rail end, although I prefer the construction shown, as it lessens the number of parts and the labor of putting them together.

K K' represent wedges adapted to be inserted between the outer face of the bar D and the flange c of the binding-clamp, the wedges, as shown in Figs. 1, 2, 3, and 4, lapping upon each other and having their apices pointing in opposite directions. They are preferably slotted centrally throughout a considerable portion of their length for the passage of the bolts a , and also to permit a longitudinal movement thereof after the bolts have been inserted. By preference they are of unequal length, the one K, lying next to bar D, being the longer, so that when driven upon each other to tighten the parts of the joint the end k' of the longer wedge, which projects beyond the base of wedge K', is turned upward, thereby securely locking the wedges together, in which position they will remain until the upturned end k' is intentionally bent down.

In putting the parts together the bolts a are first tightened sufficiently, after which the wedges are driven upon each other in opposite directions, this being permitted by the slots k , thus taking up any looseness of parts which might have existed after the bolts were tightened.

In Fig. 13 a construction is shown differing somewhat from that just described, in that the wedges K K' are narrower than those shown in the other figures and are not superposed, but rather lie one above and the other below the bolts a . The wedges shown in Fig. 13 are confined, after being driven sufficiently far, by turning up their tapered ends against the opposite sides of flange c . Should a more secure union of the parts be required, bolts a' might be passed through the plates or bars D D' near their ends, and when such are used I prefer to employ therewith narrow binding-clamps C', quite similar to clamp C.

In Fig. 6 is shown a bar D' differing somewhat in construction from that shown in Fig. 5, in that the grooves or recesses d^2 are formed on the inner face—that is, toward the web of the rail—instead of on the outer face thereof. There are also shown other recesses or seats, d^3 , for the reception of the nuts with which the bolts a' engage. This construction avoids the necessity of perforating the bar D', thereby increasing its strength and enabling the use of shorter bolts than in the other construction.

In Figs. 8 and 9 are shown two constructions of clamp C. In Fig. 8 both flanges of the clamp are perforated to permit the passage

of a bolt entirely through the same, which in some cases might be a desirable construction. The clamp is also strengthened by a bead or rib, c^3 . In Fig. 9 the clamp is shown as provided with transversely-extending wings or plates b^3 , which serve in place of the sole-plate B hereinbefore described.

In Fig. 12 I have shown a sole-plate which is wider than the base of the rail and is centrally cut away, as at b^2 , for the reception of the flanges of binding-clamp C, its edges being also notched to receive the spikes.

In order to prevent spreading of the rails, I employ a connecting-bar, G.

It is almost universally customary to break joints, and this necessitates an independent clamp adapted to engage with the flange of the rail opposite a joint in the opposing rail. In Fig. 14 a simple form of such clamp is shown, and is lettered H. Projecting downward therefrom is a button-headed screw or pin, h , adapted to engage with a key-hole-shaped aperture, g , in the end of bar G, the other end of the bar being upturned at g' . The end g' of bar G is perforated for the passage of the binding-bolts a , which unite it to the rail-joint, said end g' being secured either to the wheel-flange side of the joint or to the opposite one, preferably the latter.

Other means than those described may be used for connecting bar G with the respective rails, although those shown I deem preferable.

A construction of clamp such as shown in Fig. 14 can only be put in place by sliding it from the end of the rail. Therefore I prefer to use one of the character illustrated in Fig. 15, which may be applied directly at the place where it is to be used. This clamp (indicated by the letter H) has one or more enlarged upward-projecting portions, w , lying in the groove between the tread and base on the outside of the rail and extending in it to the top thereof, these portions w serving to support the tread of the rail against the severe outward thrust caused by a passing train. Between the upturned vertical flange h' of this clamp and the rail are inserted the filling-block E and the wedge F, which latter, after having been driven sufficiently far to tighten the parts, has its end turned up to prevent accidental removal.

I am aware that slotted keys or wedges of equal length have been used for tightening the parts of joint-connections, and hence I do not claim, broadly, such devices.

I am also aware that plain wedges have been used, driven in opposite directions, and binding on each other; but plain wedges separated by the binding-bolts and not lapping on each other, and bent outward terminally for locking purposes, I believe to be new.

I am also aware that metallic cross-ties have been used to prevent the spreading of rails; but the use of a gage-bar in connection with a joint-support for this purpose I believe to be new.

Without limiting myself to the precise con-

struction and arrangement of parts shown, I claim—

1. The combination, with the rails, of a sole-plate below the abutting ends of the rails, supporting-bars lying on opposite sides of the rails, and a rigid binding-clamp passing under the sole-plate and having upward-projecting flanges lying by the side of the supporting-bars, and bolts passing through the flanges of the clamp, the side supporting-bars, and the rails, substantially as described.

2. In a rail-joint, the combination, with the abutting ends of the rails, of supporting-bars lying on opposite sides thereof, one of said bars being provided with a seat on its outer face, a binding-clamp extending below the rail and having upward-projecting flanges, one of which rests in said seat, and bolts for uniting said parts, passing through one or both the upward-projecting flanges of the clamp, substantially as set forth.

3. In a rail-joint, the combination, with the abutting ends of the rails, of supporting-bars lying on opposite sides thereof, one of said bars being provided with seats or recesses, as at d^2 , binding-clamp, bolts, and nuts lying in said seats or recesses, by which they are prevented from turning, substantially as described.

4. In a rail-joint, the combination, with the abutting ends of the rails, of supporting-bars lying on opposite sides thereof, one of said bars being provided with a seat in its outer face and with a recess or recesses at the bottom of said seat, a binding-clamp extending below the rail and having upward-projecting flanges, one of which rests in said seat, bolts for uniting said parts, and nuts lying in said recesses, by which they are prevented from turning, they

being confined therein by the flange of the clamp, substantially as described.

5. In a rail-joint, the combination, with the abutting ends of the rails, of the side supporting-bars, a clamp having upward-projecting flanges lying opposite the supporting-bars, one being arranged at a distance therefrom, through bolts uniting the parts, and keys or wedges of unequal length inserted between one of the bars and the flange of the clamp, the end of the longer wedge being turned over against the shorter one to prevent their accidental removal, substantially as described.

6. The combination, with a rail-joint, of a gage-bar secured thereto, a separable clamp united to the opposing rail, and means for detachably uniting the gage-bar to the clamp, substantially as set forth.

7. The combination of a gage-bar secured to one rail, and a clamp secured to the other rail and provided with a button-headed projection, said projection engaging with a key-hole-shaped aperture in the gage-bar, substantially as described.

8. The combination of a gage-bar, means for securing it to one rail, a clamp, H, by which it is united to the opposing rail, said clamp being provided with supporting projections adapted to bear the thrusts of the rail, and wedging devices and fillings for holding said clamp in place, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALEXANDER H. EGE.

Witnesses:

D. E. KAST,
GEO. F. LONGSDORF.