

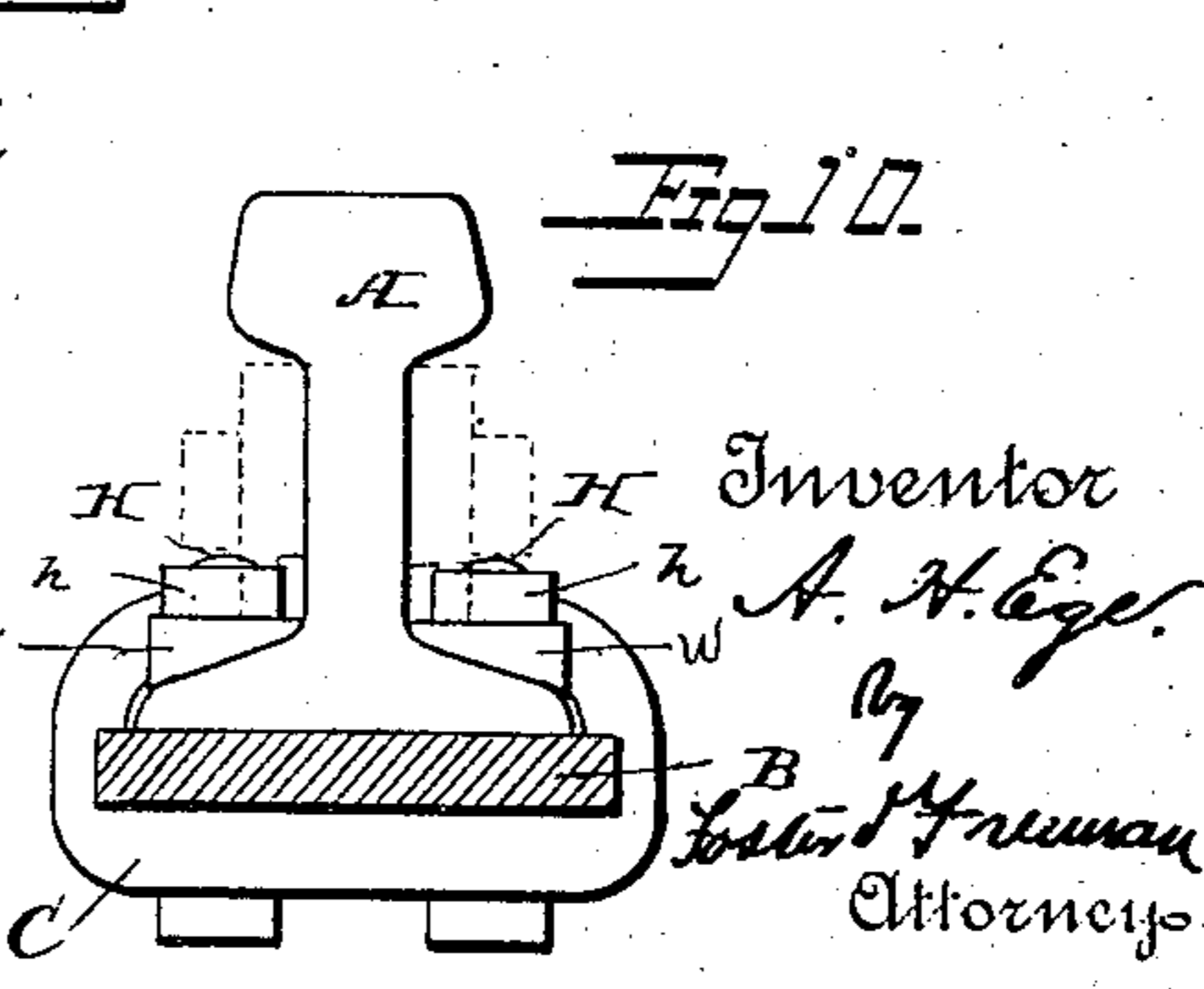
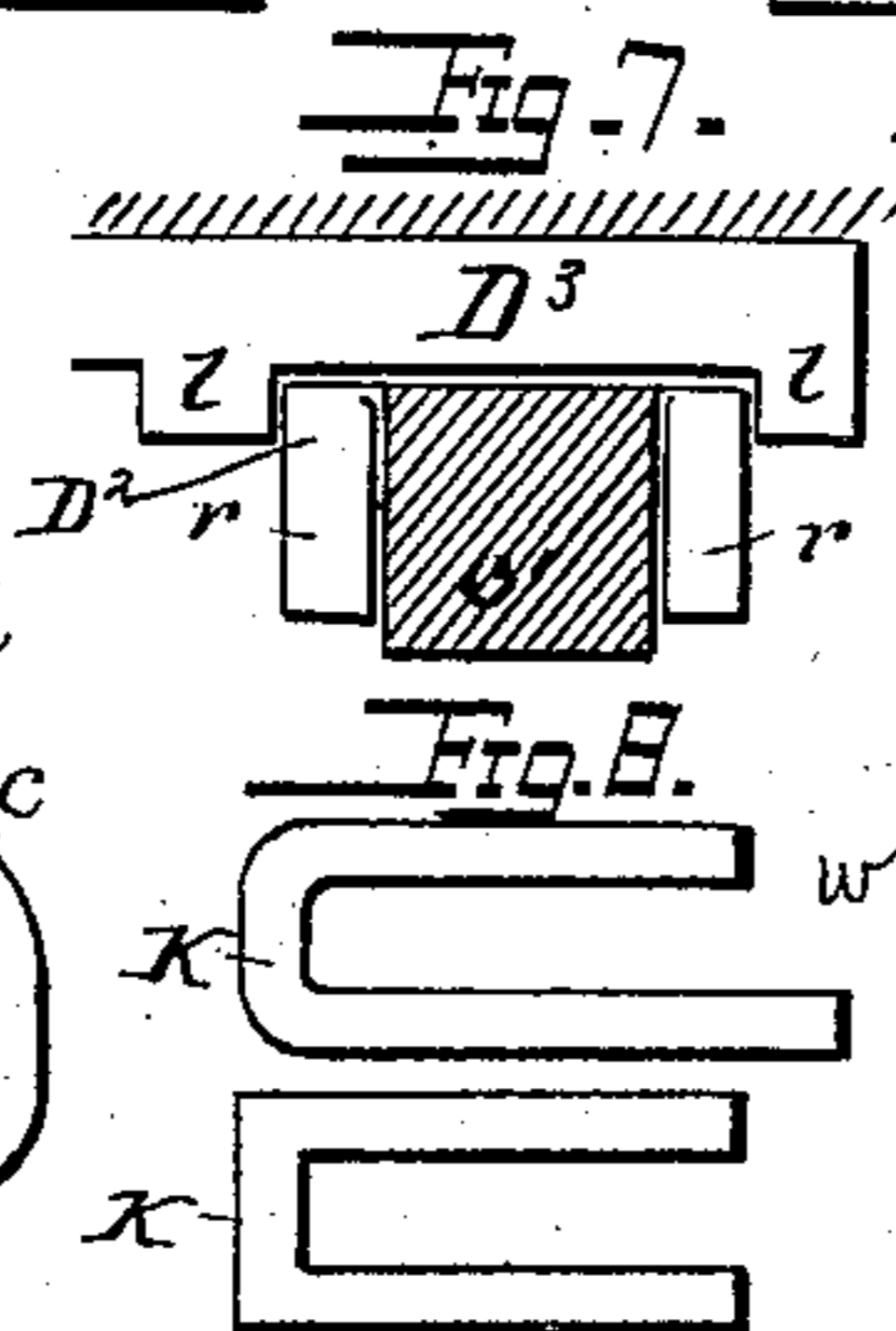
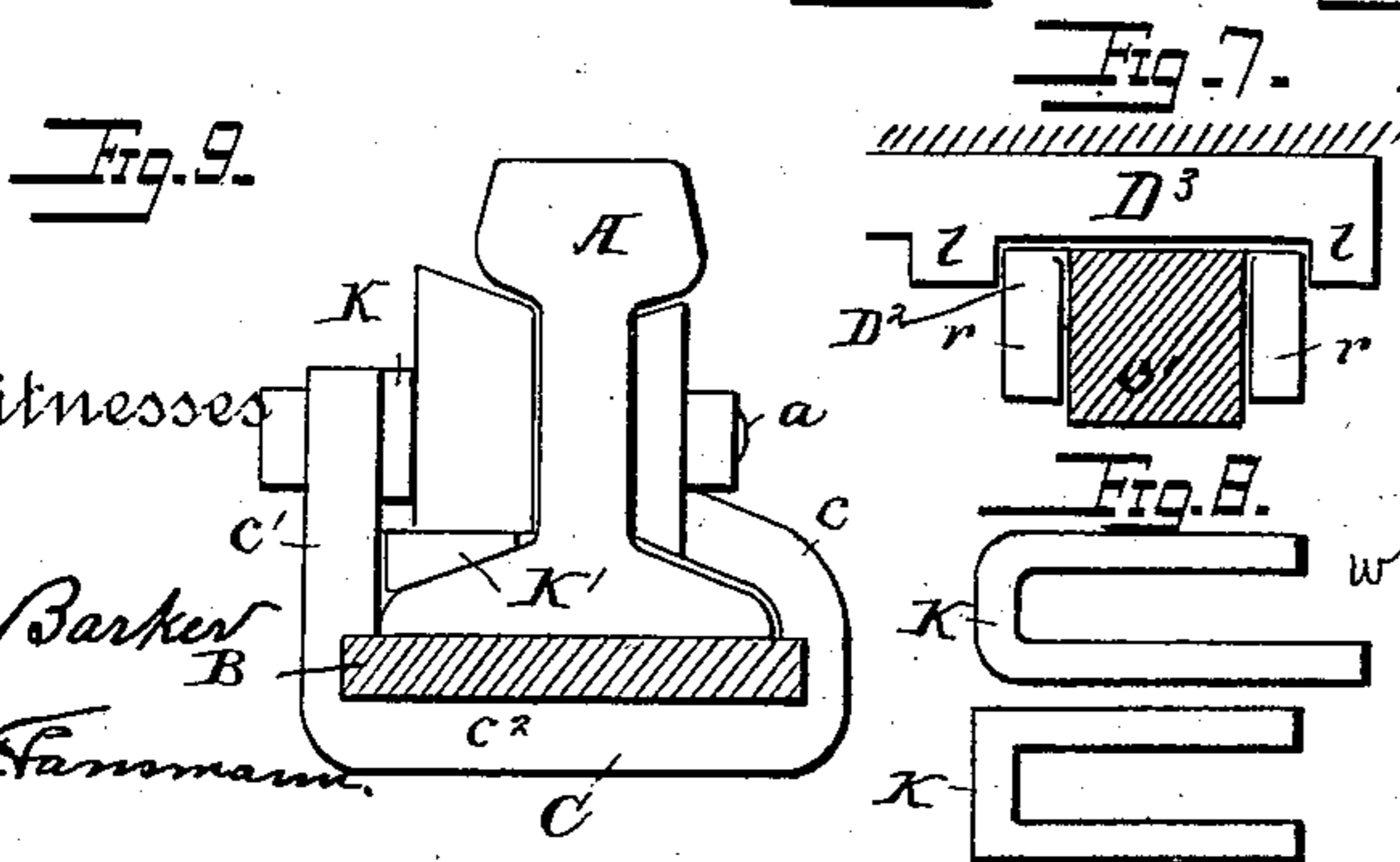
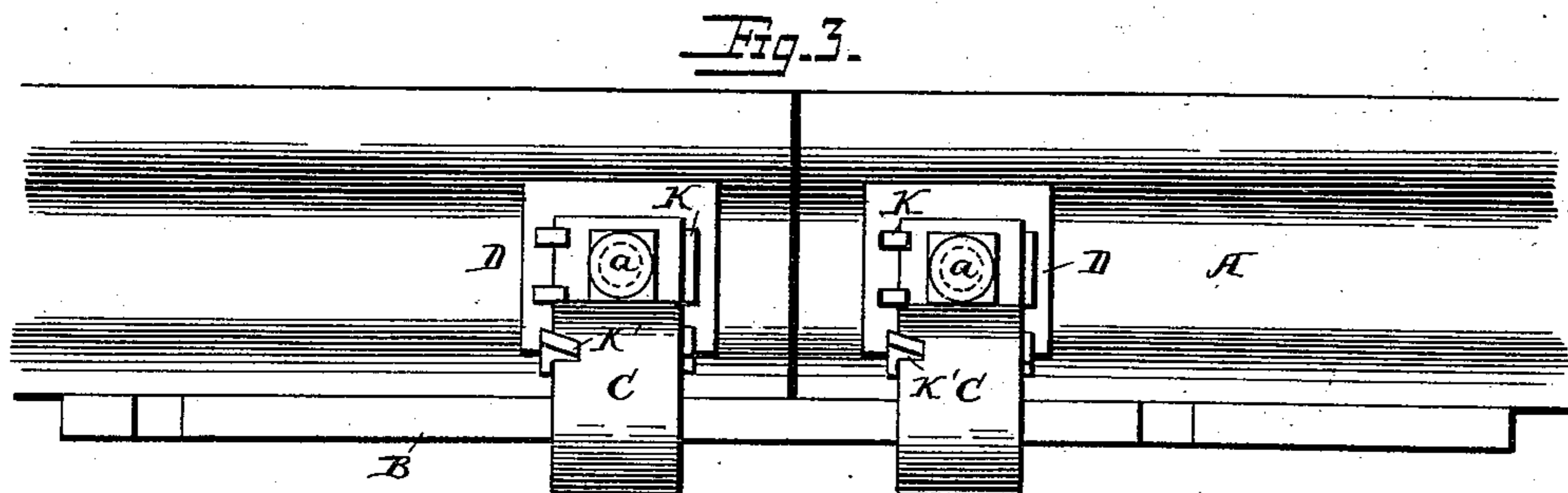
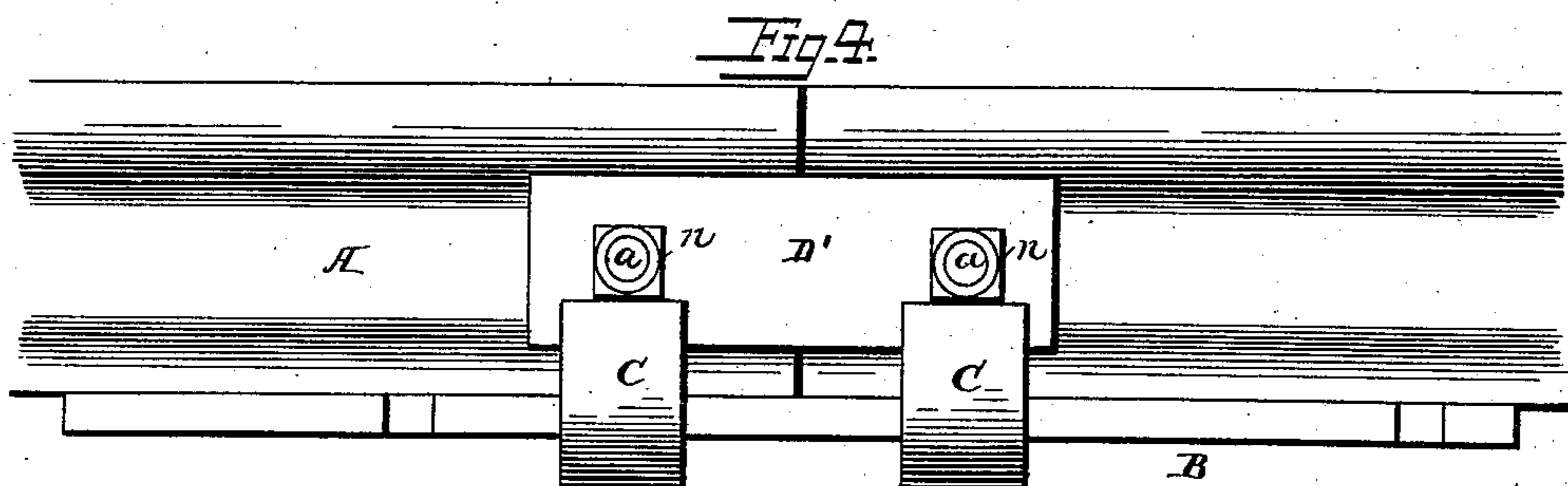
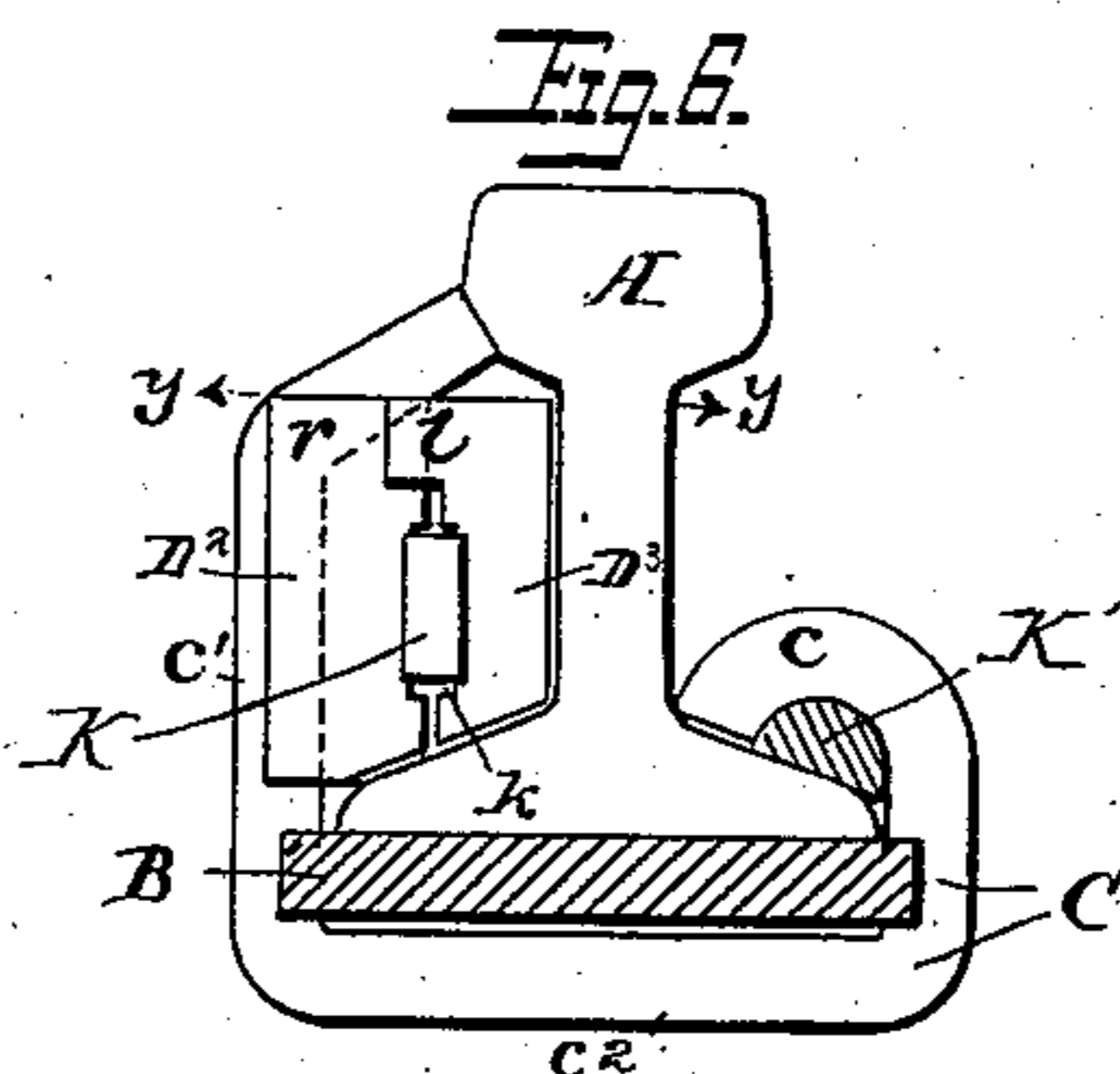
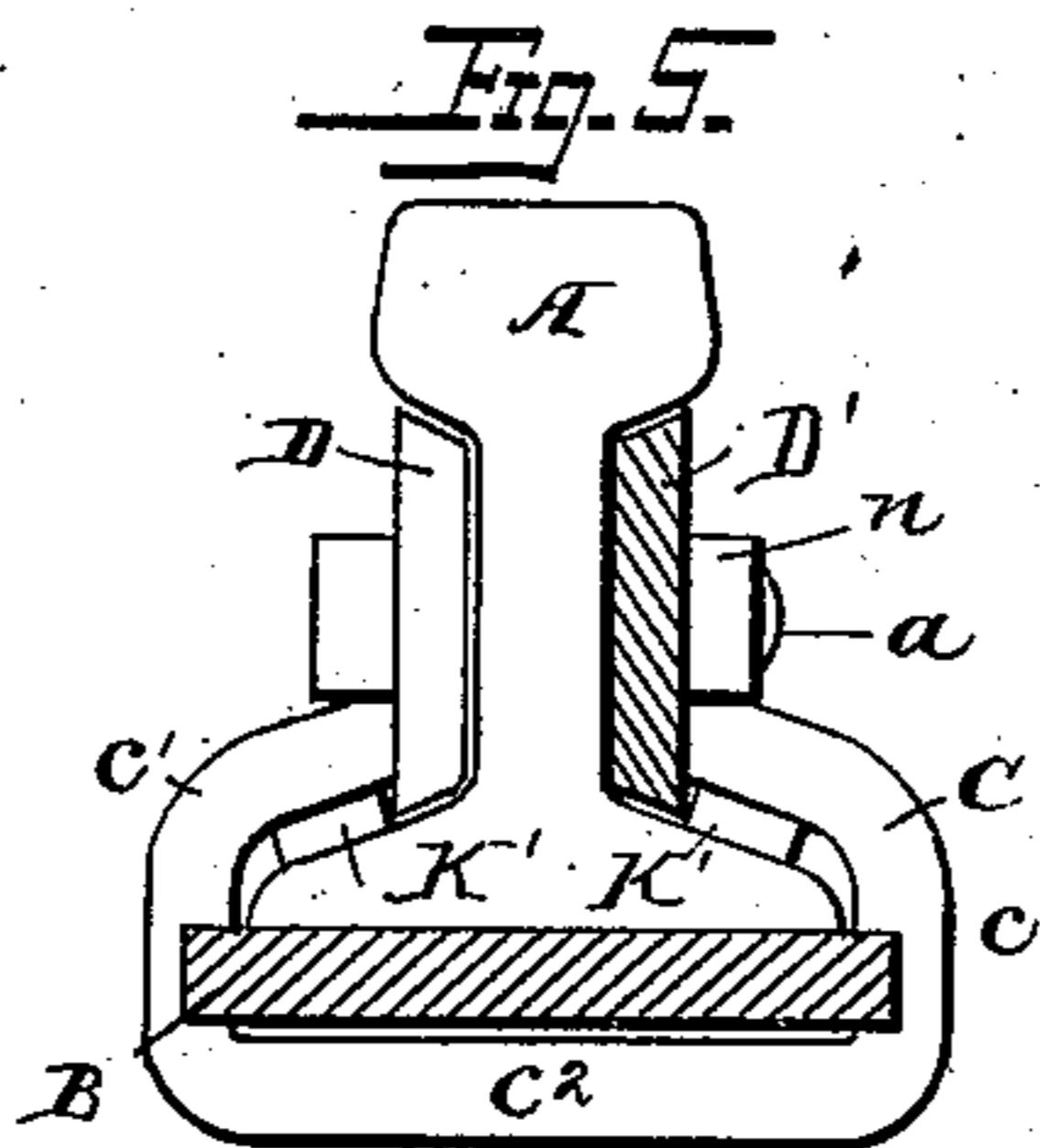
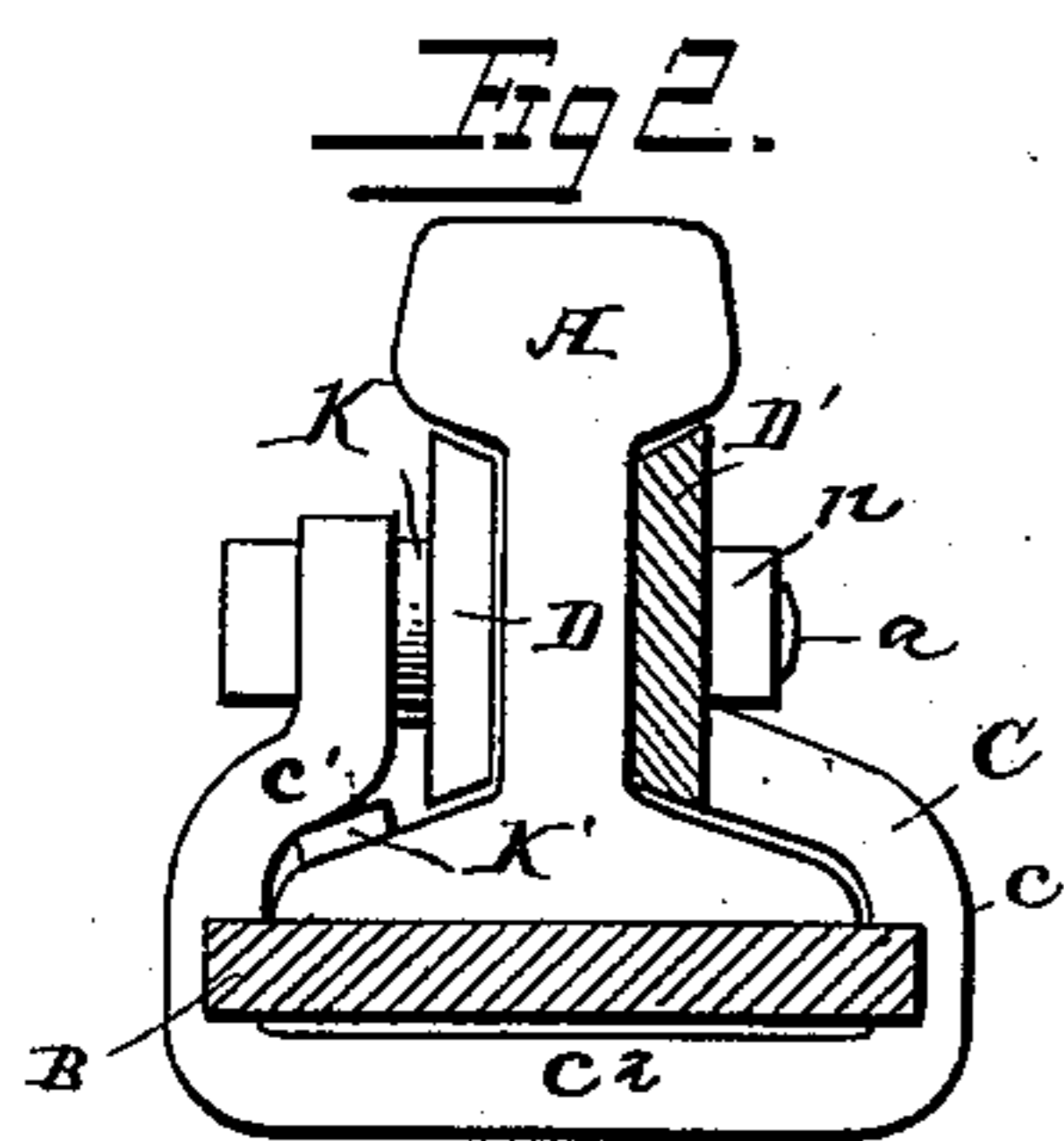
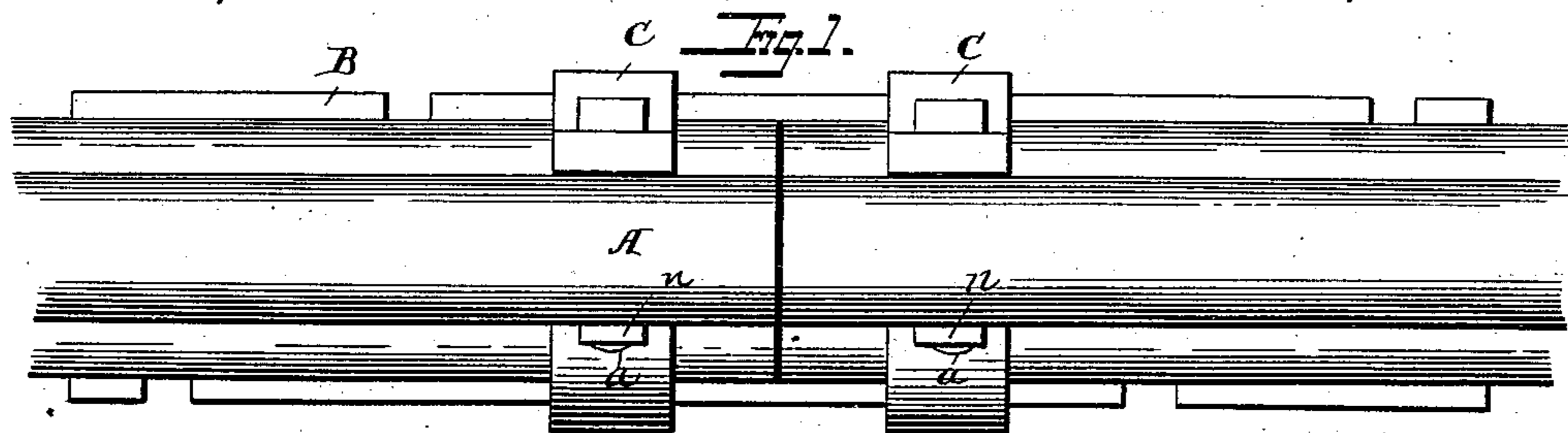
(No Model.)

A. H. EGE.

RAIL JOINT SUPPORT.

No. 376,869.

Patented Jan. 24, 1888.



Witnesses

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UNITED STATES PATENT OFFICE.

ALEXANDER H. EGE, OF MECHANICSBURG, PENNSYLVANIA.

RAIL-JOINT SUPPORT.

SPECIFICATION forming part of Letters Patent No. 376,869, dated January 24, 1888.

Application filed November 22, 1887. Serial No. 255,919. (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, Cumberland county, 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, particularly to improvements upon the device secured to me by Letters Patent bearing date October 4, 1887, and numbered 371,047.

Referring to the drawings, Figure 1 is a top plan view of an improved rail-joint support embodying my invention. Fig. 2 is a transverse section taken on line *x x*, Fig. 1. Fig. 3 is a side view of the outer side of the device. Fig. 4 is an inner side view of the same. Fig. 5 is a transverse section showing the clamp gripping the rail on opposite sides and not perforated for the passage of the through-bolts. Fig. 6 is a similar view showing another form of the invention. Fig. 7 is a section on line *y y* of Fig. 6. Fig. 8 shows two forms of keys detached. Figs. 9 and 10 are transverse sectional views showing still other forms of my invention.

In the drawings, *A A* represent the contiguous ends of two abutting rails, resting preferably on a sole-plate, *B*, which 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. This sole-plate preferably consists of a simple plate of metal of a breadth a little in excess of the breadth of the bottom of the rails, and having its edges notched to receive the upturned flanges of the clamp, as well as the spikes used to hold it in place. This plate may, however, be dispensed with, the ends of the rails resting directly upon the cross-ties.

Instead of using the ordinary continuous fish-plates or the bars shown in my aforesaid patent upon both sides of the rails lapping the joint, it is found in practice that if the sole-plate and the clamps *C* be made of sufficient strength and thickness it is best to use the continuous fish-bar *D'* only upon the inner or running side of the rails, while simple side blocks, plates, or washers, *D*, are used on the outer side to engage laterally with said rails

and the binding-keys, said bar *D'* and blocks or plates *D* being held in place by means of the embracing binding-clamps *C* and clamping-bolts *a*. The plate or bar *D'* on the inner or wheel-flange side of the joint, being of the form of the ordinary fish-bar, fits snugly in the groove or channel between the tread and flange portions of the rails and is held firmly thereto, as above stated. The side blocks, *D*, which are placed on the side of the rail opposite to *D'*, are plane on their outer side, to engage laterally with the binding-keys *K* when used, their inner sides being made to conform to and fit into the channel of the rail.

The binding-clamps *C* consist of the bottom plate, *c'*, lying below the rails and sole-plate *B* when the latter is employed, and the two upwardly-projecting flanges *c c'*. In the construction shown in Fig. 2 the flange *c* is bent into a sharp curve to embrace tightly the contiguous rail-flange, and terminates opposite the angular connection of said flange with the rail-web, while the flange *c'* is at first curved inward above the outer flange of said rail, but so as to leave a slight space between said flange *c'* and the rail-flange for the reception of a binding-key, *K'*, as shown, and subsequently said flange *c'* is turned upward at an angle more or less nearly parallel to the outer surface of the side plate, *D*, and to a height sufficient to be engaged by bolts *a* when such are used.

In Figs. 2 and 5 it is seen that the square or angular headed nuts *n*, placed to register with the perforations for the passage of bolts *a*, have their flat edges in contact with the upper surface or edge of the clamp-flange, which latter holds the nut from turning or working loose, and thereby in effect secures the advantages of a nut-lock without the use of a separate appliance for the purpose.

It is readily seen that four binding-clamps may be used—two upon each abutting end of the rails; but two—one for each end of the rail—are found in practice to be sufficient, since each is capable of being increased in breadth and thickness in connection with increased thickness of the sole-plate *B* whenever increased strength of support is required to meet the increased tonnage of passing trains or of excessive travel thereover.

K K, Fig. 8, represent simple forms of

wedges, they being slotted centrally throughout the greater part of their length, if need be, for the passage of the binding-bolts, and are sufficiently tapered at one end as to admit of being bent outward for locking purposes, as set forth in my said patent.

K' is a plane wedge-key more or less acute, and used for the purpose of vertically binding the parts—that is, binding the sole-plate to the bottom of the rail—while the keys K K bind the parts of the device laterally. The acute ends of said keys K' are also capable of being turned upward when in place for locking purposes, as shown in Fig. 3.

Referring to the construction shown in Fig. 9, it will be seen that the binding-key K', in order to perform its function, in connection with the clamp C, of binding the sole-plate B tightly against the bottom of the rail, is made to pass between the flange of the rail and the bottom surface of the side supporting-block, D'.

In Fig. 10 the means shown for binding clamp, sole-plate, and rail-flange together dispenses with the use of the binding-key K', bolts H H being passed vertically upward through holes piercing the bottom plate, c', of the clamp C, sole-plate B, and rail-flange, and wedge-shaped washers w, and provided at their upper ends with nuts h, resting in seats upon the bottom face of the engaging-block D', and held therein from turning by reason of the angles of the nuts bearing against the edges of the said seats. Lateral bolts may pass through the side supports and rail-webs, if desired. Since this form of construction, however, adds to the expense of manufacture, I prefer to use the binding-key, as shown in the other figures.

In Fig. 6 a construction is shown in which bolts, nuts, and drillings are dispensed with. In such cases both binding blocks or bars D² D³ are placed on the same side of the rail, the outer block, D², being furnished with vertical ribs r r, thus forming a recess or seat in which the flange c' of the clamp rests. The inner side supporting-block, D³, which is made longer than the block D², has also outer projecting lugs or sectional ribs, l l, upon its outer vertical edges, which lugs l project beyond and embrace the ends of the said block D². The function of said lugs l is to prevent the forward or backward movement of the blocks D³, while the blocks D² in turn are restrained from a similar movement by the inclosed clamp-flange c', which in turn is retained in place by the inclosing notched seat of the sole-plate, this being kept stationary by the rail-spikes in their respective notches. In this embodiment of my invention the vertically-binding key K' is inserted between flange c and the rail-flange, while the key K, which gives the lateral binding movement, is inserted in a seat, k, formed by registering recesses in the adjacent faces of blocks D² D³.

In Fig. 5 the upward-extending ends or flanges of the clamp C are substantially alike in shape, and engage with the opposite faces

of the bars or plates D D', or, if desired, with the web of the rail itself a little above the base thereof, sufficient space intervening between the ends of the clamp and the rail-flange to receive the wedges K', in which latter case the plates or blocks D D' are above the ends of the clamp resting between them and the rail-tread, close against the rail-web, as indicated in dotted lines, Fig. 10; but in either case such plates or blocks are held by bolts a, which in this instance do not pass through the flanges of the clamp.

While I have shown herein a number of different embodiments of my invention, each possessing certain distinctive features of advantage incident to its peculiar construction, I desire to reserve to myself the right to claim specifically in subsequent applications any constructions not herein specifically claimed.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. In a rail-joint, the combination, with two abutting rails, of a fish plate or bar, D', lapping the joint on one side of the rails, separate bars or plates D, one on each side of the joint opposite the bar D', an embracing binding-clamp for each bar D, securing it to the opposite bar, D', substantially as described.

2. In a rail-joint, the combination, with two abutting rails, of a fish-bar, D', lapping the joint on one side of the rails, separate bars D, one on each side of the joint opposite the bar D', a sole-plate below the ends of the rails, and a clamp, C, passing below the sole-plate and uniting it to the rails and assisting in securing the bars D' D, substantially as described.

3. In a rail-joint, the combination, with two abutting rails, of a sole-plate, a fish-bar, D', lapping the joint on one side of the rails, separate bars or plates D on the opposite side of the rails, and a rigid binding-clamp passing under the sole-plate, which it secures to the rails, and having upward-extending flanges, one engaging the rail-flange and terminating opposite the angular connection of said flange with the rail-web and the other flange extending upward by the side of one of said bars, substantially as described.

4. In a rail-joint, the combination, with two abutting rails, of a sole-plate, a fish-bar, D', lapping the joint on one side of the rails, separate bars D on the opposite side of the rails, a rigid binding-clamp, C, passing under the sole-plate and having upward-projecting flanges, one engaging the rail-flange and terminating opposite the angular connection thereof with the rail-web and the other flange extending upward by the side of one of the said bars, and bolts a, passing through said flange, bars, and the rail, substantially as described.

5. In a rail-joint, the combination, with two abutting rails, of plates or bars by the side of the rails supporting and uniting them, a binding-clamp, C, extending below the rail and having upward-extending flanges overlapping

the rail-flanges, and vertically-wedging keys K', adapted to bind the parts vertically together, substantially as described.

5 6. In a rail-joint, the combination, with two abutting rails, of plates or bars by the side of the rails supporting and uniting them, a binding-clamp, C, vertically-wedging keys K', and laterally-wedging keys K, substantially as described.

10 7. In a rail-joint, the combination, with two abutting rails, of plates or bars D D' by the side of the rails, the sole-plate B, the binding-clamp C, passing below the sole-plate, and having upward-extending flanges overlapping the

rail-flanges and one of them lying by the side 15 of plate D', a key, K', inserted between the rail-flange and one of the flanges of the clamp, and another key, K, inserted between plate D' and the clamp-flange adjacent thereto, substantially as described. 20

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

ALEXANDER H. EGE.

Witnesses:

J. L. SHELLEY,

GEO. F. LOUEPDORF.