

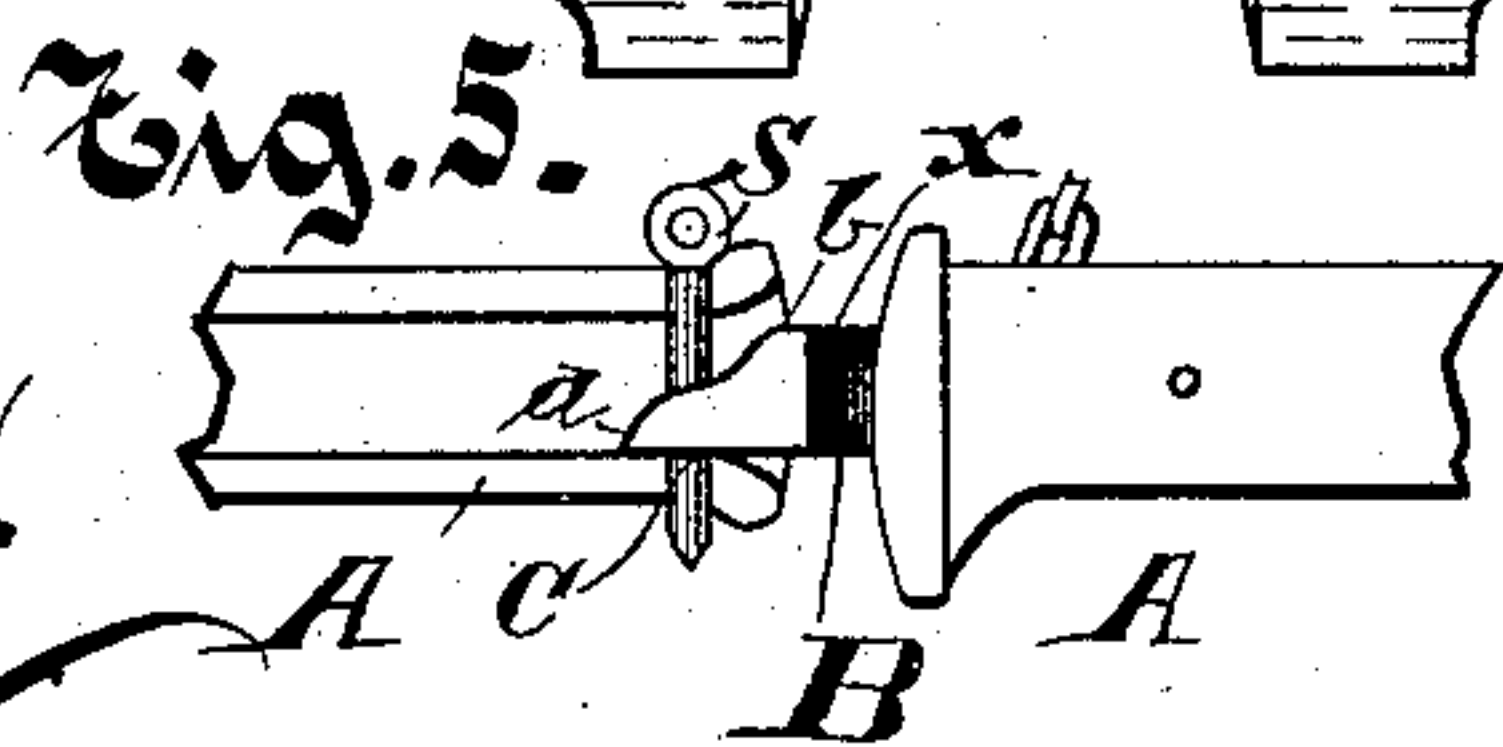
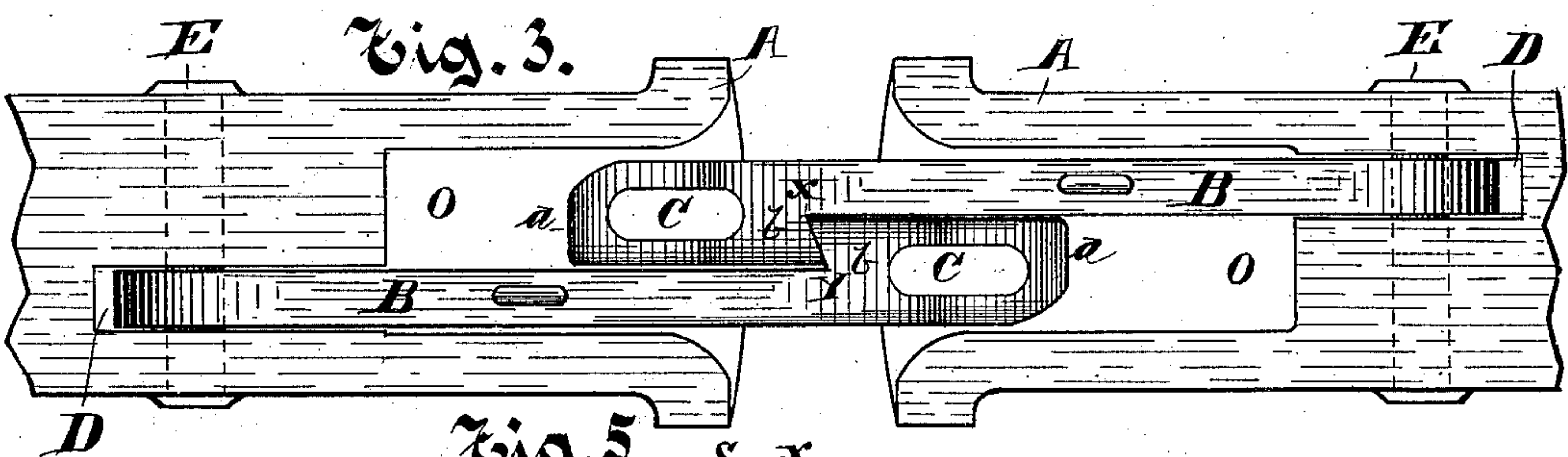
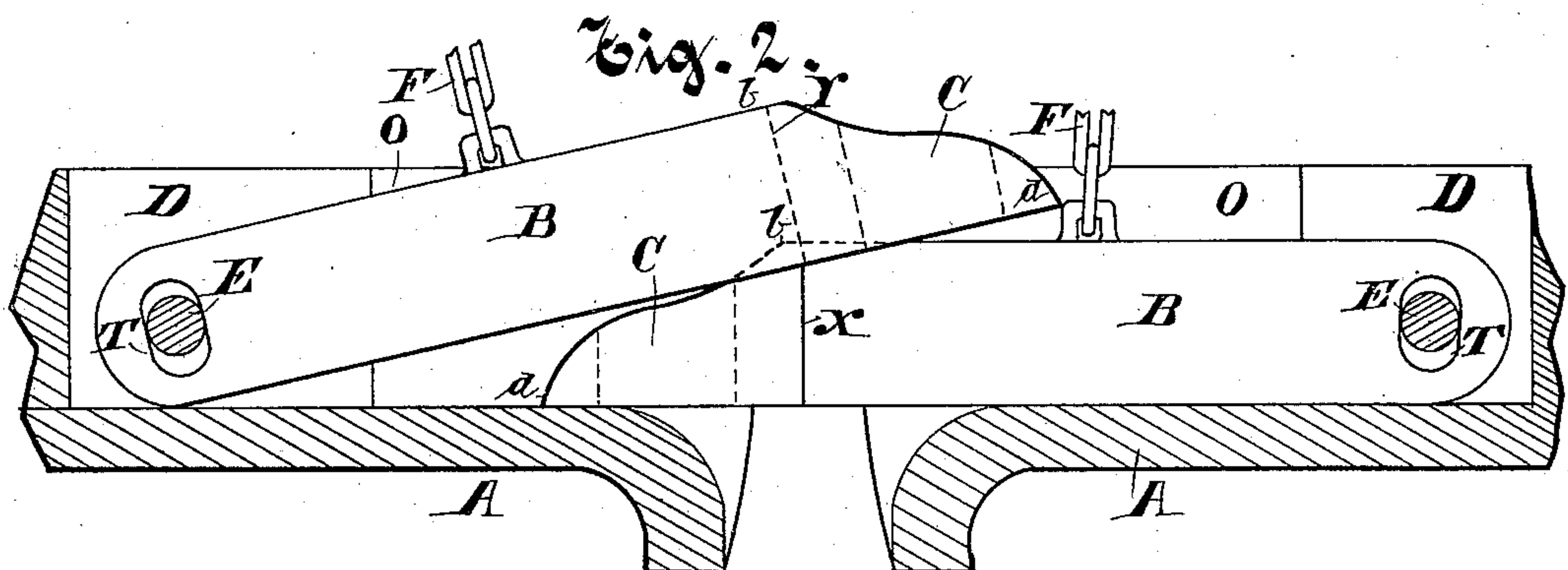
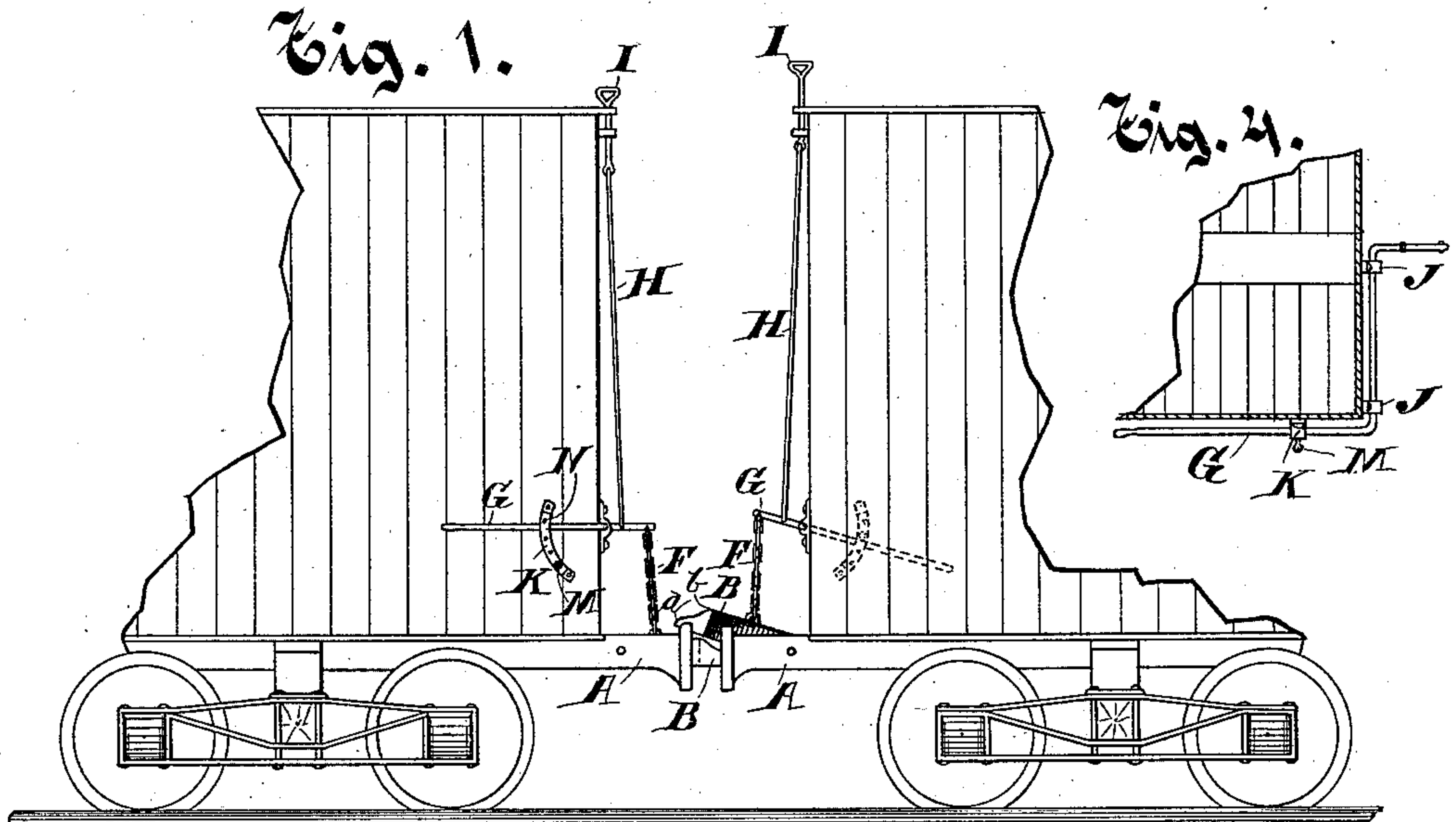
(No Model.)

J. P. RUNKEL.

CAR COUPLING.

No. 376,164.

Patented Jan. 10, 1888.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN P. RUNKEL, OF MILWAUKEE, WISCONSIN.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 376,164, dated January 10, 1888.

Application filed August 27, 1887. Serial No. 248,046. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. RUNKEL, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Car-Couplers; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in automatic car-couplers, and its construction is explained by reference to the accompanying drawings, in which—

Figure 1 represents a side view of two cars provided with my improved form of coupling, showing the coupling-hooks detached from each other. Fig. 2 represents a vertical section through the draw-bars of two cars in the position shown in Fig. 1, showing a side view of the coupling-hooks in the act of being coupled together. Fig. 3 represents a top view of the device shown in Fig. 2, with the coupling-hooks interlocked together. Fig. 4 represents a detail showing the lever for uncoupling the cars. Fig. 5 represents a side view of my improved form of coupler coupled with an ordinary coupling-pin to the ordinary draw-bar of a car.

Like parts are represented by the same reference-letters throughout the several views.

A A are the draw-bars, one being provided at each end of a car.

B B are the coupling-hooks with which the cars are coupled together. The novel features of the coupling-hooks B consist, more especially, first, in the peculiar angular or beveled shape of their front ends, *a b*, beginning at the lower horizontal line at *a* and terminating at the vertical line of the hook at *b* of the respective coupling-hooks, whereby as their front ends are brought in contact one or the other of said hooks will be thereby caused to slide above the other, as shown in Fig. 2, until they reach the locking position, when the upper coupling-hook drops into the horizontal position in line with the stationary hook, in the position shown in Fig. 3, when the cars are coupled together; second, in providing the end of the coupling-hooks with an elongated

aperture, C, for the reception of the ordinary coupling-pin, S, when desirous to couple with a car having the ordinary couplings, as shown in Fig. 5; third, in forming the bearing or drawing surfaces *x* and *y* of the coupling upon the side of the hooks between the points at *x* and *y* at an acute angle to their sides, whereby said coupling-hooks are adapted, when drawing a load, to be drawn toward each other.

It has been common heretofore to provide the coupling-hooks of automatic couplers with an angular beveled surface from both above and below, terminating centrally in a V-shape at their front ends, in which case the lower surface of the front ends of the hooks thus constructed could not, as in the present case, rest upon the lower surface of the opposing draw-bars, while it is obvious that by my form of coupling-hook, having its beveled or angular surface formed upon its upper side only and its lower side terminating in a horizontal line in line with the rear of the coupling-hook, said coupling-hooks are adapted to rest at their front ends upon the inner lower surface of the opposing draw-bars, and I am also enabled by my present form of construction to provide a broader and stronger bearing-surface through the aperture C for the reception of the coupling-pin than could otherwise be attained with the coupling-hook beveled as heretofore from both above and below.

The novelty in the draw-bars A consists more especially in forming the same with openings O through their upper surfaces, which permits of the coupling-hooks B being thrown upward and downward therein, as is required in the act of coupling and uncoupling the cars, and, further, in providing a side recess, D, in the respective draw-bars, located at one side of the center thereof, for the reception of the rear end of the coupling-hooks B, whereby said coupling-hooks are retained in their proper position at one side of the draw-bar and prevented from sliding horizontally toward the right and left as they would otherwise do upon the pivotal bolt or pin E.

It will be obvious that with couplers thus constructed they will, as the respective cars with which they are connected approach each other, be automatically interlocked or coupled

together, as described. When desirous to uncouple the cars, it becomes necessary to raise one or the other of said coupling-hooks from the locking position shown in Fig. 3 to that shown in Fig. 1, and to provide for thus raising one of said coupling-hooks the same is provided with a chain, F, which is connected at the lower end to one of said hooks and at its upper end to the lever G. The lever G is adapted to be operated from both the side and top of the car, as desired. Motion is communicated to the lever G from the top of the car through the rod H and handle I. The lower end of the rod H is pivoted to the short arm of the lever G in such a manner that as it is drawn upward motion is communicated through the chain F to one of the coupling-hooks B, whereby the same is disengaged from the other hook when the cars are uncoupled. The lever G is pivoted to the end of the car by keepers J J, which serve as its fulcrum, and said lever G extends outward from near the center of the end of the car to its side, as shown in Fig. 4, and from thence it extends rearward or at right angles from the end along the side of the car, as shown in Figs. 1 and 4, whereby it is obvious that by bearing downward upon the long arm of said lever G the short arm of said lever is thrown upward, carrying with it the free end of one of the coupling-hooks, thereby disengaging said hook from the other, and thus uncoupling the cars from each other. It is obvious that by this arrangement of the lever G at the side of the car the car may be uncoupled by a person standing at the side of the track, and the necessity of entering between the cars, as heretofore, when coupling and uncoupling the same is avoided. The long arm of the lever G moves between the car and a retaining keeper or guide, K, (shown in Figs. 1 and 4,) which guide serves the twofold purpose of holding the lever G in place and in holding the coupling-hook connected therewith out of the locking position upon the left in Fig. 1, whereby one car may be moved against another, as is frequently desired when making up a train, without permitting said couplings to interlock together. The lever G is secured at any point of adjustment desired for the purpose of holding the couplers out of locking position by inserting the pin M through one of the holes in the series N, above said lever G, formed in the keeper K, as shown in Figs. 1 and 4.

It is obvious that the beveled front ends of the coupling-hooks G may, if desired, be formed in a straight line from *a* to *b*; but the form shown is, however, preferred, as I am enabled thereby to provide a greater thickness of metal in front of the coupling-pin at the upper end of the aperture C, and also to provide a greater thickness of metal at the upper end of the bearing-surface of the hook, whereby said coupling-hook is less liable to become broken at such points. The aperture C is preferably made elongated, as shown, so that when coupled by a pin with an ordinary

car said aperture will permit of the required movement of the cars to bring the bumpers or draw-bars together, thus relieving the pin and coupling-hooks from the shock which they would otherwise sustain were the aperture C fitted closely to the pin.

When coupling cars provided with my improved form of coupling with cars having lower couplings of the ordinary construction, it becomes necessary to incline the front end of the coupling-hook B downward, so that it will enter the draw-bars of such cars upon a lower plane. To provide for thus inclining the front end of my coupling-hooks downward, I have provided an elongated slot or aperture, T, for the reception of the bolt E, which aperture permits of the upward and downward movement of the rear ends of the coupling-hooks required to enter draw-bars of lower cars.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a car-coupler, the combination of the draw-bars A, provided with a slot or aperture, O, through its upper wall to permit the upward and downward movement of the coupling-hooks B, and coupling-hooks B, having straight horizontal lower surfaces throughout their entire length from front to rear, beveled or angular surfaces *a b* at their front ends, extending forward and downward from the upper horizontal surface of the coupling-hook to and terminating at its lower horizontal surface, and vertical angular bearing-surfaces *x y*, formed upon the sides of the coupling-hooks and extending from their upper to their lower surfaces, said coupling-hooks being pivoted at their rear ends within an aperture in said draw-bars, substantially as and for the purpose specified.

2. The combination of the draw-bars A, provided with an aperture, O, through its upper wall, side recess, D, for the reception of the rear ends of the coupling-hooks B, vertically-moving coupling-hooks B, secured in said recess D by pivotal bolt E, said hooks B being provided with angular front ends, *a* and *b*, extending from the upper to the lower surfaces thereof, angular vertical bearing-surfaces *x y*, extending from the upper to the lower surfaces of said coupling-hooks, and aperture C, for the reception of the coupling-pin, all substantially as and for the purpose specified.

3. In a car-coupler, the combination of the vertically-moving coupling-hooks B, secured in apertures within the draw-bars A, provided with vertical bearing or interlocking surfaces *x y*, formed upon their sides and extending from their upper to their lower surfaces, uncoupling-chains F, secured at their lower ends to said coupling-hooks and at their upper ends to the short arm of the lever G, lever G, pivoted to the end of the car and extending from the front end at right angles thereto along the side of the car, retaining-keeper K, provided with series of apertures N, and lever-retaining pin

M, adapted to be secured in the apertures of said retaining-keeper above said lever G, substantially as and for the purpose specified.

4. The combination of the vertically-moving coupling-hooks B, provided with elongated aperture T, for the reception of the retaining-bolt E, interlocking bearing-surfaces *x y* upon their sides, and tapered or angular front ends, *a b*, chains F, secured at their lower ends to said coupling-hooks and at their upper ends to the short arm of the operating-levers G,

operating-levers G, rod H, extending from said lever G to the top of the car, and handle I, all substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN P. RUNKEL.

Witnesses:

JAS. B. ERWIN,
C. H. KEENEY.