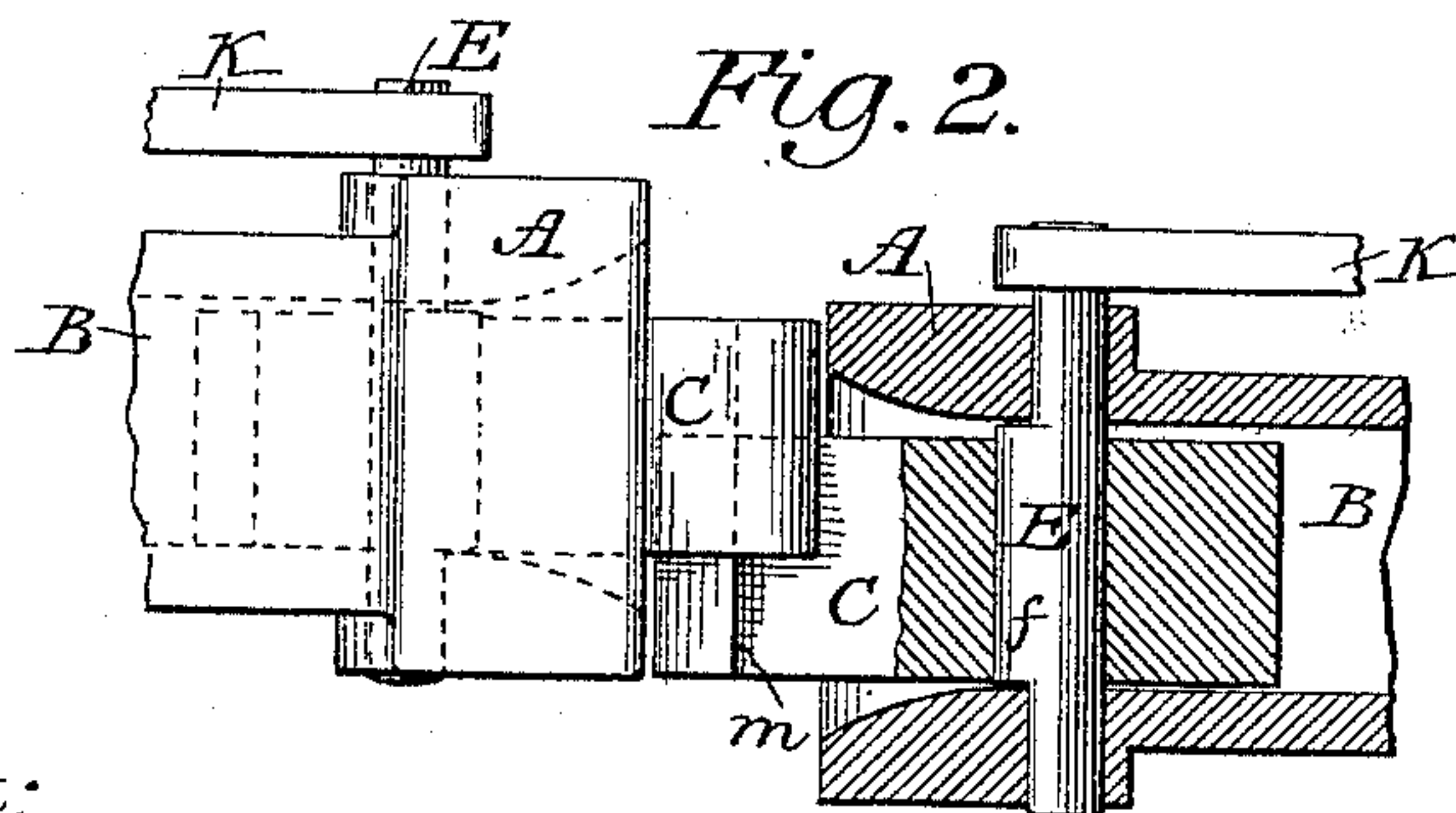
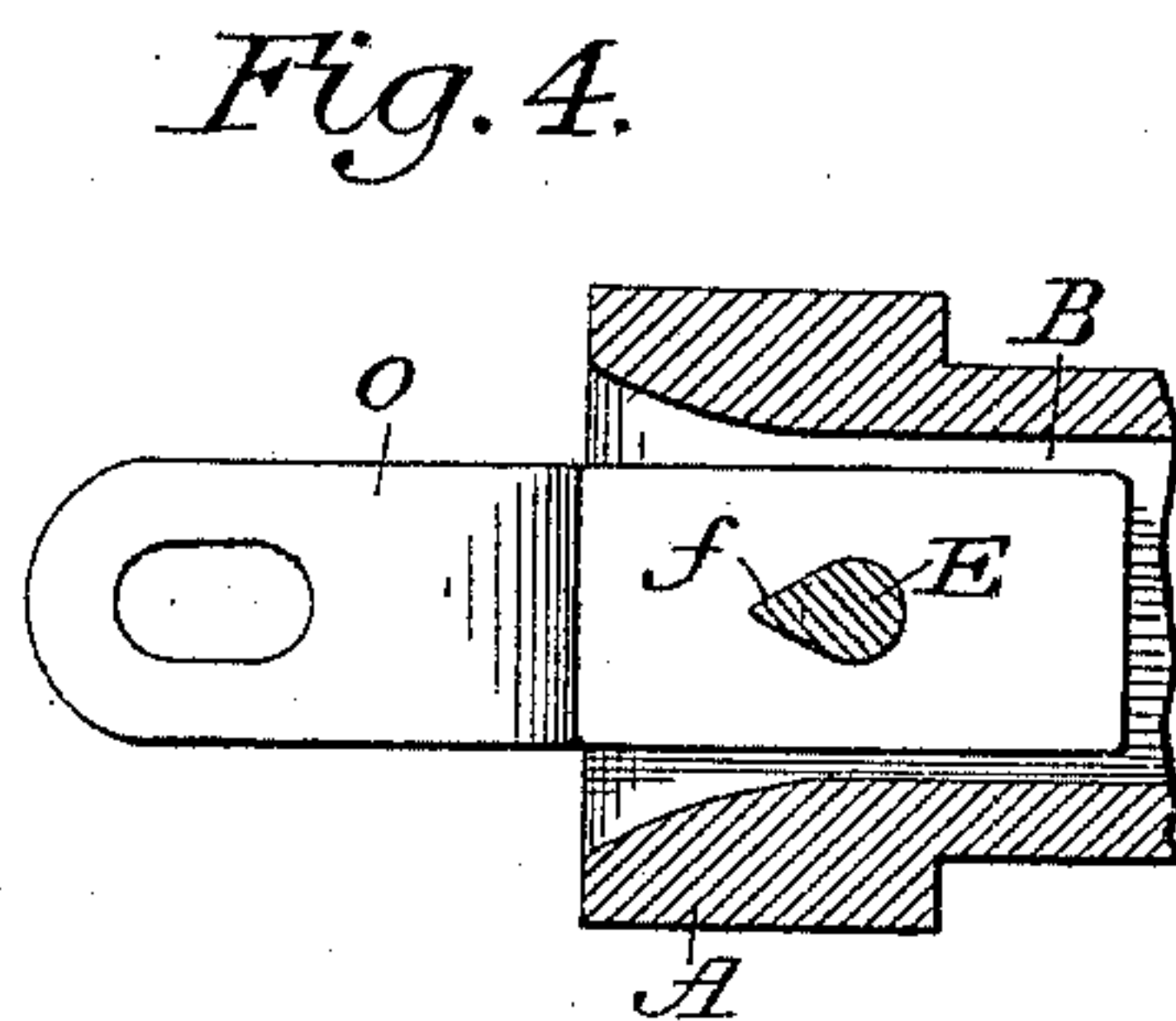
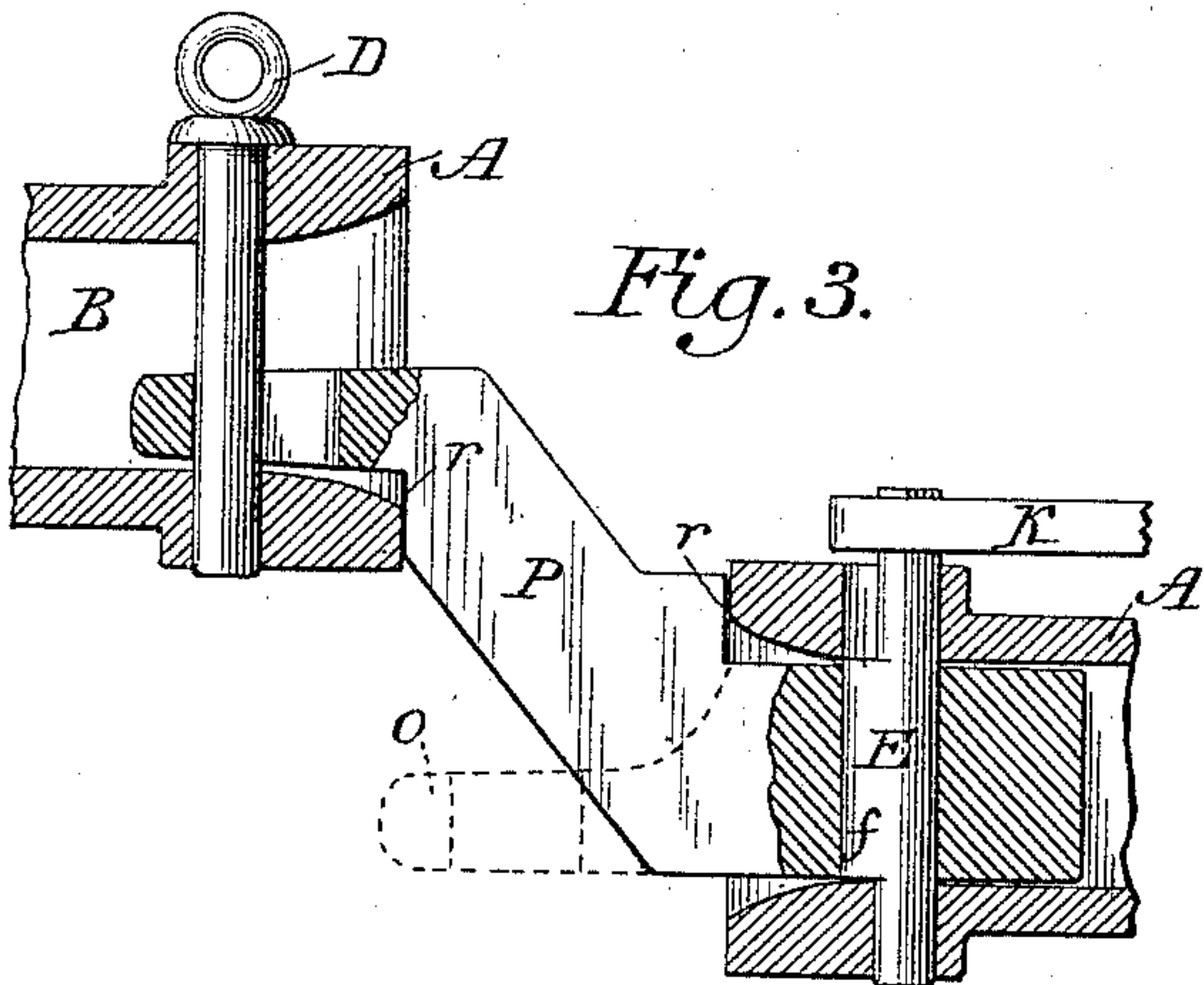
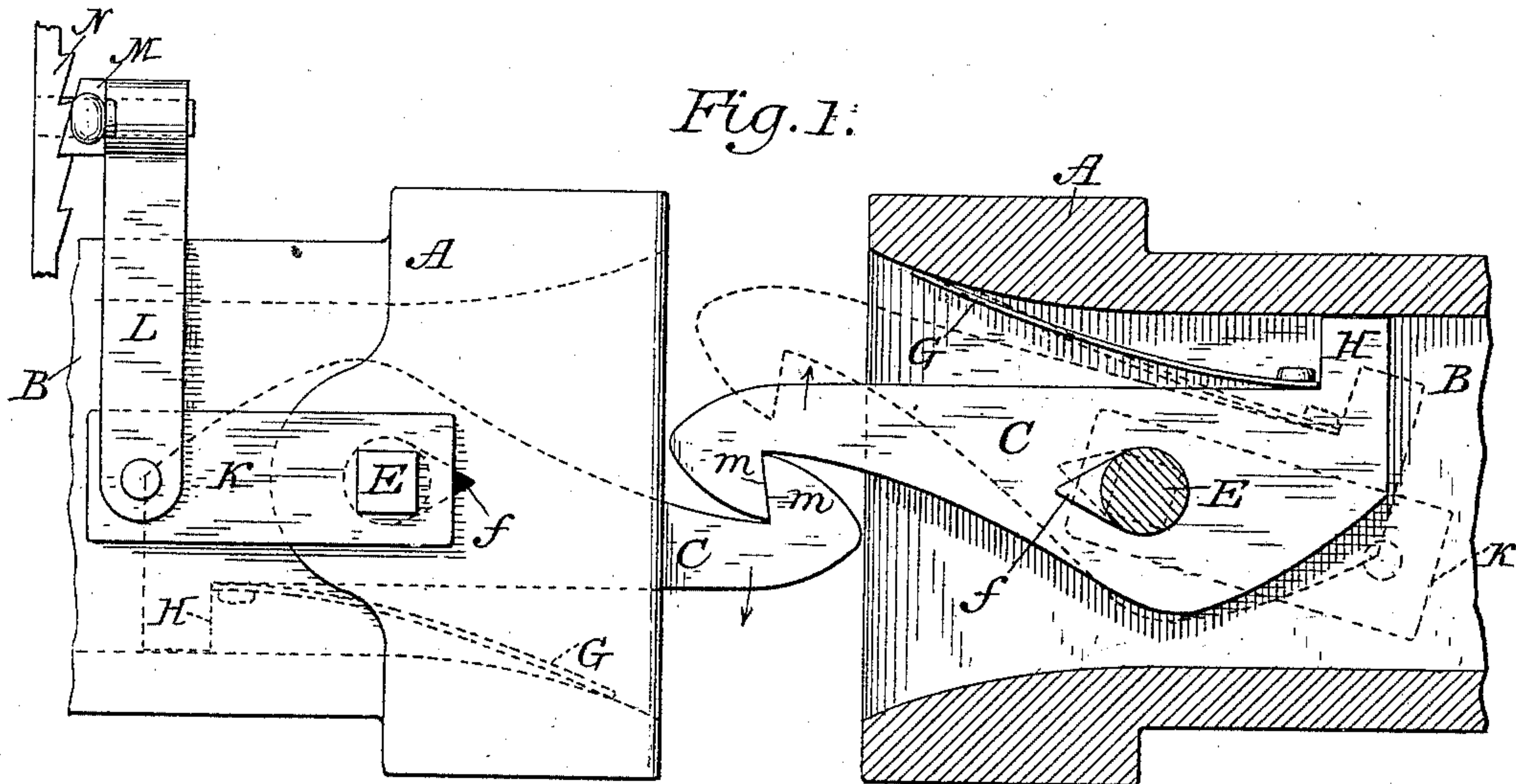


(No Model.)

J. CHESNUT.
CAR COUPLER.

No. 436,336.

Patented Sept. 16, 1890.



Attest:
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UNITED STATES PATENT OFFICE.

JOHN CHESNUT, OF MARTINSBURG, WEST VIRGINIA.

CAR-COUPLER.

SPECIFICATION forming part of Letters Patent No. 436,336, dated September 16, 1890.

Application filed July 5, 1890. Serial No. 357,725. (No model.)

To all whom it may concern:

Be it known that I, JOHN CHESNUT, of Martinsburg, in the county of Berkeley and State of West Virginia, have invented certain new and useful Improvements in Vertical-Plane Hook-Couplers for Coupling Railway-Cars; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to an improvement in the class of car-couplings known as "vertical-plane hook-couplers," and has for its object to provide in simplest possible form a self-acting coupler adapted for use with the approved and generally accepted form of bell-mouthed draw-heads, and which will admit, in case of necessity, of the use of the ordinary coupling-pins and links commonly employed with said draw-heads, and also of self-coupling links adapted to the coupling of cars of varying heights.

My invention consists in the novel construction and arrangement, in combination with the ordinary form of bell-mouthed draw-head, of the improved coupling devices hereinafter more fully described and claimed.

In the accompanying drawings, Figure 1 is a top view of my improved coupling when in position to couple two cars, one of the draw-heads being in section to show fully the construction and position of the coupling-hook pivoted therein. Fig. 2 is a side elevation of the same coupling, on a reduced scale, with one of the draw-heads in vertical section and represented as in a lower position than the other to illustrate the coupling therewith of cars whose draw-heads are at slightly-different heights. Fig. 3 is a vertical section of my coupling device when fitted with my improved goose-neck link for coupling cars whose heights greatly vary; and Fig. 4, a horizontal section showing my coupling device fitted with a link adapted for self-coupling with an ordinary draw-head and pin. (See dotted lines, Fig. 3.)

A represents the draw-head which I use in my coupling device. This draw-head is of the standard form and dimensions as in general use upon the railroads of the country, and is constructed with a flaring or bell mouth to receive the link. It is attached or made integral with a hollow draw-bar B, by which

it is secured in the usual manner to the body or running-gear of the car. This draw-head is furthermore provided, as usual, with vertical apertures in its upper and lower plates to receive an ordinary coupling-pin D, as shown in Fig. 3, so that it admits of being used in the customary manner with the customary forms of links to be caught and held by said coupling-pin D. In place, however, of the ordinary coupling-link I fit in the draw-head a hook C (see Figs. 1 and 2) of such thickness as that it will nearly fill the entire opening in the draw-head, as shown in Fig. 2, and consequently have but little play therein vertically, and which is so shaped, as illustrated in Fig. 1, as to admit of a limited horizontal vibration in the head upon a vertical coupling and pivot pin E inserted in the place of the ordinary coupling-pin D through the draw-head and through a vertical aperture in the hook. This coupling-pin E, while it has a cylindrical body of a diameter corresponding with that of an ordinary coupling-pin, so as to fit in the same hole, is made with a feather or key *f* projecting laterally and radially from the central portion thereof to fit into a corresponding lateral recess in the aperture pierced through the hook C, so that when fitted in the hook it will be locked thereto and thereby prevent an independent movement of the pin and hook. The ends of the pin E are left cylindrical to turn freely in the draw-head, and by means of the feather *f* the hook is made to turn with the pin upon the axis of the pin as a center. The hole pierced in the upper plate of the draw-bar to receive the coupling-pin is laterally recessed to permit of the passage through it of the key or feather *f*; but this recess does not interfere with the pivotal bearing of the pin after it is fully inserted in place, nor does it affect the function of the hole in furnishing the customary bearing and support for an ordinary plain coupling-pin D. The forward end of the hook C is made to project beyond the mouth of the draw-head A, and is properly shaped, as shown, to engage a corresponding hook in the opposite draw-head. Each hook is automatically swung upon its pivot-pin into position to engage the opposite hook by means of a spring G, interposed laterally on one side between the hook and the opposite inner face of the draw-head A, in such position as to neither require extra space to receive it nor

the lengthening of the hook rearward beyond its pivot and a consequent elongation of the draw-bar to provide a bearing therefor, as in other couplers of this character. The forward end of each hook is wedge-shaped, and its re-entrant or draw-face *m* is made to conform approximately to an arc having the pivot of the hook as a center, so that when two of these hooks are coupled, as shown in Fig. 1, they may be readily uncoupled by swinging either hook upon its pivot, even when under heavy tension.

Each hook *C* is provided with a rearward lateral extension *H* on the same side as that which carries the spring *G*, said extension being formed to act as a stop against the inner face of the draw-head, and thereby limit the play of the hook and arrest it so soon as it has reached its normal position for engagement with the opposite hook, as shown in Fig. 1.

The most important and original feature of my invention consists in the feathered coupling-pins *E E*, by means of which the coupling-hooks are spread apart and uncoupled without the aid of any extraneous appliances fitted to the draw-head and without interfering with the use of the draw-head as an ordinary coupler with an ordinary coupling-pin, as shown at the left in Fig. 3.

The feathered coupling-pin *E*, by which the coupling-hook is spread open when required, is readily operated by means of an uncoupling-lever *K*, secured upon its upper end, and which may be made to project in any direction, so as to be within convenient reach of the brakeman.

In use the uncoupling-lever *K* may be swung around by hand, or it may be coupled by a link *L* to the lower end of a vertical lever *M*, pivoted to the car, and whose upper end is brought into engagement with a rack *N*. (See Fig. 1.) In this case the coupling-hook will be turned and uncoupled by a movement of said lever *M* and be either locked or held open against the stress of its spring *G* by the engagement of the lever with the rack *N*. By withdrawing the coupling-pin *E* the hook *C*, with its spring *G*, is wholly detached from the draw-head, leaving the latter perfectly free and open to receive in the customary manner an open coupling-link of ordinary form. As, however, the use of the ordinary plain links involves the necessity of guiding them by hand in effecting a coupling therewith, with more or less danger to the brakeman, I provide for use with my coupling-hooks and pins a coupling-link having the portion adapted to enter the draw-head made wide and full, as shown at *O*, in Fig. 4, so that when held by the pin it will not sag, but will project, as shown by dotted lines in Fig. 3, in position to enter without guidance a bell-mouthed draw-head upon the same level.

To couple cars whose bell-mouthed draw-heads are at materially-different heights, I

provide a goose-neck coupling-link *P*, having a full solid end, to fill the draw-head and be held by the coupling-pin in right position to enter the opposite draw-head without guidance, and I form said goose-neck coupling-link with offsets *rr* thereon, as shown in Fig. 3, to engage the opposed faces of the two draw-heads coupled thereby, so that the link shall serve as a buffer as well as a strong coupler between them.

In operation the hook *C* is held normally in position by the spring *G*, so that its longitudinal central line shall coincide with that of the draw-head *A*, and so that when two of the couplers are brought together and the wedge-shaped front ends of the hooks come in contact their inclined surfaces will, as they bear upon each other, operate to swing each hook aside against the stress of its spring until the re-entrant angles or draw-faces *m m* of the hooks are brought opposite each other, whereupon they will be closed together by the action of the springs *G G*. The hooks thus couple automatically in the usual manner. To uncouple them the brakeman needs only to swing in the proper direction the operating-lever *K* upon the upper end of either of the coupling-pins *E* and thereby turn the coupling-pin. This will operate to turn the hook pivoted upon said pin so as to disengage it from the opposite hook, as illustrated by dotted lines at the right in Fig. 1.

I claim as my invention—

1. The combination, in a car-coupling, with a bell-mouthed draw-head and a vertical-plane coupling-hook fitted therein to project therefrom, of a detachable vertical pivot-pin confining the coupling-hook within the draw-head and locked to the hook to turn with it, a spring actuating the hook to carry it to its normal position, a stop adapted to arrest it when under the stress of the spring it has reached said position, and a lever attached to the pin to turn it upon its axis, substantially in the manner and for the purpose herein set forth.

2. The combination, in a car-coupling, with the bell-mouthed draw-head *A* and hollow draw-bar *B*, of the coupling-hook *C*, fitted within the draw-head to project out therefrom, the coupling-pin *E*, passing vertically through the upper and lower faces of the draw-head and interposed coupling-hook, the lateral feather *f* on the coupling-pin engaging a counterpart recess in the wall of the pin-hole in the hook, and a spring actuating the hook to carry it to its normal position, all substantially in the manner and for the purpose herein set forth.

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

JOHN CHESNUT.

Witnesses:

A. N. JESBERA,
E. M. WATSON.