

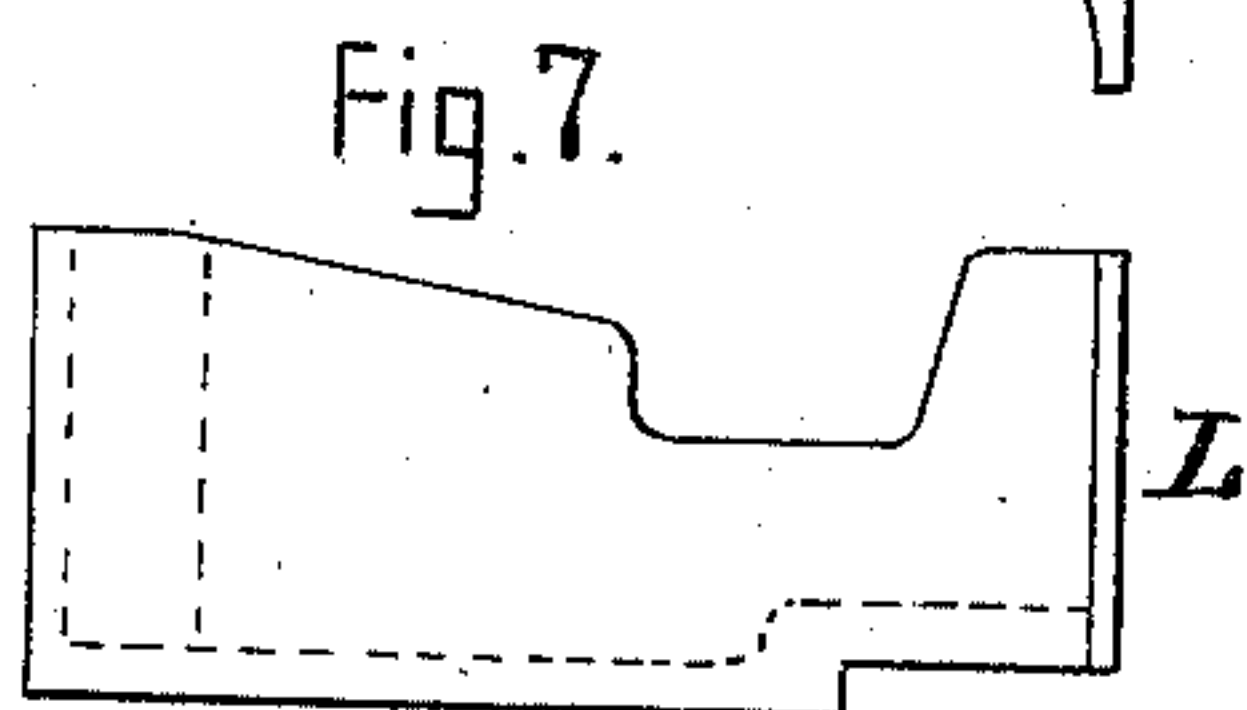
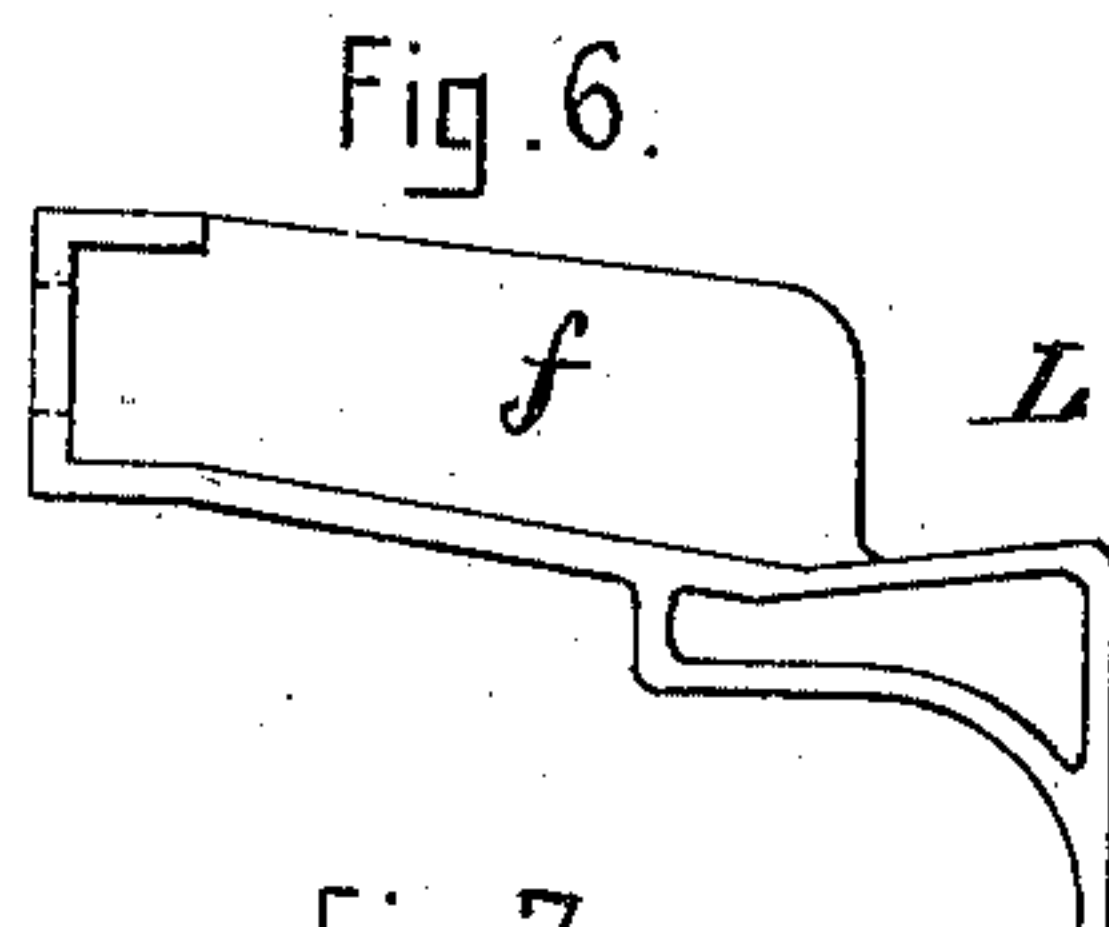
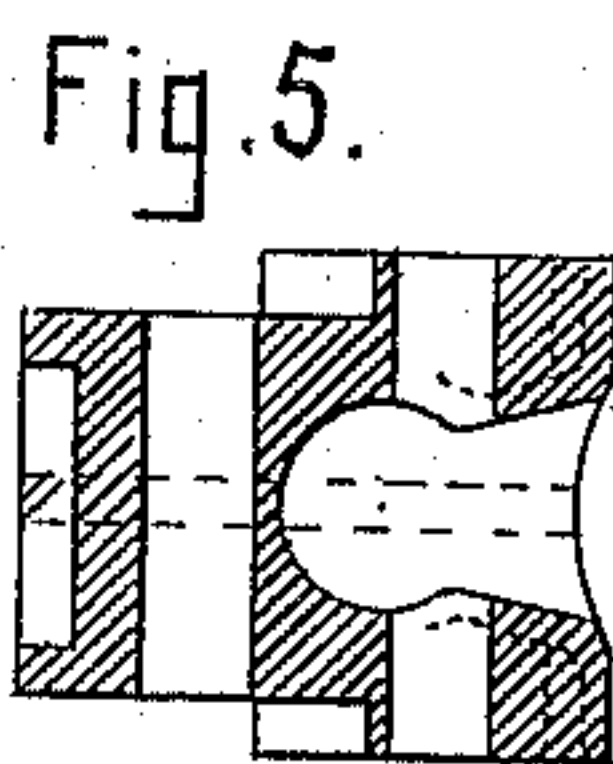
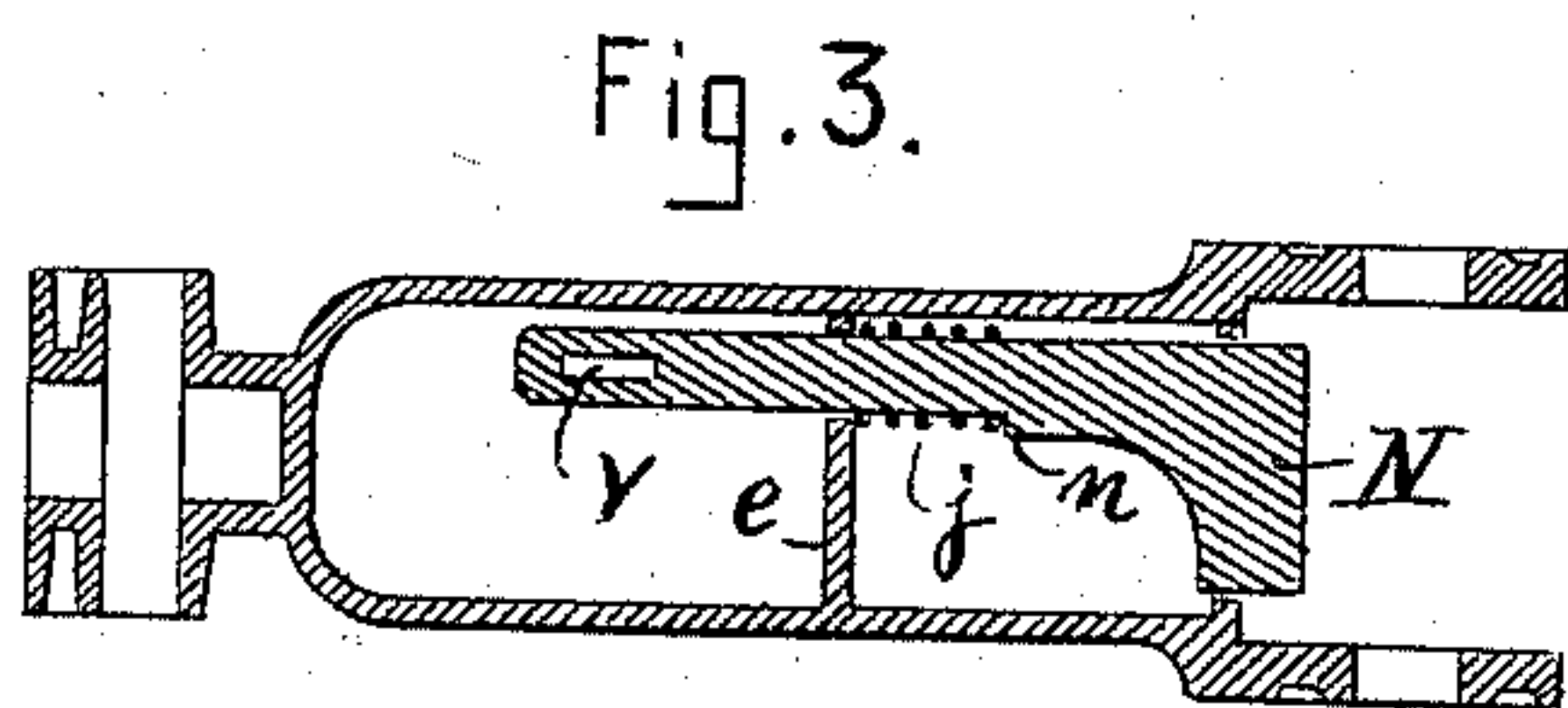
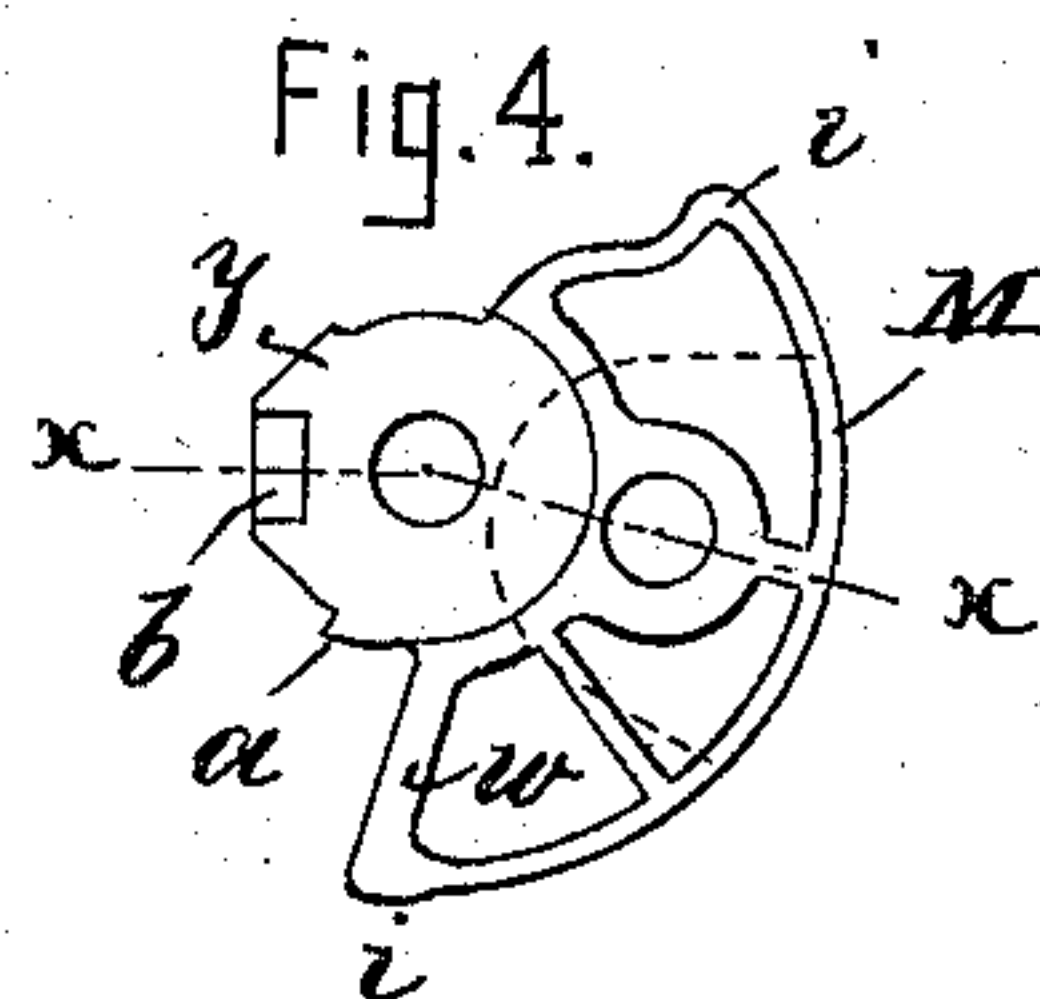
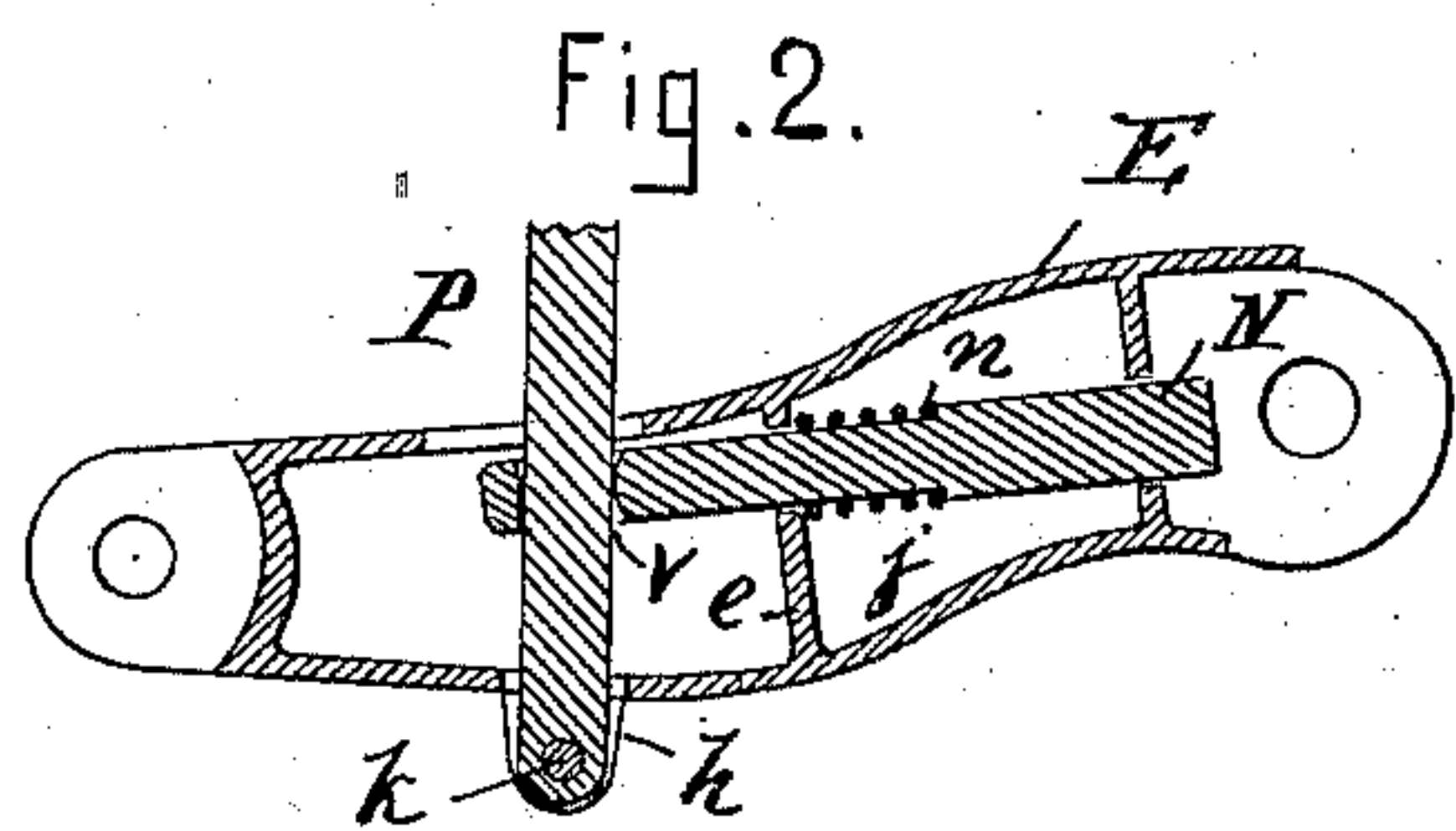
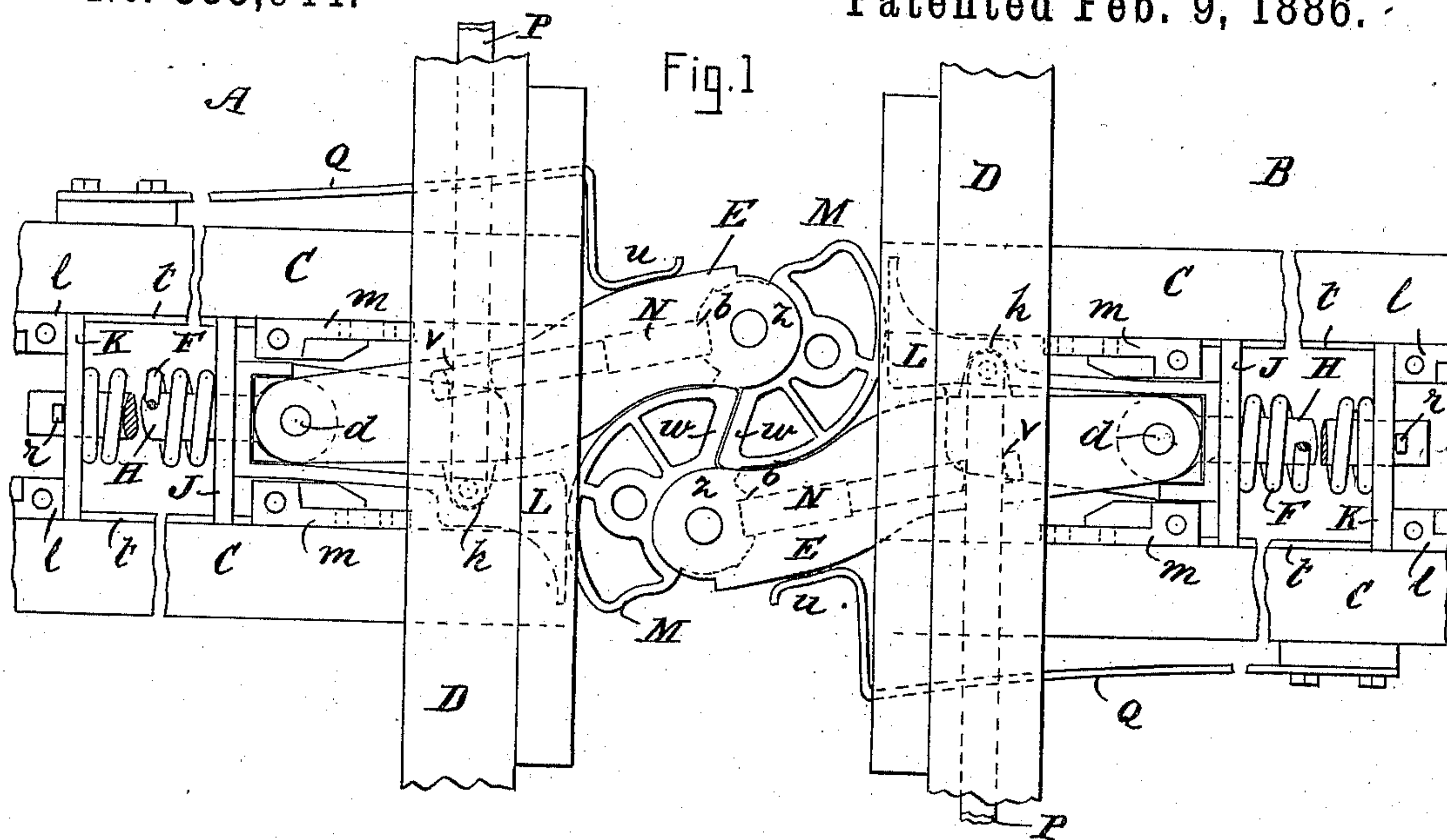
(No Model.)

J. W. MARDEN & R. H. LITTLEFIELD.

CAR COUPLING.

No. 335,944.

Patented Feb. 9, 1886.



Witnesses.

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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 335,944, dated February 9, 1886.

Application filed July 22, 1885. Serial No. 172,263. (No model.)

To all whom it may concern:

Be it known that we, JOHN W. MARDEN and RICHMOND H. LITTLEFIELD, respectively of Waltham and Somerville, both in the county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Car-Couplers, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of our improved coupler; Fig. 2, a horizontal section of one of the draw-bars, including the hand-lever, locking-bar, and its spring; Fig. 3, a vertical longitudinal section of one of the draw-bars, including the locking-bar and its spring; Fig. 4, a plan view of one of the hooks detached; Fig. 5, a vertical section taken on the line *x x* in Fig. 4; Fig. 6, a plan view of one of the buffers detached, and Fig. 7 a side elevation of the same.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

Our invention relates to that class of car-couplers which are automatic or self-coupling; and it consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, the object being to produce a more effective and desirable article of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

As the coupler consists principally of two sets of draw-bars, hooks, springs, levers, bars, &c., which are identical in their construction, arrangement, action, and functions, except as hereinafter set forth, it is deemed unnecessary to describe but one in detail.

In the drawings, A B represent portions of two cars, each of which is furnished with substantially the same coupling mechanism. The car A is provided with a horizontally-

arranged draw-bar, E, which is fitted to work in suitable bearings in or beneath the cross-timber D, and has its inner end jointed at *d* to the bar H, to enable it to swing laterally in either direction. Arranged in parallelism in the frame-work of the car there are two longitudinally-disposed timbers, C C, and attached to the inner face of each of these timbers there are cheek castings or plates *m l*, which respectively serve as stops for the followers J K, these followers being fitted to slide horizontally in the ways *t t* on said timbers. The rod H passes centrally through holes in the followers J K, and is provided at its inner end with a key, *r*, which prevents it from being withdrawn from the follower K. A buffer, L, is fitted to work in the cross-timber D, or in suitable bearings beneath the same, the inner end of said buffer being U-shaped and provided with a hole through which the rod H passes at the rear end of the bar E. The buffer is also provided with a laterally-projecting strengthening flange or fin, *f*, at its lower side, which extends under the bar E when all of the parts are in position for use. A stout coiled spring, F, is disposed around the rod H, said spring acting expansively to force the follower J against the inner end of the buffer L and said rubber against the bar E. Connected with the outer end of the draw-bar E by a rule joint, *z*, there is a stout hook, M, having its face curved from *i* to *i*, as best seen in Fig. 4, the inwardly projecting flange *y* of said hook being provided with a socket, *b*, and shoulder or rabbet *a*. Fitted to slide longitudinally in suitable ways within the draw-bar E there is a locking-bar, N, the outer end of which is adapted to enter the socket *b*, and pivoted at *k* to an ear, *h*, on the bar E there is a lever, P, which passes through suitable slots in said bar and through a slot, *v*, in the bar N, said lever being adapted to be swung in a horizontal plane to disengage the bar N from the hook M and unlock said hook. A coiled spring, *j*, is disposed around the bar N, said spring abutting against a stop, *e*, in the bar E and a shoulder, *n*, on the bar N, and acting expansively to force said last-named bar into the socket *b* of the flange *y* on the hook M. A

stout flat spring, Q, is attached to the side of one of the timbers C, the free or outer end of said spring pressing against the side of the bar E, as shown at *u*, and forcing it into engagement with the companion bar. Any other suitable spring for this purpose may, however, be employed.

The bar E, when viewed from the car A, curves slightly outward or to the left, as best seen in Fig. 2, the hook proper, *w*, of the hook M being so arranged on its inner side as to adjoin the hook proper, *w*, of the companion hook M, as best seen in Fig. 1, when the cars are coupled.

It will be seen that the bar E of the car B, when viewed from said car, also curves outwardly or toward the left, and that the hook proper, *w*, of its hook M is adapted to engage the hook proper, *w*, of the hook M on the draw-bar E of the car A.

In the use of our improvement, the cars being uncoupled and the hooks M locked by the bars N, if the cars are now run or pushed together the curved faces *i i* or ends of the hooks M will be brought into contact and pass each other, causing the hooks proper, *w*, to engage and the cars to be coupled in a manner which will be readily obvious without a more explicit description.

It will be obvious that in coupling the cars, when the hooks M are brought into forcible contact the springs F will yield and neutralize or take up the concussion or shock, and the springs Q yield to permit said hooks to pass each other and engage, as described.

After the hooks M have passed each other they are brought into contact with the buffers L, thereby relieving the shock or concussion which would otherwise occur when the cars come together. The buffers also subserve a very important purpose in keeping the hooks M engaged, the springs F forcing the buffers against said hooks and the hooks into engagement.

To uncouple the cars, the outer end of one of the levers P is swung toward the body of the car, thereby withdrawing the locking-bar N from the socket *b*, and permitting the hook M to swing laterally or outward into a position to be disengaged from its companion hook as the cars are started up or separated.

In uncoupling the cars, both of the levers P may be operated at the same time, and both of the hooks E set free, if desired; but it is usually sufficient to unlock one of the hooks.

It will be obvious that the spring F serves both for the draw-bar and the buffer; also that the cars may be coupled or uncoupled without the necessity of going between them.

The lever P is extended to the side of the car, and operated by a person standing on the ground; but it may be connected with suitable mechanism for operating it from the top of the car, if desired.

When the coupler is used with passenger-cars, the lever P is to be provided with suitable levers or mechanism for operating it from the platform of the car.

Our improvement is designed more especially for freight-cars, but may be employed for either passenger or freight cars without departing from the spirit of the invention.

Having thus explained our improvement, what we claim is—

1. In a car-coupling, a draw-bar provided with a lateral hook at its outer end, a cushioning-spring at the inner end of said draw-bar, and an independent buffer resting against said spring and adapted to resist the longitudinal thrust of a companion draw-bar, substantially as described.

2. In a car-coupling, a draw-bar provided with a lateral hook at its outer end, forming an acute angle therewith, a cushioning-spring at the inner end of said draw-bar, and an independent buffer adapted to rest against said spring and against the hook of a companion draw-bar when the hooks are engaged, substantially as described.

3. In a car-coupling, the combination of a draw-bar, a lateral hook pivoted to the outer end thereof, a cushioning-spring for said draw-bar, an independent buffer adapted to rest against said spring and against the hook of a companion draw-bar when the hooks are engaged, a locking-bar for locking said hook, and a lever for operating said locking-bar, substantially as described.

4. In a car-coupling, the combination of two pivoted laterally-swinging draw-bars, cushioning-springs for said draw-bars, oscillating interlocking hooks pivoted to the front ends of said draw-bars, spring-buffers independent of and adjacent to said draw-bars, said buffers being adapted for contact with said hooks when the cars are coupled, and locks for retaining said hooks in coupled positions, substantially as described.

5. In a car-coupling, the combination of two pivoted laterally-swinging draw-bars, cushioning-springs for said draw-bars, laterally-oscillating segments pivoted in the front ends of said draw-bars, the adjacent radial or inclined faces of said segments constituting meeting hooks, spring-buffers independent of and adjacent to said draw-bars, adapted for contact with the curved faces of said segments when the draw-bars are coupled together, and locks for holding said segments in coupled positions, substantially as described.

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Witnesses:

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