

(No Model.)

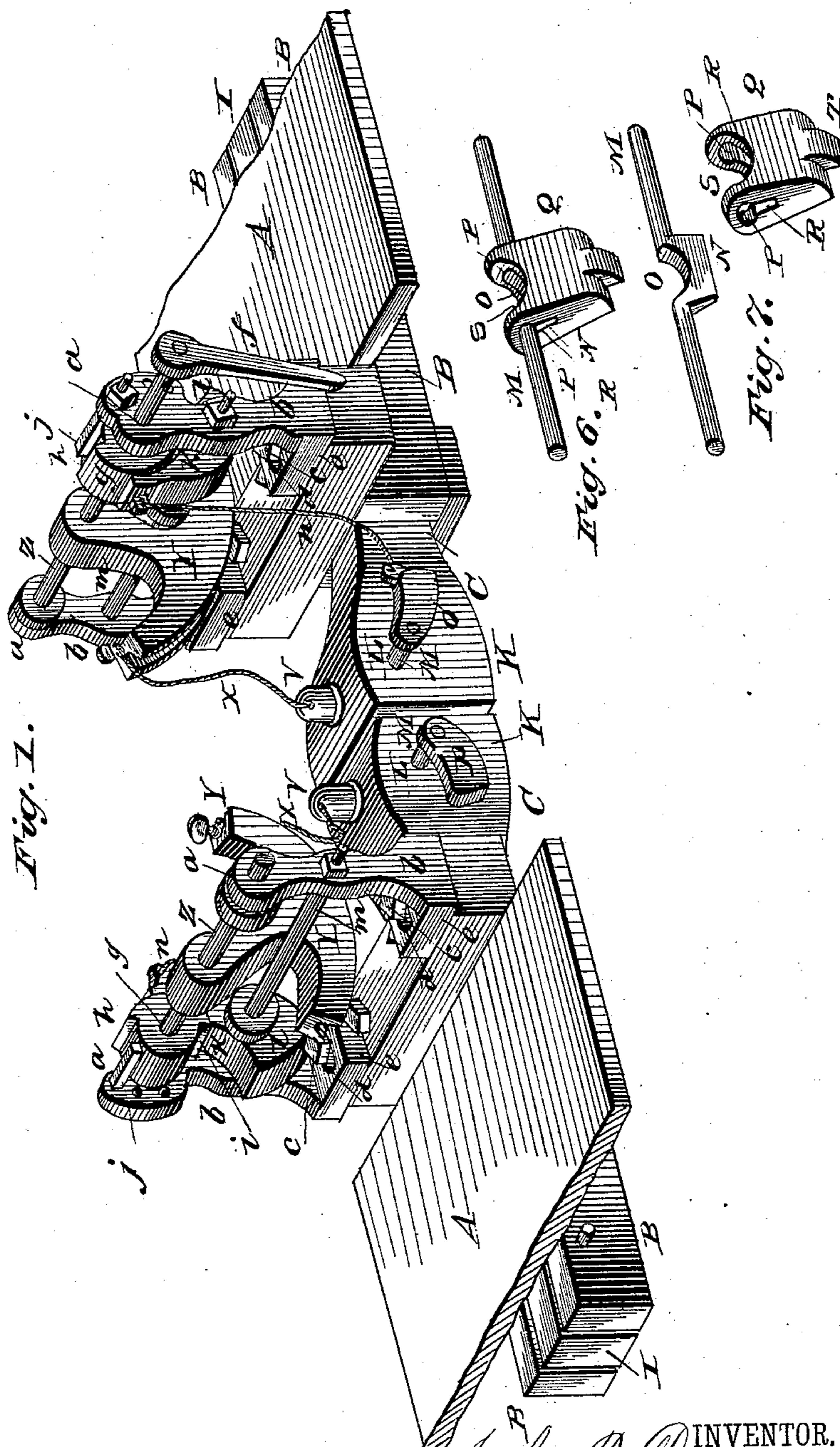
2 Sheets—Sheet 1.

J. B. DRAPER.

CAR COUPLING.

No. 287,110.

Patented Oct. 23, 1883.



WITNESSES:

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

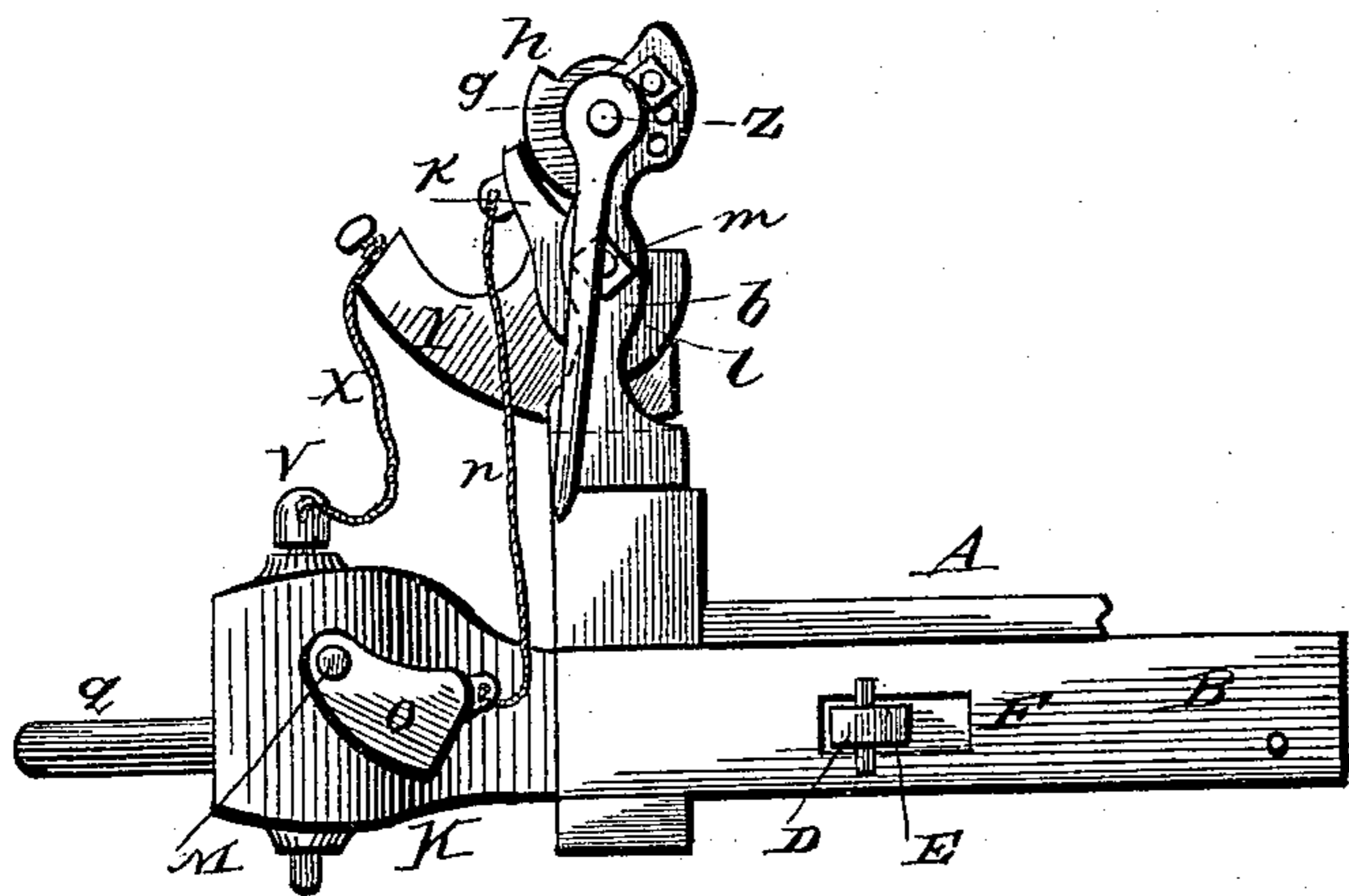


Fig. 3.

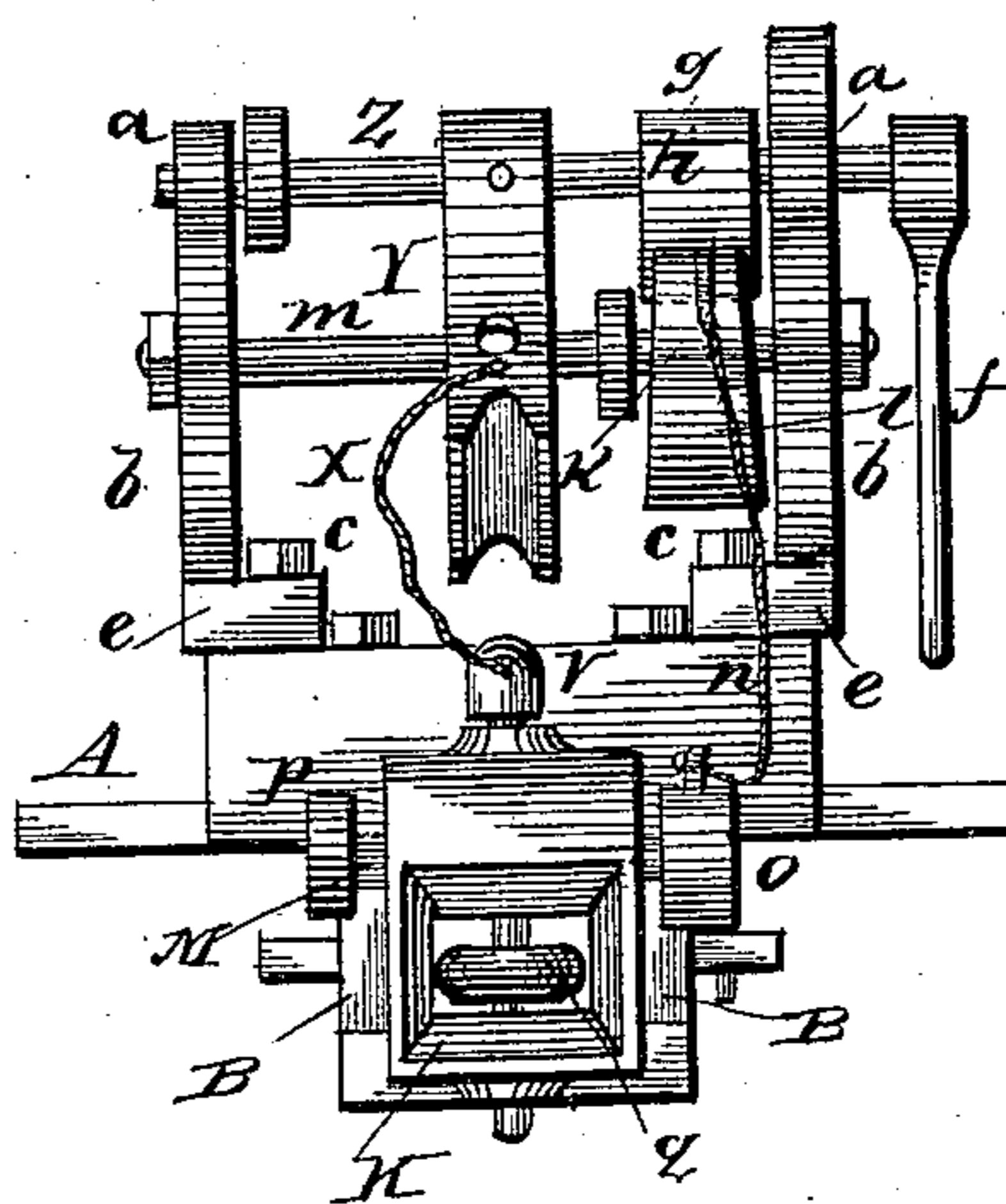


Fig. 4.

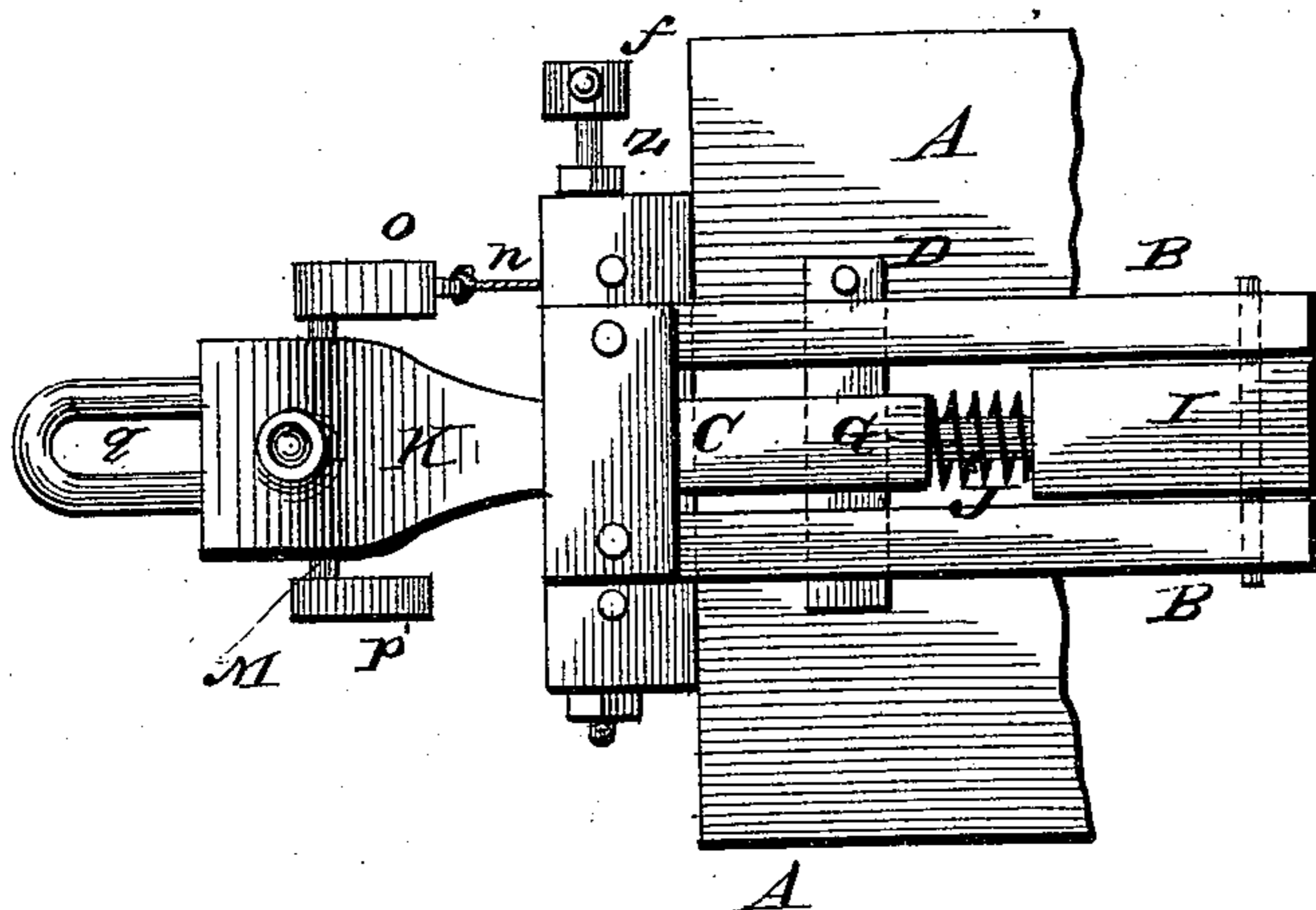
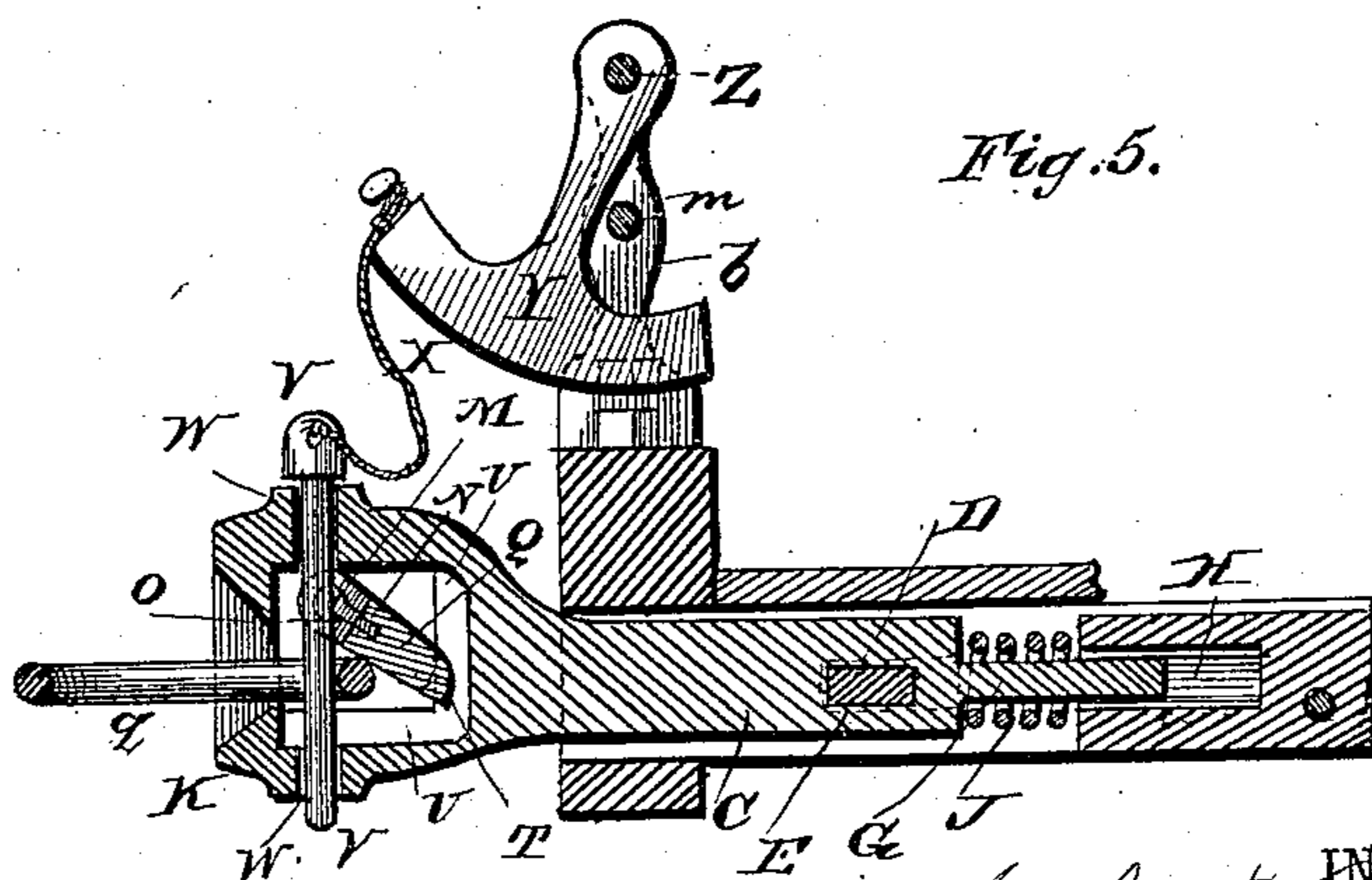


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN BURTON DRAPER, OF ZANESVILLE, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 287,110, dated October 23, 1883.

Application filed August 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. DRAPER, a citizen of the United States, and a resident of Zanesville, in the county of Montgomery and State of Illinois, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to 5 which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of the ends of two cars provided with my improved car-coupling. Fig. 2 is a side view of one of the couplings. Fig. 3 is a front view of the same. Fig. 4 is a bottom view. Fig. 5 is a longitudinal sectional view, and Figs. 6 and 7 are detail views.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to automatic car-couplings; and it consists in the improved construction and combination of parts of the same, as hereinafter more fully described and claimed.

In the accompanying drawings, the letters A A indicate the platforms of the cars, to the under side of which are secured two parallel bars, B, between which the draw-bar C slides, a flat bar, D, passing through a horizontal longitudinal slot, E, in the draw-bar, and through two horizontal longitudinal slots, F, in the parallel bars, preventing the draw-bar from being drawn too far out or being pushed too far in. The rear end, G, of the draw-bar is reduced, sliding in a longitudinal recess, H, in a block, I, pivoted at its middle between the rear ends of the parallel bars, and a spiral spring, J, is wrapped or coiled around the reduced end and fastened to the same, cushioning the draw-bar, which is allowed a certain amount of vertical play by the reduced end of the same sliding in the recessed block, which may swing upon its pivotal bolt in a vertical plane.

The draw-head K is shaped in the usual form in pin-and-link couplings, with the exception that the recess is somewhat larger than usual, and that it has a transverse perforation, L, passing through its sides into the recess, in addition to the perforation through which the pin passes. A round rod, M, passes through

the perforation in the sides of the draw-head, and is provided at its middle with a feather, N, at which point the rod is recessed, at O, through its entire thickness, the feather holding the ends together. The central portion of this rod passes through a perforation, P, in the upper end of a cam or block, Q, which perforation has a groove, R, in its lower side, in which the feather fits, and the upper end of the block has a recess, S, which extends to the inner side of the perforation corresponding to the recess O in the rod. The lower end of the cam or block has a projecting lug, T, which fits into grooves U in the rear and lower sides of the recess of the draw-head, which lug and grooves serve to guide the block, which swings in a vertical plane upon the transverse rod.

The coupling-pin V is of the usual construction, and slides in the vertical perforations W in the top and bottom of the draw-head, and a cord or chain, X, is fastened to the upper end of the pin, the other end of which chain is fastened to the upper end of a grooved segmental lever, Y, which is fastened upon the middle of a transverse rod, Z, which turns in bearings *a* in the upper end of two up-rights, *b*, fastened upon the end of the car-platform by means of screw-bolts *c*, passing up through longitudinal slots *d* in inwardly-bent flanges *e* upon the lower ends of the up-rights, by means of which screw-bolts the segmental end of the lever over the end of the pin, causing it to draw the pin up perfectly true. A crank or handle, *f*, is fastened upon the outer ends of the transverse rod or shaft, by means of which the lever may be raised, raising the pin, and a block, *g*, is fastened upon the shaft, inside the bearing, forming two steps, *h* and *i*, facing in opposite directions, the rearmost, *h*, of which steps bears against a bolt, *j*, which projects laterally from one of the bearings, and serves to prevent the handle and lever from being tilted too far back, and by that drawing the pin out of its perforations. A pawl, *k*, having a counter-weight, *l*, upon its other end, is pivoted upon a transverse rod, *m*, fastened between the up-rights and below the stepped block, and engages the foremost of the steps when the pin is raised, supporting the segmental lever in its raised position. To the outer end of this pawl is fastened a cord or chain, *n*, the lower end of

which is fastened to a weighted lever, *o*, fastened upon the end of the rod passing transversely through the draw-head, and serving, with a similar weighted lever, *p*, fastened upon the other end of the rod, to keep the cam or block in the draw-head in a vertical position, with the recess under the end of the raised pin when the coupling-link *q* is withdrawn, and to release the pawl at the same time.

By the foregoing description, taken in connection with the accompanying drawings, the operation of my car-coupling will easily be understood. When the cars are to be uncoupled, one of the cranks or handles is raised, drawing the coupling-pin upward, in which position it is held by the weighted pawl engaging the lower step in the block, and, when the cars are separated, withdrawing the link from the draw-head. The weighted arms upon the transverse rod will occupy their vertical position, releasing the pawl and bringing the recess of the cam in the draw-head under the end of the pin, supporting the same. When, now, the cars are again brought together for the purpose of coupling them again, the link entering the draw-head will push the lower end of the cam rearward, allowing the pin to drop, coupling the cars.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of a draw-head having a horizontal longitudinal slot in its inner portion, having its rear end reduced, and having a spiral spring wound around the said end and fastened to the shoulders formed by it, a pair of parallel bars fastened to the under side of the car, and having horizontal longitudinal slots in their forward portions, a flat bar passing through the slots in the parallel bars and through the slot in the draw-head, and a block pivoted to swing in a vertical plane at its middle, having a longitudinal recess in its forward end for the reception of the reduced end of the draw-head, and having the rear end of the spiral spring fastened to its forward end, as and for the purpose shown and set forth.

2. The combination of a draw-head having the usual recess, the bottom and rear side of which are grooved longitudinally, and having a vertical perforation in its top and bottom and a horizontal perforation in its sides, a cam or block having a recess in its upper edge, a lug or projection at its lower end, and pivoted upon a rod passing through it and through the horizontal perforations in the sides of the draw-head, swinging in a vertical plane in the recess in the same, and a coupling-pin passing through the vertical perforations in the top and bottom of the draw-head, as and for the purpose shown and set forth.

3. The combination of a draw-head having the usual recess, the bottom and rear side of which are grooved longitudinally, and having a vertical perforation in its top and bottom and a horizontal perforation in its sides, a cam or block having a recess in its upper edge, a

lug or projection in its lower end, and a transverse grooved perforation in its upper end, a transverse rod passing through the perforations in the sides of the draw-head, having a recess at its center passing through its entire thickness, and having a tongue or feather upon its middle, keeping the two halves of the rod together and fitting into the groove in the cam, and a coupling-pin passing through the vertical perforations in the top and bottom of the draw-head, as and for the purpose shown and set forth.

4. The combination of a transverse shaft journaled in horizontal bearings upon the end of a car, a segmental lever having its segmental end grooved and fastened upon the said shaft at its inner end, a cam or block having a step or ratchet-tooth and fastened upon the transverse shaft, a weighted pawl pivoted below the transverse shaft and engaging the step upon the cam, a draw-head having the usual recess and vertical and horizontal perforations through its top and bottom and through the sides respectively, a flat cam having a recess in its upper end and swinging in a vertical plane in the recess in the draw-head, upon a transverse rod passing through the horizontal perforations in the draw-head, and having weighted arms upon its ends, a chain fastened to one of the weighted arms and to the end of the weighted pawl, a coupling-pin having a chain fastened to its upper end and to the upper end of the segmental lever, and a coupling-link of the usual construction, as and for the purpose shown and set forth.

5. The combination of a pair of uprights fastened adjustably upon the front end of a car, and having an inwardly-projecting bolt upon the inner side of one of the bearings formed at their upper ends, a transverse shaft journaled in the said bearings, and having a handle or crank at its outer end, a segmental lever fastened upon the shaft, a cam or block having two steps or ratchet-teeth pointing in opposite directions and fastened upon the shaft, a weighted pawl pivoted below the shaft and engaging the one step upon the cam, a draw-head having perforations through its top and bottom, and through its sides, a flat cam having a recess in its upper end and swinging in a vertical plane in the draw-head, upon a transverse rod passing through the horizontal perforations in the draw-head, and having weighted arms upon its ends, a chain fastened to one of the weighted arms, and to the end of the weighted pawl, a coupling-pin having a chain fastened to its upper end and to the upper end of the segmental lever, and a coupling-link, as and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

JOHN BURTON DRAPER.

Witnesses:

JOHN FULLERTON,
GEORGE H. EMERT.