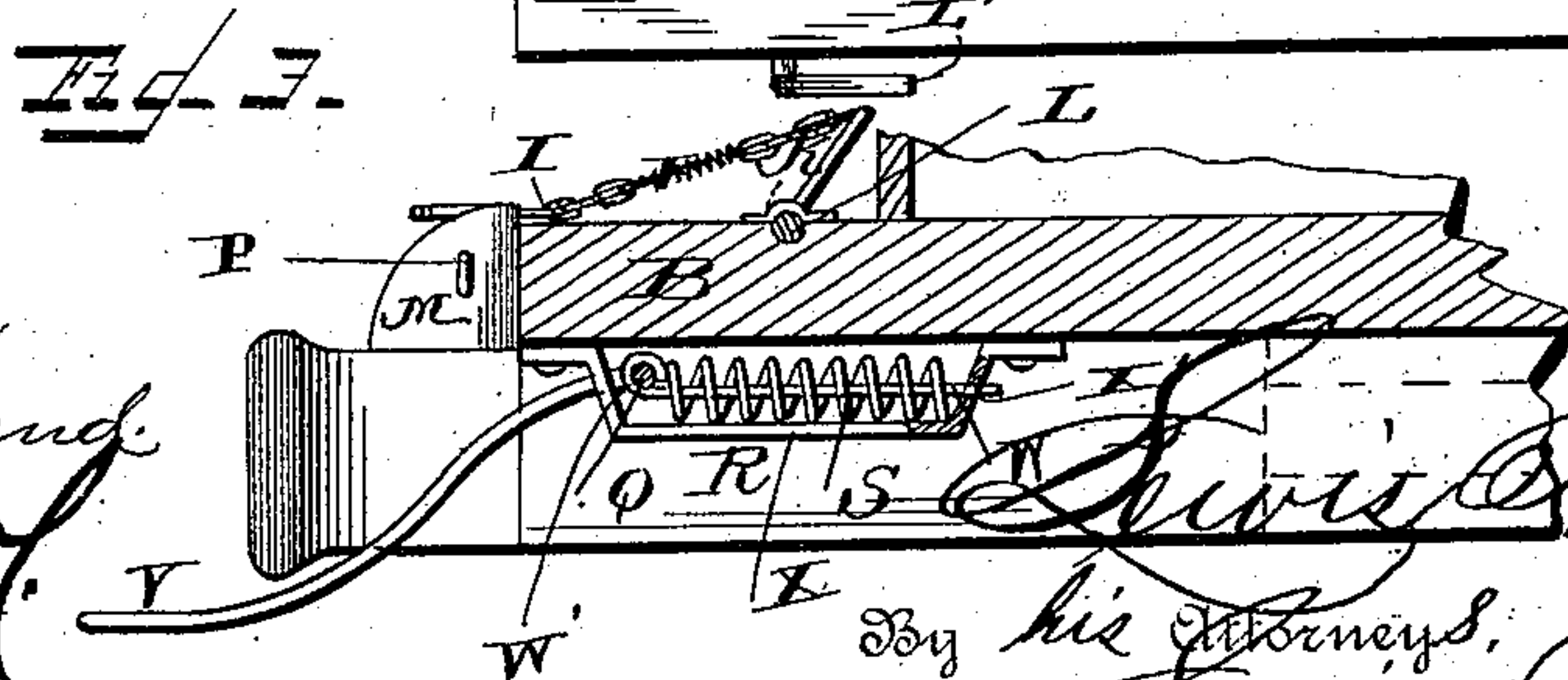
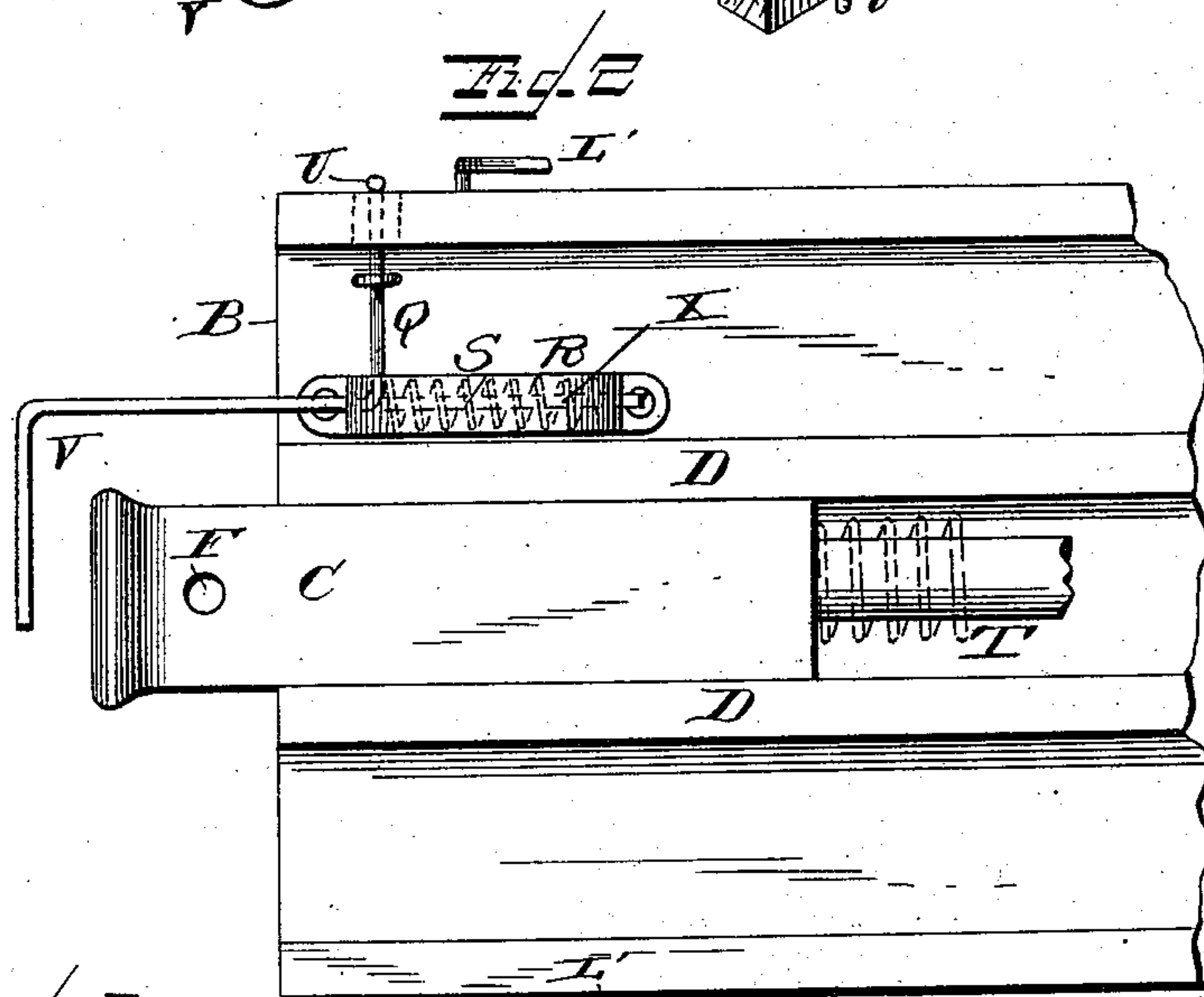
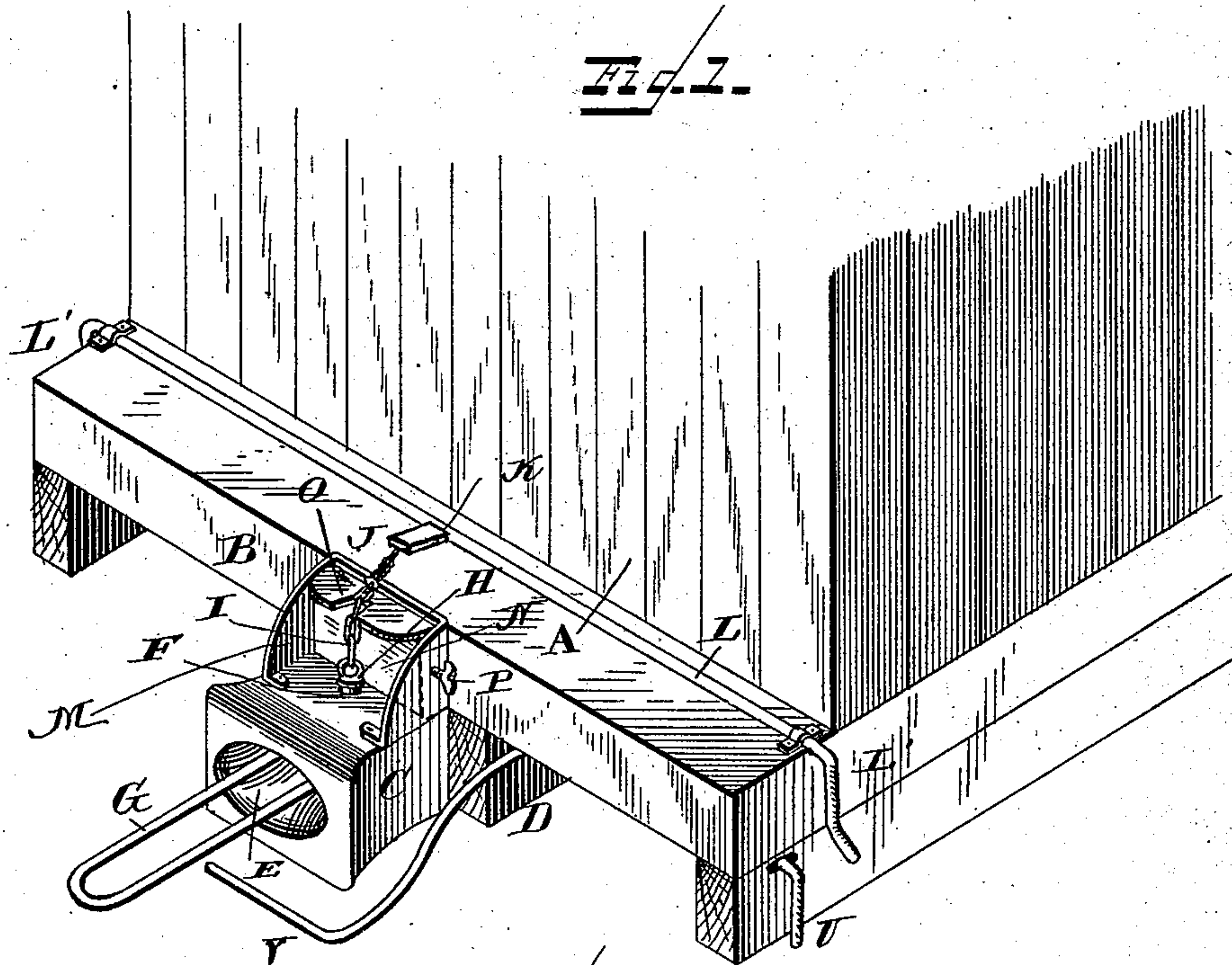


(No Model.)

L. A. NEFF.
CAR COUPLING.

No. 380,216.

Patented Mar. 27, 1888.



Witnesses
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UNITED STATES PATENT OFFICE.

LEWIS A. NEFF, OF MIDDLETOWN, INDIANA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 380,216, dated March 27, 1888.

Application filed August 18, 1887. Serial No. 247,254. (No model.)

To all whom it may concern:

Be it known that I, LEWIS A. NEFF, a citizen of the United States, and a resident of Middletown, in the county of Henry and State of Indiana, 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 which it ap-

Figure 1 is a perspective view of one end of a car provided with my improved car-coupling. Fig. 2 is a bottom plan view of the same, and Fig. 3 is a longitudinal vertical central sectional view of the same.

The same letters of reference indicate corresponding parts in all the figures.

My invention consists in a new and improved car-coupling, which will be hereinafter fully described and claimed.

Referring to the several parts by letter, A indicates the end of the railway-car to which my invention is here shown as applied, and B indicates the end platform at the bottom of the same.

C indicates the draw-head, the draw-bar of which is secured in guideways D, beneath and at the front end of the car, as shown, the draw-head being formed with the usual opening, E, in which the link is received, and the vertical apertures F F in its top and bottom, through which the coupling-pin passes.

G indicates the link, which is of the usual construction, and H indicates the coupling-pin. This coupling-pin is connected at its upper end by the chain I and the short coiled spring J to the outer end of the short weighted arm K on the center of the transverse shaft L, which is secured and turns in bearings on the rear part of the front platform, B, the ends of this shaft L being formed with the bent ends or handles L' L', by means of which the said shaft is operated from either side of the car, thus avoiding the necessity of entering between the cars in coupling them together. This chain I is of such a length that when the handles of the shaft are turned to swing the weighted arm K into a position slightly back of the vertical the coupling-pin

will be lifted up sufficiently to release the end of the coupling-link and permit of the cars being uncoupled. The arm K is so weighted and arranged that it is only necessary for the brakeman to raise the coupling-pin, as described, and when the two cars come together the shaft is so evenly balanced by its weighted arm that the slight shock as the cars meet will throw the weighted arm forward, (it being impossible for the said weighted arm to fall back, as it rests against the front end of the car when raised to its highest point, a very little back of a vertical line,) and as the weighted arm falls forward as the ends of the cars come in contact the pin is thus lowered so as to pass through the end of the link, and it will be seen that the cars are thus automatically coupled together, the only adjustment by hand being that of turning the handle of the shaft L to swing the weighted arm K back, as before described.

Upon the top of the draw-head is secured a casing or frame, M, which may be secured upon any draw-head, and within this casing or frame fits and slides vertically a slide or block, N, which is formed at its forward upper edge with the guide-notch O, and this slide-block is adapted to be adjusted vertically in the frame M and secured in its adjusted position by means of the set-screw P, the object of this device being that when the coupling-pin has become bent it can be raised by raising the slide-block and securing it in its adjusted position by the set-screw to straighten the pin.

Beneath the front end of the car, and also beneath the other end of the same, is mounted in bearings a crank-shaft, Q, this crank-shaft being mounted on a slide, R, which is normally pressed forward by a spring, S, and the said slide is secured to and moves with the bumper or draw-head, which is also pressed forward by a suitable spring, T, in the usual manner. The outer end of this crank-shaft is bent to form a convenient handle, U, which extends out at the side of the car, to permit of the said shaft being operated from the side of the car without passing between the ends of the same, and the inner end of the crank-shaft extends forward to the outer end of the draw-head, and is there bent in at V at right angles,

so as to extend with its bent end across the mouth of the draw-head, but below the same, its weight normally holding it down below the level of the bottom of the draw-head. Now when
 5 two cars approach each other to be coupled together the forward inner end of the crank-shaft can be raised by turning its outer handle end, and the free end of the link G can thus be raised, so as to hold the link level, horizon-
 10 tal, or where the draw-head of the approaching car is higher than that of the first car the outer free end of the link can be raised above the horizontal plane as high as required, so as to insure its entering the mouth of the ap-
 15 proaching draw-head, and it will be seen that by means of this important part of my invention cars provided with my invention can al-ways be readily coupled together, no matter what difference there may be between the
 20 height of their draw-heads, this being a very important feature. The outer part of the crank-shaft is loosely journaled in its bearings, and the inner end of the same transverse part of the said shaft is journaled in the end or eye
 25 W' of a rod, W, the rear end of which passes through an aperture, X', in the rear end of a casing, X, which extends beneath and partially incloses the said rod. The rod to the rear of its eye is encircled by a coiled spring,
 30 Y, which serves to press it forward. The object of this arrangement is that if the forward inner end of the crank-shaft should be caught between the draw-heads and forced violently back the spring-bearing just described will
 35 permit of the inner part of the crank-shaft moving quickly back, and thus prevent the crank-shaft from being broken or bent out of shape, and as soon as this unusual pressure is removed the coiled spring Y pushes the eye-
 40 rod, and consequently the inner part of the crank-shaft, forward into its normal position. A short stop or arm, Z, on the crank-shaft prevents the inner end thereof from falling too low when the crank-shaft is not in use.
 45 It will be seen that in coupling cars provided with my improved car-coupling the brakeman has only to turn the transverse shaft L by means of its end handles, so as to raise the coupling-pin, and at the same time
 50 swing back the weighted arm K of the said shaft until the latter touches with its outer end against the end of the car, in which position it is just balanced back of the vertical line, so that when the meeting ends of the cars
 55 come into contact the jar will throw the weighted arm forward, carrying with it the shaft to which it is attached, and lowering the coupling-pin, so as to couple the cars together, and the brakeman, having once thus "set"
 60 the balanced lever which operates the coupling-pin, has only to stand at the side of the car and raise the free end of the link to the required level or angle by means of the crank-

shaft Q, thus holding the end of the link at the required angle until it enters the mouth of the
 draw-head of the approaching car. 65

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages of my improved car-coupling will be readily
 understood. 70

It will be seen that my improved car-coupling is comparatively simple in construction, and therefore not liable to break or get out of order, while it is exceedingly efficient in op-
 75 eration. Cars of different heights of draw-heads can be readily and easily coupled together and the coupling-pins drop automatically down to couple the cars when the ends of the draw-heads come together. All of the
 80 adjustments are made from the side of the cars, and there is no necessity for going between the ends of the cars to couple or uncouple them, thus preventing many accidents and adding greatly to the security of life of
 85 the brakeman.

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

1. The combination, with the draw-head, of
 90 the adjusting-shaft formed with the projecting bent outer end and the inner forward extension having the bent forward end, the loose outer bearing for the said shaft, and the spring-actuated eye-rod, substantially as and
 95 for the purpose set forth.

2. The combination, with the draw-head, the coupling-pin, and its chain, of the frame or casing secured upon the draw-head, the
 100 slide-block, and the set-screw for securing the same in its adjusted position, substantially as set forth.

3. The combination, with the spring actuated movable draw head and bar, of the slide
 105 secured to the same, and the crank-shaft mounted on the said slide and formed with the bent projecting outer end and the inner forward projection having the bent forward end, substantially as set forth.

4. The combination, with the spring-actu-
 110 ated movable draw head and bar, of the slide secured to the same, and the crank-shaft loosely journaled thereon at its outer end, having the projecting stop journaled at its inner portion in the spring-bearing, and formed with the
 115 inner forward extension having the bent forward end, substantially as and for the purpose set forth.

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

LEWIS A. NEFF.

Witnesses:

DANIEL FRANKLIN,
 MOSES GOOD.