

N. H. DOLSEN.
Car-Couplings.

No. 157,382.

Patented Dec. 1, 1874.

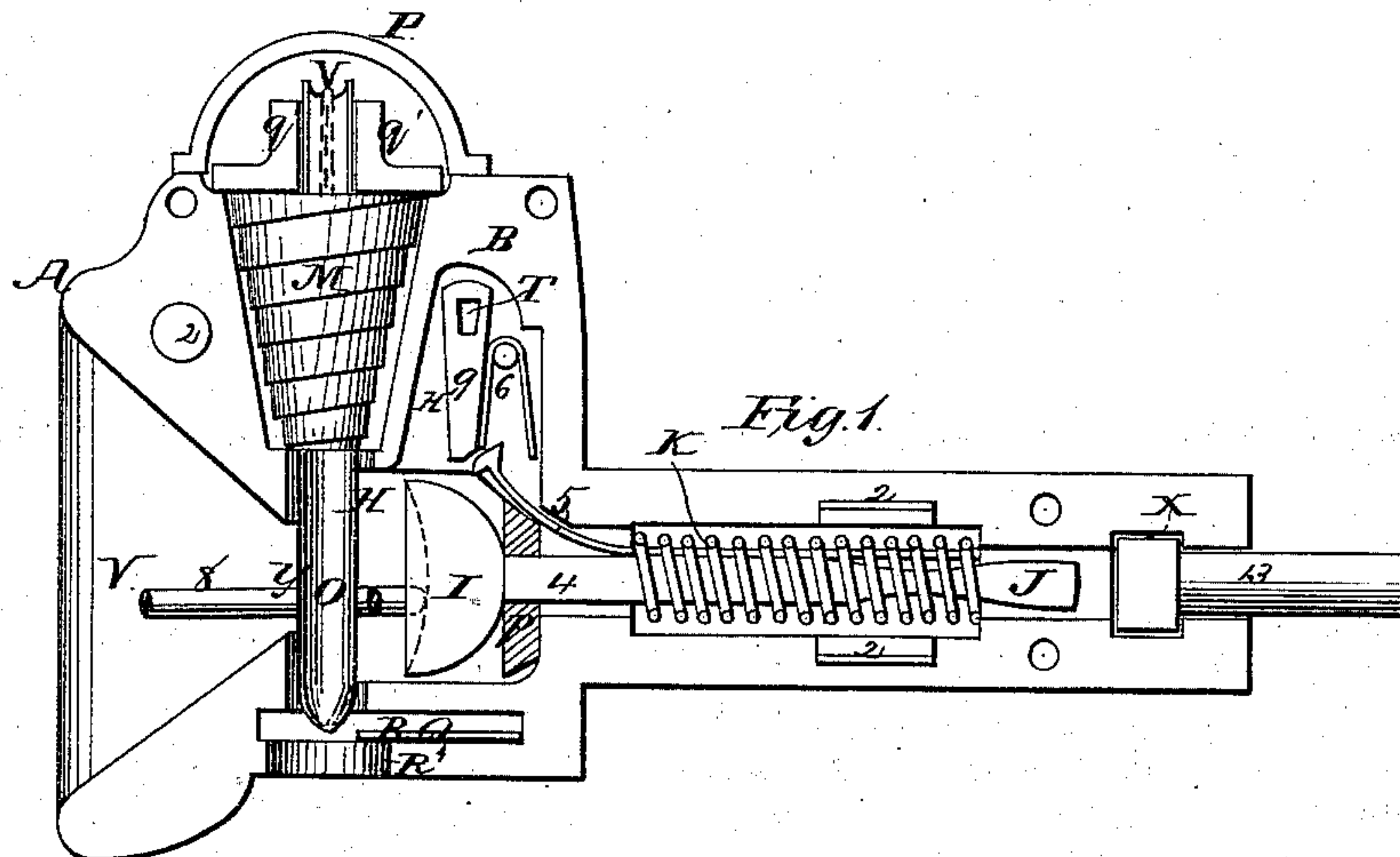


Fig. 4.

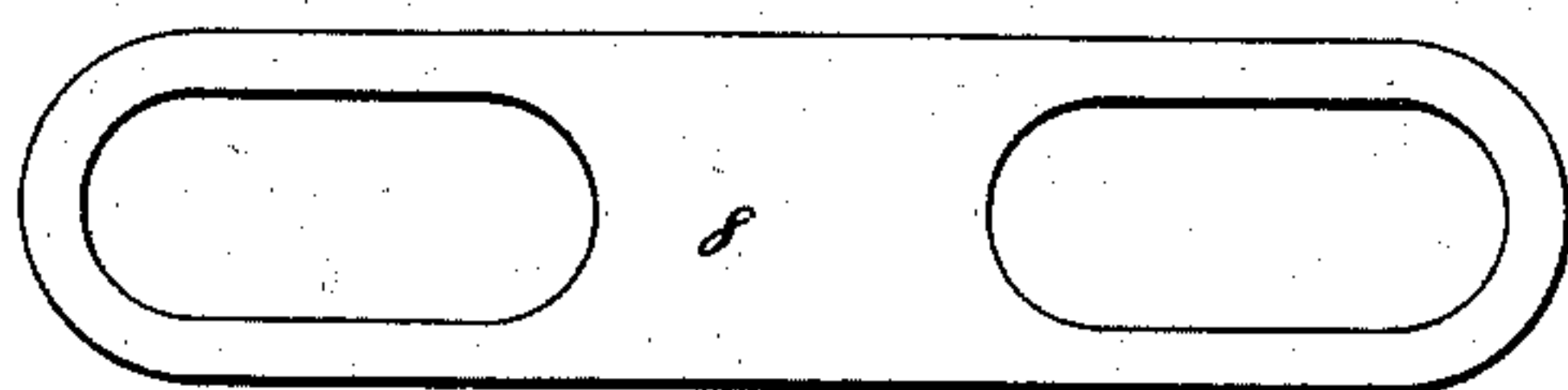


Fig. 2.

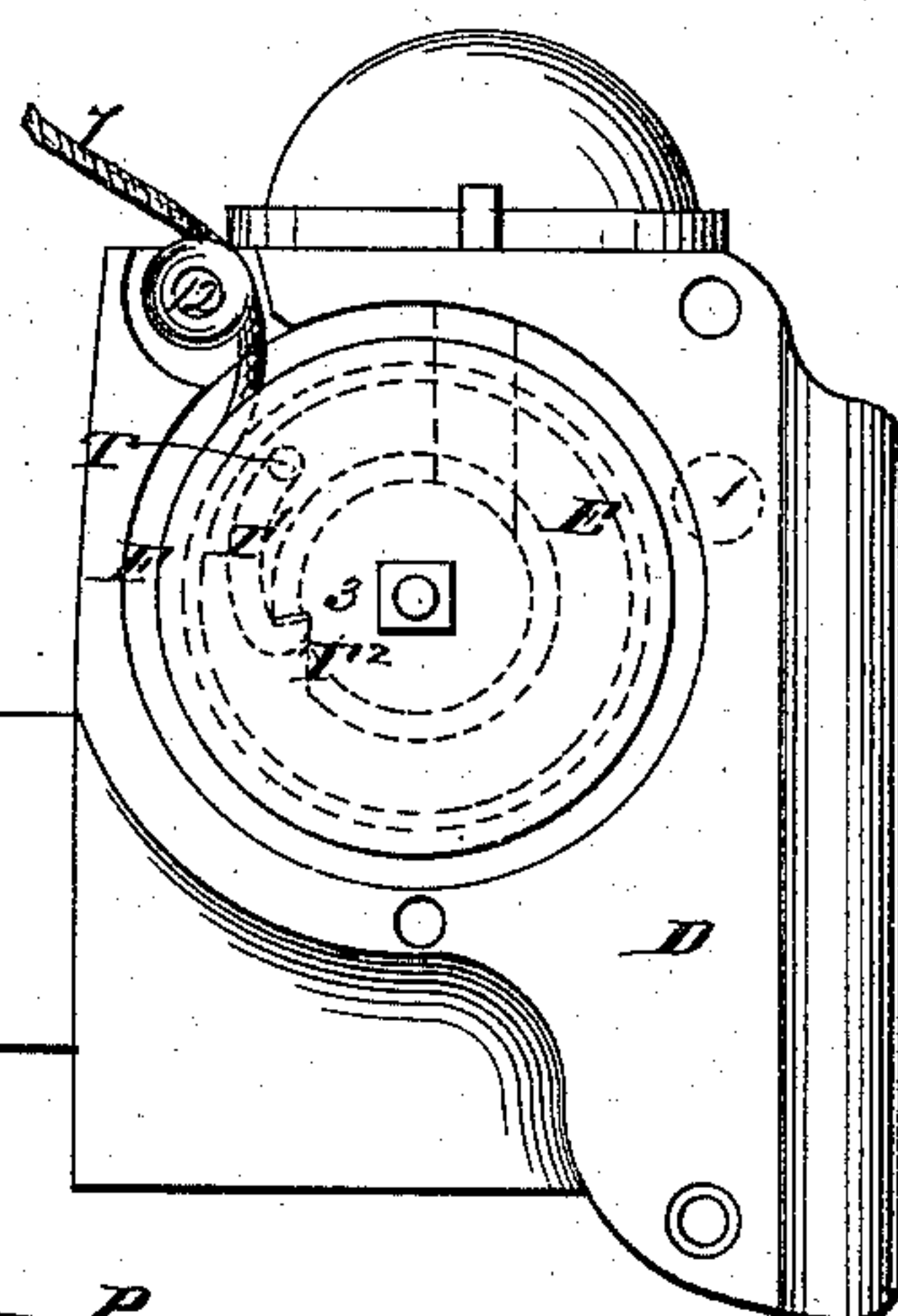
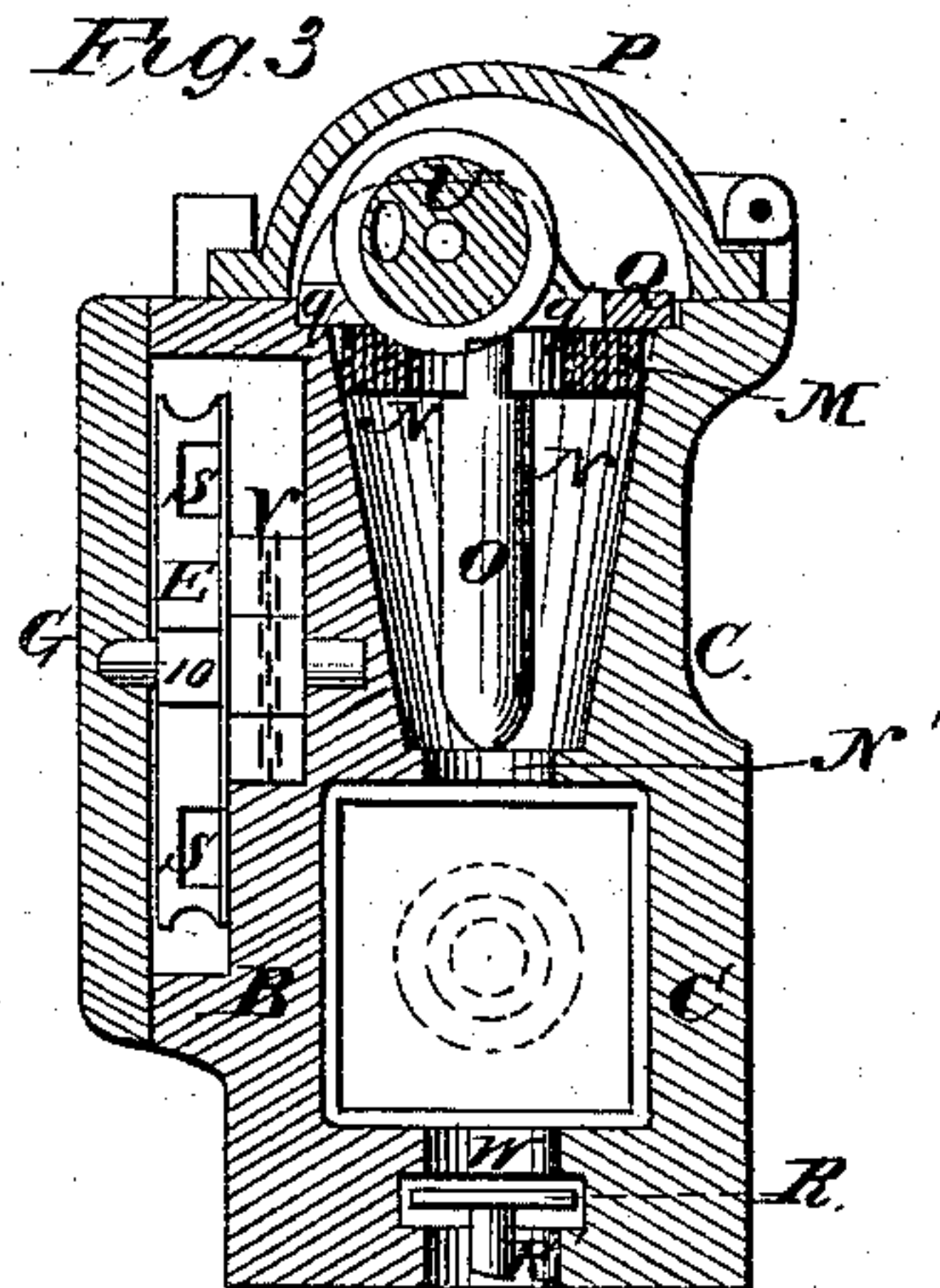


Fig. 5.



Fig. 3.



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IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. **157,382**, dated December 1, 1874; application filed October 9, 1874.

To all whom it may concern:

Be it known that I, NINIAN H. DOLSEN, of Chatham, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Car-Coupling; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved coupling, showing the coupling-pin depressed, one of the sections of the divided buffer being removed to show the working parts. Fig. 2 is an elevation looking from the opposite side. Fig. 3 is a transverse section, showing the coupling-pin elevated. Fig. 4 is a plan view of the link, and Fig. 5 an edge view of the pulley employed for elevating the coupling-pin.

Similar letters of reference in the accompanying drawings denote the same parts.

This invention has for its object to improve the construction and operation of automatic car-couplings; and to this end it consists in the improved coupling which I will now proceed to describe and point out in the claims.

In the drawings, A represents the buffer, which is divided longitudinally into two sections, B C, suitably connected in such manner as to enable either section to be detached from the other. For the purpose of preventing the longitudinal displacement of the sections, I provide one of them with lugs 2, located at suitable points, and entering corresponding recesses 1 in the other. The buffer A is provided with a tapering mouth, *b*, having a contracted throat, *y*, the latter opening into a chamber, H, in the back part of the buffer. I represents a block adapted to slide in the chamber H, and provided with a horizontal rod projecting backward into a recess in the rear end of the buffer, within which is a spiral spring surrounding the rod J, and tending to force it with the block I toward the throat of the buffer. H' is a recess extending upward from the chamber H, and containing an arm, 9, and a spring, 6, to be hereinafter described, the arm being adapted to oscillate in the recess H', and be engaged with a spring-catch, 5, projecting from the rod J in such manner as to be drawn backward by the catch

until released, when it is forced forward by its spring 6. The upper end of the arm 9 is rigidly attached to a horizontal shaft or rod, T, extending through the side of the recess H' into a chamber, F, in the outer side of the section B, where it is bent downward or provided with a downwardly-projecting dog or pawl, T¹, as shown in dotted lines in Fig. 2. E represents a grooved pulley, located on a short arbor or shaft, 10, the latter being journaled in bearings in the inner side of the chamber F, and a detachable plate, G, forming the outer side of said chamber, the pulley, with its shaft, being adapted to revolve therein. The inner side of the pulley is provided with a recess or notch, T², with which the pawl T¹ engages at a certain stage of the operation. N represents a tapering chamber, located over the center of the chamber H transversely, and opening into the latter through a suitable orifice, N'. The chamber N is of such shape as to hold the volute spring M, the lower and smaller end of which bears on a shoulder on the upper end of the vertical coupling-pin O. The upper end of the chamber N is covered by a circular plate, Q, having a slot, *q*, on each side of which are vertical lugs *q'*, forming the bearings of a pulley, U. V is a chain attached at one end to the shaft 10 of the pulley E, and passing upward through a suitable orifice into the tapering chamber N over the pulley U, and attached at its opposite end to the coupling-pin O. 7 is a cord or chain attached to the periphery of the grooved pulley E, and passing over a smaller pulley, 12, out of the buffer, and to any convenient point to be grasped by the operator. P represents a close cover placed over the plate Q and chamber N, said cover protecting the spring and other parts from moisture, &c. *p* is a rubber washer surrounding the rod J, and interposed between the block I and the rear wall of the chamber H, said washer converting the block I into a spring-buffer. 13 is a draw-bar, which is preferably screwed into a nut, X, located in a recess in the rear end of the divided buffer A. R represents a horizontal sliding plate, located in a slot below the chamber H, and provided with a pin, R', projecting downward, by means of which it may be moved forward, so as to form an abutment

for the pin O to bear upon when depressed or retracted, so as to be out of the line of the pin.

The operation is as follows: When the cars are coupled the parts are in the position shown in Fig. 1, the link 8 being inserted in the chamber H, the block I retracted, the pin O depressed, and the spring M expanded. To uncouple, the operator grasps the cord or chain 7, from any convenient point, and pulls it, thereby revolving the pulley E, the cord being wound upon the periphery of the latter. This operation winds the chain V upon the shaft 10, thereby elevating the pin O, which, as it rises, compresses the spring M, as shown in Fig. 3, and releases the link, the block I being forced outward by its spring K to the front of the chamber, thereby closing the throat as the link is withdrawn, and excluding dirt, moisture, &c. The notch T² of the pulley E is so arranged as to engage with the pawl T¹ at the moment the pin O is drawn to its utmost height, thereby locking the pulley and holding the pin in suspension, the spring 6 pressing against the arm 9 in such manner as to hold the pawl T¹ against the notched portion of the pulley. When the shaft J and block I are forced outwardly on the withdrawal of the link, as above stated, the spring-catch 5 passes by the lower end of the arm 9, its end springing up after passing, so as to bear against the outer side of the arm. The parts are now in position for coupling, and when the link from the adjacent car enters the chamber H it forces the block I, with its rod J and spring-catch 5, backward, the latter swinging back the lower end of the arm 9, thereby turning the rod T and disengaging the pawl T¹ from the pulley E, the latter releasing the pin O, which, under the impulse of the expansion of the spring M, is suddenly forced downward through the orifice N' and chamber H, engaging with the link therein. The coupling is thus performed automatically without the necessity of an attendant going between the cars; while the uncoupling, as above stated, can be effected from any part of the car or train to which the cord 7 may be conducted.

The cover P and block I effectually exclude dirt and moisture from the interior of the buffer, while the sectional construction of the buffer enables it to be readily taken apart for repairs; or, in case of the breakage of one section, it can be replaced without sacrificing the entire buffer.

The elastic washer *p*, converting the block I into a spring-buffer, relieves the shock of the entering link, and prevents the breakage of the latter. The spring M prevents the pin from being displaced by the motion of the cars when coupled.

The sliding plate R may be pushed forward, so as to receive the concussion of the pin as it descends, before the spring M strikes the bottom of the chamber N, thereby relieving the latter. In case this is not desirable, however, the plate may be moved back, so that the pin will not come in contact with it.

I claim as my invention—

1. The vertical pin O, combined with the volute spring M, arranged in a conical or tapering recess, with its smaller end downward, substantially as described.

2. The vertical sliding pin O, combined with a chain for raising it, a guide-pulley over which said chain runs, and a wheel and cord or chain arranged in a chamber or recess at the side of the draw-head, for the purpose of conveniently applying the power to raise the pin, substantially as described.

3. The dog T¹, shaft T, and arm 9, combined with the notched pulley E, and with the sliding buffer I and its adjuncts, substantially as and for the purposes specified.

4. The spring-block or buffer I, having the elastic washer *p*, in combination with the buffer A, substantially as described, for the purpose specified.

5. The sliding plate R, in combination with the slot *q* and pin O, substantially as described, for the purpose specified.

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Witnesses:

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