No. 644,107. Patented Feb. 27, 1900.

J. STAWARTZ.

CAR COUPLING.

(Application filed Apr. 28, 1899.)

(No Model.) 2 Sheets—Sheet 1.

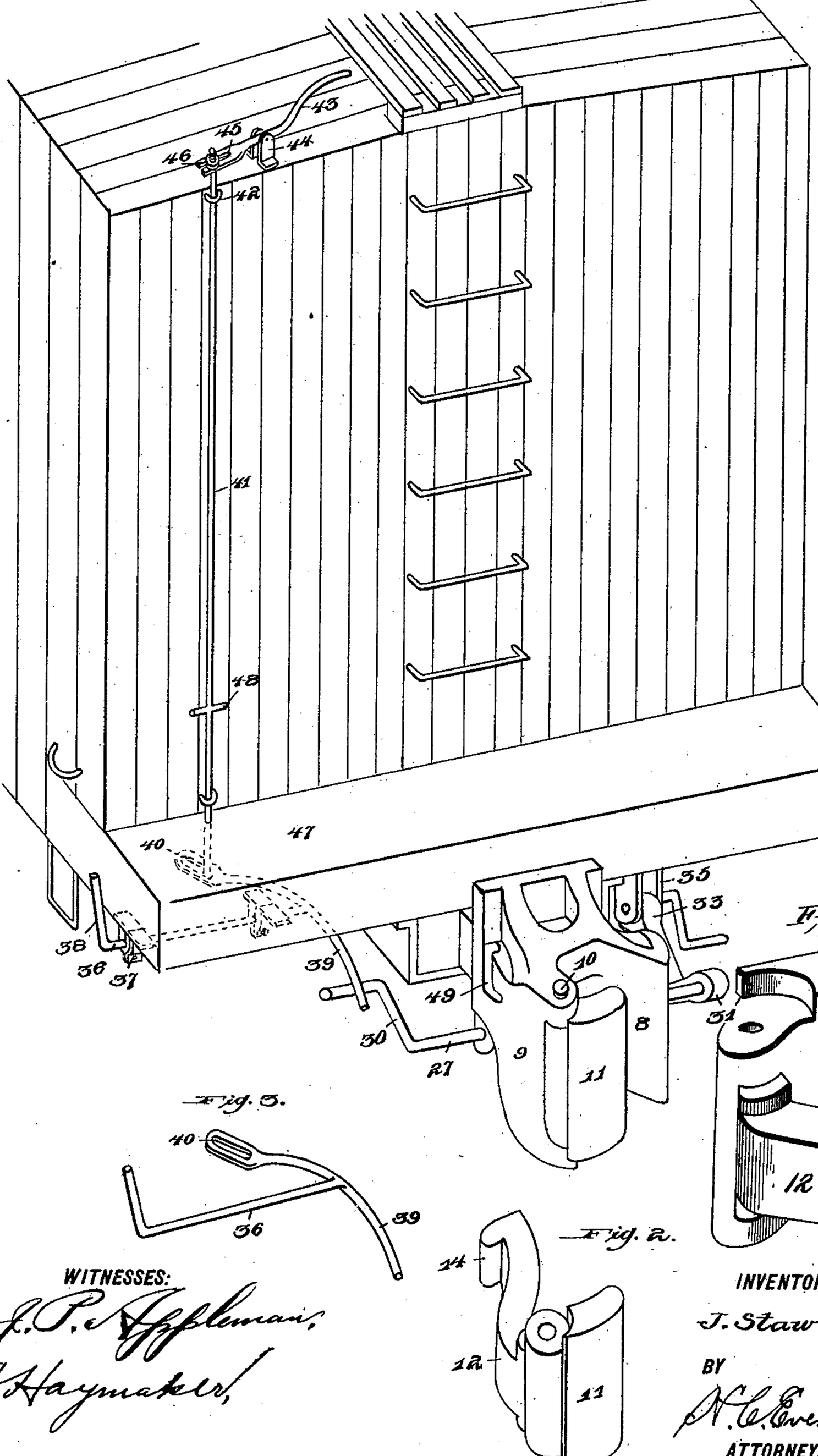

Fig. 1.

Fig. 11.

Fig. 5.

Fig. 2.

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Fig. 4.

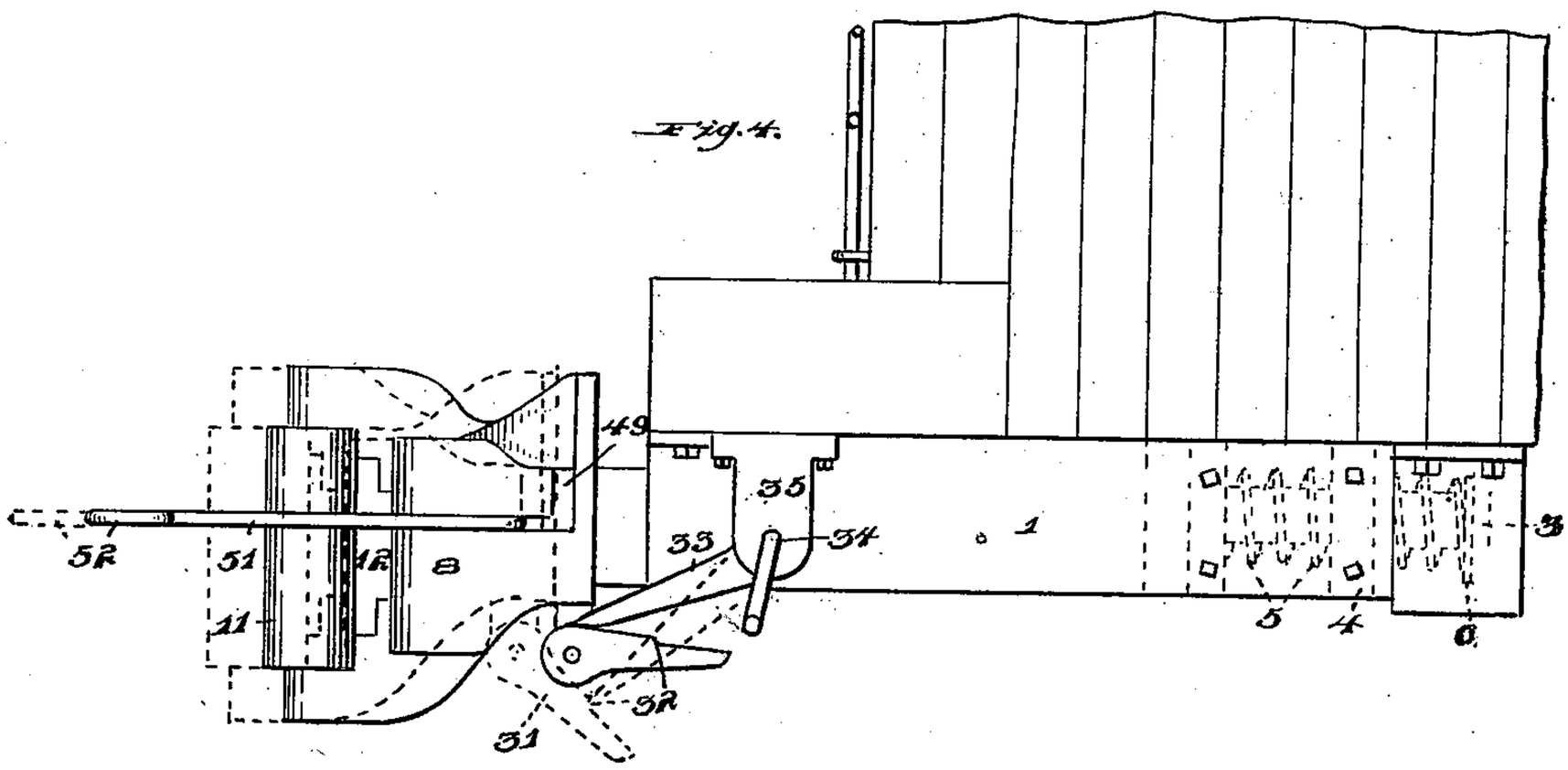

Fig. 5.

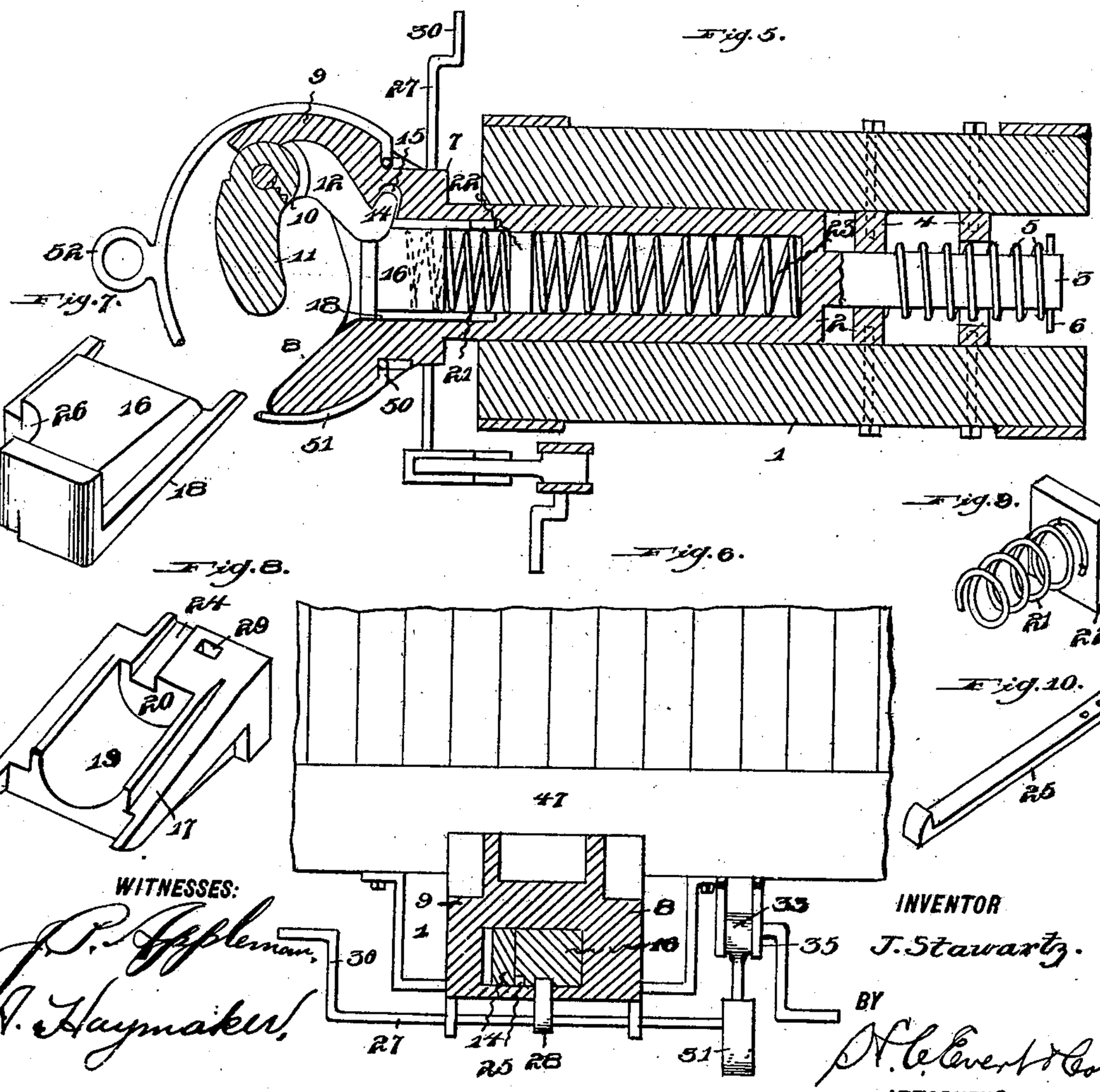

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

Fig. 6.

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UNITED STATES PATENT OFFICE.

JOHN STAWARTZ, OF PITTSBURG, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 644,107, dated February 27, 1900.

Application filed April 28, 1899. Serial No. 714,794. (No model.)

To all whom it may concern:

Be it known that I, JOHN STAWARTZ, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in car-couplers; and it relates particularly to that class in which each draw-head is provided with a laterally-swinging hooked jaw adapted to be coupled with a correspondingly-hooked jaw on an engaging draw-head, each hooked jaw having a projection or tailpiece formed integral therewith locked in position by a longitudinally-moving locking-block.

My invention aims to construct a coupler of this class having novel means for operating the locking-block in order to permit the disengagement or uncoupling of the two laterally-swinging jaws, together with means for operating the same from different points of the car.

My invention also aims to provide means for assuring the coupling between the two laterally-swinging hooked jaws irrespective of the position of the two cars, thus permitting the coupling of the jaws when the cars are upon a curve in the road-bed.

To these ends my invention consists in the features of construction and novel combination of parts, as hereinafter described, and then particularly pointed out in the claims.

The invention is illustrated in the accompanying drawings.

Figure 1 is a perspective view of a part of a car, showing my improved coupler and operating means therefor in position. Fig. 2 is a perspective view of the laterally-swinging hooked jaw. Fig. 3 is a perspective view of a part of the operating means for uncoupling the hooked jaws. Fig. 4 is a side view of a part of a car, showing my improved coupler in position, showing means for coupling with an ordinary link-and-pin coupler. Fig. 5 is a horizontal sectional view of the same. Fig. 6 is a transverse vertical sectional view of the coupler in position on the car. Fig. 7 is a perspective view of the locking-block. Fig. 8 is a like view of the reverse side of the same. Fig. 9 is a perspective view of the follower-plate and a portion of the buffer-spring arranged in the draw-head. Fig. 10 is a perspective view of the spring which automatically engages the locking-block and holds the same when depressed. Fig. 11 is an inverted perspective view of the knuckle and tailpiece.

Referring now to the drawings, 1 indicates the timbers of the car, between which the draw-head 2 is arranged and secured. This draw-head 2 is hollow, as shown in the sectional view in Fig. 5, and has a rearwardly-extending shaft end 3, which is adapted to operate through guides 4 4, secured to the timbers 1, one of said guides fitting neatly upon said shaft end 3 and the other having an enlarged aperture to receive the shaft and also its surrounding coil-spring 5, the latter being arranged thereon between the forward guide 4 and a pin 6, passing transversely through the shaft 3 near its rear end. At its forward end this draw-head 2 is enlarged, as shown at 7, thus forming a shoulder adapted to engage the ends of the timbers 1 and the front of the car to limit the rearward movement of the draw-head. This enlarged portion of the draw-head terminates in an ear or horn 8 and a bearing 9, in the latter of which is secured, by means of a vertical pivot 10, a laterally-swinging hooked jaw 11, having formed integral therewith a projection or tailpiece 12, which extends at approximately right angles to the laterally-swinging hooked jaw and is provided on the free end with a knuckle 14, adapted to rest normally in a vertical slot 15, provided therefor in the enlarged portion 7 of the draw-head.

The opening in the draw-head terminates at the forward end in the enlarged portion 7 and has arranged therein a longitudinally-moving locking-block 16, chamfered on each side, as at 17, to form a tongue or guide 18, which operates in longitudinal grooves provided therefor in the walls of the draw-head. This locking-block 16 is provided on the underneath face with a semicylindrical recess 19, extending from the rear end of the block partially through the same and forming a shoulder 20. Within this recess 19 is arranged a coil retracting-spring 21, the forward

end of which abuts against the shoulder 20 and the rear end of which abuts against a follower-plate 22, arranged within the hollow portion of the draw-head. Between this follower-plate and the closed end of the draw-head is arranged a buffer-spring 23. The locking-block 16 is further provided with a groove 24, terminating at one end at the front of the block and at the other end in the recess 19, and within which is arranged a spring-catch 25, the rear end of which is rigidly secured to the inner face of the lower wall of the draw-head. The locking-block is further cut away at its one corner, as shown at 26, to receive the free end of the tailpiece 12 and knuckle 14, as shown in Fig. 5 of the drawings.

In order to depress the locking-block rearwardly of the draw-head, and thus disengage the same from the tailpiece 12, so as to permit the outward movement of the swinging jaw 11, and thus disengage or uncouple the cars, I journal in the enlarged portion 7, near the under side thereof, an operating-shaft 27, upon which is secured a dog or pawl 28, operating through an aperture or opening provided therefor in the draw-head and engaging in a recess 29 on the under side of the locking-block 16, near its forward end. This operating-shaft 27 is formed at one end into a crank 30 and has mounted on the opposite end an operating-dog 31, cut away on the upper face thereof at the free end to form a shoulder 32, against which engages the free end of a pawl 33, which is mounted upon a crank-shaft 34, the latter being journaled in a pair of bearings 35, secured to the under side of the car-body.

In order to provide means for operating the shaft 27 from different convenient points—that is, from the side or top of the car—I provide a shaft 36, journaled in bearings 37, secured to the under side of the car-body, said shaft having a crank end 38 and also has secured to the other end a lever-rod 39, the one end of which curves downwardly and engages the crank 36, while the other end is provided with an elongated slot 40, which is suitably connected to the rod 39 and to receive the lower end of a vertical operating-rod 41, secured by keepers 42 to the front end of the car. This rod 41 may be operated from the top of the car by means of a lever 43, pivotally supported in standards 44 on top of the car and having a bifurcated end 45 to receive the rod 41 below the washer or collar 46, mounted on said rod near the upper end thereof.

To permit the rod 41 to be operated while the party uncoupling the cars is standing upon the sill 47, I provide projections 48, extending in opposite directions and forming handles. In order to couple my improved coupler with the ordinary link-and-pin coupler, I provide the draw-head in the enlarged portion 7 with bayonet-shaped slots 49, oppositely disposed and which receive the hook ends 50 of a bale 51, said bale having an eye 52, adapted to enter the draw-head of the engaging coupler and receive the pin of such coupler. When not in use, this bale may be thrown backward against the sill 47, and thus not interfere in any manner with the free and automatic operation of the coupler.

In order to permit the knuckle 14 of the tailpiece 12 passing the head of the spring-catch 25, I provide the said knuckle 14 at its engaging point with an inclined face 14′, which as the knuckle swings outwardly engages the rounded face on the end of the spring-catch, and while permitting the knuckle and tailpiece to swing outwardly at the same time releases this spring-catch from its engagement with the block 16, so that the latter will be forced outwardly by its spring 21.

Briefly described, the operation of my improved coupler is as follows: Assuming all parts to be in their proper position, the laterally-swinging hooked jaw being locked the shaft 27 is operated by means of its crank 30, thus throwing the pawl 28 into engagement with the recess 29 of the locking-block 16, forcing the said block rearwardly, releasing the same from engagement with the tailpiece 12, so that the laterally-swinging jaw may swing outwardly on its pivot-pin 10. In uncoupling the cars by impact the draw-head is drawn outwardly to the position shown in Figs. 4 and 5 by the movement or separating of the cars, and the pawl 33, having been previously placed on the supporting-dog 31, slides down the upper face of this dog and drops against the shoulder 32 thereof. When in this position, the cars may be uncoupled by impact, as the engagement of the draw-heads causes them to be depressed, and during such compression the supporting-dog 31 is forced downwardly by the pawl 33, thus turning the shaft 27 and by means of its pawl 28 engaging the locking-block 16 and force the same inwardly, so that the spring-catch 25 will engage the forward end of the block, permitting the free outward movement of the laterally-swinging jaw by reason of the lock for the tailpiece thereof having been removed. The separating of the cars then moves the laterally-swinging jaws outwardly, disengaging them from each other. This locking-block 16 may be operated, however, by operating the shaft 27 by hand, as aforedescribed, or when the operator is at the side of the car may be operated by the shaft 36, moving the same so as to throw the downwardly-curved portion of the lever-rod 39 into engagement with the crank 30. When operated from the top of the car by means of the lever 43, the depressing of the lever elevates the rod 41 and the slotted end of the lever-rod 39, throwing the curved portion of the latter into engagement with the crank 30 in the same manner as when crank 38 is operated. When the cars are brought together, so as to engage the two laterally-swinging jaws, the knuckle 14 (which is cut away at the bottom thereof)

of the tailpiece 12 rides upon the end of the spring 25, depressing the same and releasing the locking-block 16, so that as soon as the knuckle 14 enters the recess 15 the block 16 is forced outwardly by the spring 21 holding the tailpiece in position and locking the jaws.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a car-coupler, the combination of a hollow draw-head having an enlarged portion provided with a projecting horn and a projecting ear, a laterally-swinging jaw pivotally secured to said ear and provided with a tailpiece extending at substantially right angles to the jaw, said tailpiece having a knuckle adapted to engage in a groove provided therefor in the draw-head, a spring-actuated locking-block arranged in the hollow draw-head, a shaft journaled in the draw-head, a pawl secured to said shaft, and means secured to the car-body for automatically operating said shaft and pawl to depress the locking-block and release the laterally-swinging jaw, substantially as described.

2. In a car-coupler, the combination with a hollow draw-head having an enlarged portion, of a laterally-swinging hooked jaw pivotally secured thereto and having a tailpiece extending at substantially right angles to the jaw, a spring-actuated locking-block arranged within the hollow draw-head and adapted to be normally in engagement with the tailpiece to lock the swinging jaw, a shaft journaled in the enlarged portion of the draw-head, a pawl secured on said shaft and adapted to engage and force said locking-block rearwardly when the shaft is operated, means for securing the locking-block in said rearward position, a supporting-dog secured on the one end of the said shaft, and a pawl pivotally supported from the car-body and adapted to engage said dog for operating the shaft and releasing the swinging jaw when the draw-head is depressed, substantially as described.

3. In a car-coupler, the combination with a hollow draw-head having an enlarged portion, of a laterally-swinging hooked jaw pivotally secured thereto, a tailpiece formed integral with the said jaw extending at right angles thereto, a knuckle formed integral with the said tailpiece adapted to be seated in a recess formed in the draw-head and having its bottom partially cut away, a spring-actuated hollow block arranged in the said draw-head and adapted to lock said knuckle in the said recess, means secured in the said draw-head for retaining the said block out of engagement with the said knuckle and adapted to be operated by the said knuckle, a shaft journaled in the enlarged portion of the draw-head, a pawl secured to the said shaft adapted to engage the said locking-block when the shaft is operated, a supporting-dog secured on the one end of the said shaft, a pawl pivotally supported from the car-body and adapted to engage the said dog for operating the shaft and releasing the swinging jaw when the draw-head is depressed, and separate means for operating the said shaft, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN STAWARTZ.

Witnesses:
JOHN NOLAND,
E. W. ARTHUR.