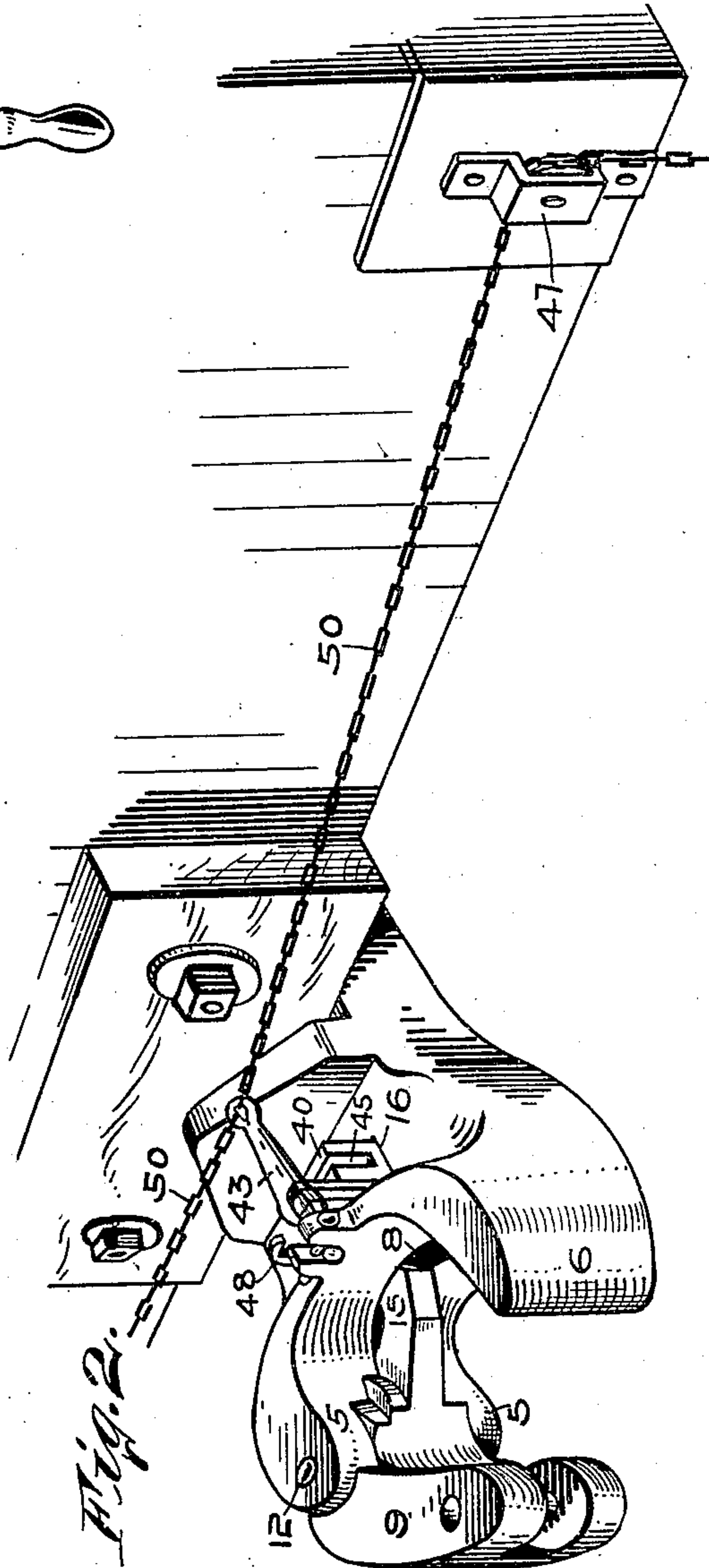
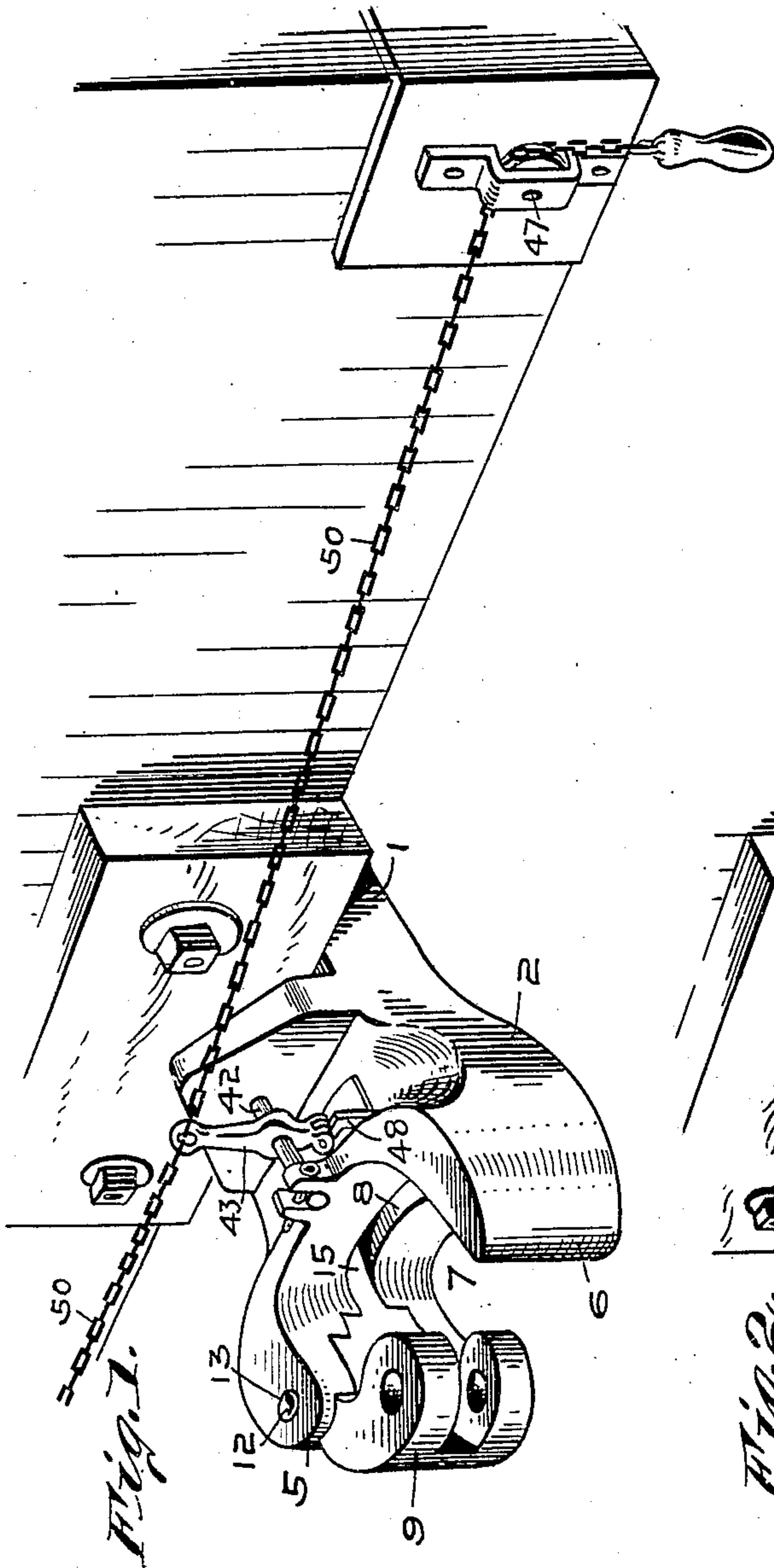


No. 843,551.

PATENTED FEB. 5, 1907.

O. F. RICHTER.
AUTOMATIC CAR COUPLING.
APPLICATION FILED MAR. 20, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

J. C. Dyner.
Wm. Harte.

INVENTOR

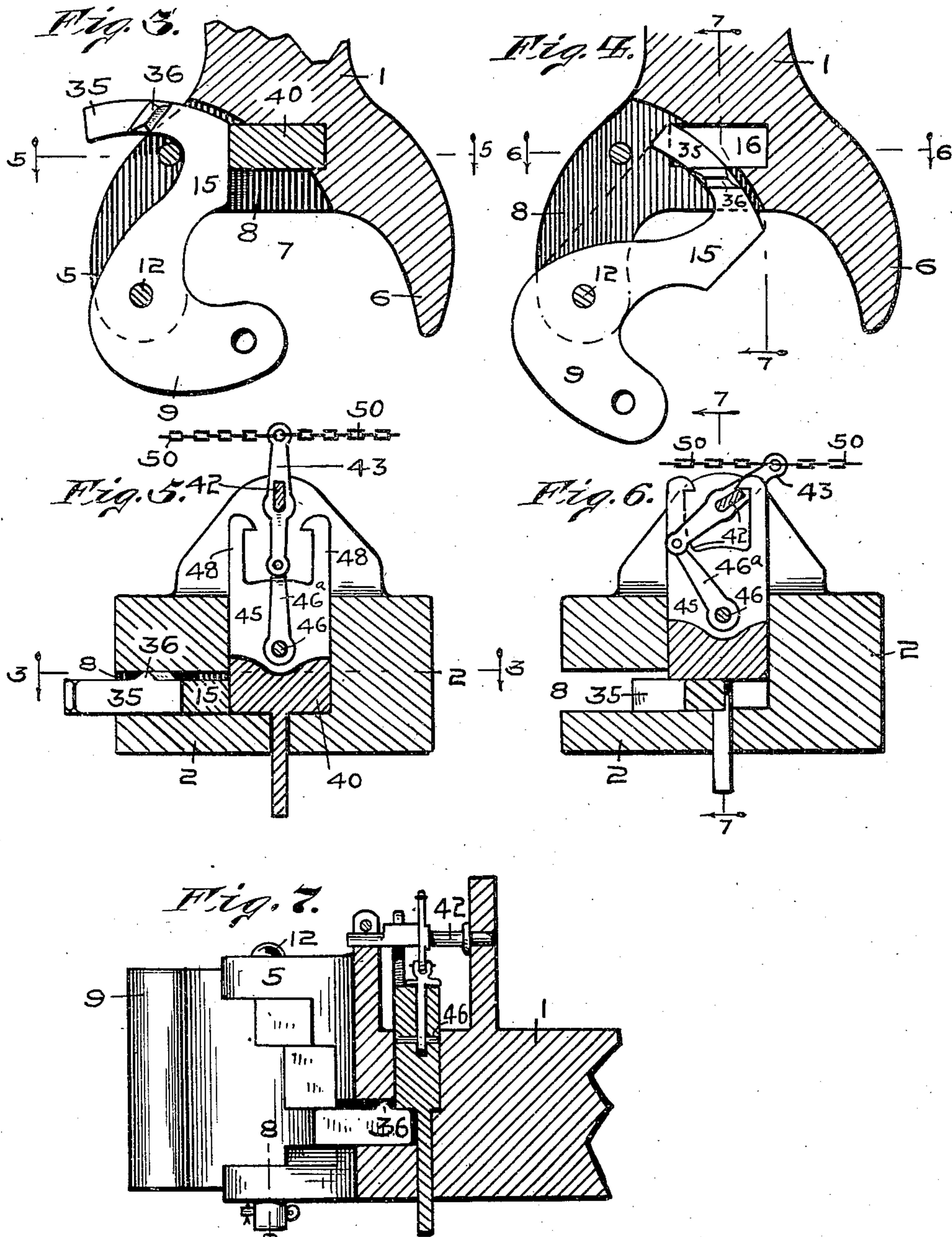
Otto F. Richter,
By Minton & Werner,
ATTORNEYS.

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2 SHEETS—SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

OTTO F. RICHTER, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF TO
JOHN T. GLAZIER AND FRANK T. GLAZIER, OF INDIANAPOLIS, INDIANA.

AUTOMATIC CAR-COUPLING.

No. 843,551.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed March 20 1906. Serial No. 306,962.

To all whom it may concern:

Be it known that I, OTTO F. RICHTER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Automatic Car-Couplers, of which the following is a specification.

This invention relates to an automatic car-coupler.

The object of the invention consists in employing certain features that will not only allow the coupler to be unlocked by means extending to the car sides, thus avoiding the necessity for the brakemen passing between the cars, but will hold the pin or other locking means in its raised position, which is the necessary position to permit the knuckle to open.

The object consists, further, in a coupler arranged that when the pin or other locking means stands in its raised position the knuckle when open is set ready for the next connection and will be automatically locked without requiring the brakemen to first set the locking means, as is now necessary.

I accomplish the objects of my invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved coupler in operating position. Fig. 2 is a view similar to Fig. 1, except that the coupler-knuckle is in its unlocked position. Fig. 3 is a central horizontal sectional view of the coupler in locked position, as seen from the dotted line 3 3 in Fig. 5. Fig. 4 is a view taken on the same dotted line as Fig. 3 and shows the knuckle in its unlocked position. Fig. 5 is a cross-section of the coupler as seen from the dotted line 5 5 in Fig. 3. Fig. 6 is a cross-section of the coupler as seen from the dotted line 6 6 in Fig. 4. Fig. 7 is a vertical longitudinal sectional view of the coupler as seen from the dotted line 7 7 in Figs. 4 and 6.

In the drawings, 1 is the coupler-body, and 2 the head, which are similar in shape to the standard couplers on the market. The head 2 is provided with the extensions 5 and 6, between which the recess or pocket 7 to receive the knuckle of the companion coupler is formed. The coupler-head 2 is also provided with the centrally-located horizontal slot 8, which is widened at the front end in the extension 5 to receive the knuckle 9. The

knuckle 9 is formed of a single piece of material, as shown in Figs. 3 and 4, and is pivotally mounted in the extensions 5 of the head 2 by means of pin 12, passing through the transverse apertures 13. The outer portion of the knuckle 9 is broad, and thus adds strength where the connection is effected with the companion coupler. This wide portion of the knuckle is reduced in diameter and extends backward in the form of a shank 15, which engages the horizontal slot 8 in the coupler-body. The coupler-body is also provided with the transverse aperture 16, which receives the locking device hereinafter set forth. The transverse aperture 16 pierces the horizontal slot 8, so that the shank of the knuckle is impeded in its operation when said locking means is in normal position. When the cars are coupled and the knuckle assumes the position occupied in Fig. 3, the uncoupling or unlocking is prevented by the contact of the face of the shank 15, resting against the locking device. The unlocking is effected when the means that extend to the side of the cars are operated to elevate the locking device, thus permitting the knuckle to swing open.

It is well known that after the knuckle is unlocked in the couplers on the market the pin or other locking means must be reset before the next coupling can be effectively made. The locking means either falls back into the aperture 16 or is left dangling on the ends of the means employed for operating said locking means. In either case the brakeman is required to reset the locking means, which act is ever accompanied with danger, and to minimize this danger is the chief object of this invention. This result is accomplished by certain mechanism, so that the brakemen's services so far as they relate to resetting the locking means is dispensed with, so that the necessity for the brakemen to pass between the cars or approach the couplers is avoided. This mechanism will now be described.

The locking means in my coupler consists of the block 40, which moves vertically in the aperture 16 and is actuated by means that extends to the sides of the car-body. This locking-block 40 may be elevated, and thus unlock the knuckle, in which position it will be retained by certain mechanism until the next connection is effected.

The locking-block 40 is actuated by means of a rock-shaft 42, which is movably and suitably mounted in the coupler immediately above said block. The rock-shaft 42 is provided with a rocker-arm 43, which is rigidly secured thereto and which extends down and pivotally connects with a crank-arm 46^a, which extends downward into a vertical longitudinal slot 45 in the locking-block 40 and is secured to the transverse pin 46. The rocker-arm 43 may be operated by means of the chains 50, which connects with the top thereof and extend to the sides of the car when they pass through suitable bearings 47. I prefer to employ the chains 50 in the place of rods now commonly employed on automatic couplers for the reason that the chains more readily adjust themselves to irregularities and are therefore less liable to become disabled.

When cars are in front of the locomotive and are being shoved into the switches called "running-switches" under their momentum, as is customary in all freight-yards, I desire to be able to hold the locking-block in its raised position, so that the car can be thrown loose from the other at the proper time. This is accomplished by providing the locking-block 40 with a hook 48 at each side, which are made integral with the block and which will engage the rock-shaft 42 when the block is elevated. The rock-shaft 42 is widened at the forward portion, as shown, so that the hook on the side of the block toward which the shaft is rocked will engage it, and thus will suspend the locking-block 40 until the knuckle 9 is swung open by the separation of the cars. After the car has been separated from the others the locking-block is supported by means that will now be described.

The shank 15 of the knuckle 9 is provided with a rearwardly-extending blade 35, which may be integral or be fixed thereto. This blade 35 is of a length from the knuckle or pivot-pin 12, on which the knuckle swings, that will insure it to traverse the vertical aperture 16, in which the locking-block 40 operates when the knuckle opens. The blade 35 has sufficient width at its outer end to prevent same from passing entirely off the aperture 16 when the knuckle is opened, and the blade 35 travels through an arc concentric of the pin 12, so that the radii remain the same when the plate is moved from its closed to open position, or vice versa. The blade 35 is provided with the shoulder 36, (see Fig. 5,) which serves the purposes, first, to slightly elevate the locking-block 40 as the blade 35 passes under it, thus disengaging the locking-block 40 from the rock-shaft 42 and permitting the block to rest upon the blade, and, second, to lock the knuckle against promiscuous tampering by unauthorized persons, which would reduce the effectiveness of the coupler.

The locking of the knuckle is accomplished by means of the shoulder 36, resting against the edge of the locking-block 40 when the knuckle is in its open position. (See Fig. 4.) To close the knuckle, sufficient pressure must be applied to first raise the locking-block 40 to permit the shoulder 36 to pass underneath. The weight of the block is sufficient, it is calculated, to deter manipulation by unscrupulous persons, while the impact on the knuckle brought about through the grouping of cars in making up the trains will readily raise the block 40 and permit a perfect connection to be made. It will be noted that when the cars are bumped together in making a coupling the knuckle 9 is closed and the locking-block 40, which is riding upon the blade 35, drops into the vertical aperture 16 when the shank 15 has passed behind said aperture 16.

Having thus fully described my said invention, what I desire to secure by Letters Patent is—

1. In a car-coupler, a knuckle pivotally mounted therein and provided with a shank that terminates in a blade which moves in an arc concentric with the pivot on which the knuckle swings, a locking means intersecting the path traveled by said blade so that the locking means will lock the knuckle when the latter stands in closed position and is susceptible of support by the blade when the knuckle stands in open position, engaging means on the locking means, movable actuating means supported by the coupler-body and adapted to raise and hold the locking means before the knuckle is opened.

2. In a car-coupler provided with a horizontal slot and a vertical aperture that crosses said slot, a knuckle pivotally mounted in the coupler-head and provided with a shank that terminates in a blade that engages and moves within said slot, a locking means engaging the vertical aperture and adapted to stand across the horizontal slot when in its lower position to lock the knuckle when the latter stands in closed position, hooks formed on the locking means, and movable actuating means to raise and hold the locking means, and means for operating the movable actuating means.

3. In a car-coupler, a knuckle pivotally mounted therein and provided with a shank that terminates in a blade, a locking means passing through the path traveled by said blade, so that the locking means will lock the knuckle when the latter stands in closed position and is susceptible of support by the blade when the knuckle stands in open position, catch devices on the locking means, lift means for lifting the locking means, and supporting means to engage the catch devices on the locking means and support the latter when in elevated position, means for disconnecting the locking means from its support.

4. In a car-coupler, a knuckle pivotally
mounted therein and provided with a shank
that terminates in a blade, a locking means
passing through the path traveled by said
5 blade, so that the locking means will lock the
knuckle when the latter stands in closed po-
sition and will be susceptible of support by
said blade when the knuckle stands in open
position, means formed on said blade to en-
10 gage the locking means when the knuckle
stands in open position to prevent its manip-
ulation, hooks secured to the locking means,
a rocker-shaft adapted to be moved into the

path of the hooks and support the locking
means, a rocker-arm secured to the rocker- 15
shaft, means connecting the arm and locking
means together, and means engaging the
rocker-arm to actuate the locking means.

In witness whereof I have hereunto set my
hand and seal, at Indianapolis, Indiana, this 20
27th day of November, A. D. 1905.

OTTO F. RICHTER. [L. S.]

Witnesses:

F. W. WOERNER,
L. M. HELMUTH.