

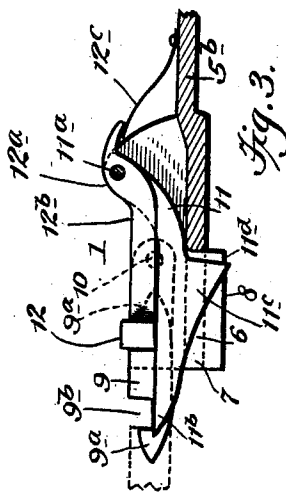
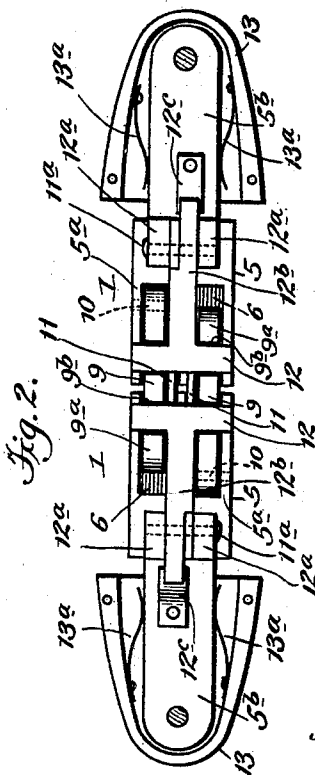
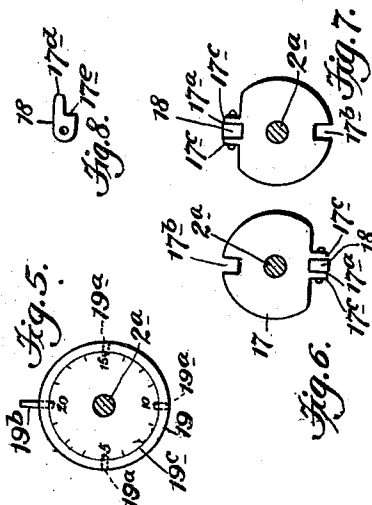
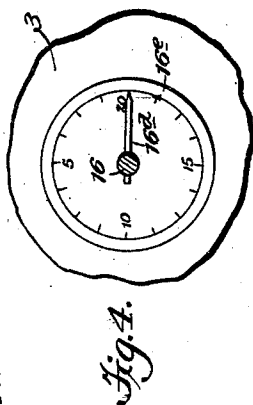
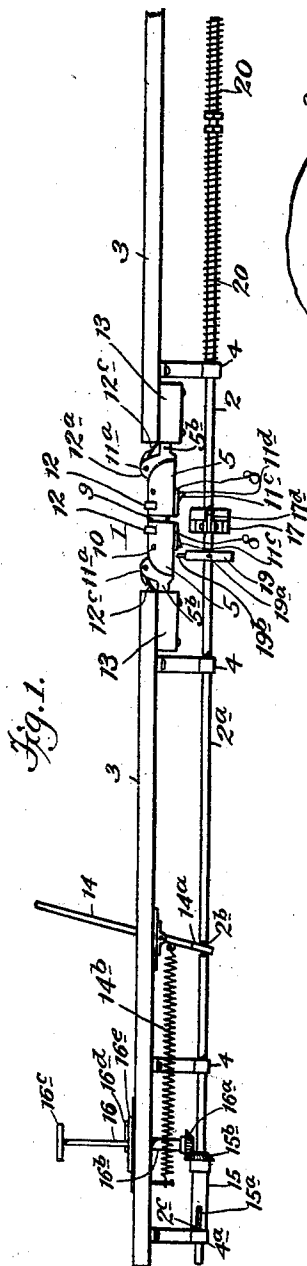
No. 697,022.

Patented Apr. 8, 1902.

T. J. SAMMONS.
CAR COUPLING.

(Application filed Sept. 14, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

TIMOTHY J. SAMMONS, OF CORONA, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 697,022, dated April 8, 1902.

Application filed September 14, 1901. Serial No. 75,401. (No model.)

To all whom it may concern:

Be it known that I, TIMOTHY J. SAMMONS, a citizen of the United States, residing at Corona, in the county of Queens and State of New York, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

This invention relates to car coupling and uncoupling mechanism; and the object of my invention is to provide simple and improved mechanism for this purpose which will possess advantages in point of convenience, effectiveness, and general efficiency and which will be comparatively simple in construction, arrangement, and operation.

Numerous constructions of car-couplings have been devised for automatically effecting the coupling of the cars when the latter are brought near together. Constructions have also been designed for effecting the uncoupling of two cars by appliances extending either to the side or top of either of the cars, whereby the uncoupling may be accomplished without necessitating the attendant's going between the cars. In some instances both features have been combined. The highest development represented by the construction last referred to has its limitations, among which is the fact that the uncoupling of any two of the cars requires the presence of an attendant adjacent to the coupled ends of either one car or the other.

My invention not only provides for the automatic coupling of the cars, but also for the uncoupling of any car or cars in a train by means operable from a single point and under the thorough control of the operator.

In the drawings, Figure 1 is a side elevation of a part of a locomotive and car embodying my improvements. Fig. 2 is a plan view of the couplers coupled. Fig. 3 is a longitudinal sectional view of one coupler, showing the hook-bar of the companion coupler in dotted lines. Fig. 4 is a face view of the disk mounted on the engine. Fig. 5 is a face view of the disk operating the coupling. Figs. 6, 7, and 8 are detail views of the blocks and dogs forming the connection between the shafts.

Corresponding parts in all the figures are denoted by the same reference characters.

My improved coupling and uncoupling mechanism, as shown, contemplates equip-

ping each car at both ends with an automatic coupling 1 of peculiar construction, each car being also provided with a longitudinal shaft 2, hung beneath its floor 3 in suitable hangers 4, the shafts of the cars having provision whereby when their cars are made up into a train they will become connected to transmit from one to the other the rotary movement imparted by a master-shaft 2^a under the direct control of the operator. Devices are so arranged on each shaft 2, near one of the ends thereof, that when the latter is turned to a definite extent and longitudinally moved to a limited extent through appliances also under the control of the operator said devices will coact with a gravity-arm to effect the disengagement of the hook-bar of the companion coupling.

The draw-head 5 of each car has a recess 6 open at the top and presenting at the front of the head an opening equal in area to the other transverse areas of said recess. That portion of the draw-head constituting the bottom of the recess has a longitudinal slot 7, flanked on the under side of the head with integral ribs 8 8.

The hook-bar 9 of the draw-head is loosely hung on a pivot 10, projecting horizontally from one of the walls 5^a of said head, the bar 9 lying closely contiguous to the inner face of said wall and having its projecting hook 9^a formed by a notch 9^b in such projecting portion. Also within the recess 6, to the rear of the pivot 10, is a second pivot 11^a, upon which is hung the inner end of a thin longitudinally-extending arm 11, lying closely parallel with the contiguous side of the hook-bar and normally having the upper edge of its outer portion 11^b flush with the bottom of the notch 9^b of said bar. The arm 11 has a long rearwardly-inclined web 11^c depending down through the ribbed seat to present an exposed shoulder 11^d.

Upon the head, to the rear of the recess 6, are integrally located a pair of ears 12^a, between which is pivotally hung near its rear end the longitudinal portion 12^b of a T-shaped bar, the forward transverse part 12 of which is designed to normally rest in appropriately-shaped and transversely-aligned notches therefor in the walls of the draw-head and the hook-bar 9 and upon the arm 11, said T-bar normally

holding said hook-bar 9 and arm 11 positively depressed through the medium of an expanding spring 12^c, interposed between the rear portion 12^b back of its pivot and the top 5 of the longitudinally-extended neck 5^b of the draw-head.

As disclosed in Figs. 2 and 3, the neck 5^b is of considerably less height and width than the draw-head and extends in the plane occupied by the bottom portion of the head. The inner end of this neck 5^b is pivotally secured in a housing 13, secured to the under side of the car, to permit a limited lateral arc play of the draw-head and its parts. 15 Cushion-springs 13^a within the housing operate to restore the draw-head to its proper longitudinal position when conditions permit.

It will be seen that the hook-bar 9 and arm 11 by being located at one side of the draw-bar recess leave sufficient of the same for the reception of the correspondingly-shaped and pivoted hook-bar 9 of the companion draw-head, the reversed relation of the latter permitting the entrance of the hook-bar thereof in the unoccupied portion of the recess of the draw-head previously mentioned.

It may be here stated that the dotted lines in Fig. 1 are intended to represent a part of the floor 3 of the locomotive-cab and its tender. Secured to the under side of the floor are the hangers 4, 4, and 4^a, in which is hung and turns the master-shaft 2^a, capable of a limited longitudinal forward movement under the throw of a vertical lever 14, immediately pivoted in a bracket secured to the floor, the lower end 14^a of the lever being bifurcated to embrace an annular groove 2^b to impart the longitudinal movement to the shaft, but permit its rotation relative thereto. The other portion of the lever, that above its pivot, extends up into the cab convenient for operation.

Mounted on the shaft 2^a, adjacent to the hanger 4^a, is an extending sleeve 15, having diametrically-located longitudinal slots 15^a, receiving pins 2^c of said shaft to permit a limited relative longitudinal movement of the latter, but insure its turning with said sleeve. A miter-gear 15^b, secured on the inner end of the sleeve 15, meshes with a similar gear 16^a, secured on the lower end of a vertical shaft 16, supported in a suitable bearing 16^b in the floor and extending above the same. This shaft 16, besides being provided with turning provision 16^c, has an index-finger 16^d, which coacts with a circular dial or plate 16^e, having a series of graduations corresponding with various extents to which the shaft 2^a may be turned, the purpose of which function will be presently more fully described.

On that extremity of the shaft 2^a below the draw-head carried by the locomotive-tender is secured a circular block 17, having a plane front and provided with two diametrically-located marginal notches 17^a 17^b. By reference to Figs. 6 and 7 it will be seen that the metal of the block 17 contiguous to the notch

17^a is cut away to present a pair of small ears 17^c, so positioned that a dog 18, pivoted between the same, will lie snugly within the notch thereof and its forwardly-projecting nose 17^d be adapted to enter the notch 17^b of the opposite block 17 on the end of the car next adjacent, the nose 17^d of which opposite block in turn engages the notch 17^b of the block first mentioned. The nose 17^d of each dog is cut away to form a shoulder 17^e, which contacts with the edge of the forward edge of the opposite notch 17, and thus prevents such mutual pounding of the blocks as might tend to throw the dogs out of engagement. Also on the end portion of the shaft 2^a, immediately beneath the rear end of the bottom slot in the nearest draw-head, is a disk 19, which is slightly larger in diameter than the block 17 and which is peripherally provided with a series of equidistantly-located threaded sockets 19^a, in which a pin 19^b is adapted to be interchangeably secured. The disk 19 is loosely mounted on the shaft 2^a and provided with a set-screw, by means of which it may be secured in position.

The inner face of the disk 19 is provided with a series of graduations 19^c, which have direct relation to the threaded sockets 19^a and correspond with the graduations on the dial-plate 16^e in the cab.

Retracting-springs 14^b, attached to the lever and to a fixed part of the car, serve to normally hold the shaft 2^a in the retracted position, (indicated in Figs. 1 and 2,) while the shafts 2 of the other cars have cushioning coiled springs 20, permitting each shaft to move to a limited extent in one direction or the other to provide for the longitudinal movement of the other shafts due to the movement of the master-shaft 2^a.

The operation and advantages of my invention will be readily understood and appreciated.

In making up the train or connecting any car thereto the pin 19^b of each car is inserted in the particular socket 19^a of its disk 19 corresponding with the position of the car in the train and the disk 19 adjusted on the shaft 2^a so that the pin 19^b will be immediately in rear of the web 11^c of the arm 11 in the nearest draw-head when the notches 17^b of the blocks 17 and the dogs 18 on all the shafts are in alinement, it being understood that when it is required to uncouple any particular car it will only be necessary to turn the vertical shaft 16 to such extent as will bring its index-finger 16^d in registration with the particular division on the dial-plate corresponding with the number on the disk 19 contiguous to which its pin 19^b has been set. This turning movement of the shaft 16 will cause sufficient actuation of the miter-gearing 15^b 16^a as will turn the master-shaft 2^a and connected shafts 2 of the cars to an extent that will revolve the several disks 19, so that the pin 19^b of the particular car to be uncoupled will be brought immediately in the rear of the web 11^c of the

releasing-arm 11 of the contiguous draw-head. With the parts as thus explained the lever 14 is then moved on its pivot, occasioning the longitudinal shifting movement of the master and engaged shafts 2^a 2, which causes the disk 19 of the draw-head to be uncoupled to move horizontally below the same, resulting in the pin 19^b of said disk striking the web 11^c of the releasing-arm of said draw-head to raise said arm on its pivot to elevate the T-bar and lift its transverse part 12 out of the engagement with the hook-bar of the companion coupling. Obviously when said heads are uncoupled and the cars separate the dogs 18 of the circular blocks 17 immediately below these draw-heads will be withdrawn endwise from the notches of the respective blocks, thus effecting the disconnection of the shafts 2^a or 2, as the case may be. The pins 19^b of the several disks throughout the train are so differentially arranged that only one pin at a time will be brought into a tripping position.

From the foregoing it will be seen that the disconnection of any car or number of cars in the train is thoroughly under the control of and may be accomplished by a single operator at a definite point, the operator and definite point being preferably the engineer and locomotive-cab.

Obviously other forms of coupling, automatic or otherwise, may with slight modification be used in connection with the novel uncoupling mechanism.

It will be evident that my invention and improvements are subject to variation and modification in the detail features of construction and that other changes may be resorted to without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variations and modifications as properly come within the scope of my invention and the scope of the following claims.

Having thus described my invention, what I claim is—

1. Uncoupling mechanism for railroad-cars, comprising a draw-head having coupling provision, a rotatable and longitudinally-movable disk contiguous to the draw-head and having a radial trip-pin, and connections for operating said disk to bring its pin into position and for bodily moving the same to effect the disengagement of the coupling provision.

2. Uncoupling mechanism for railroad-cars, comprising a draw-head having provision for engaging the coupling element of a companion head, a rotatable and longitudinally-movable disk contiguous to the draw-head and having a plurality of peripheral openings, a radial trip-pin interchangeably in one of the same, and connections for operating said disk to bring its pin into position and for bodily moving the same to effect the disengagement of the coupling provision.

3. Uncoupling mechanism for railroad-cars, comprising a draw-head having coupling pro-

vision, a rotatable and longitudinally-movable disk having graduations and corresponding perforations, a trip-pin interchangeably in one of the latter, and means including a similarly-graduated indicator for operating said disk to bring its pin into position and for bodily moving said disk to effect the disengagement of the coupling provision.

4. Uncoupling mechanism for railroad-cars, comprising a plurality of pairs of draw-heads each having coupling provision, movable disks, each adjacent to one of the draw-heads and having a trip-pin differentially located relative to the pins of the other disks, and means for operating said disks to cause their pins to independently disengage the coupling provision of the contiguous draw-head.

5. Uncoupling mechanism for railroad-cars, comprising a plurality of pairs of draw-heads each having coupling provision, movable disks each adjacent to one of the draw-heads and having an adjustable trip-pin, and means for operating said disks to cause their pins to independently disengage the coupling provision of the contiguous draw-head.

6. Uncoupling mechanism for railroad-cars, comprising a plurality of draw-heads, each having coupling provision, movable disks each adjacent to one of the draw-heads and having a trip-pin differentially located relative to the pins of the other disks, means for simultaneously operating said disks to cause any one of the same to independently disengage the coupling provision of the contiguous draw-head, and an indicator coacting with said means for determining the particular disengaging disk.

7. Uncoupling mechanism for railroad-cars, comprising a plurality of pairs of draw-heads having coupling provision, a plurality of spring-cushioned shafts, rotatable and longitudinally movable and carrying end blocks with pivoted dogs connecting said shafts for unitary actuation, disks on said shafts, each contiguous to one of the draw-heads and having a trip-pin for independently disengaging the coupling provision of the adjacent draw-head and shaft-operating means.

8. Uncoupling mechanism for railroad-cars, comprising a plurality of pairs of draw-heads having coupling provision, a plurality of spring-cushioned shafts, rotatable and longitudinally movable and carrying end blocks with pivoted dogs connecting said shafts for unitary actuation, disks on said shafts, each contiguous to one of the draw-heads and having an adjustable trip-pin differentially located relative to the pins of the other disk or disks, and means for operating said shafts to cause one of the trip-pins to disengage the coupling provision of the adjacent head, independent of any engaging action of the other pins.

9. Uncoupling mechanism for railroad-cars, comprising a plurality of pairs of draw-heads having coupling provision, a plurality of shafts, rotatable and longitudinally movable

- and carrying end blocks with pivoted dogs connecting said shafts for unitary actuation, disks on said shafts having graduations and corresponding recesses, a pin interchangeably
- 5 in one of the recesses of each disk, for disengaging the coupling provision of the adjacent head, and shaft-operating means including an indicator graduated corresponding to the disks.
- 10 10. A railroad-car coupling comprising a draw-head provided with a coupling-bar, and pivoted arm located to one side to provide for the entrance of the companion bar, the walls of the recess and said bar and arm being
- 15 notched in transverse alinement, a normally depressed cross-bar for engaging said notches and the coupling-bar of the companion head, and means for vibrating said arm to raise said cross-bar.
- 20 11. A railroad-car coupling comprising a draw-head provided with a coupling-bar and pivoted arm located to one side to provide for the entrance of the companion bar, the bottom of the head being slotted and the arm
- 25 having a web depending through the same, a normally depressed T-shaped bar having a transverse portion for engaging the coupling-bar of the companion head, and means for contacting with said web for vibrating the
- 30 arm to raise the T-bar and uncouple.
12. A railroad-car coupling comprising a head having a lower slot flanked with ribs, coupling provision, a movable arm having a web depending in said slot, a disk contiguous
- 35 to said slot and having a pin, and means for rotating said disk to bring its pin opposite to the slot and for moving the disk to cause said pin to be guided between the ribs and actuate the arm to effect the uncoupling.
- 40 13. Uncoupling mechanism for railroad-cars, comprising a draw-head having coupling provision, a rotatable and longitudinally-movable shaft provided at one end with a block with a pivoted dog for connecting said
- 45 shaft with other shafts for unitary actuation

and at the other end with a sliding sleeve mounted at one end in a suitable bearing and at the other end having a miter-gear, means for rotating said sleeve and shaft, and means on the shaft for disengaging the coupling provision. 50

14. Uncoupling mechanism for railroad-cars, comprising a plurality of pairs of draw-heads having coupling provision, a plurality of rotatable and longitudinally-movable 55 shafts carrying end blocks with pivoted dogs connecting said shafts for unitary actuation, a sleeve slidably mounted on one of said shafts and provided with a longitudinal slot in which a pin secured on said shaft works 60 and with a miter-gear at one end, means for rotating said sleeve, and means on said shafts for independently disengaging the coupling provision of the draw-heads.

15. Uncoupling mechanism for railroad-cars, comprising a draw-head having a coupling provision, a rotatable and longitudinally-movable shaft carrying an end block with a pivoted dog for connecting said shaft with 70 other shafts for unitary actuation, a sleeve slidably mounted at one end of said shaft and provided with a longitudinal slot in which a pin secured to said shaft works and with a bearing at one end and a miter-gear at the 75 other end, a shaft suitably mounted and provided at one end with a gear meshing with said miter-gear and at the other end with operating means, a pivoted lever having one end bifurcated to engage an annular groove 80 on said shaft, a spring connected with said lever for retracting the same, and means on said shaft for disengaging the coupling provision.

In testimony whereof I have signed my name in the presence of the subscribing witnesses. 85

TIMOTHY J. SAMMONS.

Witnesses:

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