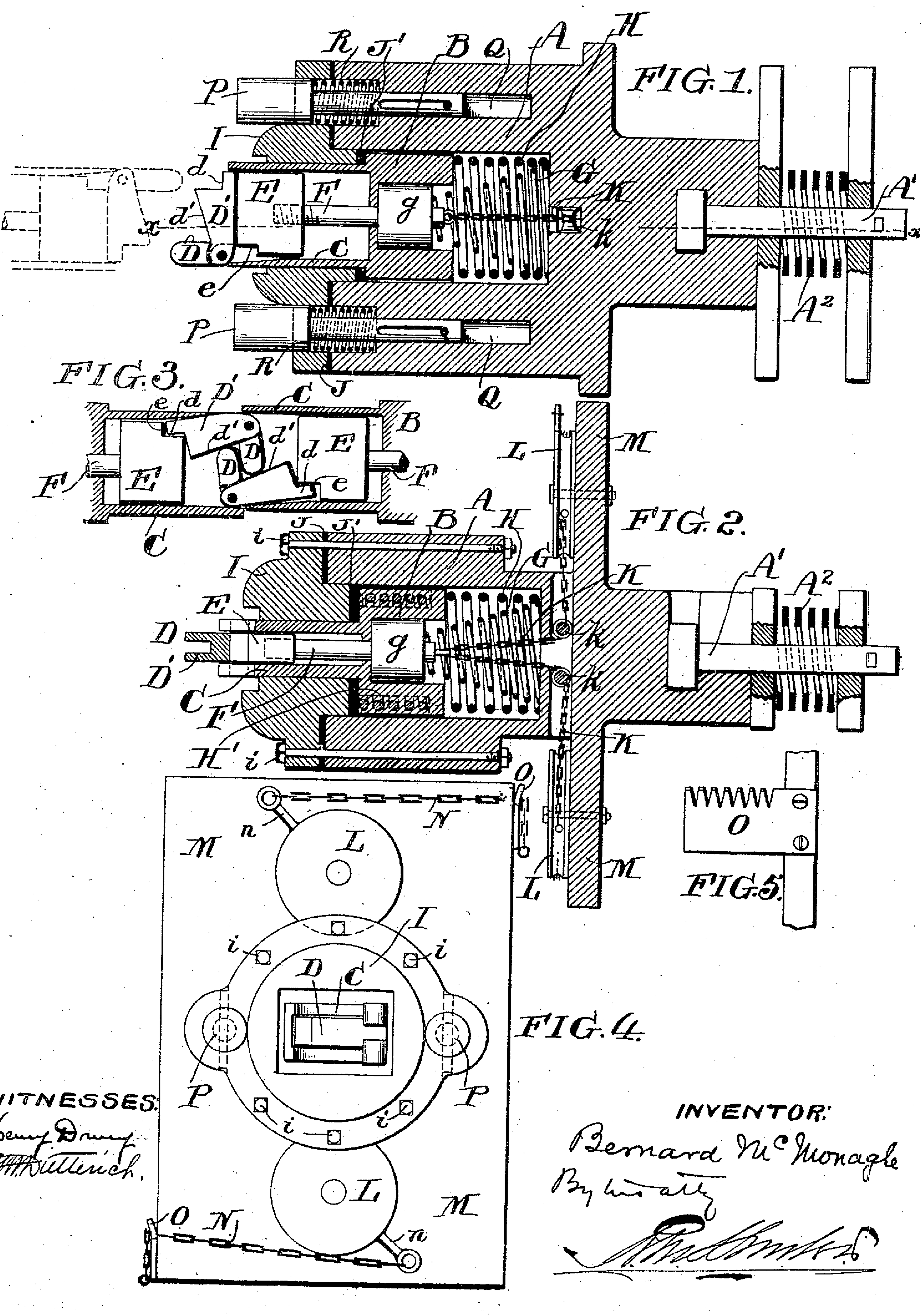
(No Model.)

B. McMONAGLE.

CAR COUPLING.

No. 495,508. Patented Apr. 18, 1893.



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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 495,508, dated April 18, 1893.

Application filed January 14, 1893. Serial No. 458,324. (No model.)

To all whom it may concern:

Be it known that I, BERNARD McMONAGLE, of the city and county of Philadelphia and State of Pennsylvania, have invented an Improvement in Draw-Heads and Car-Coupling Devices, of which the following is a specification.

My invention relates to drawheads and coupling devices for railway and other cars, and consists of certain improvements which are fully set forth in the following specification and are shown in the accompanying drawings.

It is the object of my invention to provide a railway or other car with convenient coupling devices that may operate automatically to couple cars together and may be conveniently operated to uncouple the cars.

My invention relates to improvements in the construction of the coupling devices and the means for controlling and operating them, and also relates to improvements in the construction of the drawhead itself.

I shall now refer to the drawings for the purpose of describing my invention.

In the drawings: Figure 1 is a horizontal sectional view of my improved drawhead and coupler. Fig. 2 is a longitudinal vertical sectional view of the same on the line *x*—*x* of Fig. 1. Fig. 3 is a detail view showing the coupling jaws in the act of coupling. Fig. 4 is an end plan view of the drawhead and coupler with the coupling jaws closed; and Fig. 5 is a detail view of the catch which may be employed for holding the coupling controlling chain.

A is the body of the drawhead which may be connected with the car in any convenient manner.

A′ is the draw-bar to which the drawhead is connected.

A^2 is a spring which may be interposed behind the drawhead to permit it to yield when struck by the drawhead of another car in the act of coupling.

The front portion of the drawhead A is tubular and within this tubular portion is a sliding block or frame B having a hollow extension C which projects out through the front of the drawhead. To the outer end of the extension C is pivoted the coupling jaw D. The coupling jaw D is provided with an arm D′ arranged at an angle to the jaw D and adapted to move with the jaw. The arm D′ moves within the hollow extension C of the block B and is provided with a notch or catch *d* at its outer end.

E is a plunger located within the hollow extension C of the block B in the rear of the arm D′ and adapted to press against the back of the arm D′ and swing it forward thus turning the jaw D out or open. The plunger E may be provided with a catch or notch *e*.

F is a plunger rod carrying the plunger E and extending back through the block B.

G is a spring located within the tubular portion of the drawhead A, bearing upon the head *g* of the plunger rod, so as to normally project the plunger and force it against the arm D′ of the coupling jaw and thus throw the jaw D open as shown in Fig. 1.

H is a spring within the tubular drawhead A bearing upon the rear of the block B.

I is a cap upon the front of the body of the drawhead and constitutes the front of the drawhead as an entirety. The cap I may be connected with the body of the drawhead in any convenient manner, as by bolts *i*.

J, J′ are packing rings of rubber, or other suitable material, which may be interposed between the cap I and the body A and block B respectively as shown.

The extension C projects through the cap I and the jaw D is pivoted to the projecting end on one side so that the jaw is located beyond the cap I.

K is a chain or cable connected with the end of the plunger rod F and extending back through the rear of the drawhead A, by means of which the plunger rod F and plunger E may be retracted.

When the jaw D is turned in or closed, as shown in Fig. 3 the arm D′ extends within the part C and the catch *e* of the plunger engages the catch *d* of the arm D′, and thus locks the arm D′ and jaw D securely. The plunger E thus constitutes a lock for locking the arm D′.

Any convenient means may be employed for tightening and loosening the chain or cable K for the purpose of operating the plunger E. In the drawings I have shown a double chain or cable K passing over idlers

k, in the rear of the drawhead, and connected with rotary disks L carried upon extensions M of the drawhead, so that by turning the disks the chains or cables K may be tightened or loosened, thus operating the plunger E. The disks L are shown located one on each side of the central portion of the drawhead. The disks L may be operated in any convenient manner as by the chains N connected with the arms *n* on the disks. O are toothed catch bars which may be secured upon the drawhead, for the purpose of receiving and holding the chains N and thus holding the disks L against backward movement.

It is apparent that a single disk L may be employed with its corresponding connections in place of the two disks as shown. The use of the two disks L and their connections, however, enables the plunger to be operated from either side of the car.

P, P are buffers carried by the drawhead on opposite sides of the coupling jaw D. These buffers P are carried in bores Q extending in the body of the drawhead and are provided with the usual springs R.

I have described my drawhead and coupling devices as applied to a car. It will be understood that each car will ordinarily be provided with one of these drawheads at each end. The drawheads will be so arranged that the pivot point of the jaw D will be located on the corresponding side on each end of the car so that when any two cars are brought together the jaws D will be properly presented to one another.

In Fig. 1 I have shown the coupling jaw in proper position to automatically couple with the jaw of another car, and I have shown such other coupling jaw in dotted lines. The jaw D is opened or extends outward and the arm D′ projects across the end of the hollow extension C, with the plunger E located immediately behind it. The jaw D of the opposite drawhead is similarly extended. When the two drawheads come together each jaw D strikes the arms D′ of the opposite coupler and forces it back, at the same time turning in the jaw D. As the arms D′ are thus pushed back the plungers E are also forced back until the ends of the arms D′ snap beyond the plungers when they are locked by the catches *e* and *d*. The jaws D, D are now coupled together as is shown in Fig. 3 and they are securely locked by the plungers E. To facilitate the turning back of the arms D′ by the jaws D, I prefer to make the face of arm D′ which is struck by the jaw D inclined as shown at *d′*. The cars may be uncoupled by drawing back either plunger E so as to unlock the arm D′, when the jaws D, D, may be drawn apart. The jaws should always be set to couple automatically *i. e.* in the position shown in Fig. 1. This may be done by drawing back each plunger E sufficiently to unlock the arm D′, and permit the jaw D to be opened. The plunger should then be released so as to assume the position shown in Fig. 1, immediately behind the arm D′.

If desired, the block B may be balanced within the drawhead A by springs located on either side. In Fig. 2 I have shown such a construction, indicating in dotted lines a spring H′ arranged between the block B and the front of the drawhead. The block B is thus arranged with springs H and H′ on either side so that the block B may yield slightly in either direction. The spring H relieves the jar when two cars strike together, and the spring H relieves the strain or jolt when the cars are started in motion.

While I prefer the minor details of construction that have been shown I do not limit myself to them as it is apparent that they may be modified without departing from the invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. A coupling device for cars, consisting of a drawhead frame, a yielding frame or block, carried by the drawhead frame a jaw pivoted to the outer end of the yielding frame having an arm extending at an angle from said jaw and movable within the frame or block, and a movable plunger located within the yielding frame or block behind the arm of the pivoted jaw.

2. The combination with a hollow drawhead of a yielding frame or block located therein and having a hollow extension projecting through the front of the drawhead, a movable coupling jaw carried by the end of the hollow extension and provided with a projecting arm, and a movable plunger within the drawhead located behind the projecting arm of the coupling jaw.

3. The combination with a hollow drawhead of a movable frame or block located therein and having a hollow extension projecting through the front of the drawhead, a spring bearing upon said block, a movable coupling jaw carried by the end of the hollow extension and provided with a projecting arm, a movable plunger within the drawhead located behind the projecting arm of the coupling jaw, and a spring action upon the plunger.

4. A coupling device consisting of a drawhead frame a yielding frame or block, carried by the drawhead frame a swinging coupling jaw carried by the outer end of said block and provided with a projecting arm, a spring pressed plunger located behind said projecting arm, and means to move said plunger against the action of the spring.

5. A coupling device consisting of a yielding frame or block, a swinging coupling jaw carried by the outer end of said block and provided with a projecting arm, a spring pressed plunger located behind said projecting arm, a chain connected with said plunger, and a rotary disk connected with the chain.

6. A drawhead consisting of a body A, a cap I carried by the body A, and spring buf-

fers P, P carried by the body and projecting through the cap.

7. A drawhead consisting of a body A, cap I carried by the body a packing between the cap and body and spring buffers P, P carried by the body and projecting through the cap.

8. A coupling device consisting of a drawhead, a movable block located therein and extending through the end of the drawhead, a spring on either side of the movable block, and a coupling jaw carried by the said extended end of the movable block.

9. A coupling device consisting of a drawhead, a movable block located therein and extending through the end of the drawhead, a spring on either side of the movable block, a coupling jaw carried by the said extended end of the movable block having an arm extending at an angle to the jaw, and a movable lock located behind the arm of the coupling jaw.

In testimony of which invention I have hereunto set my hand.

BERNARD McMONAGLE.

Witnesses:

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ERNEST HOWARD HUNTER.