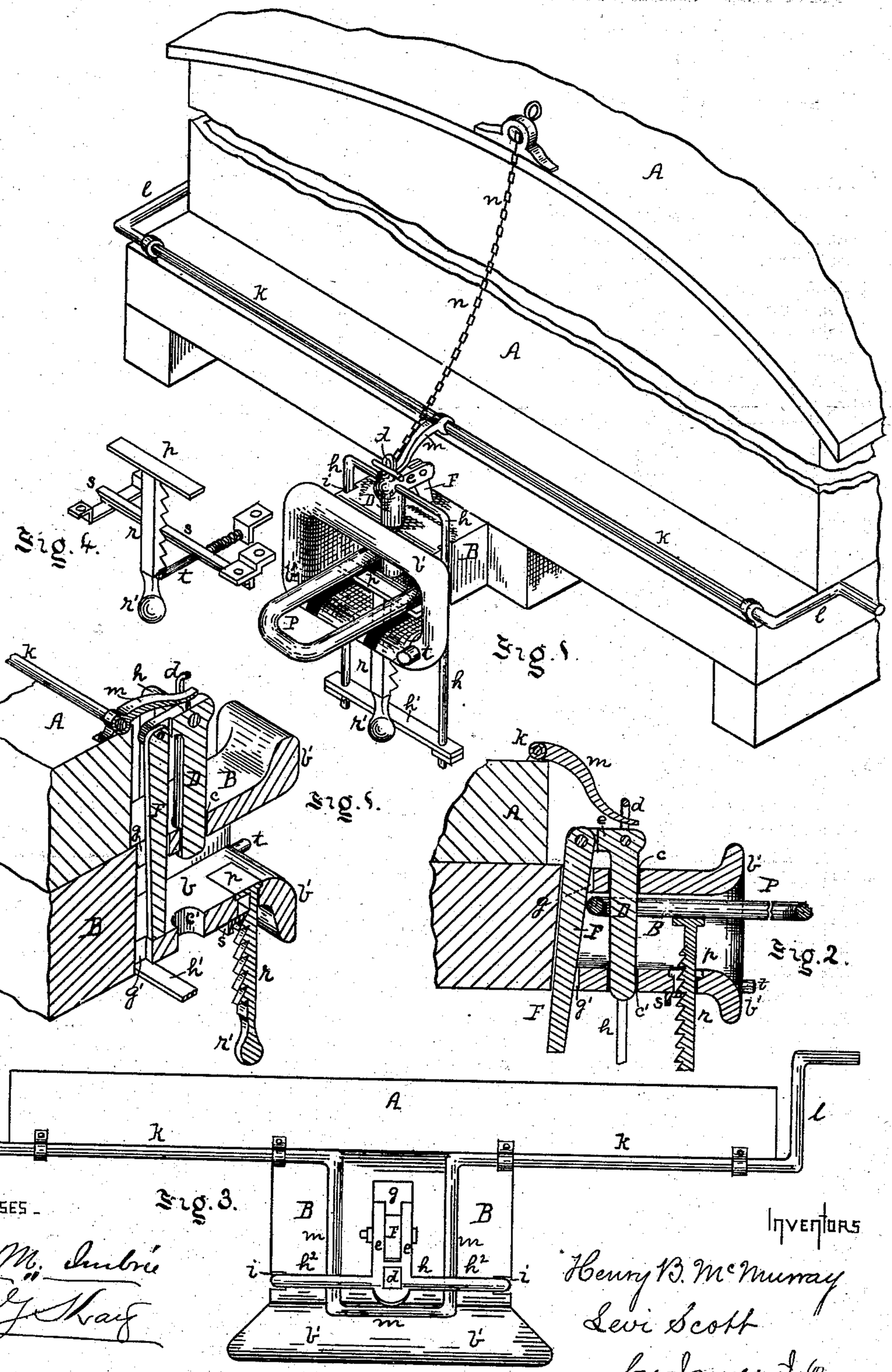
(No Model.)

H. B. McMURRAY & L. SCOTT.

CAR COUPLING.

No. 252,238. Patented Jan. 10, 1882.



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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 252,238, dated January 10, 1882.

Application filed October 24, 1881. (No model.)

To all whom it may concern:

Be it known that we, HENRY B. MCMURRAY and LEVI SCOTT, of Burgettstown, in the county of Washington and State of Pennsylvania, have invented a new and useful Improvement in Car-Couplings; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view, partly broken away, illustrating our invention. Fig. 2 is a longitudinal central section of a buffer-head, illustrating the same. Fig. 3 is a plan view, showing another form of the operating apparatus; and Fig. 4 is a view in detail of the parts composing the link-guiding apparatus.

Like letters of reference indicate like parts in each.

Our invention relates to apparatus for coupling cars, its object being to provide automatic coupling devices to be used on the common buffer-head now in general use on railroad-cars.

Our invention consists, first, in combining with a coupling-pin for securing the coupling-link a supplemental pin or rod pivoted to the head of the coupling-pin and extending through the buffer-head, and so arranged that on raising the coupling-pin the supplemental rod will automatically catch on the base of the buffer-head cavity in such position as to be caused to drop by the incoming link, and so permit the coupling-pin to fall through and secure the link; and, second, in certain apparatus for supporting the link in proper position for coupling.

To enable others skilled in the art to make and use our invention, we will describe its construction and operation.

In the drawings, A represents the body of an ordinary freight-car, with which our invention is illustrated.

B is the buffer-head, which is of the ordinary construction, having the buffer-head or link cavity *b*, flaring face or mouth *b'*, and the ordinary holes, *c c'*, for the coupling-pin, the buffer-head being secured to the car-body in the usual or any approved manner.

D is the coupling-pin, which is of proper size to fit the holes *c c'*, and has the usual ring, *d*, at its head, by which it is drawn out. The pin has an extension, *e*, projecting from the side of the head, in which is pivoted a supplemental pin or rod, F, which is longer than the coupling-pin, so that when the end of the rod rests on the base of the link-cavity *b* the coupling-pin is held clear of the cavity. The rod F extends through holes *g g'* in the head B, back of the coupling-pin, the lower hole, *g'*, being placed farther back than the upper hole, *g*, so that when the rod F extends through both holes it is held on a slight incline, being arranged in this manner so that when on lifting the coupling-pin the rod is lifted clear of the hole *g'* it will, by its own weight, automatically swing forward and rest on the base of the link or buffer-head cavity *b* in front of the hole *g'*, holding the coupling-pin clear of the link-cavity, and being in such position that when the link enters the cavity it will knock or press the rod F back over the hole *g'* and cause both rod and coupling-pin to drop, thus coupling the car.

The coupling-pin has secured to it a guide, *h*, which is preferably formed in shape of a yoke, one arm of which extends down on either side of the buffer-head B, fitting in perpendicular guide-recesses *i* back of the face *b'*, and the base *h'* of which extends under the buffer-head. The guide thus holds the pin in proper position, insures its perpendicular movement, and by its base *h'* prevents the pin from being drawn out of the buffer-head. The coupling-pin guide may also be formed of separate rods sliding in perpendicular holes in the buffer-head, or of like devices which will hold the pin in proper position during its movement.

In order to uncouple the coupling from the side of the car, we mount in suitable loops or bearings along the base of the car-body a bar, *k*, and provide it with a crank, *l*, on either side of the car. From this bar *k* an arm, *m*, extends out and passes through the ring *d* on the head of the coupling-pin, the pin being raised by this arm when the bar *k* is turned by the cranks. To open the coupling from above, as where arranged on a freight-car, a chain or rope, *n*, is secured to the ring *d* of the pin D, and passes through a loop on the platform-floor or car-roof, and by pulling this chain the pin is lifted, the guide *h* causing its perpendicular movement and preventing its being pulled out of place.

In the base of the buffer-head cavity *b*, in front of the coupling-pin *c'*, is arranged the lifting-bar *p*, for holding the link in proper

position to enter the buffer-head cavity of the car with which it is to be coupled. This bar is formed in the shape of a T. The long arm *r* extends through a hole in the buffer-head, while the upper bar fits in a suitable recess in the face of the link-cavity base. The back surface of the arm *r* is provided with a ratchet, in which a pawl on a rod, *s*, catches to hold the lifting-bar at any desired height. The rod *s* is pivoted or secured on the back of the buffer-head face *b'*, and it is pressed forward so as to catch in the ratchet either by a separate spring or by thinning part of the rod *s* to impart to it sufficient spring to hold it in place. Extending longitudinally through the buffer-head, so as to project a short distance beyond its face, is the pin *t*, the inner end of which presses against the pawl-rod *s*, so that when the face of the opposite buffer-head strikes this pin and presses it back it throws the pawl-rod out of connection with the ratchet-arm *r* and causes the lifting-bar to drop.

Our improved coupling apparatus is operated as follows: Where a coupling is to be made the link P is secured in one buffer-head in the usual manner, and by pressing on the knob *r'* at the base of the arm *r* the lifting-bar is raised so as to support it in proper position to enter the link-cavity of the opposite buffer-head, the bar *p* being supported by the pawl-rod *s*. By means of the crank-bar *k* or chain *n* the coupling-pin in the opposite buffer-head is drawn up until the rod F swings forward, so that its end rests on the link-cavity base, and so supports the pin clear of the link-cavity. As the cars approach, the link extending out of one buffer-head enters the link-cavity of the opposite buffer-head and pushes the rod F back until its end comes over the hole *g'*, into which it drops, thus causing the coupling-pin to drop to place through the entering link and couple the cars. As the two buffer-heads come together the pin *t* is pressed back, disconnecting the pawl-rod *s* from the ratchet-arm *r* and causing the lifting-bar to drop to place, so that its upper surface is flush with the base of the link-cavity, leaving free space for the movement of the link.

To uncouple the cars all that is necessary is to raise the pin by the chain *n* from above, or crank-bar *k* at the side of the car, until the rod F is free of the hole *g'* and swings forward so as to rest on the link-cavity base. The movement of the pin is guided by the guide *h*, so that it always drops directly into place, and the base *h'* of the guide prevents its being lifted out in uncoupling. When a car is uncoupled as above described, it is always in position for coupling, and can be left in that position until the car is coupled again.

In Fig. 3 is shown another form of crank-bar for raising the pin. In this the bar is bent out so as to form a double arm or crank, *m*, which fits under the upper arms, h^2, of the guide *h*, and thus lifts the pin. This has been found to work as well as where a single arm is used.

It is evident that the guide-recesses *i* may be formed in separate metal bars, which may be bolted to the buffer-head, and that the pivoted rod F may be secured to the ordinary coupling-pin, so that the only change necessary in the common buffer-head in mounting the coupling-pin apparatus is drilling the holes *g g'* for the reception of the pivoted rod.

In mounting the lifting-bar *p* it is only necessary to drill the recess for the bar and the holes for the ratchet-arm *r* and pin *t*, the other parts of the apparatus being secured in accessible places.

We thus form a coupling which is automatic in its operation and can be operated both in coupling and uncoupling without incurring any danger between the cars, and which can be applied with little or no expense to the ordinary buffer-head now in common use on railroad-cars.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In car-couplings, the combination, with a buffer-head, of a coupling-pin and a rod pivoted to the head of the coupling-pin and extending through the buffer-head, said pivoted rod being so connected that when raised it will automatically catch upon the base of the buffer-head cavity in position to be caused to drop by the incoming link of the opposite buffer-head, substantially as and for the purposes set forth.

2. In car-couplings, the combination, with the buffer-head B, of the coupling-pin D and rod F, pivoted to the head of the coupling-pin and extending at an incline through slots *g g'* in the buffer-head back of the coupling-pin, and adapted, when raised, to swing forward and automatically catch upon the base of the buffer-head cavity, substantially as and for the purposes set forth.

3. The combination, with the buffer-head B, of the coupling-pin D, vertically-moving guide *h*, secured to the coupling-pin, and rod F, pivoted to the coupling-pin and extending at an incline through slots *g g'* in the buffer-head back of the pin, and adapted, when raised, to swing forward and automatically catch upon the base of the buffer-head cavity, substantially as and for the purposes set forth.

4. In combination with a buffer-head, B, the lifting-bar *p* for supporting the link, and ratchet-and-pawl apparatus for holding the bar at the desired height, substantially as and for the purposes set forth.

5. In combination with a buffer-head, B, the lifting-bar *p*, having the ratchet-arm *r*, pawl-rod *s*, and disconnecting apparatus *t*, substantially as and for the purposes set forth.

In testimony whereof we, the said HENRY B. MCMURRAY and LEVI SCOTT, have hereunto set our hands.

HENRY B. MCMURRAY.
LEVI SCOTT.

Witnesses:
F. G. KAY,
JAMES I. KAY.