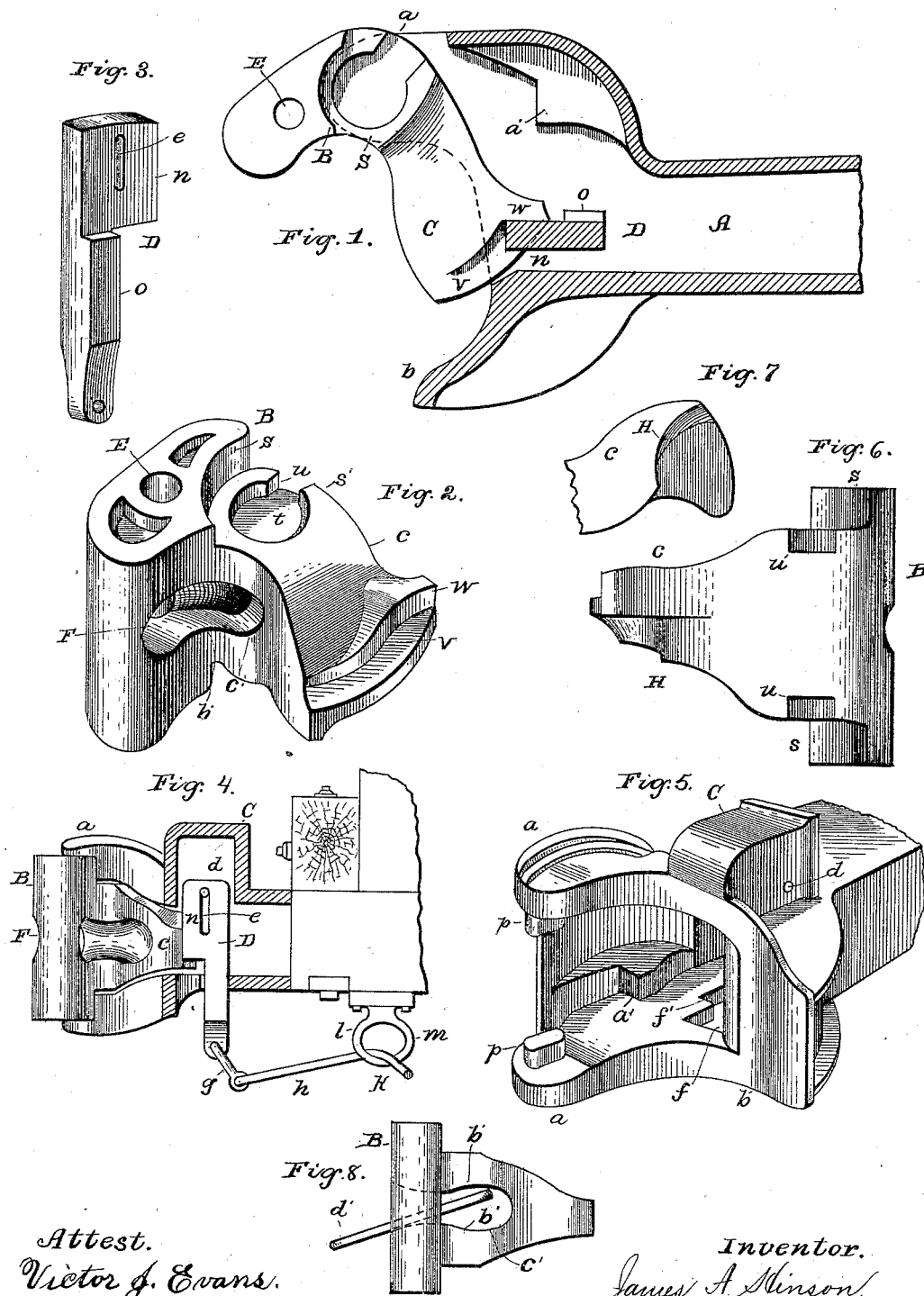


(No Model.)

J. A. HINSON.
CAR COUPLING.

No. 421,404.

Patented Feb. 18, 1890.



Attest.
Victor J. Evans.
A. L. Evans

Inventor.
James A. Hinson,
By W. A. Redmond
Atty.

UNITED STATES PATENT OFFICE.

JAMES A. HINSON, OF DES MOINES, IOWA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 421,404, dated February 18, 1890.

Application filed July 5, 1889. Serial No. 316,498. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. HINSON, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of car-couplers known as "twin jaws," in which a jaw is pivotally mounted in the draw-head and arranged to swing or turn horizontally on its pivots and to be automatically coupled with a corresponding jaw on the next car and locked in position by a gravitating latch, and it has for its object to simplify the construction of these jaws and locking devices without weakening the coupling or the parts of the same; and it consists of the parts and combinations of the parts hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a horizontal section through the draw bar and head, showing the swinging jaw in its open position in plan; Fig. 2, a perspective view of the jaw; Fig. 3, a perspective view of the latch; Fig. 4, a vertical section through the draw-bar and draw-head, showing the jaw and latch in side elevation, said jaw being in its closed position; Fig. 5, a perspective view of the draw-head; Fig. 6, a rear view of jaw; Fig. 7, a detail view, and Fig. 8 a side elevation of the jaw.

Similar letters refer to similar parts throughout the several views.

A represents the draw-bar, which is secured to the end of a car in the usual manner to permit of its having a limited longitudinal movement against the spring employed to prevent or lessen the shock incident to the coming together of the cars while being coupled. At its outer and enlarged end, commonly called the "draw-head," the draw-bar is formed with an outward and forward curved arm *a* on one side, and a shorter curved arm or guard *b* on its opposite side, and is hollowed out at its center to receive

the branch of the swinging jaw B in order to effect the coupling.

Immediately at the center of the upper part of the draw-head is cast a housing C, in which the upper end of the latch D works, and is supported by a pin *d*, passing through the sides of said housing and an oblong opening *e* in the pin, the lower end of said pin passing through a slot *f*, formed in the lower portion of the draw-head and being loosely connected to one end of a short arm or lever *g*, the other end of which is loosely connected to a rod *h*, which extends across the car from side to side, and is bent backward at right angles and then outwardly at right angles at its ends in order to form crank-handles *k*, which are passed through and supported by hangers *l*, secured to and depending from the car and having elliptical-shaped openings *m* formed therein.

Owing to the construction and arrangement of the parts just described, no fastening means are required to hold the operating-rod in place, as its outer portion will be supported by the latch through the arm *g*, and its handle, resting in the elliptical opening at the bend of the rod, will be retained in position, and may be readily rotated or given a half-turn therein when it is desired to raise the latch in order to release the branch *c* of the jaw and thus uncouple the cars.

The latch D, as clearly shown in Figs. 1 and 3, is formed with an extension *n* at its upper end, and is reduced therefrom to its lower end, and its lower half is cast considerably thicker to form an upright shoulder *o*, extending the length of the lower half of the latch, which is adapted to fit the slot *f*, which is also formed with an offset *f'*, or is wider at one end than the other. By this construction of the latch and slot the latch is prevented wobbling and is guided in its up-and-down movement.

As shown in Figs. 1 and 5, the draw-head is hollowed out at its center, and on the side at which the swinging jaw B is connected is adapted in shape to receive the branch *c*, said branch being formed tapering or wedge-shaped from the point of its junction with the jaw proper to its outer or free end, and with a shoulder H on its rear side adapted to

fit against the ledge a' , said ledge a' being formed on the lower surface of the draw-head, where the part should be strongest, whereby the arm of the draw-head is not weakened
 5 materially by being hollowed out for the branch c , and the ledge furnishes a buffer to receive the shock in coupling. The extreme ends of the arm a at top and bottom project beyond the body of said arm and are provided
 10 on their contiguous faces with elliptical-shaped trunnions p , on which the swinging jaw is mounted. These trunnions are arranged or cast on the ends of the arms at an angle or diagonally. The jaw B is cut away
 15 or reduced at the center to form arc-shaped walls s , which are adapted to fit the extreme edges of the ends of the arms a and work smoothly thereabout.

Alongside the walls s , on the plane surface
 20 s' , circular recesses t are formed in the metal of the jaw, in the outer sides or walls of which openings u of the width of the trunnions are formed, thus enabling the jaw to be hinged to the arm a by simply sliding it on
 25 the trunnions through the openings u , and then securing it in place by giving it a half-turn forward, so as to bring the trunnions in the recesses across the openings u . The trunnions being formed diagonally across the ends
 30 of arm a will be breadsides to the openings, and thus prevent the jaw from accidental displacement.

With the trunnions cast solid with the ends of the draw-head and the journals or recesses
 35 for the same formed in the jaw a stronger and more durable coupling is produced.

At the free end of the branch c , I form a way v from its front end to near its rear, and at the rear I form a stop w , the face of which
 40 is at an angle to the body of the branch, in order to limit the outward swing of the jaw. The extension n of the latch rests on the way v when the jaw is open ready for coupling with the stop w against the side of the latch,
 45 as shown in Fig. 1, thus preventing the further outward movement of the jaw and holding it in the proper position for operation.

When two cars provided with my couplings are brought together their jaws will pass each
 50 other and come in contact with their respective branches c forcing or pushing them back into the hollowed-out draw-heads until the latches drop off the ways in front of the ends of the branch, thus locking them in place until
 55 the crank k is given a half-turn, which raises the latch up in the housing on the pin d till the extension n passes the upper surface of the way v , and permitting the jaws to be swung out, when the cars may be drawn apart.
 60 The jaw B is perforated through its center, as at E , and an oblong opening F is formed through its body, intersecting said perforation for the purpose of using my coupler in connection with the ordinary link-and-pin
 65 coupler.

It will be noticed that there is no possibil-

ity of the coupling becoming accidentally uncoupled, as the weight of the latch itself and the rod h will secure the latch against being accidentally raised. Besides, the branch
 70 c will be firmly held against the side of the latch, further preventing any possibility of its accidentally being raised. The opening F is formed at the center of jaw B and extends back into the curved branch, forming
 75 a pocket therein, and flares outwardly at its outer end and is rounded on its upper and lower surfaces, as at b' , as shown in Fig. 6, forming a zigzag curve in longitudinal section, and is deepest at the point c' , near its
 80 rear end, whereby a link d' may be inserted and project from said opening at an angle, as shown, so that when a car provided with the ordinary link-and-pin coupling is to be coupled to one provided with my improved
 85 coupler the end of the link will strike the flaring mouth of the approaching coupler and be pushed back into the opening F and pocket and gradually raised at its outer end, owing to the shape of the rear end of the
 90 opening, which is calculated to depress the rear end of the link until its outer end enters the opening on the approaching coupler.

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

1. In a car-coupler, a swinging jaw having a vertical perforation through its center and an oblong opening intersecting said vertical perforation and extending back into said jaw,
 100 said oblong opening having its upper and lower surfaces formed in zigzag curves which are deepest toward the rear and its outer end flaring, substantially as described.

2. The combination, in a car-coupler, of the
 105 draw-head having the flaring curved arm having oblong trunnions cast on the contiguous faces of the ends of said arm, the guard-arm, the housing, the slot formed in the lower surface of said draw-head, the latch having the
 110 oblong opening mounted in said housing, the arm loosely connected to said latch, the rod extending across the car and having its ends bent at right angles, the hangers having elliptical-shaped openings, and a swinging jaw
 115 having a curved branch provided with a way and a stop on its free end, substantially as described.

3. The combination, in a car-coupler, of the draw-head having oblong trunnions cast
 120 on its ends, the swinging jaw having a curved branch projecting therefrom, the circular recesses having openings in their outer walls formed near the junction of the branch and jaw, a way formed on the free end of said
 125 branch, a stop formed at one end of said way, and a gravitating latch having an extension adapted to rest on said way, substantially as described.

4. The combination, with the draw-head of
 130 a car-coupler, of the swinging jaw pivotally mounted in the draw-head and having a

curved branch projecting therefrom provided with a way at its free end, a stop formed at one end of said way, and a latch having an extension at one end and a shoulder at one side, and an oblong opening having an offset formed in the lower part of said draw-head, whereby said latch is adapted to be moved up and down to secure and release said branch, substantially as described.

10 5. The combination, with the draw-head of a car-coupler having a ledge formed on its lower interior surface at one side, of the swinging jaw having a curved branch projecting therefrom, provided with a shoulder
15 on its rear side adapted to fit against said ledge, substantially as described.

20 6. The combination, in a car-coupler, of the swinging jaw having the curved branch, the latch mounted in the draw-head and adapted to have a vertical movement, the arm loosely pivoted to said latch, the rod having the bent ends pivoted to said latch, the hang-

ers having elliptical-shaped openings adapted to support said rod, substantially as described.

7. The combination, with the draw-head of 25 a car-coupler having a housing formed in its upper part and an oblong opening having an offset on one side formed in its lower part, of the swinging jaw pivotally mounted in the draw-head and having a curved branch pro- 30 jecting therefrom, provided with a way on its end and a stop at the end of the way, and a latch having an extension at one end adapted to rest on said way, and a shoulder at one side adapted to fit said offset, pivotally and ad- 35 justably secured in said housing, substantially as described.

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

JAMES A. HINSON.

Witnesses:

WM. CHRISTY,
E. E. COLE,