H. E. SMITH.

Car-Couplings.

No. 154,423. Patented Aug. 25, 1874.

Fig: 1.

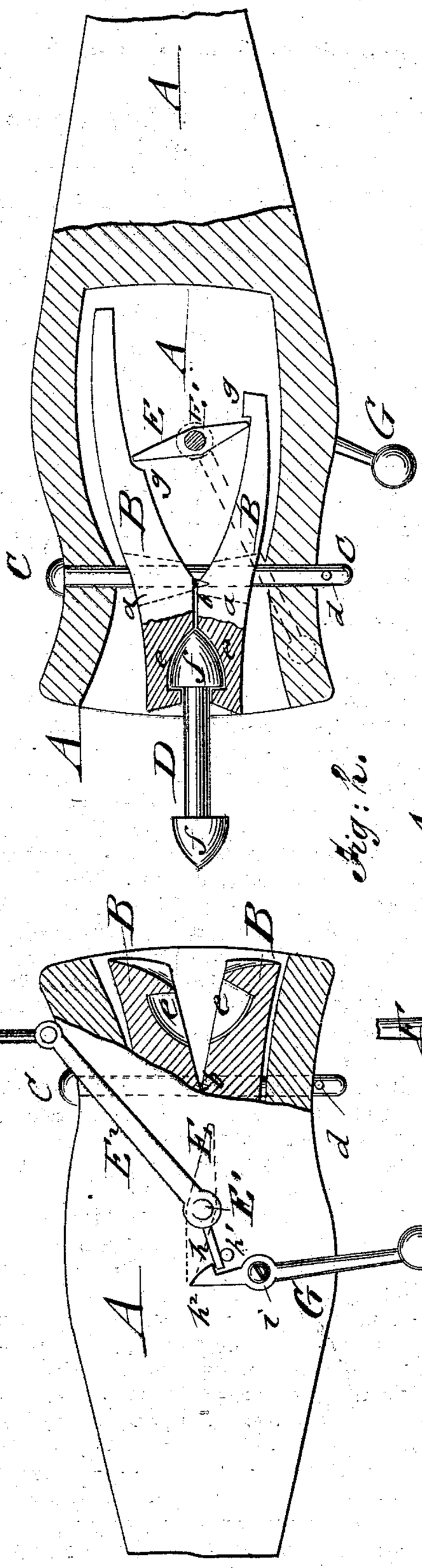
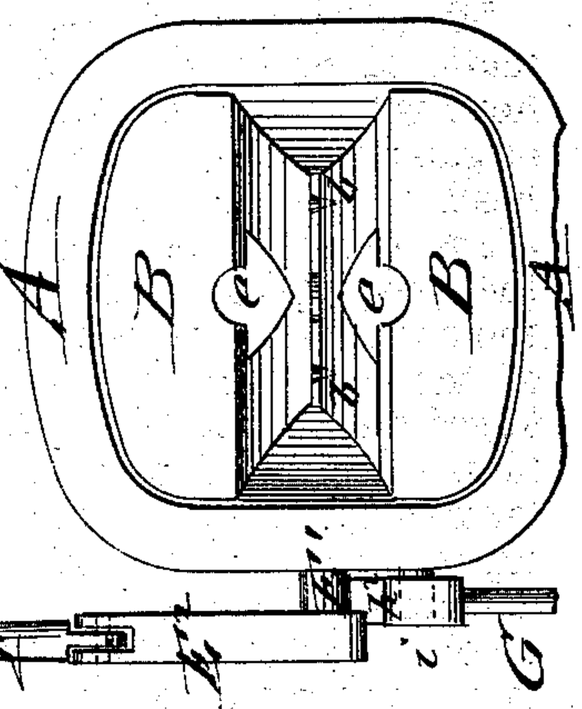


Fig: 2.



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UNITED STATES PATENT OFFICE.

HARRISON E. SMITH, OF PORTLAND, OREGON.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **154,423**, dated August 25, 1874; application filed June 6, 1874.

To all whom it may concern:

Be it known that I, HARRISON E. SMITH, of Portland, in the county of Multnomah and State of Oregon, have invented a new and Improved Car-Coupling, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a sectional side elevation of my improved automatic car-coupling, showing it in progress of coupling; and Fig. 2 is an end view of one draw-head with jaws open for the coupling-link.

Similar letters of reference indicate corresponding parts.

My invention relates to an improved automatic car-coupling; and consists of a draw-head with weighted horizontal jaws swinging on small pivot-pins, and connected to the draw-head by a vertical fastening-pin. The jaws are recessed for the enlarged conical head of the coupling-link, and lock over the same by the action of a diametrical cam on shoulders of the rear parts of the jaws. The cam is keyed to a lateral shaft, turned into horizontal position for uncoupling by a side crank and lever-rod or other mechanism applied to the top or side of the car, and held in position for uncoupling by the hook end of a weighted pivoted lever, which catches over a lug of the cam-shaft, releasing the lug by the concussion of the draw-head, and producing the instant coupling of the pins to the link-head.

In the drawing, A represents a draw-head, made of the usual shape and material, and applied in such a manner to the under side of the car-frame that a sufficient play is imparted for weakening the concussion of the cars and producing a yielding motion of the draw-heads in every direction. A vertical pin, C, secures the horizontal jaws B by means of conically-tapering holes *a* of the same, in such a manner that they may swing readily on their pivot-pins. The pin C is keyed firmly, by a cross-pin, *d*, at its lower end, to the draw-head A, but may, in case of injury to the jaws or coupling-link, be taken out, and the jaws then detached from the cavity of the draw-head, so that the same may be used in connection with the pin for coupling in the usual manner with the common link. The front ends of both jaws B are inclined toward their horizontal joint, and provided with recesses *e*, corresponding to the shape of the conical or rounded-off head *f* of the coupling-link D. The head *f* of the coupling-link D is guided by the inclination of the front ends of the jaws into the recessed parts of the same, which holds them firmly by the closing of the jaws, but with a sufficient degree of play for the adjustment of the link to the motions of the car. The jaws B are weighted in such a manner, by extending the rear part of the upper jaw back into the cavity of the draw-head, and making the front part of the lower jaw heavier, that the jaws spread into open position, ready for the entrance of the coupling-link. The rear parts of the jaws B have projecting shoulders *g*, which face a diametrical cam-piece, E, keyed to a lateral shaft, E^1, of the draw-head, and produce the spreading of the rear parts and locking of the front parts of the jaws when cam E is brought against them in forward inclined position, as indicated in Fig. 1. The cam-shaft E^1 has a crank, E^2, sidewise of draw-head A, to which the lever-rod F, or other coupling mechanism, is applied. Lever-rod F slides in a suitable guide ring or sleeve of the platform, side, or top of the car, and has a handle for being readily operated, and throwing thereby the cam into horizontal position, so as to release the jaws and produce, by their weighted parts, the opening of the same and the uncoupling of the link. A projecting lug, *h*, of cam-shaft E^1, comes in contact with a stop-pin, h^1, when lever-rod F is raised, and is engaged in that position by a hook, h^2, of a weighted lever, G, pivoted at *i* to the side of draw-head A.

The concussion of the draw-heads throws the weighted lever G instantly forward, releasing the lug of the cam-shaft, so that the weight of the lever-rod F on the crank carries the cam from its horizontal position along the rear parts of the jaws into forward inclined position, and closes thereby the front ends of the jaws over the simultaneously-inserted link, coupling firmly and securely the same until released by the raising of the lever-rod or other uncoupling mechanism.

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

1. The combination of draw-head A, by vertical fastening-pin C, with the pivoted weighted coupling-jaws B, having tapering holes *a*, for playing freely on the pin C, and allowing the detaching for repairs and coupling with the common link, substantially as described.

2. The pivoted horizontal jaws B, of which one is weighted at the rear part, the other at the front part, and provided with inclined front ends, having recesses *e* for the head of the coupling-link D, for holding and releasing the same, in the manner set forth.

3. The horizontal weighted jaws having rear-extending parts, with opposite shoulders *g*, in combination with the laterally-pivoted cam-piece E, for closing the front part of the jaws, substantially in the manner described.

4. The cam-piece E, keyed to shaft E^1, having lug *h*, in combination with stop-pin h^1 and hook of weighted lever G, for producing the open uncoupled position of the weighted jaws, ready for coupling, substantially as specified.

5. The combination of cam E, pivoted jaws B, with recessed front ends, and coupling-link D, having large conical head, for coupling the same on release of cam-shaft by concussion of draw-heads, substantially as set forth.

Witnesses: HARRISON E. SMITH.

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