(No Model.)

G. B. BENJAMIN.

CAR COUPLING.

No. 452,658. Patented May 19, 1891.

Fig. 1

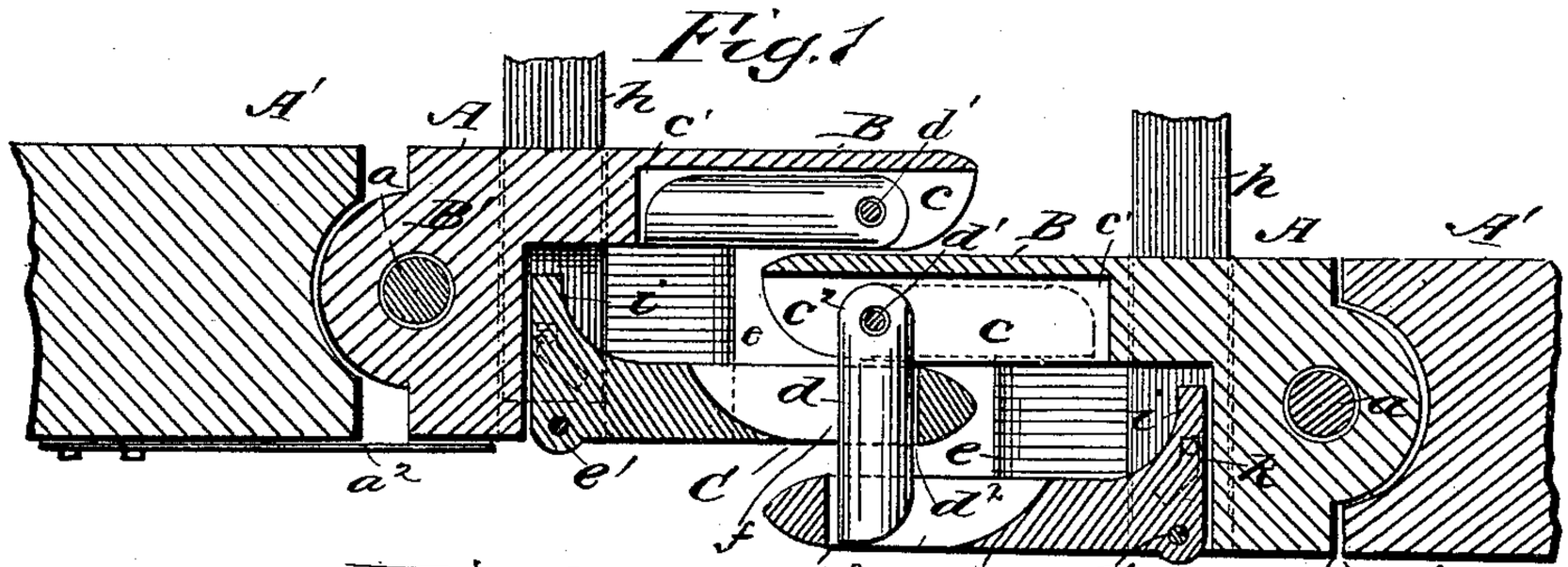


Fig. 2

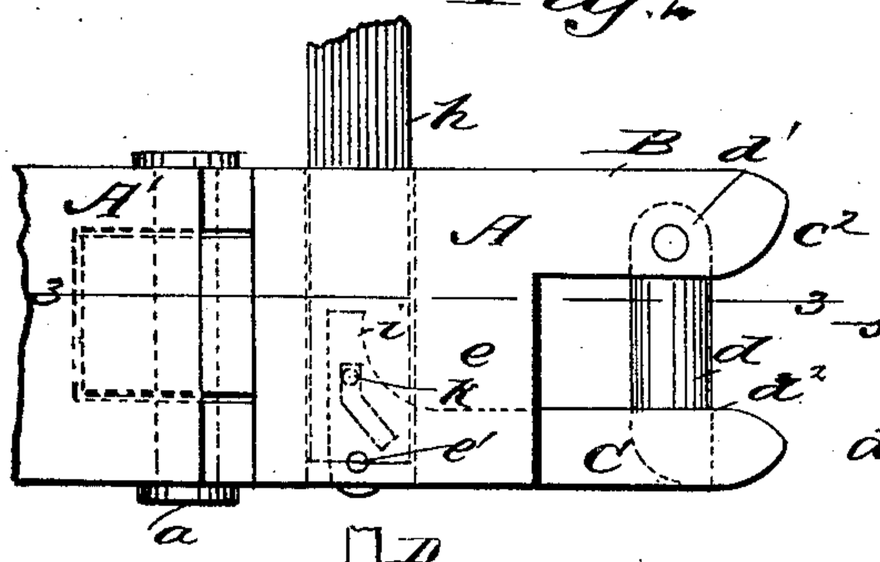


Fig. 3

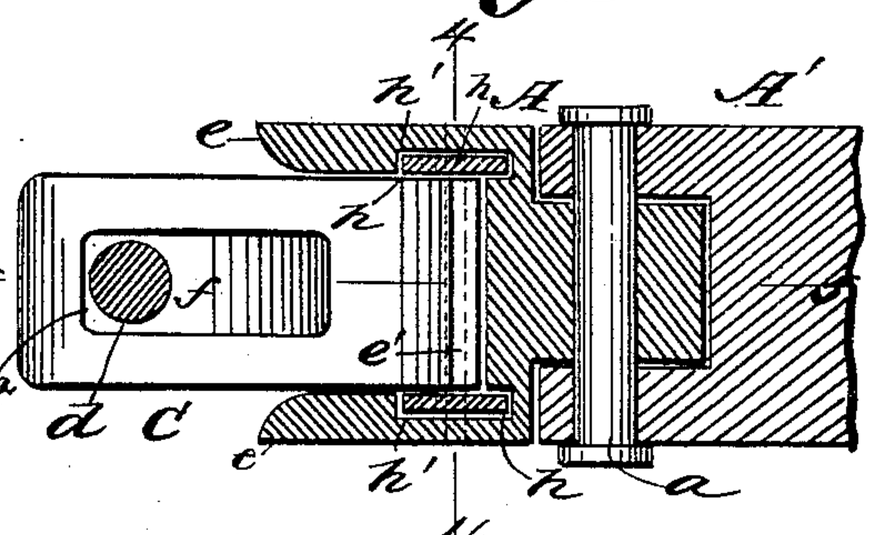


Fig. 4

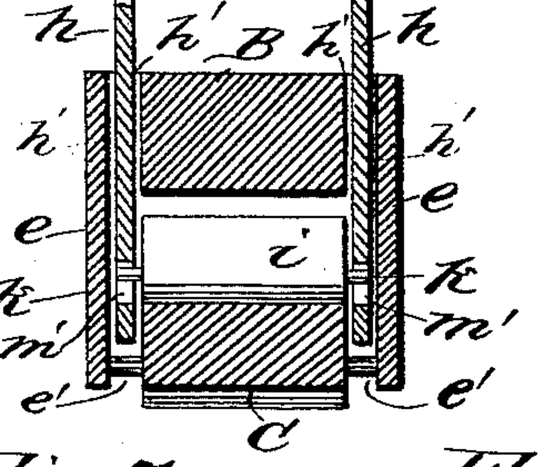


Fig. 5

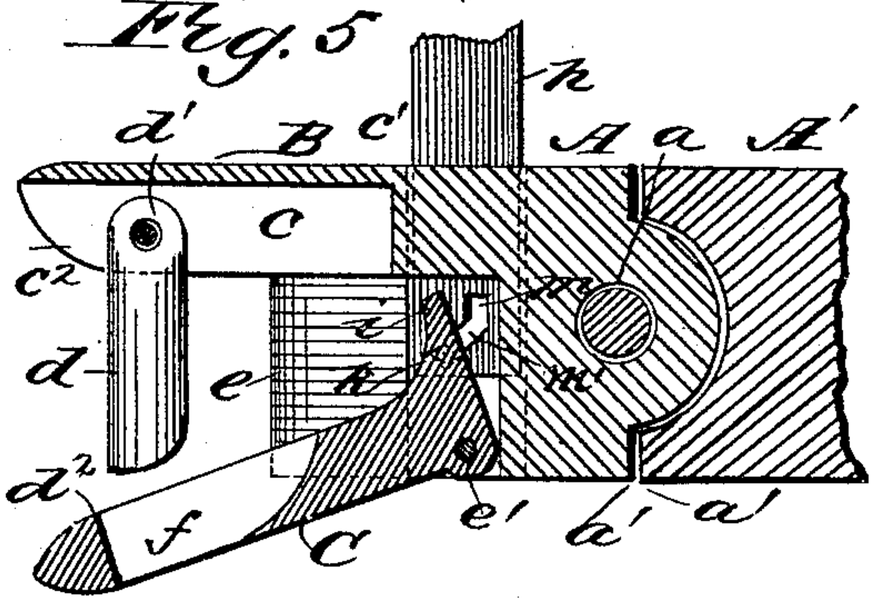
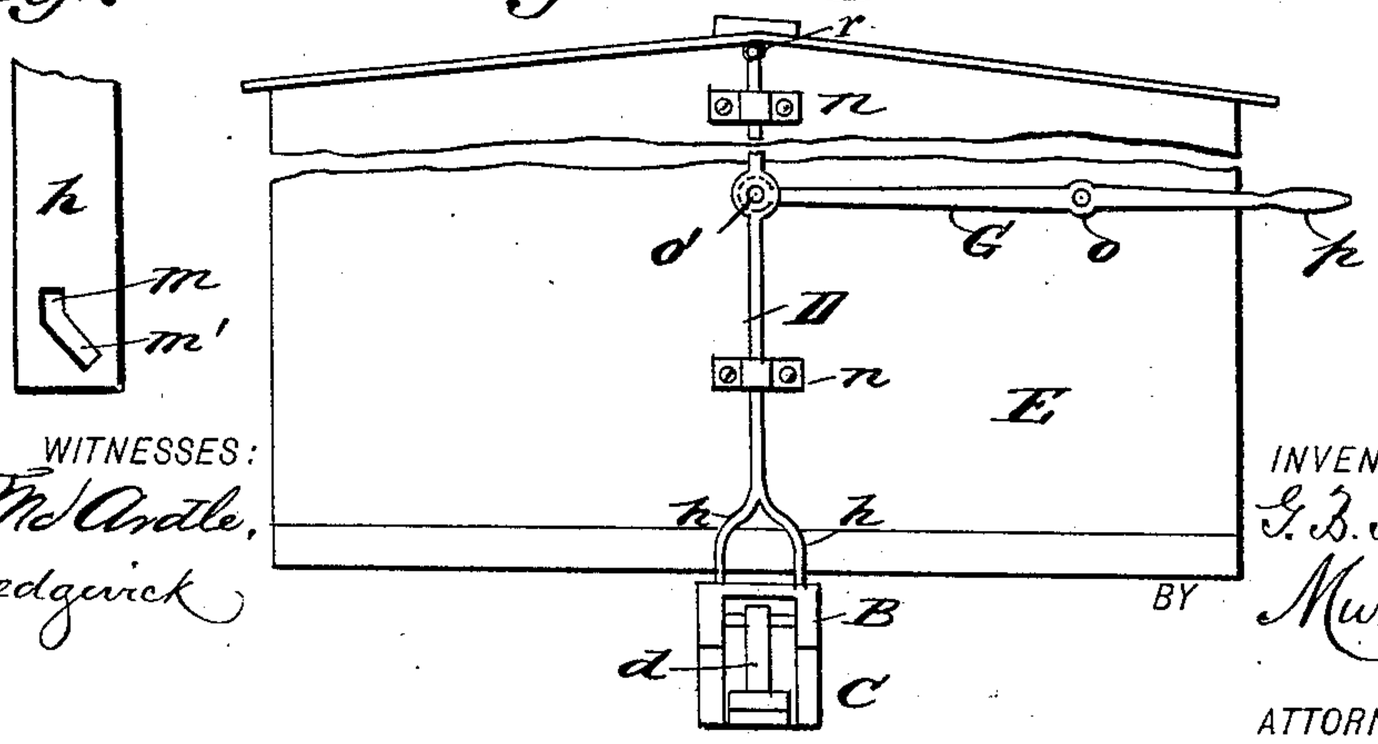


Fig. 7

Fig. 6



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UNITED STATES PATENT OFFICE.

GEORGE B. BENJAMIN, OF DANBURY, CONNECTICUT.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 452,658, dated May 19, 1891.

Application filed February 13, 1891. Serial No. 381,336. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. BENJAMIN, of Danbury, in the county of Fairfield and State of Connecticut, have invented a new and useful Car-Coupling, of which the following is a full, clear, and exact description.

The object of this invention is to provide a car-coupling of simple construction which will afford means to automatically couple cars provided with the improvement and release the same from the side or roof of the car.

To this end my invention consists in the construction and combination of parts, as is hereinafter described and claimed.

Reference is to be made to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal section of two couplings embodying the improvement shown in coupled position, parts of the duplicate devices being broken away. Fig. 2 is a side view of one coupling with the draw-head inner end and the upper portion of the jaw-moving bar broken away. Fig. 3 is a plan in section taken on the line 3 3 in Fig. 2. Fig. 4 is a transverse section on the line 4 4 in Fig. 3. Fig. 5 is a longitudinal section of the coupling, taken on the line 5 5 in Fig. 3, showing the parts in uncoupled position. Fig. 6 is an end elevation of a car-body broken, showing the improvement in position and a device connected therewith which affords means to manipulate the coupling from the top or side of the car; and Fig. 7 is a detached enlarged portion of a jaw-actuating slide-bar.

The draw-head body is composed of two main portions A and A′, which are jointed together at *a*, said joint being provided to allow a vibration of the forward portion A upon the rearward portion A′ in a vertical direction, the latter-named piece being secured upon the car-timbers, when in service, by any preferred means.

The main portion A of the draw-head is composed of two jaws B and C, the first-named jaw having an integral connection with the joint-piece, on which the other jaw C is pivoted at its inner or rear end. The upper jaw B is longitudinally channeled, as at *c*, from *c′* to the outer end, which latter is rounded on its lower corner c^2 to facilitate the introduction of a jaw on another coupling of like construction between the upper jaw B and lower jaw C. In the channel *c* a coupling-pin *d* is pivoted near the front or outer end of the upper jaw B, as at *d′*, so as to permit the folding movement of said pin in either direction.

On each side of the jaw B an integral depending flange-wall *e* is formed, which extends to the lower edge of the draw-head section A and forwardly a suitable distance.

The lower jaw C is pivotally supported at its rear end by a transverse bolt *e′*, which is inserted in aligning perforations in the jaw and flange walls *e*, so as to permit a vibration of this jaw on its support. A longitudinal slot *f* is formed in the lower jaw C near its transverse center, of a proper length to permit the travel in it of the free end of the pin *d* until it is arrested by its impinge on the front wall d^2 of said slot, said wall d^2 being so relatively located that the pin will hang pendent and be at right angles to the parallel inner faces of the jaws B C when in contact with it.

On the inner surface of each flange-wall *e* near its rear edge vertical open recesses *h′* are formed, which extend upward through the jaw B and are of proper dimensions to receive the parallel limbs *h* of the slide-bar D and permit them to reciprocate, these limbs having a loose contact with the sides of the lower jaw C at its rear end.

A toe *i* is projected from the upper side of the lower jaw C at its rear end, from the opposite sides of which the pins *k* extend and enter the similar cam-slots *m′*, that are produced in the lower end portions of the slide-bar limbs *h*. The slots *m′* are forward and downward extensions from the short vertical slots *m*, (see Fig. 7,) and from their inclination are adapted to hold the lower jaw C parallel with the upper jaw B when the slide-bar D is in lowered adjustment by its gravity, and also enforce the downward vibration of the lower jaw C, if said bar is raised, as represented in Figs. 2 and 5, the downward movement of the jaw being sufficient to release the coupling-pin therefrom and allow it to swing forwardly.

The joint *a* between the draw-head sections A A′ permits a limited upward or downward flexure of the engaged parts, to enable the

coupling of two draw-heads if not in the same horizontal plane, as the impinge of one upper jaw against the curved front end of the top jaw of a similar coupling will cause the highest jaw to rise sufficiently to effect a connection of parts by one of the pivoted pins *d*, the other pin folding upwardly, as shown in Fig. 1. The joint *a* may be constructed to impinge its shoulders *a'* on the lower side and thus maintain the forward section A of the draw-head from dropping too far below a horizontal plane, or a yielding spring a^2 (shown at the left side of Fig. 1) may be employed to normally hold the section A projected horizontally, and if necessary have a limited flexure downward or upward.

The slide-bar D is loosely retained in a vertical position by one or more keeper-loops *n* or similar means, and is extended to be reached from the roof of the car E. A laterally-extended lever G, having a pivotal support on the car at *o*, is also pivoted to the slide-bar, as at *o'*, so that the downward vibration of the handle end *p* of the lever will elevate the slide-bar and release a coupled car. The weight of the slide-bar D and that of the connected end portion of the lever G will project the lower jaw C, when free to do so, and when thus adjusted the engagement of the pins *k* with the vertical slots *m* in the limbs *h* of the slide-bar effects a lock of the parts until designedly released by a depression of the outer end of the lever G.

From the foregoing description it will be evident that the manipulation of the bar D by the lever G from the side of the car or directly by lifting its end *r* from the roof of said car will lower the jaw C and release a coupled car, and, further, that cars provided with the improved coupling may be connected automatically.

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

1. A car-coupling having a fixed horizontal upper jaw whereon a coupling-pin is pivoted by one end and adapted to fold forwardly or rearwardly in a channel of the jaw, and further provided with a lower jaw jointed to the upper jaw by its rear end and slotted to receive and interlock with the pendent coupling-pin, and a slide-bar which is adapted to normally retain the lower jaw parallel with the upper jaw by its gravity and depress the engaged lower jaw when said bar is lifted, substantially as set forth.

2. A car-coupling having a fixed horizontal upper jaw whereon a coupling-pin is pivoted by one end and adapted to fold forwardly or rearwardly in a channel of the jaw, and further provided with a lower jaw jointed to the upper jaw by its rear end, slotted to receive and interlock with the pendent coupling-pin and provided with sidewise-extending pins, and a slide-bar having cam-slots to engage said pins, substantially as set forth.

3. The combination, with a draw-head having its body jointed, producing a vertically-flexing front main section which has a fixed upper jaw and a hinged lower jaw, and a coupling-pin pivoted by one end in a channel of the upper jaw, so as to interlock with a slot in the lower jaw when pendent, of a vertical slide-bar having two parallel limbs which have cam-slots that are engaged by pins projected from a toe on the lower jaw, substantially as and for the purpose set forth.

GEORGE B. BENJAMIN.

Witnesses:
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EDW. M. CLARK.