(No Model.)

# F. A. FOX.

## CAR COUPLING.

No. 467,882. Patented Jan. 26, 1892.

Fig. 1.

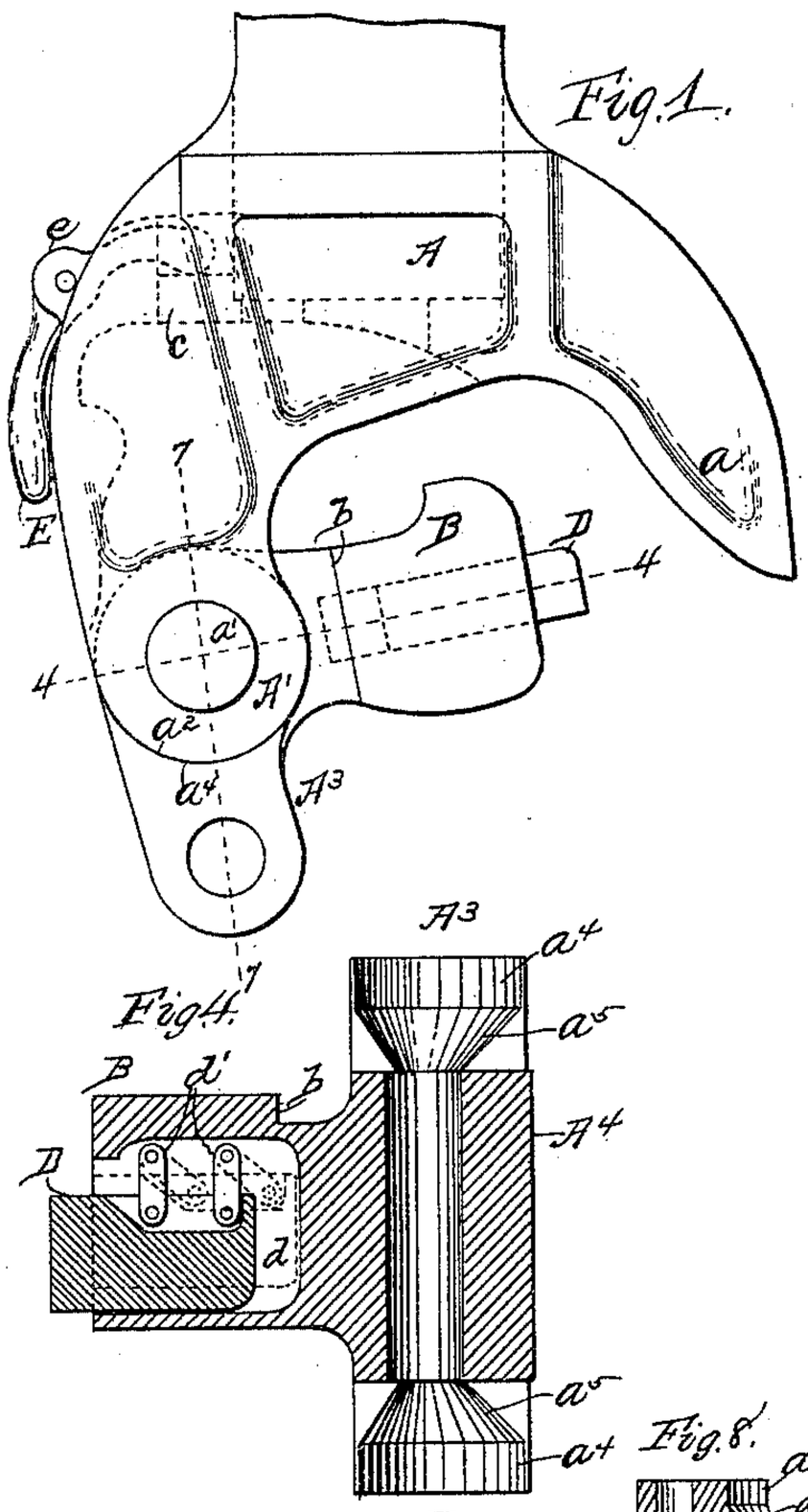



Fig. 2.

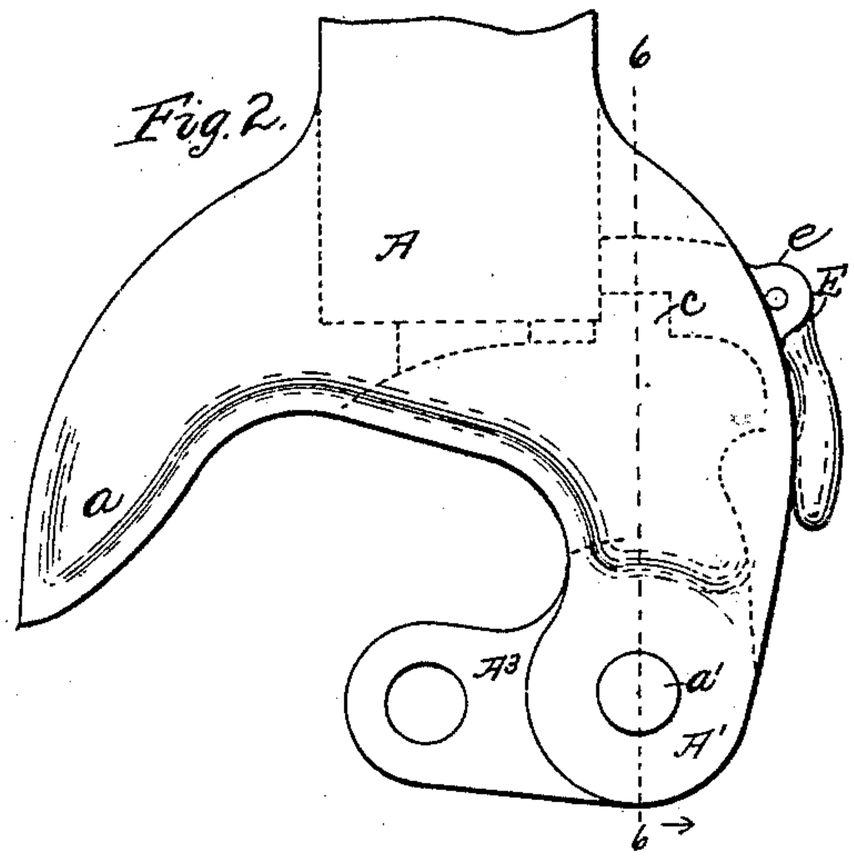



Fig. 4.




Fig. 3.

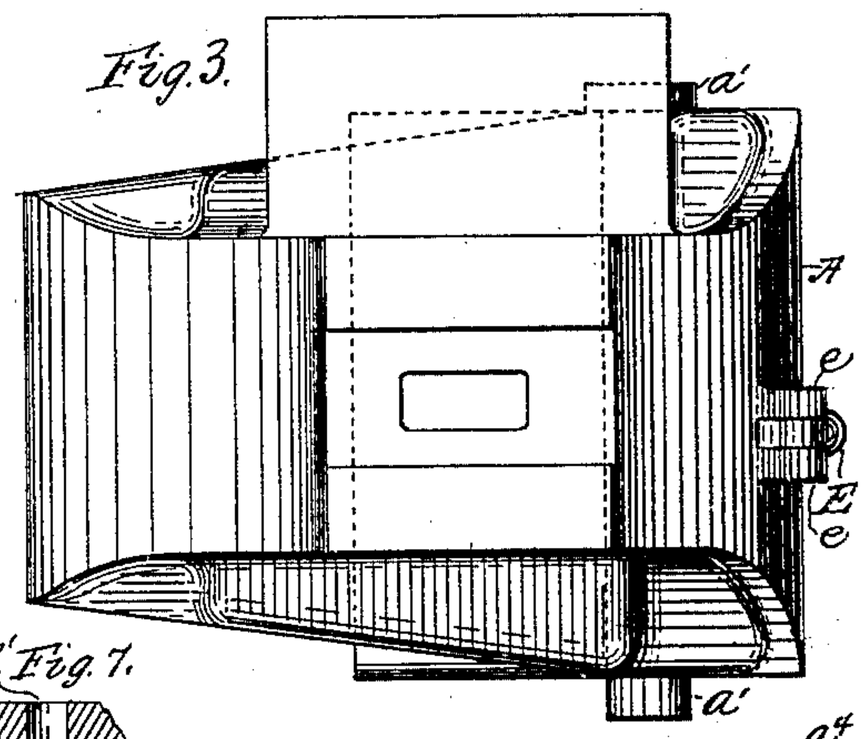



Fig. 8.

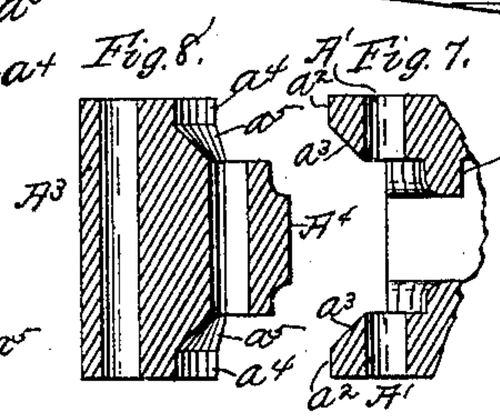



Fig. 7.

Fig. 5.

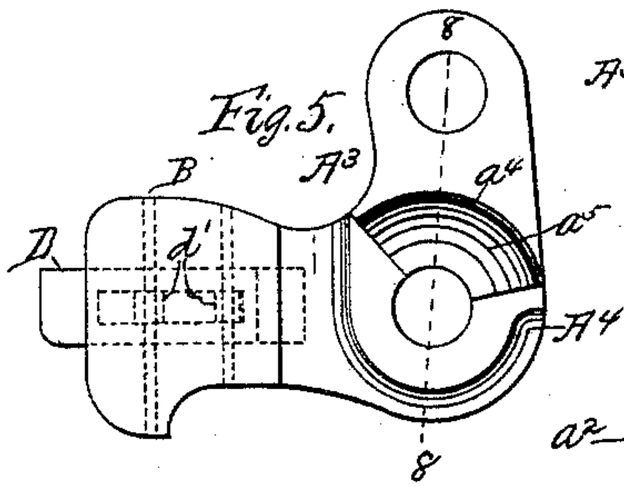



Fig. 9

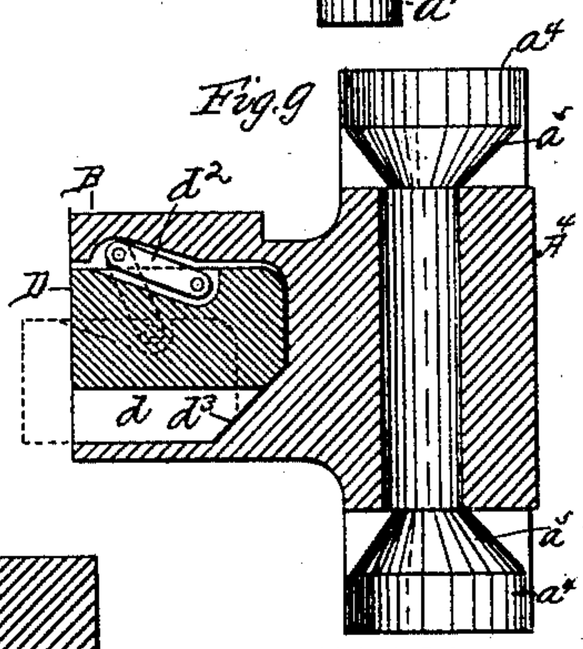
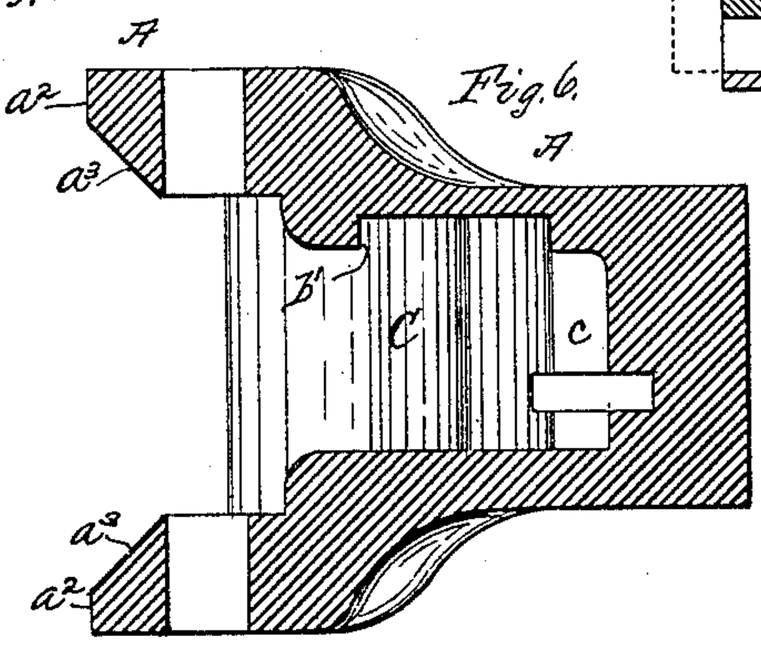



Fig. 6.

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# UNITED STATES PATENT OFFICE.

FRANK AVERILL FOX, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO THE EMPIRE CAR COUPLER COMPANY, OF WEEHAWKEN, NEW JERSEY.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 467,882, dated January 26, 1892.

Application filed October 26, 1891. Serial No. 409,774. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK AVERILL FOX, of San Francisco, county of San Francisco, and State of California, have invented a certain new and useful Improvement in Car-Couplers, of which the following is a specification.

This invention relates to that class of car-couplers in which there are two automatically-interlocking sections having means for securing them as interlocked; and it consists in the construction and novel arrangement of parts, as hereinafter set forth.

I will describe a car-coupler embodying my improvement, and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is a top or plan view of a coupler embodying my invention with a swinging section in an open position. Fig. 2 is a top or plan view thereof with the swinging section in a closed or locked position. Fig. 3 is a rear end view. Fig. 4 shows a swinging section, partly in vertical section, on the line 4 4 of Fig. 1. Fig. 5 is a top or plan view of the swinging section. Fig. 6 is a section through the line 6 6 of Fig. 2, looking in the direction indicated by the arrow. Fig. 7 is a section through the line 7 7 of Fig. 1, with a portion broken away and drawn on a reduced scale. Fig. 8 is a section, on a reduced scale, on the line 8 8 of Fig. 5. Fig. 9 is a section similar to Fig. 4, but showing a slight modification.

Referring by letter to the drawings, A designates a fixed section or coupler-head adapted to be secured to a car in the usual manner. This section A has the usual guide-horn $a$ at one side, and at the opposite side has forwardly-projecting lugs A′, forming bearings for a horizontally-swinging interlocking section $A^3$. The section $A^3$ has a reduced portion or block $A^4$, adapted to engage between the lugs A′, and both the lugs and the block $A^4$ are vertically perforated for the passage of a hinge-pin $a'$. It will be seen by this construction that a hinge-joint is formed between the sections A $A^3$ of the coupling and that the block $A^4$ forms one member of the joint and the lugs A′ form the other member of the joint. The outer ends of the lugs A′ are rounded transversely, and each lug has a vertical wall or bearing-surface $a^2$ and an inwardly-inclined wall or bearing-surface $a^3$. The section $A^3$ has a transversely-curved vertical bearing-wall $a^4$, conforming to the wall $a^2$, and a transversely-curved inclined wall or bearing $a^5$, conforming to the wall or bearing $a^3$. By this construction I provide an increased thickness of metal at the junction of the main portion of the section $A^3$ and the block $A^4$. This is advisable, because in ordinary couplings of this character a break is most likely to occur at this point when two couplings come in sudden and violent contact. Also, as the lines of the walls $a^2$ $a^3$ $a^4$ $a^5$ are vertically in straight lines, they are easily fitted one with another, and in casting the patterns are more easily drawn. The interlocking section $A^3$ has a projection B at substantially right angles to its face. The projection B has a transverse shoulder or abutment $b$ on its upper side adapted to impinge against a shoulder $b'$, extending downward from the upper wall of a chamber C within the section A. When the section $A^3$ is in its closed or locked position, it will be seen that the engaging shoulders $b$ $b'$ relieve the pin $a'$ of considerable strain, and, indeed, if the pin $a'$ were removed the shoulders would hold the parts firmly together.

The projection B carries a locking-bolt D. This bolt D is movable longitudinally and vertically within a recess $d$ in the projection B and is automatic in its locking motion. The bolt has a swinging motion within the recess, and as a means for this swinging motion I have shown the bolt in Fig. 4 as suspended by two links $d'$, the upper ends of which are pivotally connected to the upper wall of the recess $d$ and their lower ends pivotally connected to the bolt D. As one link $d'$ is connected to the bolt near its center and the other link connected to the bolt near its inner end, it is obvious that the bolt will automatically swing outward into a recess or keeper $c$ in the section A, and the two links will maintain the bolt parallel at all times with the walls of the recess $d$.

In Fig. 9 I have shown the bolt D as suspended within the recess $d$ by means of a sin-

gle link $d^2$. In this example as a means to cause the bolt to maintain its parallelism relatively to the walls of the recess $d$ I provide the lower portion of the rear wall of the recess with an incline $d^3$, upon which the lower inner edge of the bolt slides. By suspending the bolts on links, as described, they operate easily and with very little friction.

E designates a lever for moving the bolt D out of the recess $c$ when it is desired to unlock the section $A^3$. This lever is fulcrumed to lugs $e$, extending laterally from the section A, and has its inner end projected through a hole in the side of the section A into the path of the bolt D. By moving the outer end of the lever E outward the bolt will be forced into the recess $d$, allowing the section $A^3$ to be moved to an open position.

Having described my invention, what I claim is—

1. In a car-coupler, the combination, with a fixed section having the forwardly-extending lugs provided with the transversely-curved bearing-walls having the vertical surface and the inclined surface, of the swinging section provided with the transversely-curved bearing-walls having the vertical surface and the inclined surfaces, all of said bearing-surfaces being in straight lines upward and downward, substantially as specified.

2. In a car-coupler, the combination, with the fixed section and the swinging section, of the longitudinally and vertically swinging locking-bolt carried by said swinging section, substantially as specified.

3. In a car-coupler, the combination, with the fixed section and the swinging section, of the locking-bolt, a link or links connecting said bolt to the swinging section within a recess thereof, and a lever for moving said bolt in one direction, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK AVERILL FOX.

Witnesses:

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