No. 740,725. PATENTED OCT. 6, 1903.

G. D. WILLIAMS & A. J. CONEY.

BANK OR MINE CAR.

APPLICATION FILED JUNE 3, 1903.

NO MODEL.

FIG. 1.

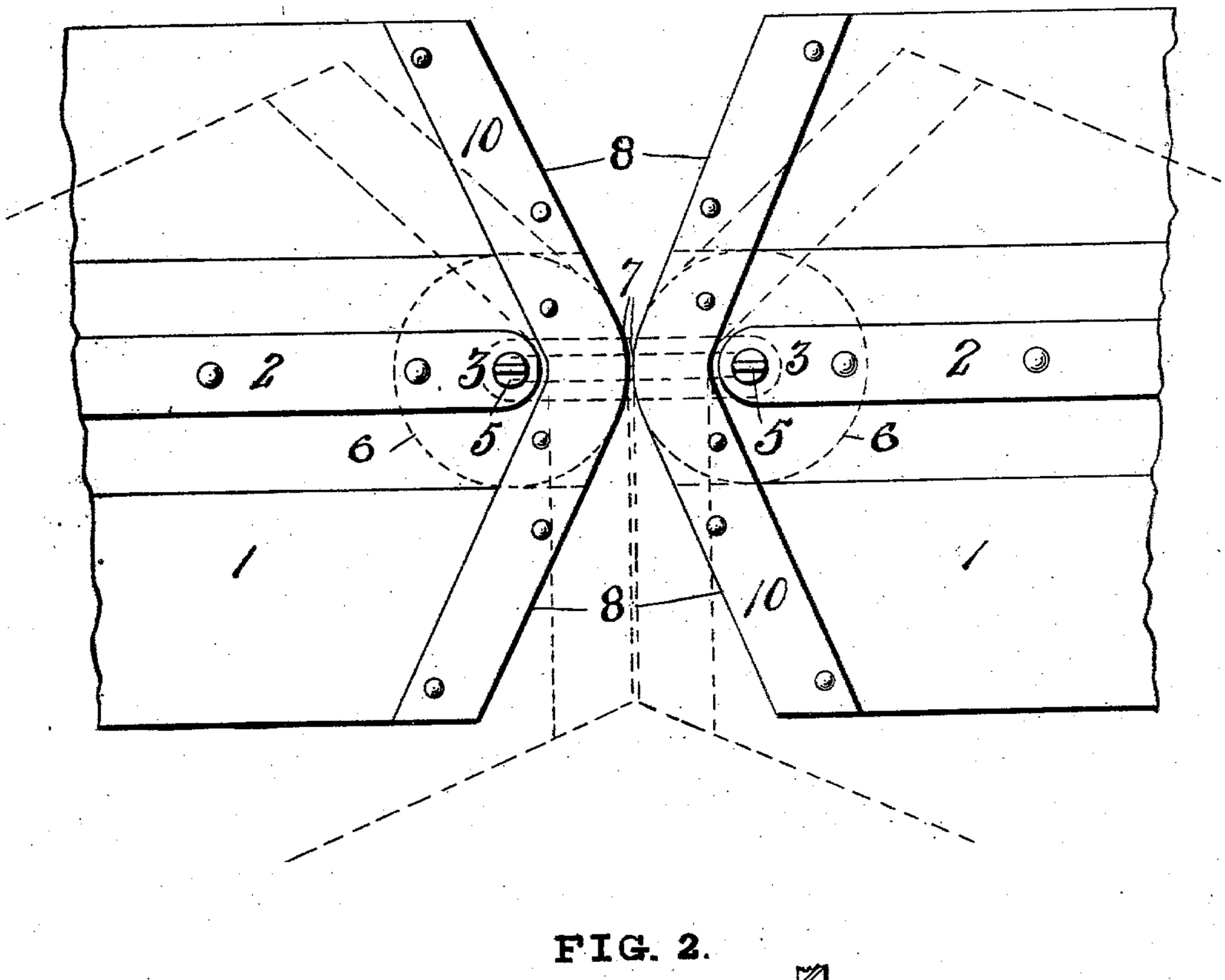
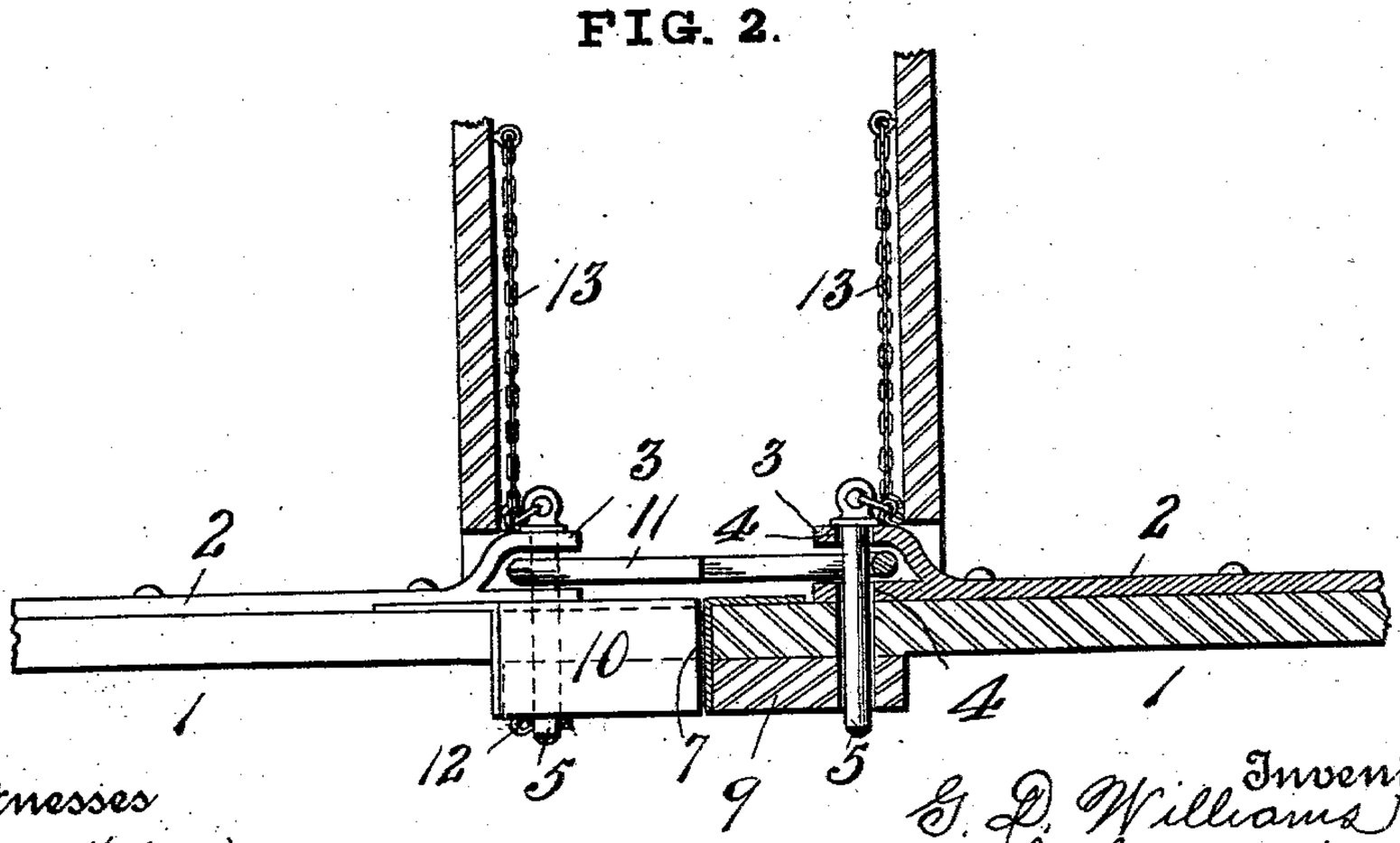


FIG. 2.



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UNITED STATES PATENT OFFICE.

GORHAM D. WILLIAMS AND ANDREW J. CONEY, OF CHARLESTON, WEST VIRGINIA.

BANK OR MINE CAR.

SPECIFICATION forming part of Letters Patent No. 740,725, dated October 6, 1903.

Application filed June 3, 1903. Serial No. 159,877. (No model.)

To all whom it may concern:

Be it known that we, GORHAM D. WILLIAMS and ANDREW J. CONEY, citizens of the United States, residing at Charleston, in the county of Kanawha and State of West Virginia, have invented new and useful Improvements in Bank and Mine Cars, of which the following is a specification.

The object of our invention is the production of a bank or mine car which shall have the ends so constructed that when coupled to another car of similar formation the ends of the said cars will constitute bumpers and the face or end of one car be adapted to engage the end of the other car at all times, either when the cars are on a tangent or on a curve, and without causing any excessive strains to be imparted to the coupling means.

Heretofore it has been the practice to construct mine-cars with square ends and to locate bumpers each side of the coupling or to employ a central bumper only. In the former case when two coupled cars are on a sharp curve the adjacent bumpers come in contact and acting as a fulcrum pry upon the coupling means, such as a link, and subject it to severe strains and wear. In the latter case the central bumpers sometimes get out of alinement and pass each other when loosely coupled, and when tightly coupled the link is subjected to prying strains. In both cases it is generally necessary to employ a loose coupling or one with more or less slack. The prying action is present in both types of construction when passing sharp curves.

The purpose of our invention is to obviate the disadvantages appertaining to such and other types of construction and to produce a car in which the adjacent ends of two cars when coupled may be brought tightly and closely together and still pass curves without any prying or binding action.

Our invention consists in certain novelties of construction and combinations of parts hereinafter set forth and claimed.

The accompanying drawings illustrate an example of the physical embodiment of our invention constructed according to the best mode we have so far devised for the practical application of the principle.

Figure 1 is a top plan view of the adjacent ends of two mine-cars coupled together and showing our invention, the dotted lines representing the positions of the car-bodies when on a curve of short radius. Fig. 2 is a side view in elevation of the left-hand car in Fig. 1 and a longitudinal section of the car at the right hand in Fig. 1.

Referring to the figures, the numeral 1 designates the floors or underframes of the car; 2, the continuous draw-bars secured to the floors in any suitable manner; 3, the forked ends of the draw-bars; 4, holes in the ends to receive coupling-pins; 5, the coupling-pins located in the holes and also passed through holes in the floors; 6, in dotted lines, circles described by short radii and from the coupling-pins as centers; 7, the rounded ends of the floors or underframings, which are arcs of the circles described from the coupling-pins as centers; 8, the ends of the floors or underframes, which are in lines tangential to the arcs of the circles constituting the ends of the cars; 9, reinforcing-strips extending the entire width of the floors and when of wood with the grain running at an angle to the grain of the wood of the floors; 10, angle-irons applied as facings to the ends of the cars and bent to conform to the outline of the floors or underframes; 11, the coupling-link; 12, a cotter passed through the end of one of the pins, and 13 chains by which the pins are attached to the car-body.

From the foregoing description, taken in connection with the drawings, it will be seen that we have produced a car with a novel end construction which fulfils all the conditions set forth as the purpose of our invention.

By reference to Fig. 1 and the dotted lines it is obvious that the adjacent ends of the two coupled cars have their extreme ends always in contact, or approximately so, that a tight coupling may be employed, and that whatever the relative positions of the adjacent ends of the two cars may be, whether on a curve or on a tangent, there will be no prying action upon the coupling link or pins. Moreover, upon ordinary curves an open space will be left between the tangential portions of the two cars, which will allow any foreign body, such as the leg of a mule, to be inter-

posed without liability of injury. It will also be seen that one car may be pushed by another with facility.

While we have shown and described only one example of the physical embodiment of our invention, we do not thereby intend to limit the scope thereof to such specific embodiment, inasmuch as the invention may be employed in other forms and by analogous modes without constituting substantial departures.

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

1. A bank or mine car having a floor end provided with a projecting curved central portion, and with a coupling-pin opening through the floor at the rear of said curved portion; a draw-bar extending substantially from end to end of the car and having a perforation matching the opening in the floor; a link; and a pin securing the link to the end of the draw-bar, the link extending beyond the floor end of the car.

2. A bank or mine car having an end provided with a curved central portion, and side portions at tangents to said curved portion, and provided with a coupling-pin opening at the rear of said curved portion; in substance as set forth.

3. The combination with a mine or bank car having a curved projecting floor end with a coupling-pin opening at the rear thereof, of a fixed, immovable draw-bar with a forked end having openings therein coinciding with the opening in the end of the car-floor or underframe; a link, and a pin; said link secured to the end of the draw-bar by the pin and projecting beyond the end of the floor and adapted to secure the floor end to another car of similar construction so that one floor end will be held substantially in frictional contact with the other.

4. A bank or mine car having an end with a projecting curved portion, and a coupling-pin opening in the rear thereof; the curved portion being an arc of a circle struck from the coupling-pin opening as a center.

5. A bank or mine car having an end with a projecting curved portion, and a coupling-pin opening in the rear thereof; the curved portion being an arc of a circle struck from the coupling-pin opening as the center, and the end of the car each side of the curved portion being tangential to the arc of the circle or curve.

6. A bank or mine car having an end with a projecting curved portion, and a coupling-pin opening in the rear thereof; the curved portion being an arc of a circle struck from the coupling-pin opening as a center, and a draw-bar having a perforation coinciding with the coupling-pin opening.

7. A bank or mine car having an end with a projecting curve portion, and a coupling-pin opening in the rear thereof; the curved portion being an arc of a circle struck from the coupling-pin opening as a center; and a rigid draw-bar with a perforated forked end.

8. A bank or mine car having an end with a projecting curved portion, and a coupling-pin opening in the rear thereof; a draw-bar; the said floor and draw-bar having holes for the passage of a coupling-pin, and the extreme end of the car provided with an angle-iron reinforcing-piece conforming to the shape of the end of the car.

9. A bank or mine car having a floor with a curved projecting central portion and the parts each side thereof tangent to the curve of the projecting portion, a reinforcing-strip and an angle-iron applied to the end face of the floor.

10. A bank or mine car having a floor with a curved projecting central portion with the portions each side thereof tangent to the curve, the reinforcing-strip, and an angle-iron applied to the end face of the floor; the floor being provided with a coupling-pin opening in the rear of the central curved portion; a pin; and a link.

11. A bank or mining car having a floor with a curved projecting central portion with the portions each side thereof tangent to the curve; a reinforcing-strip, an angle-iron applied to the end face of the floor, and the draw-bar with a forked and perforated end.

12. A bank or mine car having projecting end portions with the floor cut away each side of the projecting ends; a coupling-pin opening at each end in the rear of the projecting portion; a draw-bar with perforated ends; pins and links; and buffing-plates for protecting the projecting end portions; in substance as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

GORHAM D. WILLIAMS.
ANDREW J. CONEY.

Witnesses:
L. C. ONEY,
FRED N. MOORE.