

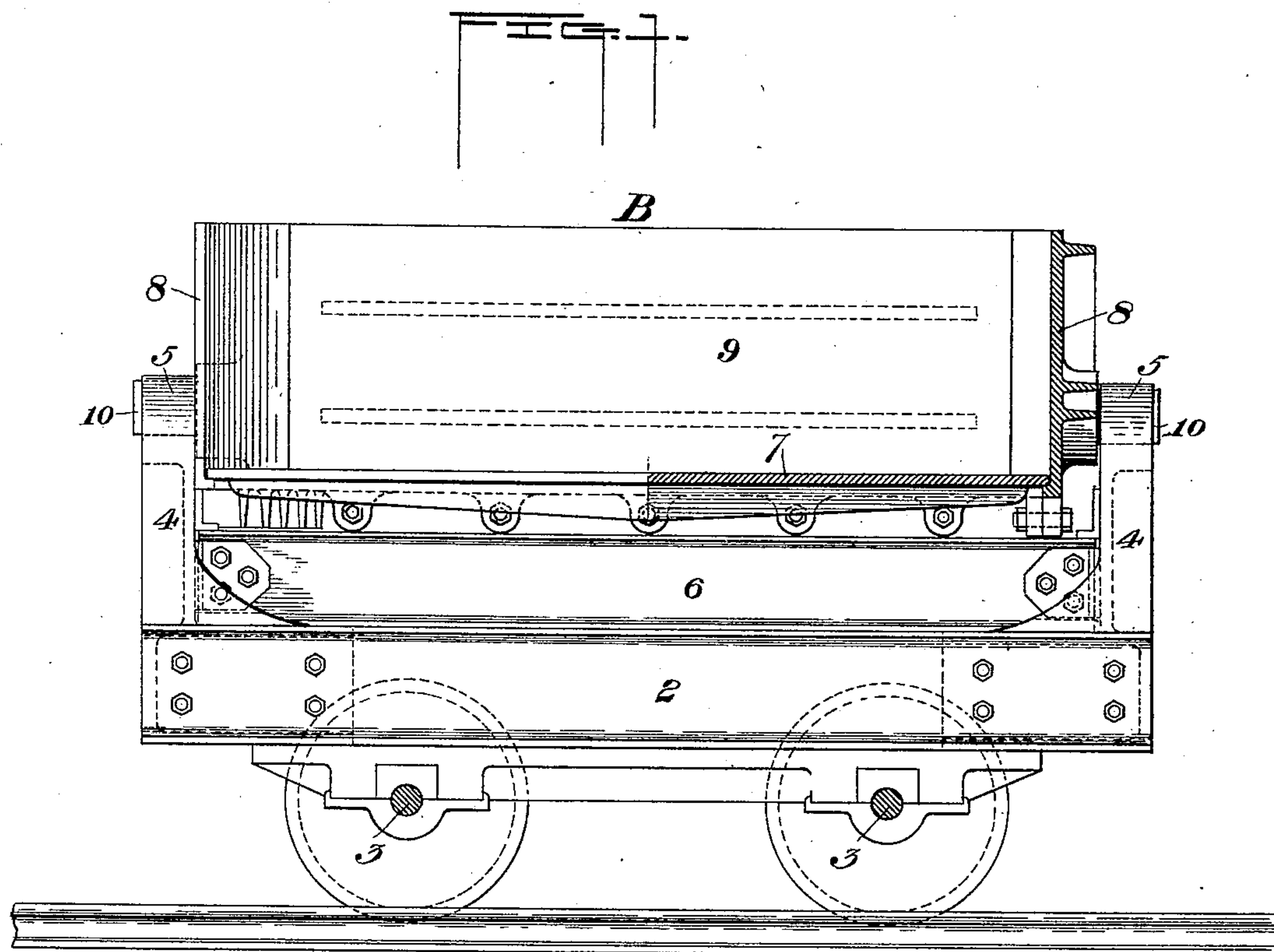
(No Model.)

2 Sheets—Sheet 1.

W. H. BRADLEY.
CINDER CAR.

No. 435,478.

Patented Sept. 2, 1890.



WITNESSES

H. L. Gill
N. B. Corum

INVENTOR

William H. Bradley
by W. Baxendell & Sons
his Attorneys

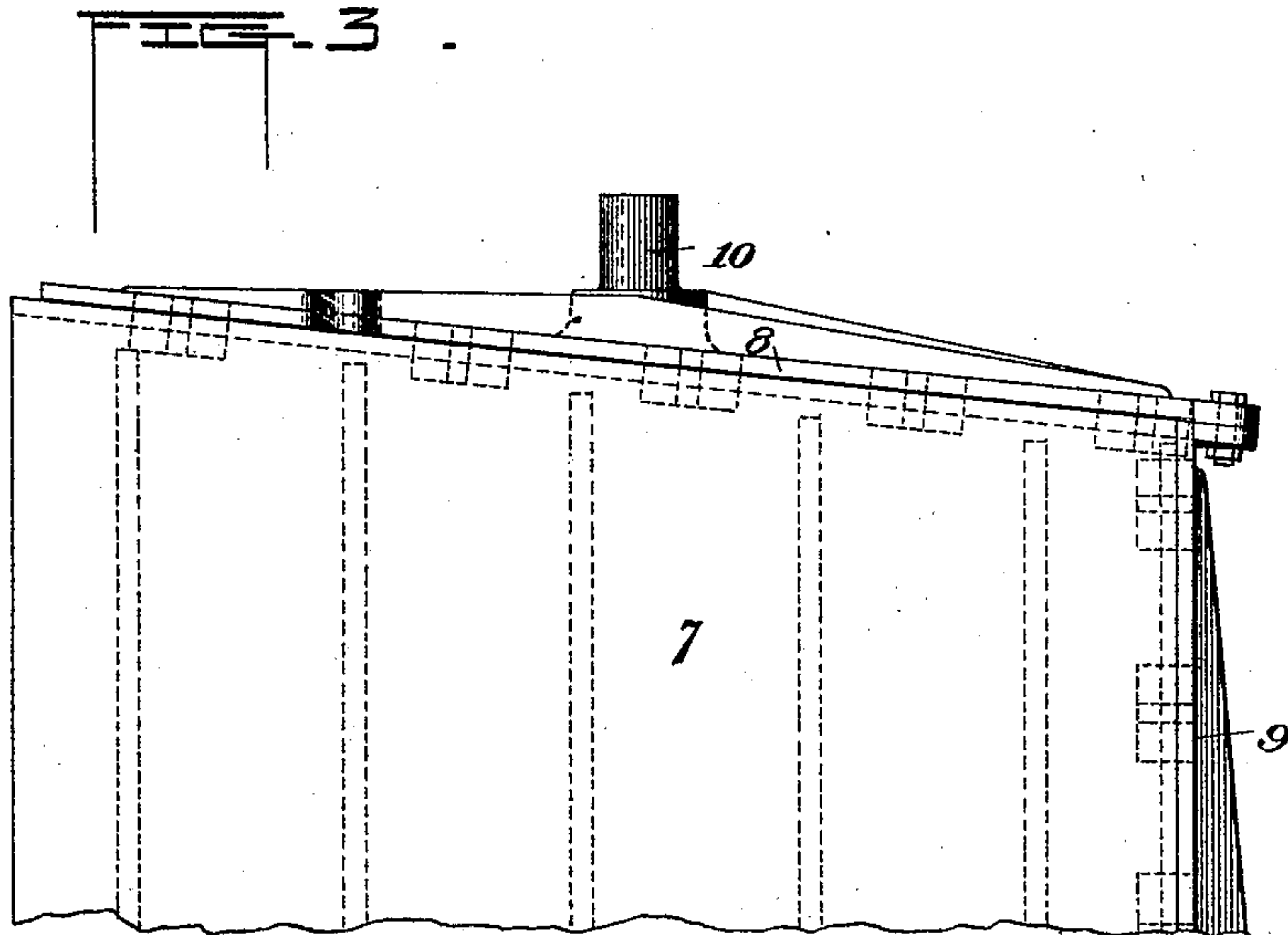
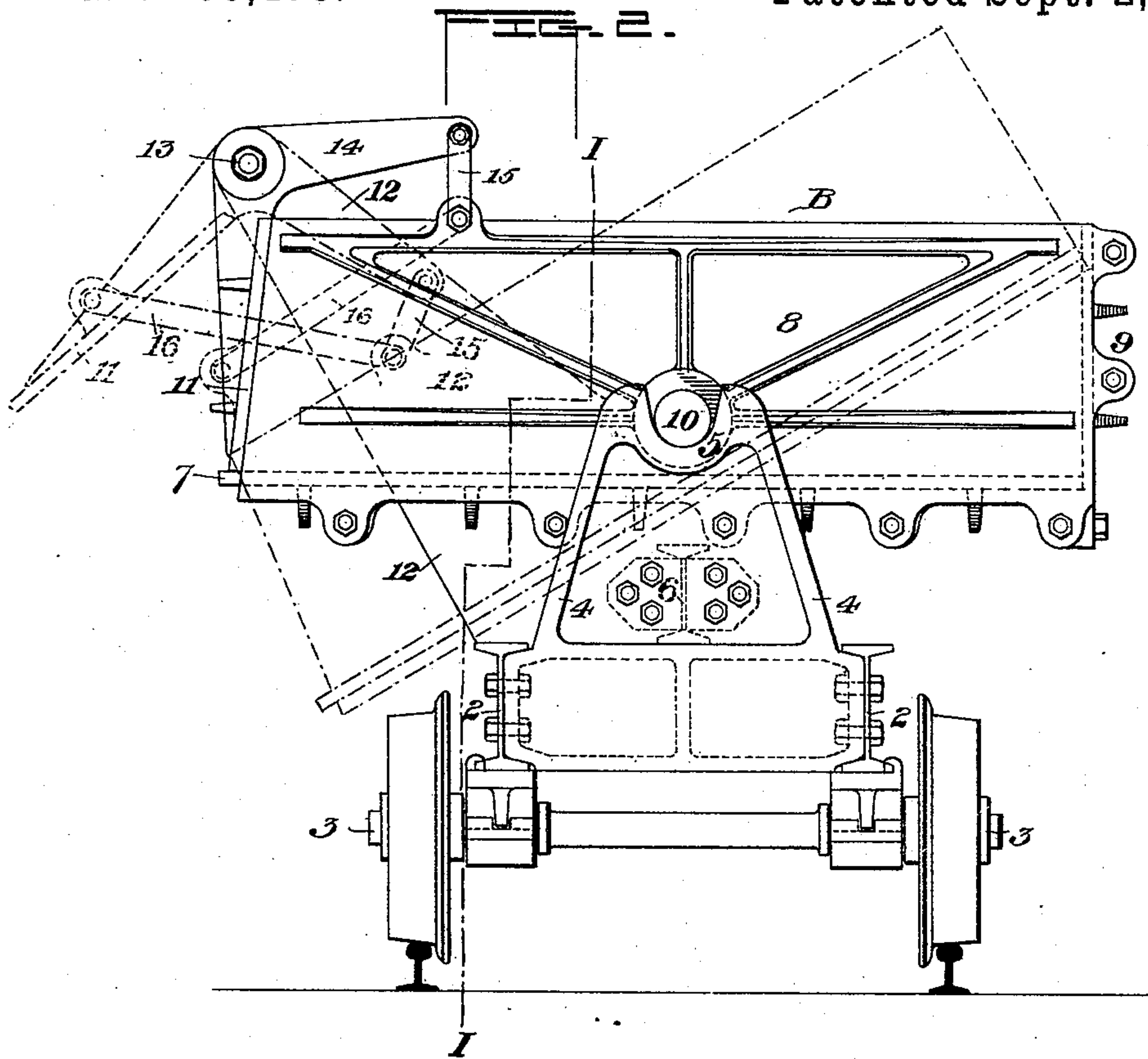
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A. L. Gill
W. B. Corwin

INVENTOR

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his Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM H. BRADLEY, OF MINGO JUNCTION, OHIO.

CINDER-CAR.

SPECIFICATION forming part of Letters Patent No. 435,478, dated September 2, 1890.

Application filed June 9, 1890. Serial No. 354,755. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BRADLEY, of Mingo Junction, in the county of Jefferson and State of Ohio, have invented a new and useful Improvement in Cinder-Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a partial vertical sectional view of my improved cinder-car, showing the body in an upright position, the section being on the line I I of Fig. 2. Fig. 2 is an end elevation thereof, showing by dotted lines the positions of the parts when the car-body is dumped. Fig. 3 is a partial plan view of the car-body.

Like symbols of reference indicate like parts in each.

My invention has been designed primarily to improve the construction of cars used for carrying cinder from blast-furnaces, &c., and I shall so describe it, premising that my claims are general and are not limited strictly to the application of the invention to such use.

The car-frame is a strong structure, which may be composed of longitudinal beams 2, carrying the axles 3, and having at the ends upright standards or frames 4, secured to the beams and provided with forked portions or sockets 5 for the trunnions of the tipping car-body. The frames 4 are preferably connected and braced by an intermediate beam 6. The car-body or box B comprises a bottom plate 7, end plates 8, and a fixed side plate 9, which are fitted and bolted together, as shown in the drawings. Trunnions 10 are cast integrally with and fixed to the ends of the car-body, and are adapted to rest in the forks or sockets 5 to support the body and to constitute journals, on which it may be tipped.

For purposes hereinafter explained the car-body is made with diverging ends, so that it shall increase in length from the side 9 toward the other side, which latter side is adapted to be closed by a door 11. Standards 12 extend upwardly from the frames 4 at the ends of the car, Fig. 2, and the door is pivotally supported on these standards by trunnions 13, which have their bearings at the upper ends of the standards. The door itself consists of a plate or casting suitably braced and of proper shape to close the side of the

car, and is preferably provided at its upper end with a projecting arm 14, which by means of a link 15 may be connected with the car-body. The lower part of the door may also be connected with the car-body by a link 16. Either one of these links will answer the purpose hereinafter described; but both may be used, if desired.

The operation is as follows: Owing to the fact that the side of the car next the swinging door is wider than the other side, the center of gravity will be on the side next the door when the car is loaded with cinder or other material. When loaded, the car is held from tipping by suitable restraining devices. When it is desired to tip the car, these restraining devices are loosened, and thereupon the car-body will tip automatically on the trunnions 10 into the inclined position shown by dotted lines in Fig. 2. When the body tips in this manner, the door, being upheld by the standards 12, does not move downwardly with the car-body; but by the action of the link 15 or 16 the door will be thrown open to permit the discharge of the load, as shown by dotted lines. As soon as the load is discharged, the car-body will automatically right itself and the door will resume its former vertical position at the side of the car, as shown in Fig. 2. This is due to the fact that, because the door is supported by the car-frame and not by the car-body, the center of gravity of the car when empty is on the side of the trunnions next to the side 9 of the car-body, and the door, tending by gravity to resume a vertical position, will, through the link 15 or 16, exert on the car-body an upward force, which tends to right it. It will be seen, therefore, that the car is automatic in its action, and is very advantageous in respect of its ease of operation, strength, and durability.

The advantage of making the car-body longer at the side next to the door 11 and tapering in length toward the other side is not only that it causes the center of gravity to be shifted when the car is loaded, but also that by affording a flaring discharge for the cinder the latter will free itself quickly and will not stick or adhere to the sides of the car. I intend to claim this feature of my improvement specifically; but it should be un-

derstood that the other claims, which do not refer to such feature of construction, are not limited thereby.

In respect of the door 11, one of the distinguishing features of my invention is that the door is not supported pivotally by the tipping car-body, but by standards which project from the car frame or truck. The door, being thus in a manner independent of the car-body, opens easily and without friction, affords a free outlet to the load, and resumes its position at the side of the car with rapidity and certainty.

The advantages of my invention will be appreciated by those skilled in the art, and need not be further enumerated herein.

I claim—

1. The combination of the car frame or truck, a tipping body mounted thereon, and a swinging door or side for the car-body pivotally supported by the car frame or truck, and connected also to the car-body at the side of the axis of the latter next to the door, substantially as and for the purposes described.

2. The combination of the car frame or truck, a tipping body mounted thereon, a

swinging door or side for the car-body pivotally supported by the car frame or truck, and a link connecting the door with the car-body, substantially as and for the purposes described.

3. The combination, with the car frame or truck and standards 12, projecting therefrom, of a tipping car-body mounted on the truck, and a swinging door journaled in the standards 12 and adapted to close the side of the car, substantially as and for the purposes described.

4. The combination of the car frame or truck, a tipping body mounted thereon, and a swinging door or side for the car-body pivotally supported by the car frame or truck, said car-body decreasing in length from the side next the swinging door toward the opposite side, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 26th day of May, A. D. 1890.

WILLIAM H. BRADLEY.

Witnesses:

JAMES G. SMITH,

DAVID N. LONG.