

(No Model.)

E. R. STEINHILBER.  
COAL CAR.

No. 428,235.

Patented May 20, 1890.

Fig. 1.

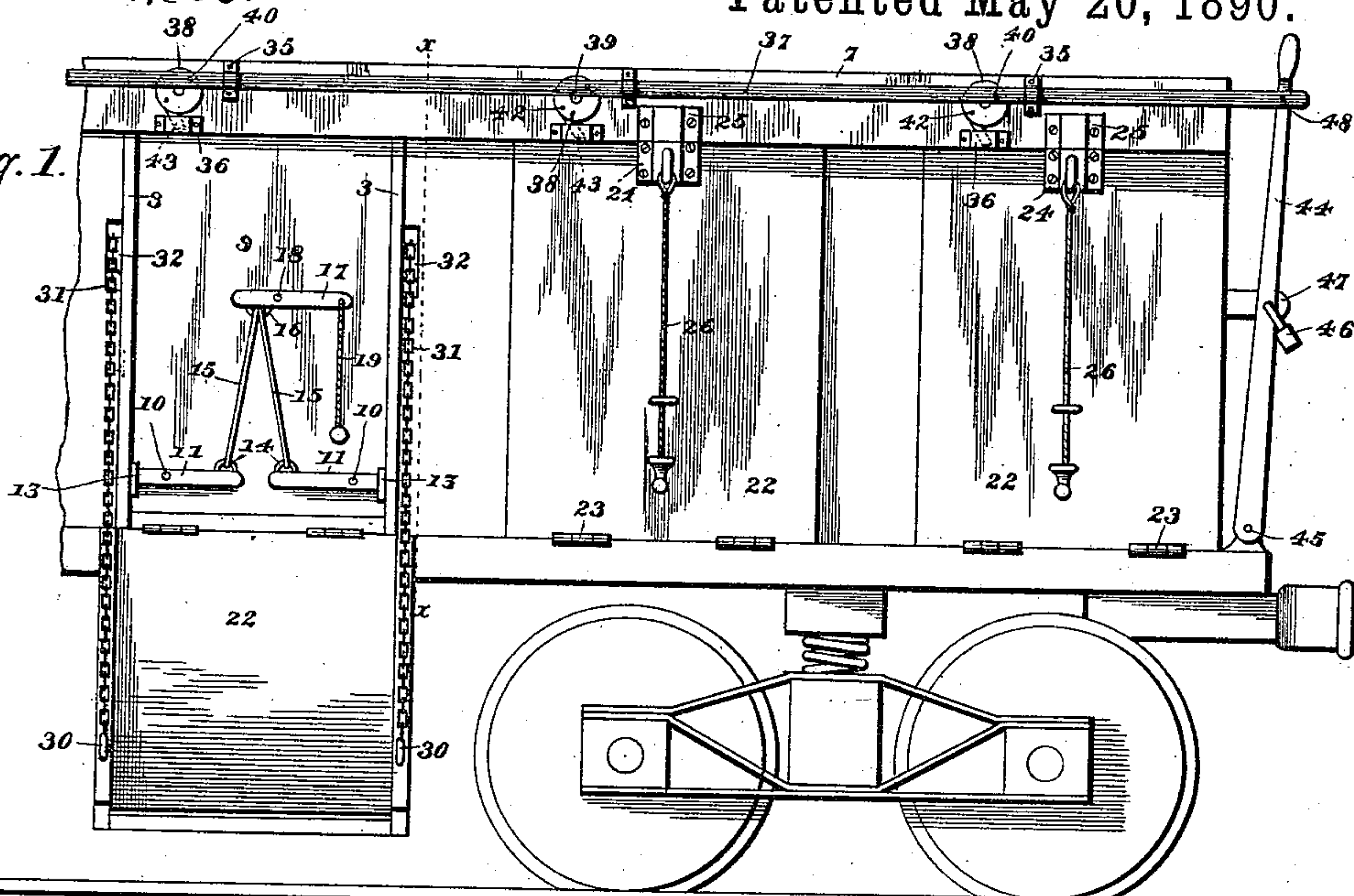


Fig. 3.

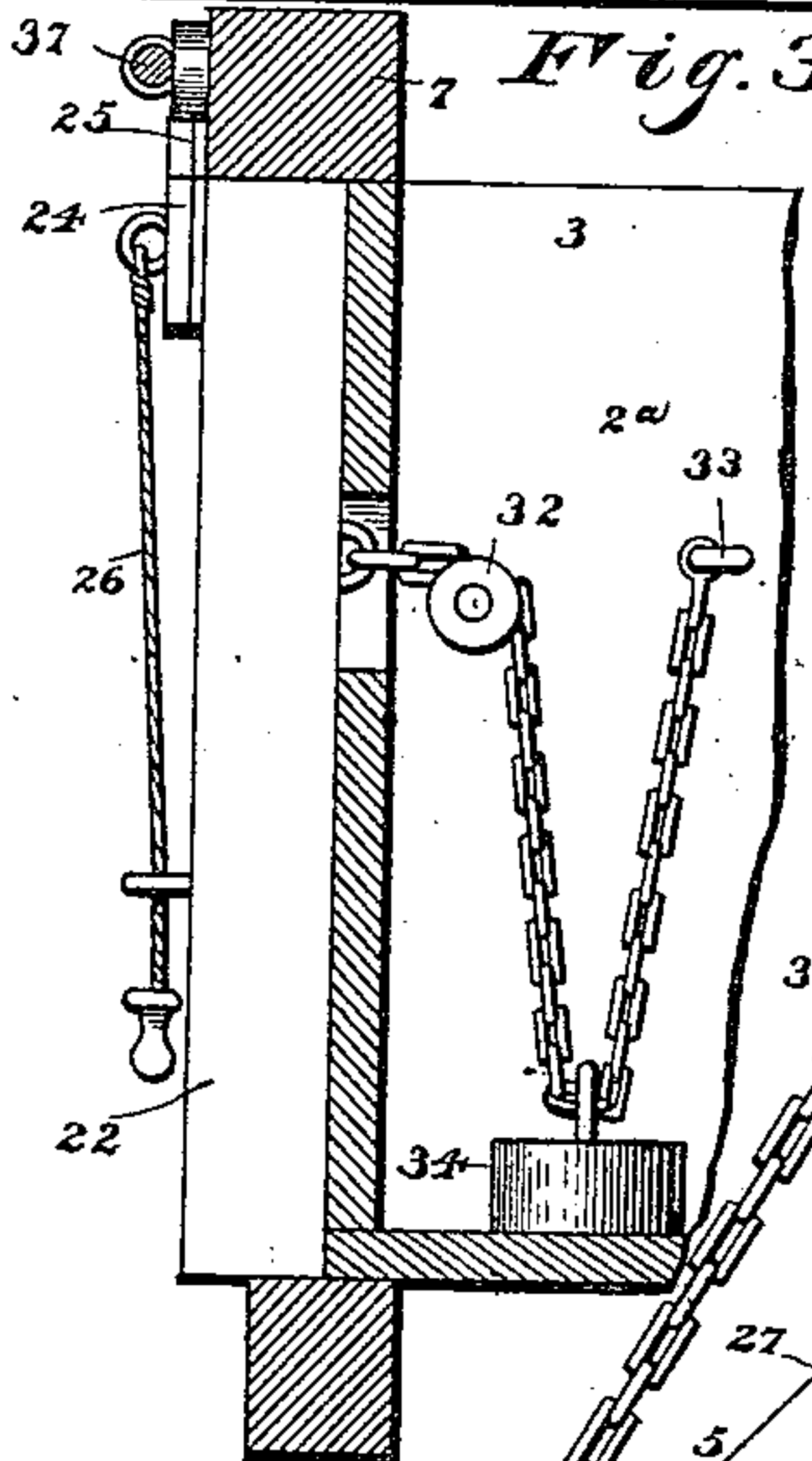


Fig. 2.

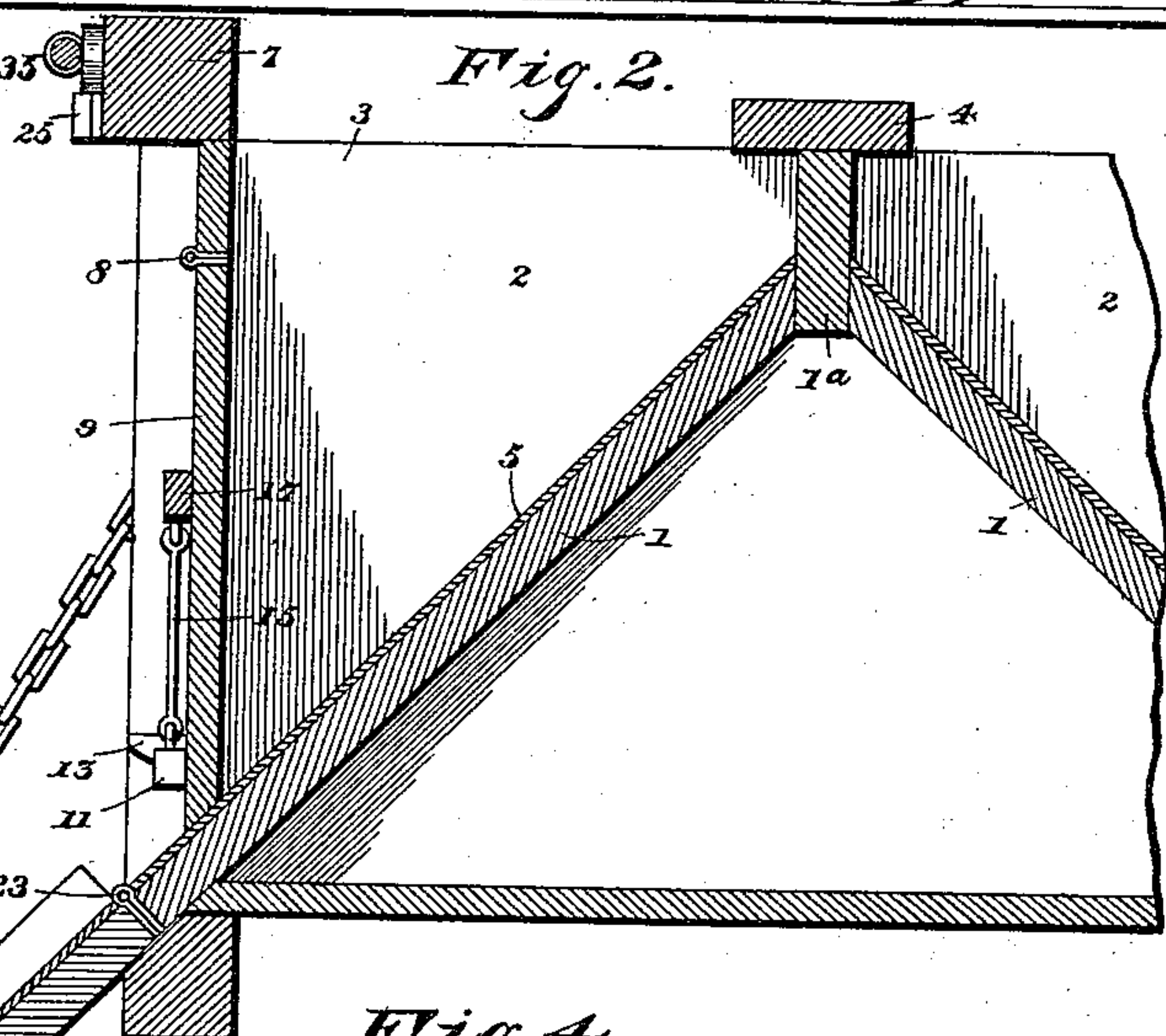
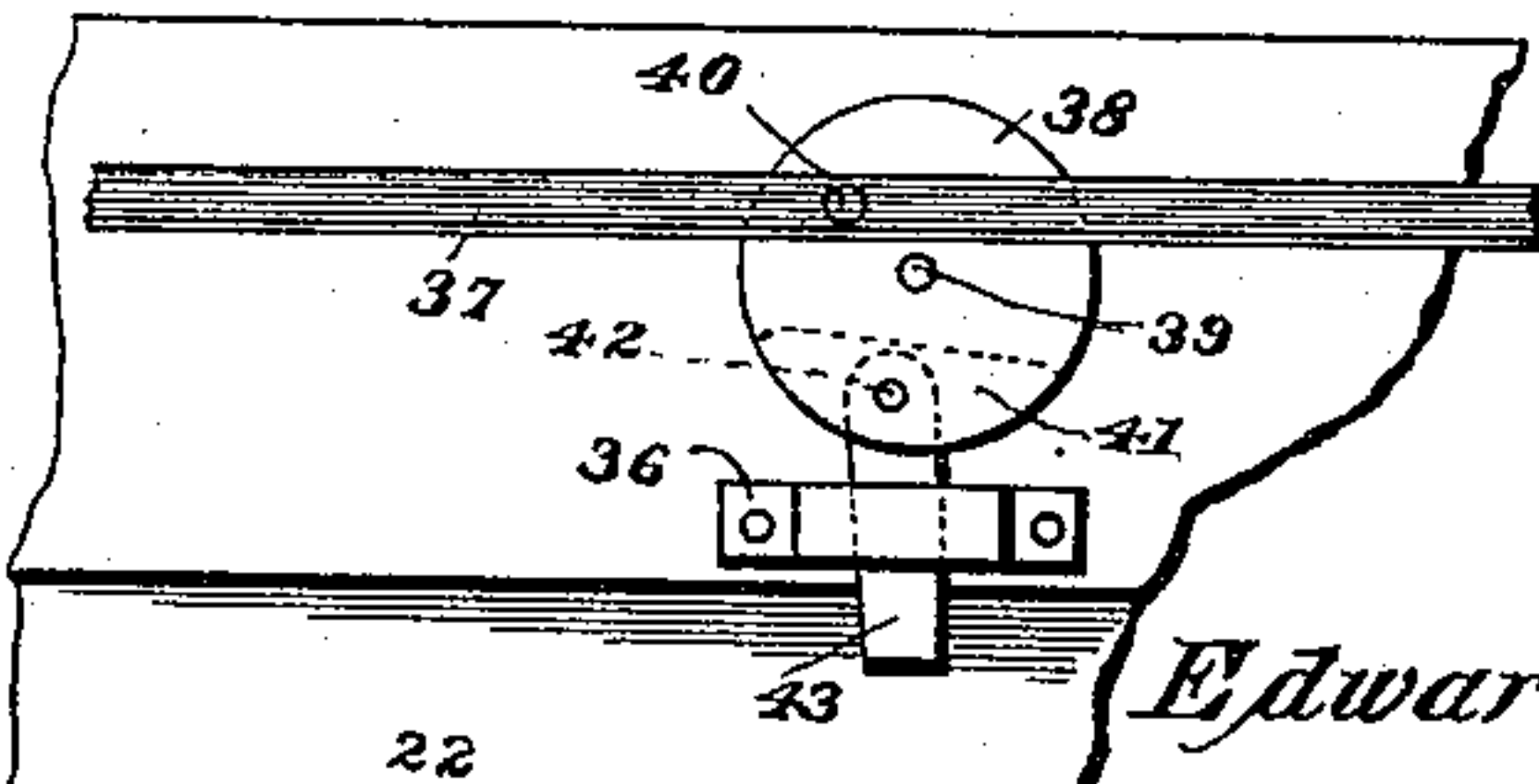


Fig. 4.



Witnesses:

*M. Withers*  
*W. L. L. Wall*

By *J. W. L. L. Wall* Attorneys,

Inventor,

*Edward R. Steinhilber*

*C. A. Snow & Co.*



# UNITED STATES PATENT OFFICE.

EDWARD R. STEINHILBER, OF GALESBURG, ILLINOIS.

## COAL-CAR.

SPECIFICATION forming part of Letters Patent No. 428,235, dated May 20, 1890.

Application filed February 25, 1890. Serial No. 341,701. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD R. STEINHILBER, a citizen of the United States, residing at Galesburg, in the county of Knox and State of Illinois, have invented a new and useful Coal-Car, of which the following is a specification.

This invention has relation to coal-cars, and among the objects in view are to provide a car having a series of independent compartments, each adapted to carry a predetermined quantity of coal, so constructed as to facilitate discharging the same and to insure a safe transmission of the coal.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of a portion of a coal-car constructed in accordance with my invention, one of the compartments being shown in position adapted for delivery or discharge. Fig. 2 is a transverse vertical section through one of the compartments. Fig. 3 is a similar section taken between two compartments on the line *x x* of Fig. 1. Fig. 4 is a detail in elevation of the apron-locking mechanism.

Like numerals of reference indicate like parts in all the figures of the drawings.

The car-body and its supporting-frame may be of any ordinary construction, and such forms no part of my invention. The car box or body is divided longitudinally by two converging inclined walls or bottoms 1, at the apex of which there is located a longitudinal dividing-partition 1<sup>a</sup>, and along the upper edge of the partition there is located the foot-way 4. In order to prevent wear of the wood-work of the car and to facilitate the movement of the coal when being discharged, the bottom walls 1 are covered with a lining 5 of sheet-iron. The car is divided at each side of the inclined bottom into several compartments 2 by means of pairs of transverse partitions 3, and between the adjacent partitions of each compartment there is left remaining an intervening space or pocket 2<sup>a</sup>.

The divisional walls 3 are connected at their upper ends by a crown-strip 7 at each side of the car and hinged to the inner end of the

same, as at 8, and adapted to be swung outward from between each of the walls 3 are doors 9, said doors also being adapted to be swung inward and form a front wall for the compartment. Near the bottom of each door and at each side of the same there is pivoted, as at 10, a pair of gravity-latches 11, the major portions of which are upon the inner side of their pivots, said latches having the inner edges of their outer ends slightly chamfered, so as to ride under and behind opposite shoulders 13, secured to the side walls 3. The inner ends of the latches are each provided with a staple 14, and to the same are loosely connected the lower ends of a pair of links 15, the upper ends of the links being loosely connected by a staple 16 to the inner end of a latch-operating lever 17, which latter is pivoted, as at 18, to the door 9 and provided at its opposite end with a rope 19, terminating in a hand-pull.

The door falling by gravity, it will be apparent, will automatically latch, the gravity-latches taking behind the shoulders, and thus the coal will be retained within the compartments, and may readily be discharged by simply operating the latch-lever through the medium of the hand-pull, which operation tends to tilt the inner ends of the gravity-latches, disengaging their outer ends from the shoulders.

22 represents an apron or shovel-board, there being one provided for each of the compartments 2. These aprons are hinged at their lower edges to the front edges of the compartments, or rather the bottoms 1, as shown at 23, and are adapted to fold upwardly against the front edges of the divisional partitions 3. The free ends of the aprons are each provided with an ordinary spring-bolt 24, each of which is adapted to be automatically projected under a keeper 25, located upon the crown-piece, when the aprons are thrown into a vertical position. Each bolt is provided with a depending pull-cord 26, whereby the same may be withdrawn from its keeper, thus releasing the apron. The sides of the aprons are each provided with inwardly-disposed cleats or wings 27, which take at the outside of the divisional walls 3, serving to embrace the same. The apron, like



the bottom of the compartment, is provided with a suitable lining 28 of sheet-iron, so that when the said apron is lowered a long inclined way is furnished for the coal to pass over, it being intended that the apron shall, when so lowered, form a continuation of the inclined bottom, and thus be adapted to deliver coal a considerable distance from the track and within any vessel or coal-conducting way.

The free ends of the wings are provided with staples 30, and to the same are connected the ends of pairs of chains 31, which chains have their opposite ends connected to staples 33, secured to the outside of its adjacent partition 3, and therefore within the pockets 2<sup>a</sup> and intermediate the staples is passed over a pulley 32 and between the pulley and rear staple provided with a counterbalancing-weight 34, so that the apron may be operated very easily in either direction. Bearing-brackets 35 are secured at intervals along the crown-piece 7, and below said brackets, opposite the upper edge of each of the aprons, are located keepers 36. Within the bearings 35 there are mounted at the sides of the car sliding operating-rods 37. Opposite each of the keepers 36 there is mounted a disk 38, pivoted to the crown-piece, as at 39, and to the sliding bar, as at 40. Each of the disks is recessed upon its under surface, as shown at 41, and pivotally connected to the disk, as at 42, and within the recess is a bolt 43. By reciprocating the bar 37 it will be apparent that the disks 38 will be partially rotated, and the bolts 43, having their lower ends passed through the keepers 36, will have said ends projected below the front face of its respective apron 22. To facilitate the reciprocation of this bar 37, a lever 44 is pivoted, as at 45, to the car, and at one end of the same and by a lock 46 is adapted to be connected with a staple 47, whereby said lever, which is pivoted, as at 48, to the end of the bar, may be locked against operation. By operating the bar 44 it is apparent that the entire series of aprons may be securely locked during transportation, so that the contents of the cars cannot be tampered with by unauthorized persons.

Having thus described my invention, what I claim is—

1. In a coal-car, the combination, with a series of compartments, of a series of aprons hinged at their lower edges to the front edges of the compartments and each adapted to fold upward and cover the same, opposite chains connected to the aprons and at their opposite ends to the sides of the compartments, intermediate pulleys for the support of the chains, and counterbalancing-weights mounted on the chains in rear of the pulleys, substantially as specified.

2. The combination, with a coal-car having a series of compartments provided with inclined bottoms, of a series of aprons hinged at their lower ends to the front edges of the

bottoms and adapted to be lowered so as to form a continuation of the bottoms, opposite chains connected to the aprons, and at their opposite ends passing over pulleys and provided with sliding counterbalancing-weights, substantially as specified.

3. In a coal-car, the combination, with a series of compartments, of doors hinged at their upper ends and adapted to fold down within the compartments, gravity-latches pivoted to the doors, a lever for operating the latches and provided with a hand-pull, and opposite shoulders secured to the walls of the compartments for engaging the ends of the latches, substantially as specified.

4. In a coal-car, the combination, with opposite inclined bottoms, and a series of transverse partitions dividing the car into compartments, crown-strips connecting the partitions, and a series of doors, one for each compartment, hinged at their upper ends to the strips, automatic latches mounted upon the doors near their lower ends, and aprons pivoted to the front ends of each of the inclined bottoms and connected to the partitions of the compartments, and counterbalancing-weights for said aprons, substantially as specified.

5. In a coal-car, the combination, with a series of compartments, each provided with a door hinged at its upper end and adapted to fold over the compartments, and means for locking the door, of an apron pivoted below each of the compartments, adapted to fold down to form a continuation of the inclined bottoms with which the compartments are provided or up to close said compartments, substantially as specified.

6. In a coal-car, the combination, with the compartments, the series of doors, one for each compartment, hinged at their upper ends within the same, and the opposite gravity-latches pivoted in rear of their centers near the opposite edges of each of the doors, shoulders for engaging the same, mounted at each side of the compartment, a latch-operating lever pivoted between its ends above the latches and provided with a hand-hold at one end, and cords connecting the opposite end thereof with the rear ends of the latches, substantially as specified.

7. The combination, with a series of compartments and pivoted aprons for the same, of a reciprocating bar mounted in brackets above the aprons, disks centrally pivoted to the car above the aprons and eccentrically pivoted to the bar, and eccentrically-pivoted bolts secured to the disk and adapted to be projected in front of the aprons, and keepers secured to the car for guiding the bolts, substantially as specified.

8. The combination, with the compartments and the hinged aprons, of the keepers 36, the disks 38, pivoted, as at 39, above the same, recessed upon their under faces, as at 41, and having the bolt 43 pivoted, as at 42, within the recess and having its lower end



projected through the keeper, and reciprocating bar 37, mounted in bearings 35, the operating-lever 44, pivoted, as at 45 and as at 48, to the reciprocating bar, the staple 47, and the lock 46, substantially as specified.

9. The combination, with a series of compartments and pivoted aprons for the same, of a reciprocating bar, disks centrally pivoted to the car above the aprons and eccentrically pivoted to the bar, and eccentrically-pivoted bolts secured to the disk, substantially as specified.

10. In a coal-car, the combination, with a series of compartments, each provided with a door hinged at its upper end and operating by gravity to swing outward, of an apron pivoted below each of the compartments, and adapted to fold down so as to form a continuation of the inclined bottoms, substantially as specified.

11. The combination, with the series of

pockets and aprons for the same pivoted to the pockets, of a reciprocating bar supported above the pockets and oscillating vertically, reciprocating bolts connected to the bar and to engage the aprons, substantially as specified.

12. In a coal-car having compartments, the gravity-door 9, hinged at the top of the compartments and swinging outward and upward and having a gravity-lock, combined with the apron hinged at the bottom of each compartment and swinging outward and downward, and the counter-balance for the apron when swung down, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

EDWARD R. STEINHILBER.

Witnesses:

W. H. CALLENDER,  
HATTIE P. MAIR.