M. VAN WORMER.

Dumping-Car.

No. 200,813. Patented Feb. 26, 1878.

Fig. 1.

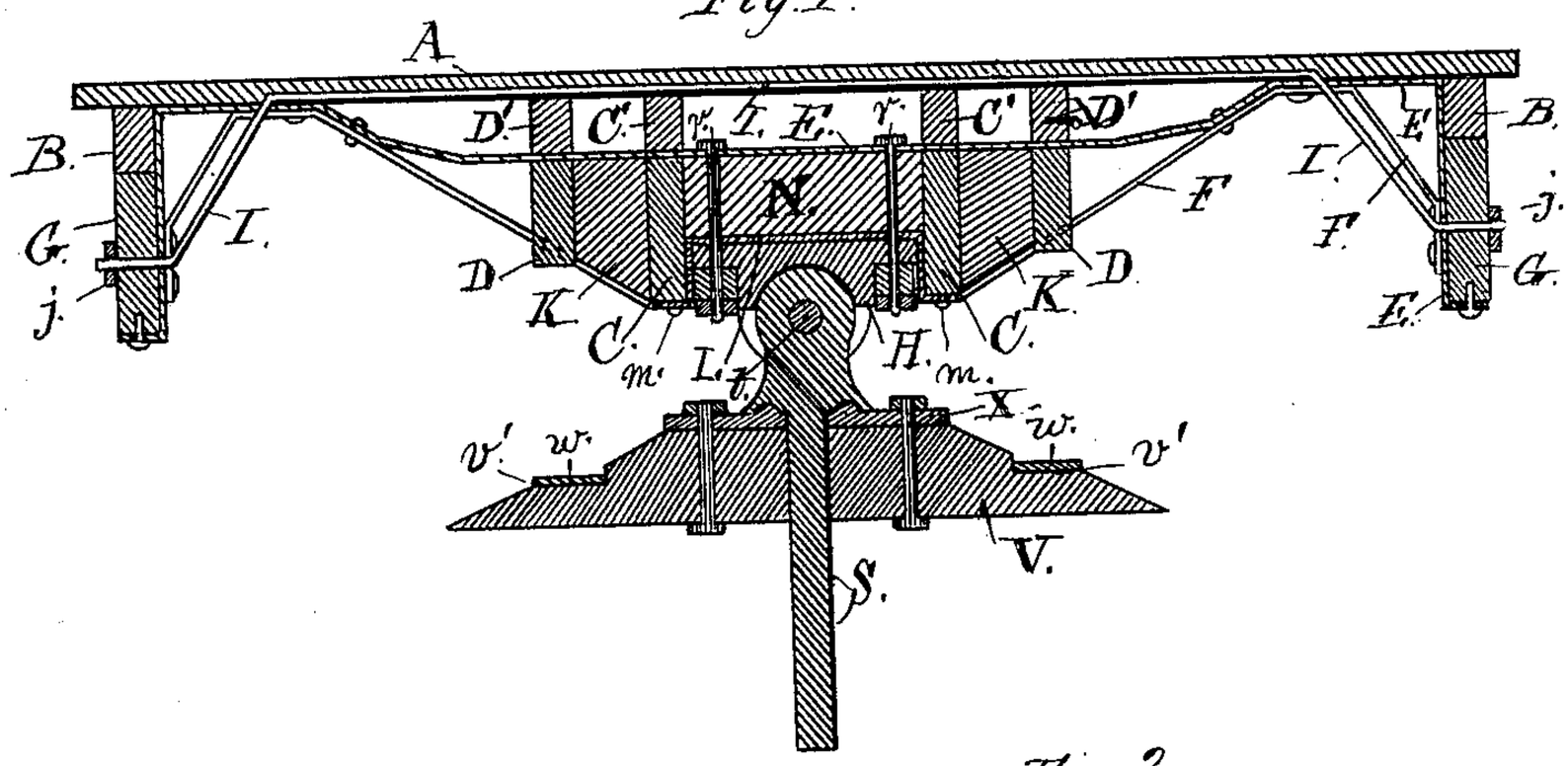


Fig. 2.

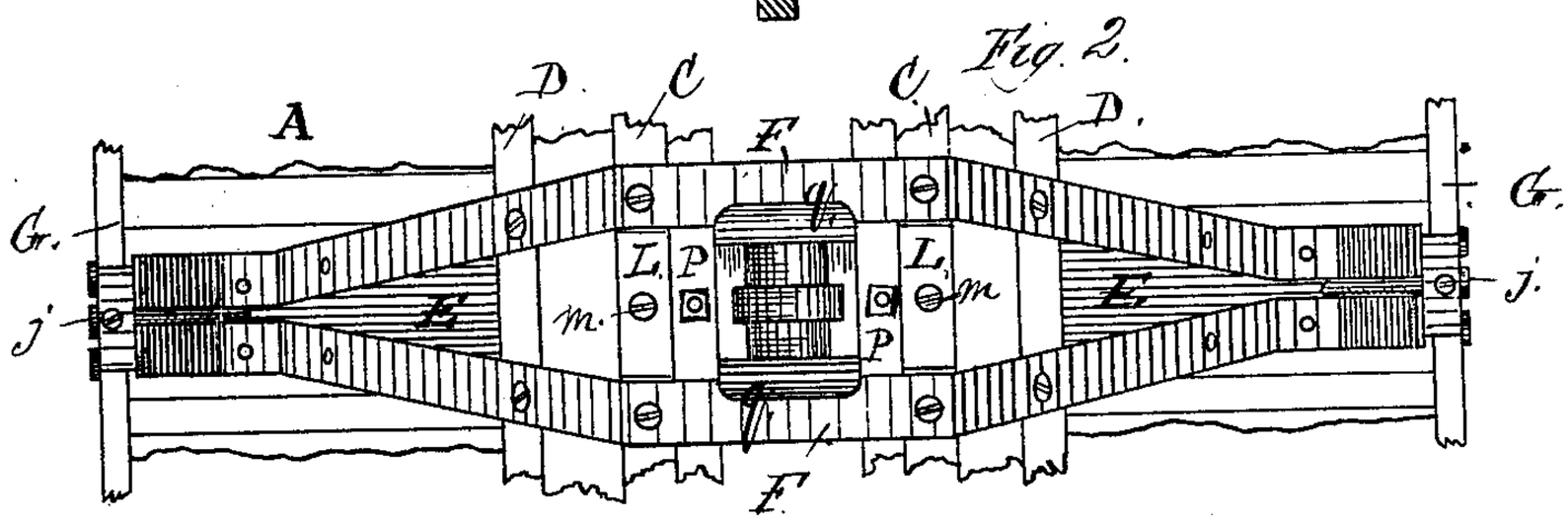
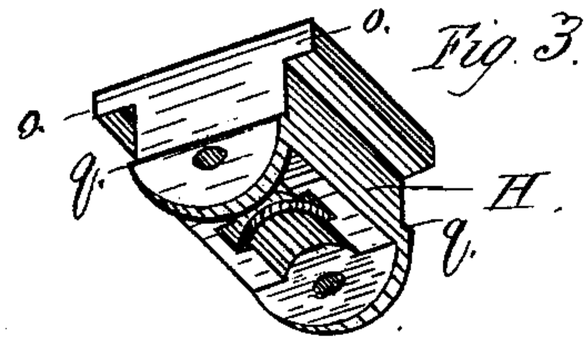


Fig. 3.



Attest

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UNITED STATES PATENT OFFICE.

MATTHEW VAN WORMER, OF DAYTON, OHIO.

IMPROVEMENT IN DUMPING-CARS.

Specification forming part of Letters Patent No. **200,813,** dated February 26, 1878; application filed February 9, 1878.

To all whom it may concern:

Be it known that I, MATTHEW VAN WORMER, of the city of Dayton, county of Montgomery, and State of Ohio, have invented certain new and useful Improvements in Dumping-Cars, the same being further improvements on the one patented to me July 17, 1877, No. 193,101, and also on the one patented to me January 29, 1878, No. 199,761; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My present improvements relate to an improved construction of the transom; to the means for more firmly holding the socket of the jointed rocker hinge-bolts, or other center bearings; to the construction of the jointed rocker hinge-bolt; to the means for providing more space between the floor of the car and the wheels, and at the same time having the bed-timbers of the car-frame built about on a level with that of ordinary freight and merchandise cars, so that it shall not override them in case of collisions and other accidents; in the means for permitting the placing of the jointed rocker hinge-bolt higher and more nearly at the center of gravity of the bed of the car, while at the same time having it equally strong and reliable as in other constructions; and in other details, hereinafter set forth.

Figure 1 is a central vertical longitudinal section of a transom and king-bolt illustrating my improvements. Fig. 2 is a plan of the transom without the bolt, and Fig. 3 a perspective of the socket for the king-bolt.

A represents the floor of a dumping-car; and B G, the outermost sills or beams, and C C the innermost ones, D D being the remaining beams, and which are placed near the beams C C, both of which are removed far enough from the center of the car to allow the socket of the rocker king-bolt and its fastenings to be placed between them, in order to leave as much clear space as possible between the beams G, B, and D, to enable the car to be turned over or dumped sufficiently to discharge its load before coming in contact with the truck-timbers or truck-irons, it being understood that the transom represented in the drawings, and to which my improvements belong, is placed, as in my patents above named, directly over the car-trucks and truck-timbers. E is a strong flat bar of iron, and F F two narrower ones, extending across the car over the timbers, and formed and fastened as follows: The bar E passes on top of the four sills C C and D D, and is bolted to them, and passes also beneath the floor-sills C′ and D′, and then for a short distance on a level toward each side of the car, and then is bent upward till it meets the floor A at a point about or nearly midway between the sills B and D, and thence running along on the under side of the floor to the outside sills B, and there bent at right angles, and extending down on the inside of these floor-sills and of the large bed-sills G G of the car to their lower edge, at which point each end of this bar E is again bent at right angles underneath said bed-sills and bolted to them. The other bars, F F, are placed below the bar E, and run underneath the sills C C and D D, and at their central parts are spread apart from each other, as shown, sufficiently to admit between them and between the beams C C the jointed rocker-hinge bolt-socket H, or other center-bearing socket. These bars F F run on a level and parallel with each other until they pass over the outside edge of each of the sills C C, to which they are bolted, and from this point they approach each other and are bent obliquely upward, and fastened to the sills D D, if desired; and, continuing to approach each other and to pass obliquely upward, are bolted to and underneath and parallel with the bar E for a short space, and thence are bent downward and pass obliquely to the lower part of the sills G, and are there bolted by bolts passing through them and through the bar E and the sills G.

This mode of construction makes a very strong support and brace, due to the peculiar shape and points of connection of the wide bar E, and to the spreading of the narrower bars F F, and to the points of connection or bolting of the same, and at the same time this spreading apart allows room for, and affords a strong

and firm support for, the sides of the socket provided for the hinge king-bolt or other center bearing which may be used.

I is a long rod, applied as follows: It passes on top of all the bed-timbers, as shown, and immediately beneath the floor until it reaches a point near the inside of the outermost bed-sills G, respectively, and there each end of the rod is bent downward obliquely till it meets such sills, and there is passed through them, as also through the bar E, at a point between the bars F F. The ends of the rod are fastened by nuts *j j*, as shown. This serves to hold the car more firmly against spreading, and, in conjunction with the bars E and F F, all bolted together and to the sills, and, if desired, to the timbers K, placed between C and D, the whole constitutes an extremely strong, firm transom for a dumping-car, capable of carrying heavy freight of immense weight, and at the same time admitting of accomplishing the important purpose desired—namely, affording ample and increased space for tipping the car to the extremest degree needed for a full discharge of the car-load before coming in contact either with the truck-timbers, truck-irons, or the dumping machinery of the car.

The bolt-socket H is made and applied as follows: The sills C C are placed far enough apart to admit the body of this socket and its supports. L is a short bent iron bar, of sufficient width and thickness to answer for fastening the socket thereto, and it is somewhat of an inverted U shape, extending upward between the sills C C, as shown, and fastened by bolts *m m* to said sills. A short piece of timber, N, fills the space between the bar L and the flat bar E, and between the sills C C. The socket H is level at its top, where it comes in contact with the under face of the bent piece L, and is provided with flanges *o o*, between each of which and the bars F F is placed a draw-bar, P P, on which the flanges rest, and which fill up the space between the socket and the sills C. The head of the socket also has ears, lips, or flanges *q q*, which project over the inner edges of the bars F F on their under sides, and each thus tends to strengthen and support the other, and this also adds much to the strength of the socket. Bolts *r r* pass through the draw-bars, through the flanges *o o* of the socket, and through bar L, timber N, and flat bar E, and are secured by appropriate nuts or otherwise, and thus these parts make a very strong support and housing for the socket, and convert what has generally heretofore been the weakest part of a dumping-car into its strongest part, and which is not likely to break in case of accidents, while at the same time the placing of the socket up between the sills and nearer to the car-floor brings it nearer to the center of gravity of the car-bed, and also avoids the need of having such floor unduly elevated or higher than the floors of other cars not having my improvements.

My improvement also greatly reduces the power required to lift the car-bed back again to its horizontal position after it has been dumped.

The jointed rocker hinge-bolt S is made with a hole through the center of its head, (instead of the arched slot shown in my Patent No. 199,761,) thereby allowing a strong bolt, *t*, to pass through such head, and through the lips or overlapping ears *q q* of the socket, and nearer the center of said ears; and this, in connection with the greater thickness and strength of the ears due to their overlapping the bars F F, makes all this portion of the hinging mechanism, upon which so much strain and weight comes, very much stronger, avoiding liability to break while dumping, or in case of accidents to the cars.

The means for giving the increased space for dumping hereinbefore mentioned, and without raising the car-floor too high relatively to the bed-timbers of the car-frames of ordinary freight or merchandise cars of which a train may be in part made up, so that my improved cars may be used on the same train with safety and without risk of overriding, are as follows: On top of the main sills of the car-bed, and parallel with and resting upon them, I place false sills B B, D′ D′, and C′ C′, of shallow depth or height, but yet sufficient to raise the floor of the car high enough above the main sills G D C to allow the car to tilt and dump its load without having the floor or transom come in contact with the wheels or truck timbers or irons, and yet preserving the whole upper surface of the car-floor level, to permit a free discharge of the load when dumping, as well as keeping it thereby adapted for any kind of freight, better than if the floor (as is often the case in dumping-cars) were made with elevations or openings at certain parts of the floor-surface to make room for the wheels and truck timbers and irons when dumping.

My invention permits the use of these false sills without raising the entire floor too high, and without the need of raising certain parts of the floor higher than the rest, which latter is a serious disadvantage both in loading and unloading.

The jointed rocker hinge-bolt is made and applied nearer the center of gravity of the car, as follows: It has, as above stated, a bolt, *t*, passing through its head, at the elevated position occupied by the socket H, through which such bolt or axis passes. The hinge-bolt itself passes through a hole in a piece of timber, V, of sufficient width to be placed on top of the truck-timber, and of sufficient height to raise the rocker and the car-bed enough for free and satisfactory dumping. Each end of this timber or bolster V is beveled or chamfered off enough to prevent the car bed or transom from coming in contact with it when dumping; and it has also a level space, *v′*, cut out of each of these bevels, and upon these spaces are iron plates *w*, for the side bearings to bear and rest and roll upon, such side bearings not needing to

be here described, as they form no part of my present invention, and are described in my former patents.

The bolster-piece V is furnished with a metallic top plate, X, adapted at its central part to the concaved under face of the head of the king-bolt, and having a central hole to admit such bolt through it and through the piece V.

The general construction of this plate is similar to that shown and described in my Patent No. 193,101.

I claim—

1. The combination of the iron bars E and F F and rod I, disposed relatively to each other, and to the car-bed and sills, substantially as shown and described, and for the purposes set forth.

2. The bent iron bar L, placed between the inner sills C C, in combination with the short timber N, draw-bars P P, bolts *r r*, and flanges *o o* of the king-bolt socket.

3. The socket H, having thick overlapping flanges or lips *q q*, and bolt-holes through them at the elevated points described, in combination with the jointed rocker king-bolt, and with the bolt *t*, passing through both flanges and through the head of the bolt, substantially as shown and described.

4. In combination with the iron transom, constructed as described, and with the sills C D, the extra floor-sills C′ D′, adapted for a level though raised car-floor, while permitting the bed-timbers to be practically on a level with ordinary merchandise-cars.

5. The bolster-piece V, having its top beveled off downward toward its ends, as set forth, and provided with the metal-faced spaces or recesses *v′*, adapted for the sustaining and shifting thereon of the side bearings, as and for the purposes set forth.

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Witnesses:

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