No. 765,085. PATENTED JULY 12, 1904.

C. W. LANPHER.

WAGON BOX.

APPLICATION FILED DEC. 26, 1902.

NO MODEL.

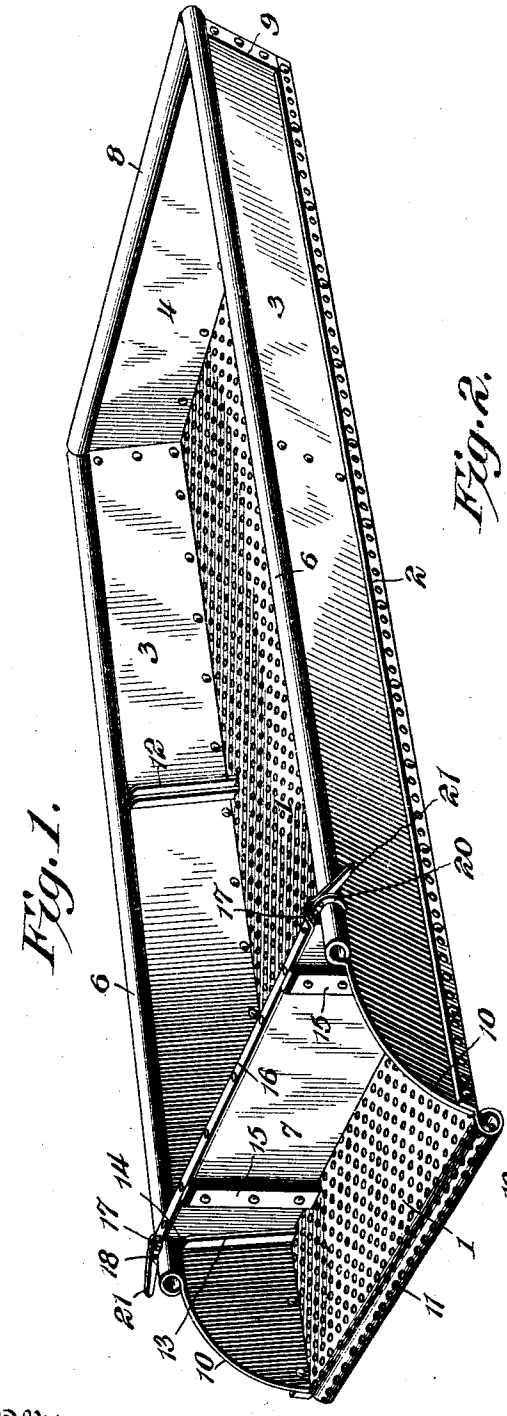


Fig. 1.

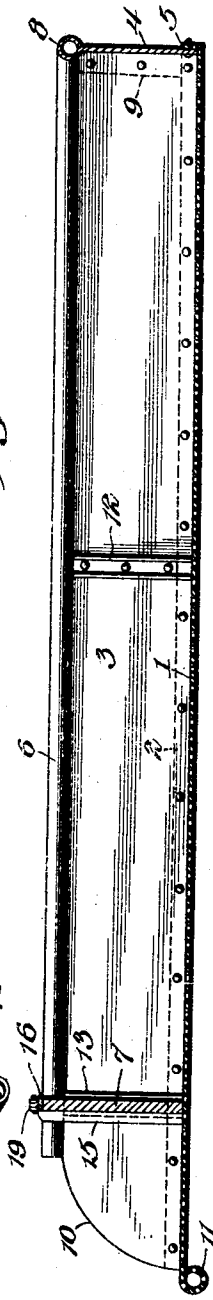


Fig. 2.

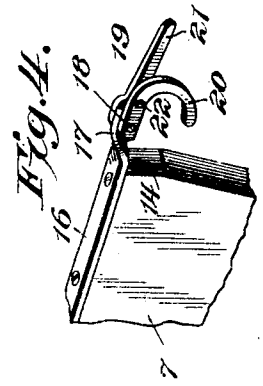


Fig. 4.

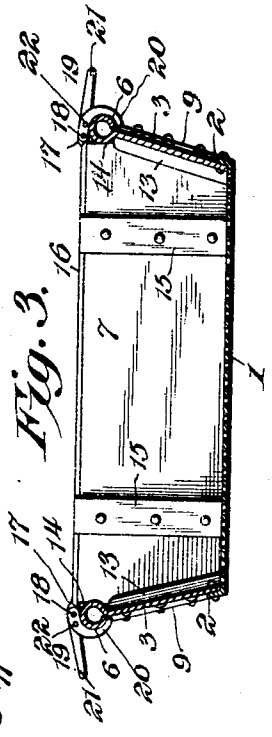


Fig. 3.

Witnesses
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No. 765,085. Patented July 12, 1904.

UNITED STATES PATENT OFFICE.

CHARLES W. LANPHER, OF NORWICH, NEW YORK, ASSIGNOR TO COAL DEALERS SUPPLY COMPANY, OF BINGHAMTON, NEW YORK.

WAGON-BOX.

SPECIFICATION forming part of Letters Patent No. 765,085, dated July 12, 1904.

Application filed December 26, 1902. Serial No. 136,701. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. LANPHER, a citizen of the United States, residing at Norwich, in the county of Chenango and State of New York, have invented a new and useful Wagon-Box, of which the following is a specification.

The invention relates to improvements in wagon-boxes.

The object of the present invention is to improve the present construction of metallic wagon-boxes and to provide an exceedingly simple and inexpensive one of great strength and durability designed more especially for hauling coal and adapted to relieve the rear end-gate and the central partition of strain and pressure and permit such parts to be readily removed from the wagon-box when desired.

A further object of the invention is to enable wagon-boxes of this character to be constructed of sheet-steel or similar material without reinforcing the same with angle-braces and to provide simple and effective means for locking the rear end-gate in position and for preventing the sides of the wagon body or box from spreading.

With these and other objects in view the present invention consists in the novel construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the claims hereto appended, it being understood that changes in the form, proportion, and minor details of construction within the scope of the claims may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a metal wagon-box constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a transverse sectional view, the rear end-gate being shown in elevation. Fig. 4 is a detail perspective view of a portion of the rear end-gate, illustrating the construction of one of the locking devices.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates the bottom of the wagon-box, constructed of sheet metal perforated as shown and having its side edges bent upward to form longitudinal side flanges 2, which are riveted or otherwise secured to sides 3 of the wagon-box. The side flanges 2, which extend the entire length of the sides of the wagon-box, are arranged at a slight inclination, being flared or bent outwardly, as clearly shown in Fig. 3 of the drawings, and the said sides 3, which are also outwardly and upwardly inclined, have their lower edges arranged at the inner faces of the longitudinal side flanges of the perforated bottom 1. The front ends of the sides of the wagon-body are connected by a front end wall or gate 4, which is fixed to the bottom and to the sides by means of rivets or other suitable fastening devices. The bottom is provided at its front end with an upwardly-extending vertically-disposed flange 5, formed by bending the front edge of the bottom upward and arranged at the outer face of the front end wall 4.

The sides and the front end wall or gate of the wagon-box are constructed of imperforate sheet-steel or other suitable material, and in order to stiffen and strengthen the sides and the front end wall or gate and render them sufficiently rigid without reinforcing them by angle braces or cleats the upper edges of the sheet metal are rolled, as hereinafter explained. The sides are provided at their upper edges with approximately circular or cylindrical rolls 6, which are centered, or substantially centered, over the sides to project inward and outward therefrom, whereby the sides are stiffened and strengthened and rendered more rigid than they would be were the roll or bead arranged wholly at the inner or outer face of the side. Furthermore, by arranging the roll or bead centrally of the inclined side in the manner shown in Fig. 3 of the drawings the edge of the roll or bead abuts against the body portion of the sheet metal, and the outer portion of the roll or bead is also permitted to spring laterally to

coöperate with the locking devices of the rear end-gate 7 of the wagon-box, whereby the resiliency of the beads or rolls is utilized for holding the locking devices in their engaging position. The roll or bead 8 of the front end wall or gate 4 is arranged centrally over the body portion of the sheet metal, and the terminals of the end wall or gate 4 are provided with inwardly or rearwardly extending flanges 9, which are riveted or otherwise secured to the outer faces of the sides 3.

The rear end portions 10 of the sides 3 are tapered and cut away at the top to provide curved upper edges and to expose the rear portion of the bottom, which extends beyond the rear end-gate, to form a shoveling board or portion. The rear edge of the bottom is rolled to form a cylindrical bead 11, which lies below the plane of the bottom and which stiffens the rear portion of the same to prevent the bottom from sagging at the center of the rear end when subjected to the weight of a person.

The sides 3 are provided with intermediate and end guides or ways 12 and 13, arranged at their inner faces and preferably constructed of sheet metal. Each guide or way consists of a single piece of sheet-steel, bent longitudinally at opposite sides of the center to form projecting longitudinal flanges and riveted or otherwise secured to the side at points between the projecting flanges. The intermediate guides or ways 12 are designed to receive an intermediate approximately centrally-arranged division-board or partition, (not shown,) and the rear guides or ways receive the rear end-gate 7, which may be constructed of any desired material and which tapers downwardly to fit the space between the inclined or flaring sides 3 of the wagon-box. The rear end-gate is provided at its ends adjacent to its upper edge with short vertical edges 14, formed by reducing or cutting away the end-gate at those points to enable it to clear the centrally-disposed longitudinal beads or rolls of the sides 3. The inclined sides snugly receive the end-gate and the intermediate partition when the same are in position, and when the locking devices, hereinafter described, are disengaged from the beads or rolls of the sides of the wagon-box the end-gate is relieved of pressure incident to a load of coal or other material and may be readily withdrawn or lifted out of the guides or ways. The intermediate partition may also be readily lifted out of the guides or ways of the wagon body or box, as the slightest upward movement frees it from the sides, and the outward pressure of the material with which the wagon-box is loaded operates to press the sides away from the edges of the partition.

In the accompanying drawings the rear end-gate is shown constructed of wood and reinforced by vertical cleats 15 and a horizontal top bar 16. The bar 16, which is constructed of metal, has its terminal extended beyond the end edges of the end-gate and given a quarter-bend and perforated to form ears 17. The ears 17, which are arranged in vertical planes, receive pivots 18 of locking devices 19, which are provided with depending curved engaging portions or jaws 20 for interlocking with the resilient beads or rolls of the sides of the wagon-box. Each locking device 19, which is provided with an outwardly-extending handle or arm 21, is constructed of two pieces of metal, as illustrated in Fig. 4 of the accompanying drawings; but any other desired construction may be provided. The arm or handle is secured near its inner end by a rivet 22 or other suitable fastening device to the other piece at the top of the engaging portion, which is approximately semicircular. The engaging portion or jaw is provided with an extension or shank which is perforated to receive the pivot 18, and the inner portion or shank of the arm or handle is deflected laterally to offset the inner end from the shank of the engaging portion or jaw to provide an intervening space for the perforated ear. When the engaging portions or jaws of the locking devices are interlocked with the resilient beads or rolls of the sides 3, the latter are prevented from spreading and the end-gate is securely held against upward movement. The beads or rolls are adapted to be compressed sufficiently to permit the locking devices to be engaged with and disengaged from them.

The metal wagon-box, which is adapted for all the purposes for which an ordinary wooden wagon body or box can be used, is particularly designed for handling coal and possesses decided advantages therefor. The perforations of the bottom of the body lessen the weight of a heavy steel bottom without perceptibly decreasing the strength or wearing qualities of the same, and they permit water thrown upon coal for laying the dust to drain readily from the wagon-box, thereby greatly reducing the load and enabling the coal to be ultimately delivered to the purchaser in a clean and approximately dry condition to avoid smearing or soiling pavements, woodwork, and the like in delivering coal. The coal is also prevented from being delivered in a condition that will render a bin or receptacle too damp. The locking devices for securing the end-gate to the sides of the wagon-body are readily disengaged by a single stroke of the hand, and they are practically self-tightening, as the internal pressure against the sides of the wagon-box forces the engaging portions of the locking devices tightly and firmly in engagement with the top beads or rolls.

What I claim is—

1. A wagon-box provided with outwardly-inclined sheet-metal sides having rolls or beads at their upper edges, said resilient rolls or

beads being approximately centered over the sides and projecting from the inner and outer faces thereof, and an end-gate fitted between the sides and provided with locking devices engaging the rolls or beads and held in engagement with the same by the resiliency thereof, substantially as described.

2. A wagon-box provided with outwardly-inclined sides constructed of sheet metal, and provided at their upper edges with rolls or beads approximately centered over the sides and projecting from the inner and outer faces thereof, and having free outer edges abutting against the body portions of the sides and arranged to spring laterally, and a tapering end-gate fitted between the sides and provided with locking devices engaging the rolls or beads substantially as described.

3. A wagon-box provided with outwardly-inclined sheet-metal sides provided at their upper edges with resilient rolls or beads centered over the sides and projecting from the inner and outer faces thereof, and a tapering end-gate fitted between the sides and provided with locking devices having curved engaging portions conforming to the configuration of and interlocked with the rolls or beads and held in engagement with the latter by the resiliency thereof, substantially as described.

4. A wagon-box provided with sides constructed of sheet metal and having resilient rolls or beads at their upper edges, and an end-gate fitted between the sides and provided with locking devices having engaging portions or jaws interlocked with the beads or rolls and retained in engagement with the same by the resiliency thereof, substantially as described.

5. A wagon-box provided with sheet-metal sides having approximately cylindrical rolls or beads at their upper edges, and an end-gate fitted between the sides and provided with pivoted locking devices having outwardly-extending arms or handles, and provided with depending engaging portions or jaws curved to conform to the configuration of the cylindrical rolls or beads and interlocked with the same, substantially as described.

6. The combination with the sides of a wagon body or box, of an end-gate provided with ears, and locking devices pivoted to the ears and having outwardly-extending arms or handles, and provided with depending engaging portions or jaws interlocked with the sides, substantially as described.

7. The combination with the sides of a wagon body or box, of an end-gate provided with projecting ears and locking devices pivoted to the projecting ears and having openings receiving the same, and provided with outwardly-extending arms or handles and having depending engaging portions or jaws, substantially as described.

8. The combination with the side of a wagon body or box, and an end-gate, of a locking device comprising a curved engaging portion or jaw having an inwardly-extended portion or shank at the top, and an arm or handle secured to the engaging portion or jaw at the top and provided with a shank or extension spaced from the extension of the jaw, substantially as described.

9. The combination with an end-gate having a projecting ear, and a locking device comprising a hooked shaped engaging portion or jaw provided at the top with an extension, an arm or handle secured to the engaging portion or jaw at the top thereof, and provided with an extension spaced from the extension of the engaging portion or jaw to receive the ear, and a pivot passing through the ear and through the said extensions, substantially as described.

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

CHARLES W. LANPHER.

Witnesses:

J. E. NICKERSON,

ELEANOR MARSH.