(No Model.)

D. S. MORROW.

END GATE.

No. 343,384. Patented June 8, 1886.

Fig. 1:

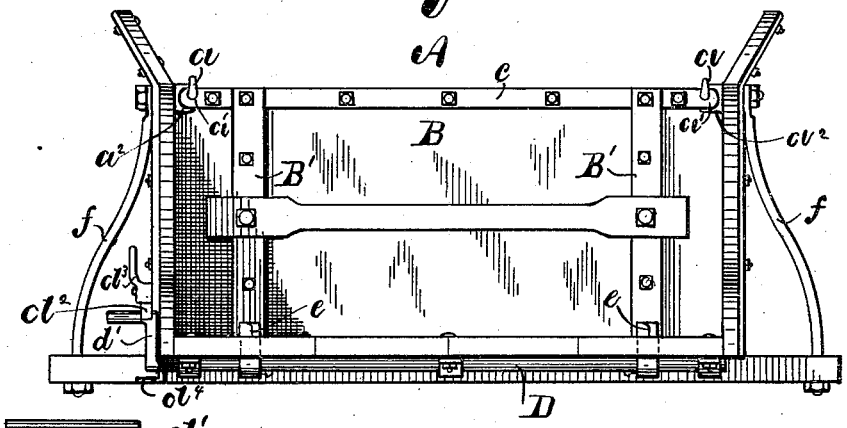


Fig. 2:

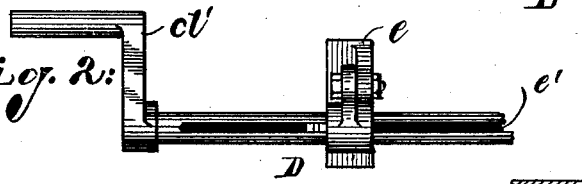


Fig. 3:

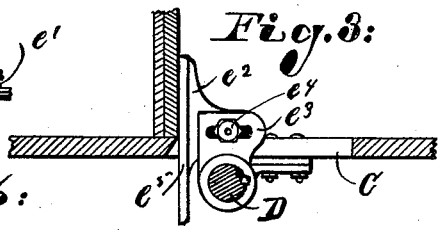


Fig. 7:

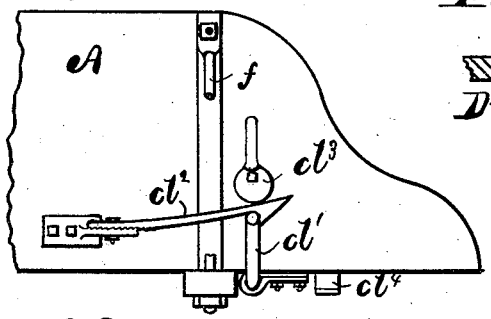


Fig. 6:

Fig. 4:

Fig. 8:

Fig. 9:

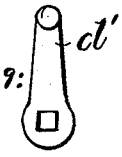


Fig. 5:

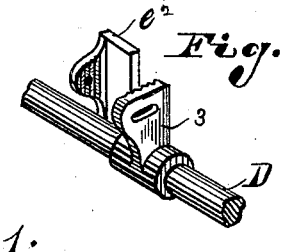


Fig. 10:

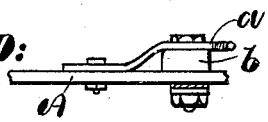
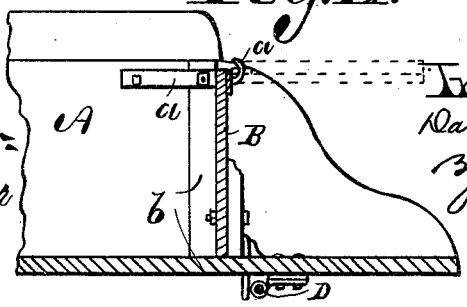


Fig. 11:



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UNITED STATES PATENT OFFICE.

DANIEL S. MORROW, OF SPRINGFIELD, OHIO.

END-GATE.

SPECIFICATION forming part of Letters Patent No. 343,384, dated June 8, 1886.

Application filed March 10, 1886. Serial No. 194,700. (No model.)

To all whom it may concern:

Be it known that I, DANIEL S. MORROW, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in End-Gates, of which the following is a specification.

My invention relates to improvements in end-gates for wagons, and is especially adapted for carts or dumping-wagons used for hauling coal and similar material, though it may be used on any wagon with good results.

By the use of the sliding end-gate commonly employed, when hauling coal, corn, or similar material, considerable trouble is experienced in removing the end-gate, so that the material may be removed from the end of the wagon by the ordinary process of shoveling.

The object of my invention, hereinafter described, is to overcome this difficulty by providing a swinging end-gate of novel construction adapted to be held at the bottom by projecting lugs on the transverse shaft, which passes across the wagon under said end-gate, suitable means being supplied for holding said lugs in position against the end-gate, and releasing said end-gate when desired.

My invention consists in the constructions and combinations of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is an end elevation view of a wagon provided with an end-gate embodying my invention. Figs. 2 to 6, inclusive, are detailed views showing the construction of the shaft and lugs for holding the gate in position. Fig. 7 is a side elevation view of the rear end of the wagon, showing the means for holding the shaft with the lugs in the proper position. Figs. 8 to 11 are detailed views of some of the parts hereinafter referred to.

In the said drawings, A represents a wagon-bed of the ordinary construction. B is an end-gate adapted to close the rear end of same.

At either side of the wagon-bed A, near the top, is provided a hook, *a*, which is bolted securely to the inner side of the wagon-bed, as shown in Figs. 10 and 11.

Extending vertically along the side of the wagon-bed, near the rear, are cleats or standards *b*, against which the end-gate B is adapted to close from the rear.

The end-gate B is provided at either side, at the upper corners, with eyes *a' a'*, adapted to pass over the hooks *a*, secured to the inside of the wagon-bed. The eyes *a'* are preferably formed in the ends of a metal strip, *c*, which is extended across the end-gate B at the upper end thereof, said strip being bolted or otherwise firmly secured to the end-gate proper.

The end-gate proper is preferably cut away immediately under the eyes *a'*, as shown at a^2, Fig. 1. The hooks *a a* and eyes *a' a'* are so shaped that the end-gate B is free to turn thereon, as indicated by dotted lines in Fig. 11. By turning the end-gate B up to or almost a vertical position the eyes may be readily withdrawn and the end-gate B may be removed. The end-gate is thus readily adapted to be removed or replaced, and is so hinged that it will swing upward when desired.

Immediately under the floor of the bed A, and just behind the end-gate B, is provided a shaft, D, which extends entirely across said bed, and is provided with lugs *e e*, secured thereon. The shaft D is provided at one end with a crank, *d'*, which is adapted to extend up along the side of the bed A, and be engaged by the spring-catch d^2, secured on the side of said bed.

Immediately over the spring-catch d^2 is a cam-latch, d^3, by which the spring-catch may be secured into engagement with the crank *d*, when desired. The lugs *e* are preferably secured to the shaft D by small keys, which fit into a keyway, *e'*, which extends almost or quite the full length of the shaft D.

The end-gate B is provided in the usual way with cleats B' B'. When the shaft D is turned until the crank *d'* occupies the position shown in Fig. 7, the lugs *e* are brought to bear against the cleats on the end-gate, and thus hold the end-gate in position. When in this position, the crank *d'* is engaged by the spring-catch d^2, and the end-gate is thus firmly held in position at the top by the hooks *a a*, and at the bottom by the lugs *e*.

In order that the lugs may be readily adjusted to compensate for wear or to suit cleats of different thicknesses on the end-gate, I pref-

erably make them in two parts, e^2 e^3, one of which is secured rigidly to the shaft D. These parts are secured together by the bolt e^4, which passes through a slotted opening in one of the parts, so that by loosening the bolt and sliding the same along in the slotted opening the lug may readily be adjusted to any desired point. The faces of the different parts of the lugs where they join together are serrated, so that when the bolt is tightened they will be held firmly in position. The shaft D being provided with the keyway e', extending throughout its length, the lugs may readily be adjusted to or from each other, so that they may be accommodated to the cleats B' B', no matter at what point on the end-gate they be applied. The spring-catch d^2, which engages with the crank d', is also preferably made of two parts connected together in such a manner that it may be adjusted back and forth, so that it may engage and hold the crank d' at the proper position. It will be seen now that when this end-gate is applied to a cart or dumping-wagon to dump the load it is only necessary to release the spring-catch d^2 by the cam-latch d^3, which withdraws the spring-catch from engagement with the crank d', the pressure of the load will force the end-gate outward at the bottom, pushing back the lugs and turning the crank d' until it rests against a stop, d^4, secured on the floor of the bed. As the load is dumped, the end-gate B will swing back, as indicated in dotted lines in Fig. 11, allowing the load to pass out at the rear of the wagon. When the bed is brought back to its normal position, it will fall back against the cleats, and may be again secured by turning shaft D until the crank d' is engaged with the spring-catch d^2. The shaft D being below the floor of the bed, it is necessary to provide openings C in the floor, through which the lugs project when engaged with the end-gate B. Now, in order that the coal or other material of which the load is composed may be prevented from passing through the opening C, when the load is dumped, I provide the lugs e with the extending faces e^5, adapted to come flush with the surface of said floor and close the opening, as indicated in Fig. 4, when the shaft D is turned until the crank d' rests against the stop d^4. It will be seen that by this construction an end-gate is formed which may be readily released or replaced, and held in position by fastening-devices which may be adjusted to suit any kind of end-gates. The hooks a a are secured in place by a bolt, which passes through the cleats b, and brace f on the outside of the bed A, and are thus secured firmly to and form a part of the sides of the bed, the eyes a' being formed in the respective ends of the strip c, which extend entirely across the bed, or which is rigidly secured thereto. The sides of the bed are thus firmly held together without the use of the ordinary connecting-rod. The spring-catch being secured to the side of said bed, it is not necessary, in dumping, for the driver to go behind the wagon. The spring-catch may be readily released with one hand, while he holds the lines with the other.

The crank d' may be made in one piece with the shaft D, or it may be made separate and secured thereto.

The device, it will be seen, is simple and compact, and may be readily applied to wagons now in use. It is evident that it admits of many modifications in construction and arrangements of its parts.

In applying the device to carts, or to wagons in which the floor of the bed does not project back of the end-gate, the shaft may be secured directly to the end of the bed, instead of below the floor thereof, in which case the openings in the floor will not be used, and the extended faces on the lugs, adapted to close said openings, may be dispensed with.

The lugs, instead of being adjustable on the shaft, may be secured rigidly thereon or forged in one piece therewith.

I claim—

1. The combination, with the hooks on the side of the bed and the eyes on the end-gate, of the shaft under said end-gate, the adjustable lugs on said shaft, and means for turning and securing said shaft in different positions, substantially as and for the purpose set forth.

2. The combination, with the hinged end-gate B, of the shaft below said end-gate and lugs thereon, and a keyway extending along said shaft, by which said lugs may be secured thereto at any point along the length thereof, a crank on said shaft, and a spring-catch for holding said crank, substantially as and for the purpose set forth.

3. The combination, with the swinging end-gate, of the shaft under said end-gate, the lugs on said shaft, composed of two parts connected together so that they may be adjusted, and means for holding said lugs against the end-gate, substantially as and for the purpose set forth.

4. The combination, with the swinging end-gate B, of the shaft under the floor of the wagon-bed, having lugs adapted to project through openings in the floor of said bed and engage with the end-gate, said lugs being provided with extensions adapted to fit into and close said openings when the shaft is turned to release the end-gate, substantially as and for the purpose set forth.

5. The combination, with the swinging end-gate B, of the shaft under said end-gate, having the lugs thereon, a crank on said shaft, a spring-catch adapted to engage said crank, and a cam-latch adapted to hold said spring-catch, substantially as specified.

6. The combination, with the swinging end-gate, of the shaft and lugs adapted to engage with said end-gate, said shaft being provided with a crank, and the adjustable spring-catch adapted to engage said crank, substantially as and for the purpose set forth.

7. The combination, with the end-gate B, of the shaft D, lugs *e*, and the bar *c*, extending across said end-gate and provided with eyes adapted to engage with said hooks *a a*, thus tying the sides of the wagon-bed together, substantially as and for the purpose set forth.

8. The combination, with the end-gate B, hooks *a*, and eyes *a'*, of the shaft D, having adjustable lugs *e*, crank *d'*, spring-catch d^2, and cam-latch d^3, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 2d day of March, A. D. 1886.

DANIEL S. MORROW.

Witnesses:
F. WILLIS BAINES,
CHASE STEWART.