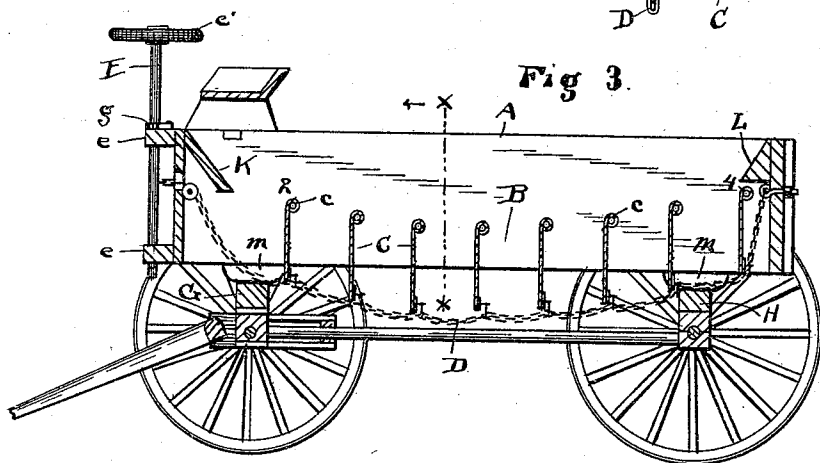
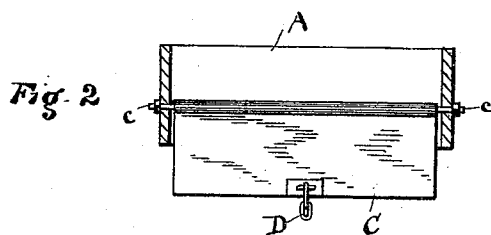
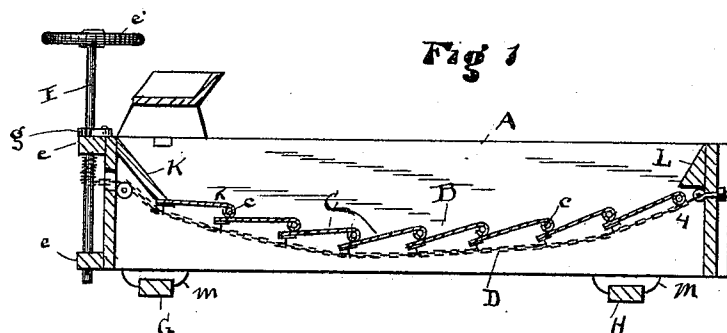


(No Model.)

W. K. LONG & C. H. HENRY.  
WAGON BODY.

No. 492,090.

Patented Feb. 21, 1893.



ATTEST

*R. C. Mizer*

*N. L. McLane*

*A. J. Fisher*

ATTORNEY.

INVENTORS

*William K. Long*

*Charles H. Henry*

# UNITED STATES PATENT OFFICE.

WILLIAM K. LONG AND CHARLES H. HENRY, OF CLEVELAND, OHIO.

## WAGON-BODY.

SPECIFICATION forming part of Letters Patent No. 492,090, dated February 21, 1893.

Application filed July 5, 1892. Serial No. 438,857. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM K. LONG and CHARLES H. HENRY, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Wagon-Bodies; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to wagon bodies, and the object of the invention is to provide a wagon body with a bottom which can be quickly opened and closed over its entire surface, so as to adapt the same to convenience in unloading sand, gravel, earth and the like without the use of hand labor, except to operate the mechanism embodied in our improvement.

To this end the invention consists in a wagon body provided with a parallel bottom, the panels constituting the bottom being pivoted at their ends and at or near one edge and adapted to swing down together on their pivots and to open the spaces between them, the said panels being connected together by a chain or its equivalent which is common to all the panels and which is connected to a shaft, drum, or the like for winding it up and thus closing the bottom, or unwinding it and thus opening the bottom, all as clearly shown in the drawings and particularly pointed out in the claims.

In the accompanying drawings Figure 1 is a longitudinal section of a wagon body containing our improved bottom, the panels or slats being shown here as closed. Fig. 2 is a transverse section of the said body on line *x*, Fig. 3, the panels in this view being down. Fig. 3 is a longitudinal section of the wagon body with the panels released or lowered as in unloading.

A represents the wagon body, which may be of any suitable pattern or kind, and C represents the panels or slats which form the bottom of said body. These panels or slats are each provided at their ends and top edges with spindles *c* which extend through the side of the body or into the same, as may be found most convenient or desirable in construction, and upon which spindles the said slats or pan-

els are pivoted. These slats or panels are placed at suitable distances apart, but the distances may vary according to the use to which the wagon is to be applied. For an ordinary wagon the said panels may have a space of from eight to twelve inches between them, and for all ordinary uses this width is amply sufficient. Indeed, the space between the panels might be made not exceeding six inches with advantage, for hauling gravel, sand, and the like. Each slat is pivoted and supported upon its own spindles, and each will drop by its own gravity into the position shown in Figs. 2 and 3, so that the natural tendency of the said slats is to occupy the suspended position shown in Figs. 2 and 3, and to open the bottom of the wagon body to discharge its contents. The said slats or panels are usually made to overlap more or less very much as the slats in a window blind, and they are operated and supported in a raised position by means of a chain D, which, in this instance, is connected with each slat midway of its length at its free or lower edge, and the said chain is designed to operate with each and all the said slats or panels in like manner, extending from one to the other lengthwise of the wagon body, and supported at its front end on the hand wheel shaft E. The said shaft E is supported in suitable bearings, *e*, on the wagon body, and has a hand wheel *e'* by which it is operated very much as an ordinary brake on a street car. A ratchet and pinion *g* is here shown for locking the said shaft when the bottom B is closed, and the operator or driver may thus at will and without leaving his seat, discharge the load by simply releasing the dog *g* and allowing the weight of the load to throw the panels into the position shown in Fig. 3, when the load will instantly discharge; or, having discharged a load, he can easily, and without rising from his seat or stopping the team, close the bottom by turning the said shaft E in a closing direction. There is however, a well-known tendency in all chains, ropes, or the like, to sag more or less when a weight comes upon them transversely to their length, notwithstanding that the said chains or ropes are stretched very tight. Hence, to accommodate this invention to this well-known tendency, we have placed the slats D in pivots which are formed on the segment of

a circle, when measured from the point 2 to the point 4, shown in Figs. 1 and 3. That is to say, at the ends of the body the pivot points of the end panels are higher with respect to the bottom edge or plane of the said body, than the intervening pivot points, the lowest of said points being midway of the length of the wagon body. This enables us to close each and all of the panels uniformly, and enables us to get a closed bottom notwithstanding that we use a flexible medium for connecting and supporting the said panels at their free edges.

The advantage of a bottom for a wagon to haul sand, gravel, and the like, constructed as herein shown and described, is obvious, and need not be dwelt further upon. The driver is not really required to leave his seat at all, nor to stop his team to discharge a load, and if he wishes to he can discharge the load gradually as he drives along, if he will but partially open the bottom and have it sufficiently opened to discharge a small amount of the load at a time. In this way he can discharge a load of gravel or sand over a considerable distance, the shaking or jarring of the moving wagon being sufficient to agitate the load so that it will run out between the panels. Or, he can discharge a load instantly by throwing the panels all bodily open at once.

If desired, there may be two chains, D, instead of one employed in connection with the slats or panels, and indeed the chains might be dispensed with and some other medium or mechanism employed to open and close the panels. We therefore do not wish to consider ourselves as limited to the use of a chain for this purpose, although this is regarded as an exceedingly simple and practical way of connecting the said parts and operating them.

In addition to accommodating the panels to the unavoidable slack in the chain, which is done by pivoting the panels on the arc of a circle, we have the advantage of bringing the end panels above the bolsters by this arrangement, while the middle panels can be arranged on a lower plane and yet not come in contact with the reach which connects the front and rear carriages of the wagon. It will be noticed furthermore that by arranging the slats or panels on the arc of a circle, as here shown, we surrender the lower portion of the body to the said slats or panels,

and that they are adapted to swing free of the bolsters G and H, at both ends of the wagon, and above the same. We might use panels of less width and thus pivot them on a lower plane than the body of the wagon, and thus make more room. If, however, there be not room enough for the load above the panels, there may be boards put up as is common practice in hauling heavy loads. At the front and rear of the body are cross pieces, K and L, placed in inclined position, and adapted to protect the spaces at the front and rear respectively, of the connected panels, so that the earth, sand, or whatever is carried, will not drop down at these points. As here shown, the body has cleats, *m*, to raise it above the bolsters, and thus give more freedom to the panels. At its rear the chain D is secured to the body, A, and has free link connections with the several panels.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A wagon body and a bottom for said body, consisting of a series of transverse slats pivoted in said body and the slats at the ends of the body pivoted higher than the slats at the middle thereof, in combination with a flexible connection and support for said slats, substantially as described.

2. The wagon body, a series of transverse slats or panels provided with spindles at their ends and upper edges pivoted in the sides of said body, a chain connected with the free or lower edges of said slats, and extending beneath the slats to form a support therefor, and means to tighten and loosen said chain, substantially as described.

3. In a wagon, a body having a transversely slatted bottom, said slats pivoted at their ends and overlapping beneath one another, the free edge of one slat coming beneath the pivot edge of the next slat, in combination with a chain connected with the slats at their free edges and fixed to the wagon body at one end and to a winding device at the other end, substantially as described.

Witness our hands to the foregoing specification.

WILLIAM K. LONG.  
CHARLES H. HENRY.

Witnesses:

H. T. FISHER,  
NELLIE L. McLANE.