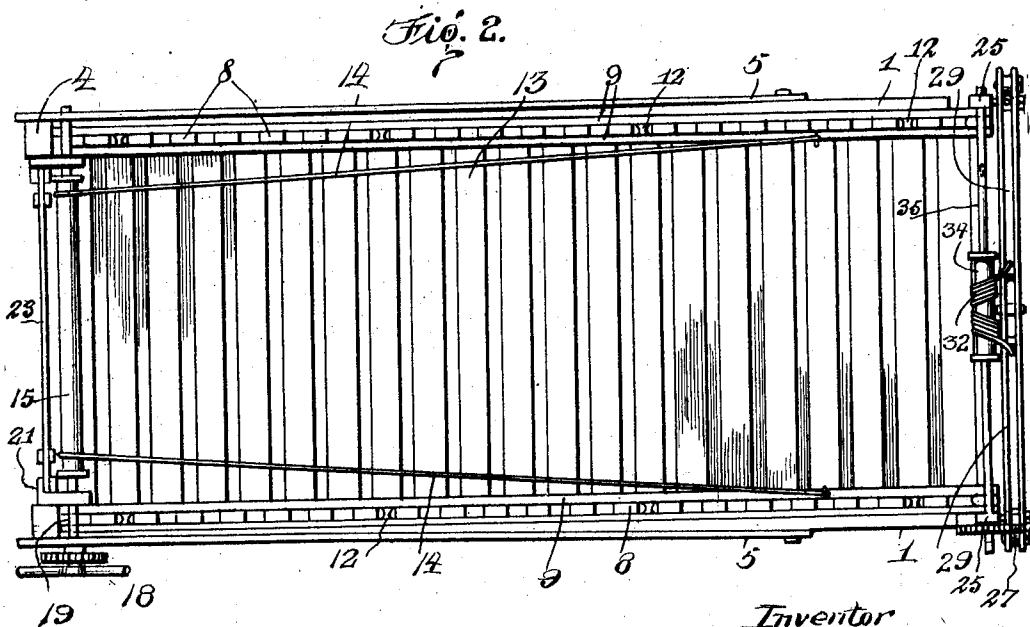
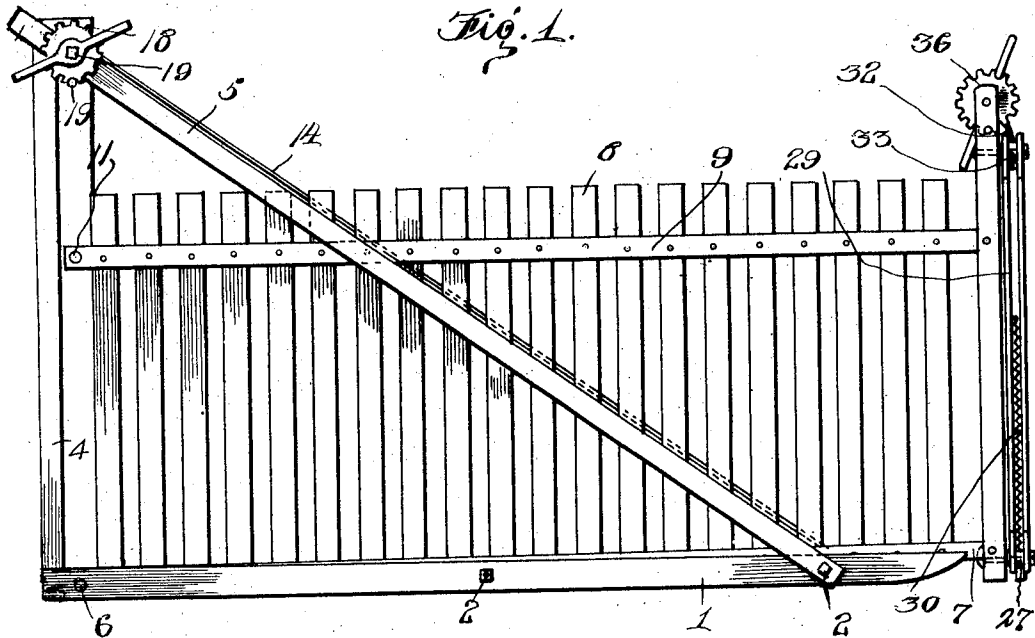


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APPLICATION FILED JUNE 10, 1919.

Patented June 29, 1920.

3 SHEETS—SHEET 1.

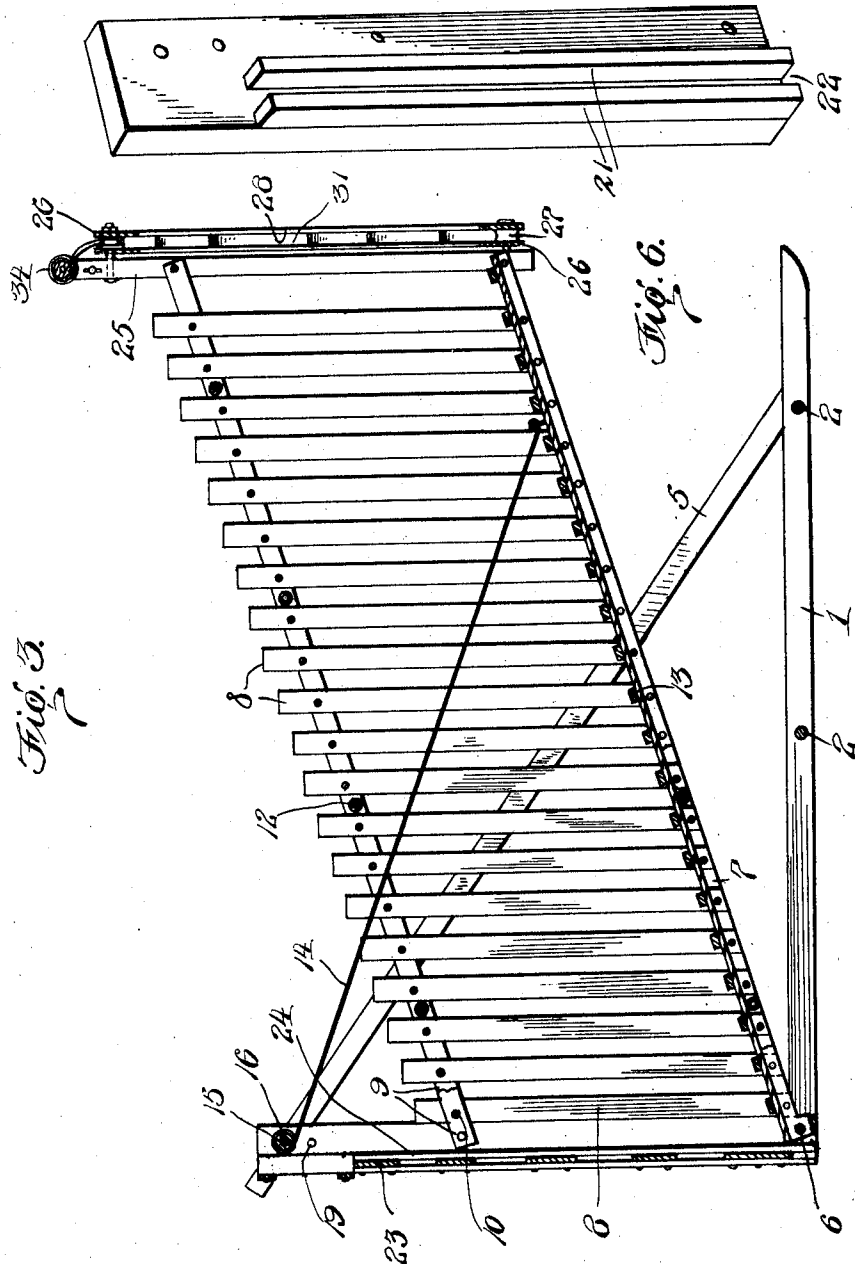


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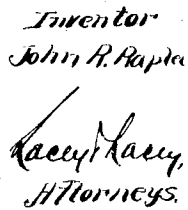
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

JOHN R. RAPLEE, OF SHELBY, MISSOURI.

STOCK-LOADING CHUTE.

1,345,238.

Specification of Letters Patent.

Patented June 29, 1920.

Application filed June 10, 1919. Serial No. 303,034.

To all whom it may concern:

Be it known that I, JOHN R. RAPLEE, a citizen of the United States, residing at Shelby, in the county of Shelby and State of Missouri, have invented certain new and useful Improvements in Stock-Loading Chutes, of which the following is a specification.

This invention has for its object the provision of inexpensive and efficient means whereby cattle or other live stock may be expeditiously loaded into stock cars or other vehicles, or held while waiting to be so loaded. The invention also seeks to provide an apparatus for the stated purpose which may be quickly and easily adjusted to the varying heights of vehicles and held in an adjusted position. Other objects of the invention will appear in the course of the following description, and the invention resides in certain novel features which will be particularly pointed out in the claims following the description.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a chute embodying my improvements arranged in its lowered position;

Fig. 2 is a plan view of the same;

Fig. 3 is a longitudinal section showing the chute adjusted so that its front end will be on a level with the floor of the stock car;

Fig. 4 is an elevation of the front end of the chute;

Fig. 5 is a similar view of the rear end of the chute;

Fig. 6 is a detail perspective view of one of the posts at the rear end of the chute.

In carrying out my invention, I employ a pair of runners 1 which may be held in their proper spaced relation by cross rods or braces 2 and are tapered or curved, as shown at 3, at their front ends whereby they may readily move over the ground in order to transport the chute from place to place. At the rear ends of the runners, I secure posts 4 and the upper ends of these posts are connected with the runners by braces 5 so that a rigid structure will be provided. The rear ends of the runners may be secured to the lower ends of the posts by bolts or other forms of fasteners, indicated at 6, but I prefer to employ a connecting rod equal in length to the width of the apparatus so that a single rod may extend through the posts and runners at both sides of the chute and

secure the same together. The connection should, however, be long enough to serve also as a pivot for the lower rails 7 forming a part of the frame of the chute proper. These rails are arranged in pairs and between the rails of each pair, I pivotally attach the lower ends of palings 8 which extend upwardly between the members of pairs of upper rails 9 and are pivoted thereto, as indicated at 10, the rear ends of said rails 9 being pivotally supported upon bolts or rods 11 in the posts 4. It will be readily understood that by this arrangement the rails may swing in a vertical plane about their pivotal supports and the palings will always remain in a vertical position so that they will effectually restrain the animal and the chute may be easily adjusted so as to have its front loading end on the same level as the floor of the stock car or truck into which the animals are to be loaded. Spacers 12 may be provided between the rails at suitable intervals so as to hold them in proper relation to carry the palings and prevent binding of the palings between the rails. The floor of the chute consists of timbers extending transversely between and supported by the rails 7 and upon the said timbers at intervals through the length of the chute, I provide in any convenient manner cleats 13 so that secure foot rests will be provided for the animals and they will not tend to slip when the floor is inclined, as shown in Fig. 3.

To effect the vertical adjustment of the chute, I provide cables or other flexible supports 14 which are secured at their lower ends to the rails 7 near the front ends thereof and extend upwardly and rearwardly from the said rails to a drum 15 which is mounted between the posts 4 and carried by a shaft 16 journaled in said posts. A lever or other form of handle 17 is provided to fit upon the end of the shaft 16 so that the necessary rotary motion may be imparted to the said shaft and the end of the shaft is preferably angular in cross section to fit an angular opening in the lever so that the proper engagement between the parts will be effected to prevent the lever merely turning upon the shaft without imparting motion thereto. A toothed wheel 18 is fixed on the shaft and this wheel is adapted to be engaged by a locking rod 19 which is slidably mounted in the posts 4 immediately adjacent the drum, the said rod being provided with

suitable stops to impinge against the post and thereby limit its endwise movement. When the drum is to be rotated so as to wind the cables 14 or permit them to unwind, the locking rod is shifted so that its end will be disposed at the inner side of the toothed wheel 18. After the chute has been brought into the desired position and rotation of the drum is to be prevented, the rod is then slid outwardly endwise so that its end will engage between adjacent teeth of the wheel 18 and consequently lock the wheel against turning movement and, therefore, hold the drum in the position in which it has been set. The stops upon the locking rod 19 may conveniently be cotter pins 20 inserted through openings provided therefor in the rod, as shown in Fig. 5, this arrangement permitting the rod to be inserted in the openings in the posts 4 before the stops are applied and, consequently, enabling me to use the openings in the posts as guides to prevent the rod having any lateral movement so that its engagement with the toothed wheel will be certain.

On the inner opposed faces of the posts 4, I provide guides, shown in Fig. 6, which may consist of parallel cleats 21 secured to the inner faces of the posts in spaced relation whereby a vertical groove 22 is provided to receive the edges of an end gate 23. This end gate may be of any desired construction and is illustrated as consisting of cross bars carried by vertical connecting strips 24 and having their ends engaged in the grooves 22 so that it may readily move vertically. It will be readily understood that this gate is to be raised when an animal is to be driven into the chute and immediately lowered after the animal is in the chute so as to prevent him backing therefrom.

The front ends of the rails 7 and 9 are pivotally attached to posts 25 which may be of the same form and dimensions as the posts 4 and upon the front sides of these posts 25, I secure transverse sills 26 which are arranged in pairs and held in proper spaced relation by spacers 27 as will be readily understood. The sills may be connected by braces 28 so as to constitute a rigid frame, and, between the lower sills, I pivotally mount the lower ends of doors or stanchions 29 which have their upper edges between the upper sills 26 so that they will be held against forward or rearward movement. Springs 30 are attached to the outer ends of the lower sills 26 and to the outer edges of the stanchions or doors 29 so as to exert a constant tension on the said doors and thereby tend to swing them transversely of the chute so that they will be separated or in open position. The inner edges of these doors or stanchions are provided with notches 31 of various dimensions, the notches

on the opposite edges being arranged to register so as to form an opening to receive the neck of the animal and it will be readily understood that animals of different sizes may be accommodated and held against stampeding when the doors are closed, as shown in Fig. 4. To retain the doors in their closed position against the action of the springs 30, I secure to the upper edges thereof cables 32 which extend over guide pulleys 33 carried by the upper sills 26 and are trained around a drum 34 secured upon a shaft 35 which is journaled in the upper ends of the posts 25. A toothed wheel 36 is fitted to the end of the shaft 35 so as to rotate the same and a locking rod 37, similar in all respects to the locking rod 19, is slidably mounted in the posts 25 below the shaft 35 to engage the toothed wheel 36 and hold the same and the drum 34 against movement when the doors are closed. While I have illustrated a separate toothed wheel on each of the shafts 16 and 35, it will be understood that a single operating handle and toothed wheel may be employed to operate both shafts, being fitted upon the shafts interchangeably so that it may be easily applied to that shaft which is to be operated.

It will be readily seen from the foregoing description, taken in connection with the accompanying drawings, that I have provided an inexpensive stock loading and holding chute which may be readily moved from place to place so that live stock may be loaded successively into all the cars of a train. The rear posts, the runners, and the braces connecting the same, constitute a rigid supporting frame for the chute proper and the chute proper may be readily brought into any desired inclination so that while its rear end will remain at the ground level its front end will be on the level of the car floor. Moreover, the animal will be positively held in the chute so that he cannot back therefrom and will be held against premature escape from the chute so that he will not be apt to be injured if the car should move before the chute is properly adjusted. The animal may be driven into the chute while it is lowered and after he has been secured, the chute may be adjusted with the animal therein to accommodate the height of the car floor. The apparatus may be easily constructed and readily operated and its construction is such that it is not apt to get out of order and the cost of maintenance will, therefore, be slight.

Having thus described the invention, what is claimed as new is:

1. A portable stock-loading chute comprising runners, posts erected at the rear ends of the runners and rigidly connected therewith, upper and lower rails pivoted to said posts, a fixed continuous floor carried by the lower rails, means connected to the

posts and to the lower rails near the front ends thereof for adjusting the rails and the floor pivotally in a vertical plane, and palings pivotally secured to and extending between the upper and lower rails, the front ends of the rails being free of the runners whereby an open unobstructed space is provided between the lower rails and the runners when the rails and the floor are raised.

10 2. A portable stock-loading chute comprising a supporting frame consisting of runners, posts at the rear ends of the runners and braces extending between the posts and the runners, the front ends of the runners
15 being free and clear, upper and lower rails pivoted to the posts at their rear ends, said rails being arranged at the sides of the frame, a continuous fixed floor carried by the lower rails, a drum mounted upon the
20 upper ends of said posts, cables wound on

the drum and secured to the lower rails near the front ends thereof, and palings pivoted to and extending between the rails at each side of the frame.

3. A portable stock-loading chute com- 25
prising a supporting frame, a chute pivotally mounted at its rear end in said frame for movement in a vertical plane while maintaining the perpendicularity of its ends, the front end of the chute being free, a drum 30
mounted on the frame at the rear end thereof and above the chute, a cable connection between the drum and the free end of the chute, a toothed wheel connected with the drum, a locking rod slidably mounted in the 35
frame to engage said wheel to hold the same and the drum against rotation, and stops on said rod interiorly of the frame.

In testimony whereof I affix my signature.

JOHN R. RAPLEE. [L. s.]