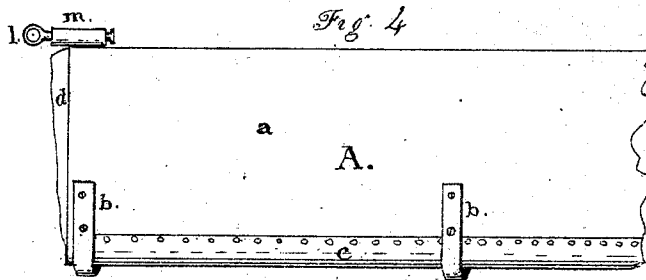
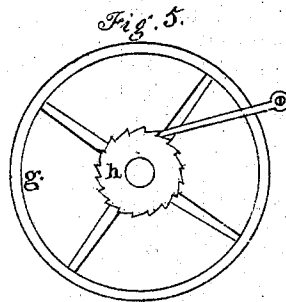
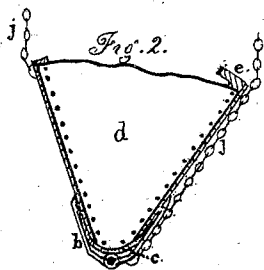
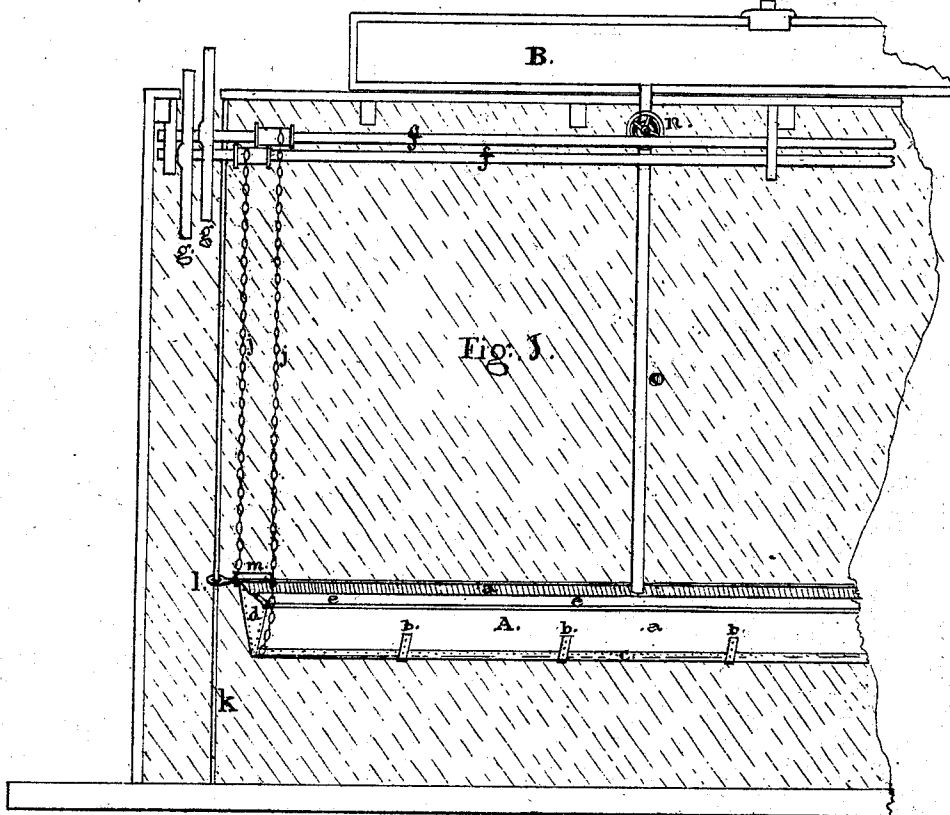


(121.)

THOMAS E. KNAUSS.
Improvement in Stock Cars.

No. 122,120.

Patented Dec. 26, 1871.



Attest

Wm M Gooding
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Inventor
Thos E Knauss

UNITED STATES PATENT OFFICE.

THOMAS E. KNAUSS, OF ZALESKI, OHIO.

IMPROVEMENT IN STOCK-CARS.

Specification forming part of Letters Patent No. 122,120, dated December 26, 1871.

Specification describing the construction of an Apparatus for Feeding and Watering Live Stock during transportation on railroads, invented by THOMAS E. KNAUSS, of Zaleski, in the county of Vinton and State of Ohio.

The first part of the invention relates to the constructing and attaching to a railroad-car a folding trough for feeding and watering livestock in the cars during transportation.

In the accompanying drawing, Figure 1 is a view, in section, of part of a car; also of the folding trough, with the provisions for adjusting it for use and for its elevation to the roof of the car when carrying other freight than cattle. Fig. 2 is an enlarged view of the end of the open trough with its adjusting and folding devices attached thereto. Fig. 3 is the same when closed. Fig. 4 is a flat view of part of the closed or folded trough, and Fig. 5 is one of the hand-wheels on the ends of the hoisting-shafts with the ratch and catch (not shown in Fig. 1) for retaining the trough in its required position when down and in use, or when folded and drawn up to the roof.

A is the trough, its whole length being nearly that of the inside of the freight-car—ordinarily between twenty and thirty feet. The two sides are of wood, *a a*, connected at an edge of each piece by the metallic joints *b*, with a strip of flexible water-tight material attached either inside or outside, as shown at *c*, covering the joint at the bottom the whole length of the trough. Each end *d* is alike formed of suitable flexible water-tight material, attached to the sides so as to allow them to come together when folding and elevating is required, and to open to the necessary angle when required for use. A projection inward is put upon the upper edge of the front side as a preventive to waste of feed and the spilling of water; this strip is shown

by *e*. On or below the beams of the roof of the car, and supported thereby, I place two shafts, *f f*, extending from end to end of the car. On one end of each shaft is a hand-wheel, *g*, with a ratch-wheel, *h*, shown in Fig. 4, (not shown in Fig. 1.) For each ratch a suitable pawl is attached to the car. It is immaterial whether the shafts extend through the end of the car and have the wheels outside, or that the wheels are placed inside and project through the roof, as shown in Fig. 1. Chains or ropes *j* are, at one end, connected with the shafts *f* and at the other with the trough. The front chains or ropes are affixed to the lower front edge of the trough, turning the front side when drawn upward by winding the chain on the shaft parallel to the roof. The back chains or ropes are attached to the upper edge of the back side of the trough. The two shafts, operating independent of each other, admit adjustment of level of the two upper edges of the trough, as circumstances may require. At each end of the car is a guide-rod, *k*, on which freely slides the swivel eye-bolt *l*, connected to and turning freely in the socket *m* that is fastened upon the upper corners of the back of the trough, by which device the trough is at liberty to lie in any desired position.

What I claim, and desire to secure, is—

1. The flexible ends *d* and flexible bottom piece *c*, swivel eye-bolt *l* and socket *m*, combined in the folding feed-trough A, substantially as shown.

2. The hand-wheels *g*, shafts *f*, and chains or cords *j*, in combination with the trough A, for the purpose specified.

THOS. E. KNAUSS.

Attest:

W. M. GOODING,
EDWARD COLLVER.

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