

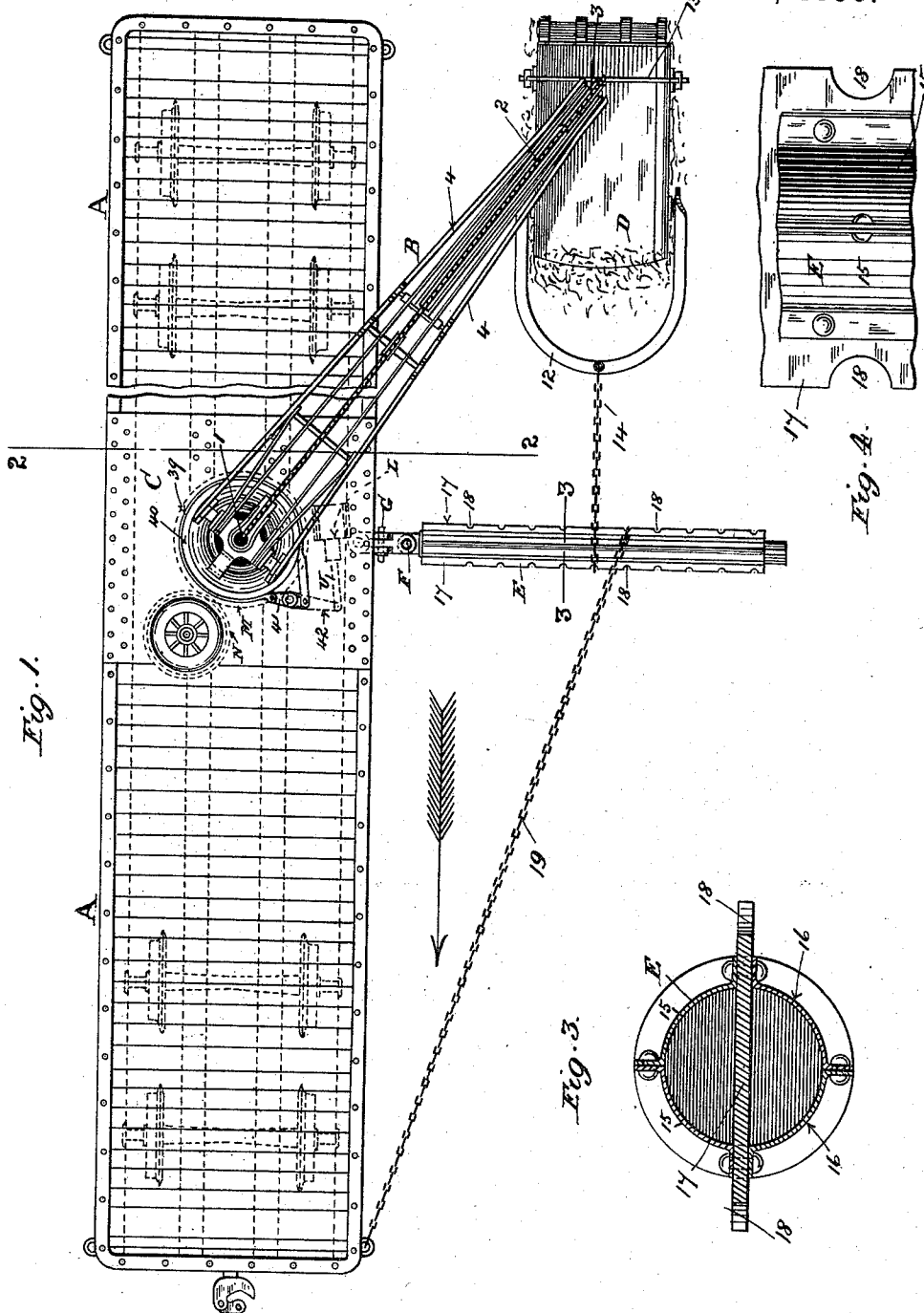
(No Model.)

4 Sheets—Sheet 1.

W. B. DODDRIDGE.
RAILROAD DITCHER.

No. 572,875.

Patented Dec. 8, 1896.



WITNESSES

J. H. Robinson
C. R. Kelly

INVENTOR

William B. Doddridge
By Edward W. Furrell
His Atty

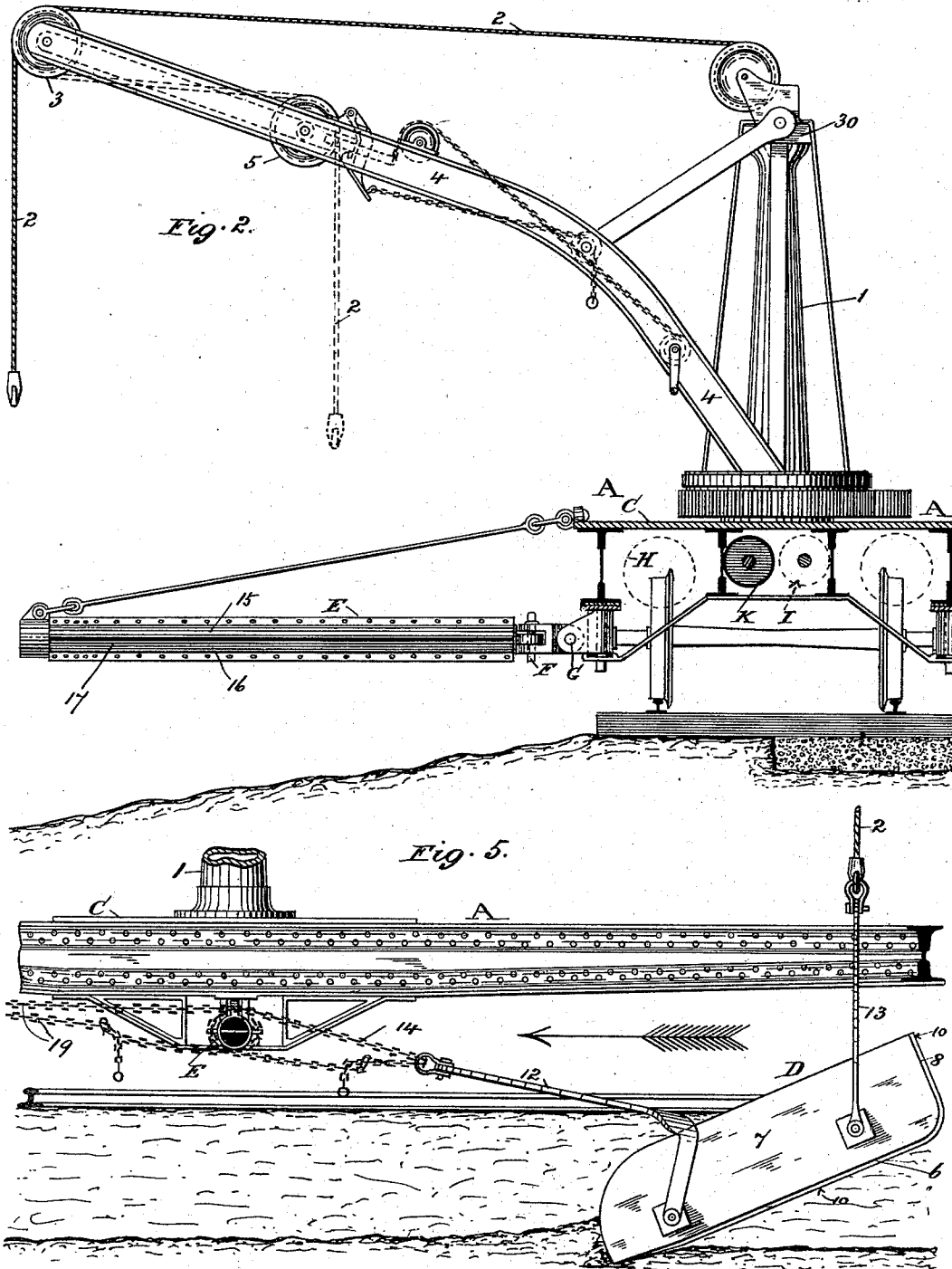
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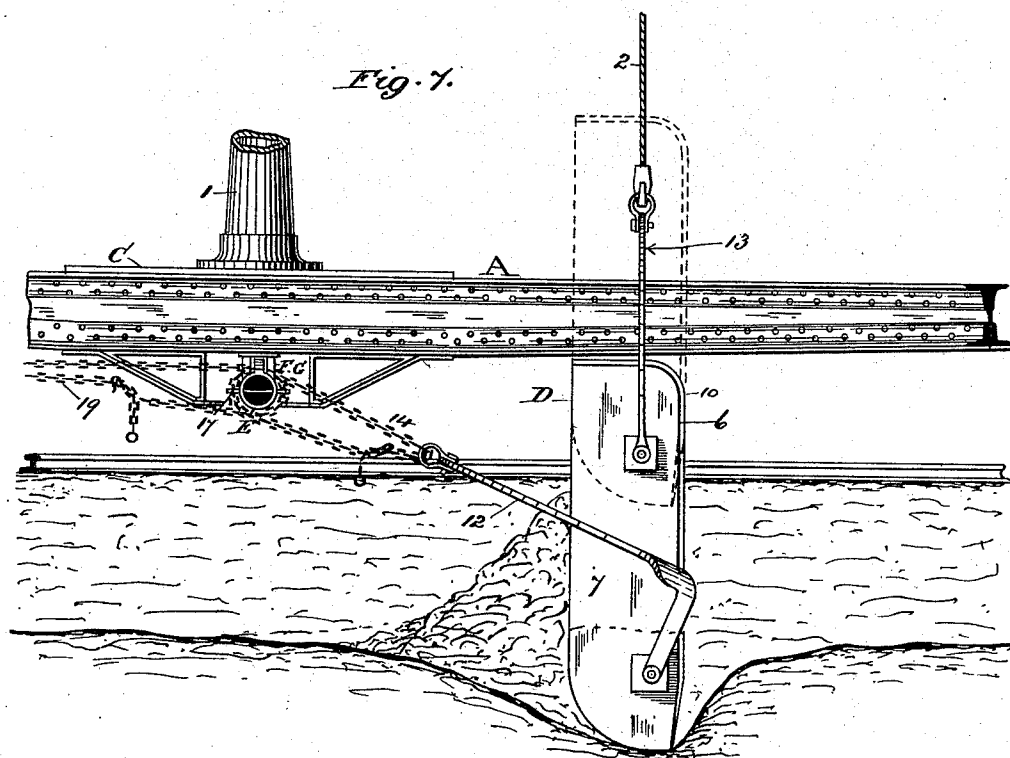
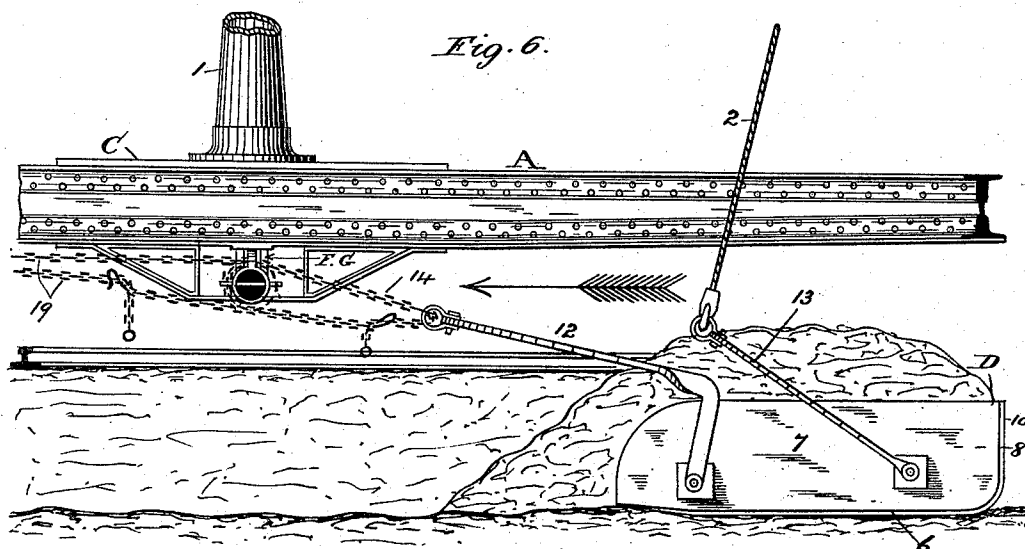
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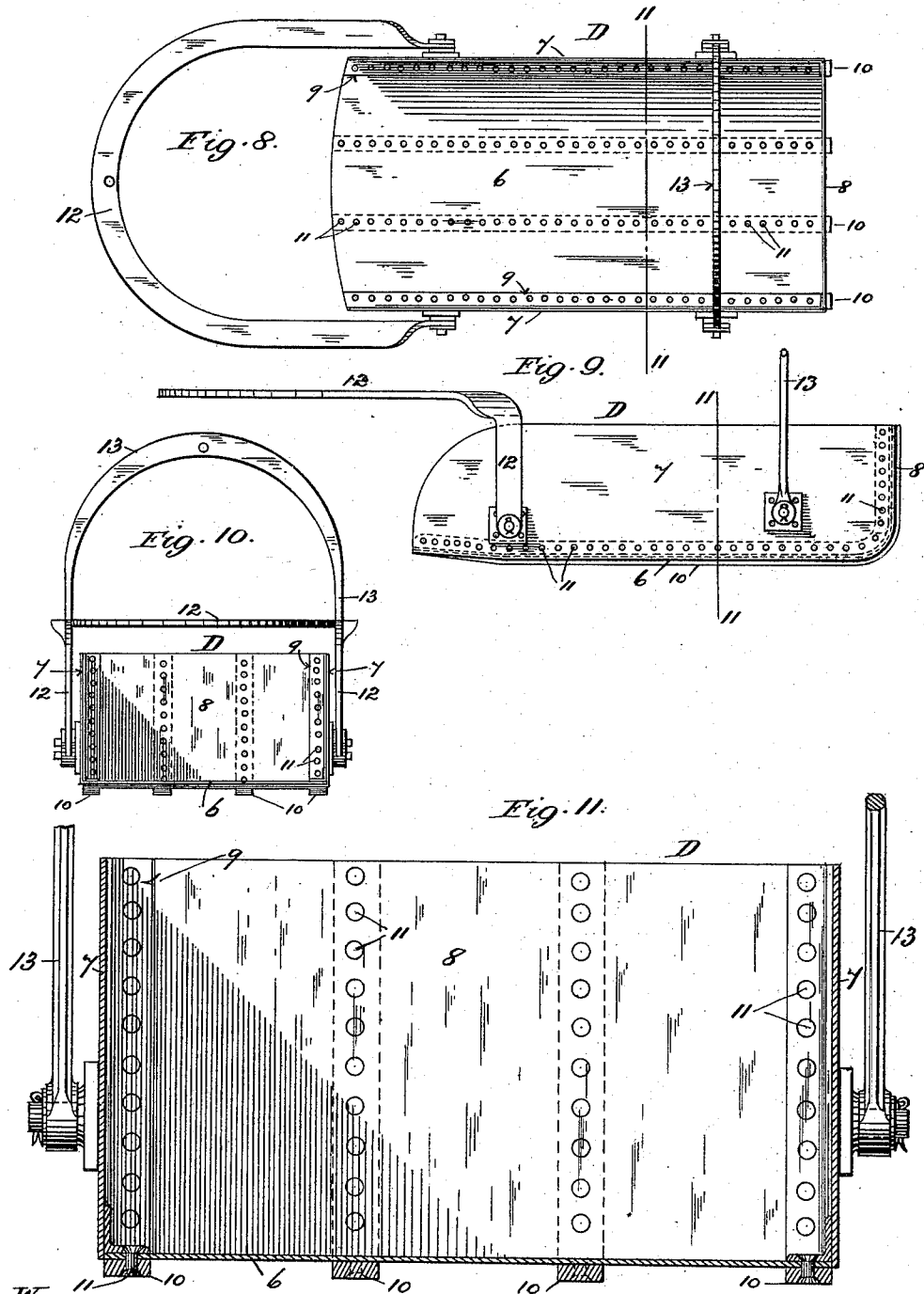
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4 Sheets—Sheet 4.

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WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM B. DODDRIDGE, OF ST. LOUIS, MISSOURI.

RAILROAD-DITCHER.

SPECIFICATION forming part of Letters Patent No. 572,875, dated December 8, 1896.

Application filed August 3, 1896. Serial No. 601,434. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. DODDRIDGE, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Improvement in Railroad-Ditchers, of which the following is a specification.

This invention relates to apparatus used in connection with a railroad-car for ditching and forming the earth-bed embankments at the sides of the track, and has for its object to improve the construction and means of holding and adjusting the implement used.

The invention consists in features of novelty, as hereinafter described and claimed, reference being had to the accompanying drawings, forming part of this specification, whereon—

Figure 1 is a plan view of a railroad flat-car (broken away) having a scoop or shovel and its controlling devices, forming parts of my invention; Fig. 2, a transverse section, to enlarged scale, through the car (broken away) on line 2 2 in Fig. 1, showing the draft-beam and crane, forming parts of the apparatus, in side elevation, respectively; Fig. 3, a cross-section, to enlarged scale, through the draft-beam on line 3 3 in Fig. 1; and Fig. 4, a plan thereof, broken away; Fig. 5, a side view, to enlarged scale, of the car, (broken away,) showing the scoop or shovel in position for loading; and Figs. 6 and 7, similar views to Fig. 5, with the scoop in the "loaded" and "dumping" positions, respectively; Fig. 8, a plan, to enlarged scale, of the scoop or shovel detached; Figs. 9 and 10, a side and front elevation thereof, respectively; and Fig. 11, a cross-section, to enlarged scale, on line 11 11 in Figs. 8 and 9, looking to the right-hand or rear end of the scoop.

Like letters and numerals of reference denote like parts in all the figures.

A represents a railroad flat-car which is mounted on the ordinary trucks and wheels and may be of any suitable construction, but preferably similar to the railroad plow-car described in Letters Patent granted to me September 3, 1895, No. 545,782—improvement in railroad plow-cars.

On the car A is mounted a crane B, having its pillar 1 fixed at the base to the deck-plate C. The crane B may be of any suitable con-

struction adapted to swing around its pillar 1 in either direction. The hoisting-cable 2 of the crane B may either pass over and depend directly from the sheave 3 at the outer end of the jib 4 in the usual manner, or be directed from the sheave 3 along the jib 4 toward the pillar 1 and over an auxiliary sheave 5, from which it depends, as shown particularly by broken lines in Fig. 2.

The crane B is operated, preferably, by compressed air in a similar manner to that described in my said Letters Patent.

D represents a scoop or shovel which is used in connection with the car A for distributing the earth which has been previously broken up by the plow, (such as the plow described in my said Letters Patent,) or, in other words, for reducing the inequalities of the ground by removing the earth from the high portions and depositing it along the lower portions previous to using the shoulder-former or earthwork templet described in Letters Patent granted to me for an improvement in railroad-ditchers, dated November 5, 1895, No. 549,188.

The scoop D is composed, preferably, (see particularly Figs. 8, 9, 10, and 11,) of a bottom plate 6, two upright side plates 7, and an upright rear end plate 8, combined with internal angle-bars 9 and external brace-bars 10, the whole being fastened together by countersunk rivets 11.

The nose and adjacent part of the bottom plate 6 at the front or open end of the scoop D are inclined upward from the plate 6 for enabling the scoop D, when loaded and in the horizontal position, to be hauled longitudinally without entering the ground.

The scoop D is provided with front and rear bails 12 13, respectively, which are hinged externally to the sides 7 and are movable radially to their hinges in any direction. To the rear bail 13 is hitched the free end of the crane-cable 2, and to the front bail 12 is coupled one end of the traction-chain 14, which extends to a beam E, carried by and projecting from the car A. The beam E may be of any suitable construction, but preferably tubular in cross-section, as shown, on the principle of the well-known "Phenix" column. Between the upper and lower tubular segments 15 16 of the beam E is a horizontal

plate 17, which is held between the flanges of the segments 15 16, the longitudinal edges and adjacent portions of the plate 17 projecting beyond the sides of the beam E, as shown particularly in Figs. 3 and 4.

At suitable intervals along the outer longitudinal edges of the plate 17 are concave or other suitably-shaped depressions 18, one of which on the forward side of the beam E engages and holds the traction-chain 14, which is passed around that side of the beam E and hooked at its free end onto the main portion of the chain 14, between the beam E and scoop D, thereby dispensing with the usual clevis on the beam E. By this means the delay incurred in uncoupling the clevis is avoided and the traction-chain 14 quickly disconnected and shifted from one depression, 18, to another along the beam E, according to the required distance of the scoop D from the side of the car A. In like manner the chain 19, connecting the beam E to the clevis 20 on the forward end of the car A, is passed around the rear side of the beam E and held by one of the depressions, 18, on that side, according to the desired distance from the car A.

The beam E is secured at its inner end to the car A by a double-hinge joint F G, having the hinge F at right angles to the hinge G, so as to allow the beam E to be swung in a horizontal or vertical direction, as required, in adjusting the beam E. By this arrangement also the beam E, when not in use, can be swung back out of the way against the side of the car A.

In operation, the scoop D being suspended by its rear bail 13 from the crane B and its front bail 12 connected by the traction-chain 14 to the beam E in the position seen in Figs. 1 and 5, or so that the nose of the scoop D is directed into the ground, on the forward move-

ment of the car A the scoop D is hauled forward and its nose thereby forced into the ground, when, on gradually lowering the bail 13 by the crane B and at the same time continuing to haul on the bail 12, the scoop D becomes loaded with earth and is brought into a horizontal position, as shown in Fig. 6, when the scoop D is hauled longitudinally along the ground until it reaches the place for filling, when the rear end of the scoop D is raised by the crane B and its contents dumped, as required. The scoop D is then lowered for a fresh operation.

The bail 12 is made with an offset or L-shaped portion for clearing the open front end of the scoop D when hauling, thereby affording an unobstructed passage for the earth entering the scoop D.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a railroad-ditcher, the combination of a railroad-car, a beam projecting from the car and secured thereto by a double-hinge joint, a scoop, a chain connecting the beam to the scoop, and a chain connecting the beam to the car, the beam having depressions for holding the said chains, substantially as described.

2. In a railroad-ditcher, the combination of a railroad-car, a beam projecting from the car and secured thereto by a double-hinge joint, a chain connecting the beam to the scoop, a chain connecting the beam to the car, and a crane or derrick, the beam having depressions for holding the said chains, substantially as described.

WILLIAM B. DODDRIDGE.

Witnesses:

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J. A. ROBIDOU.