

(No Model.)

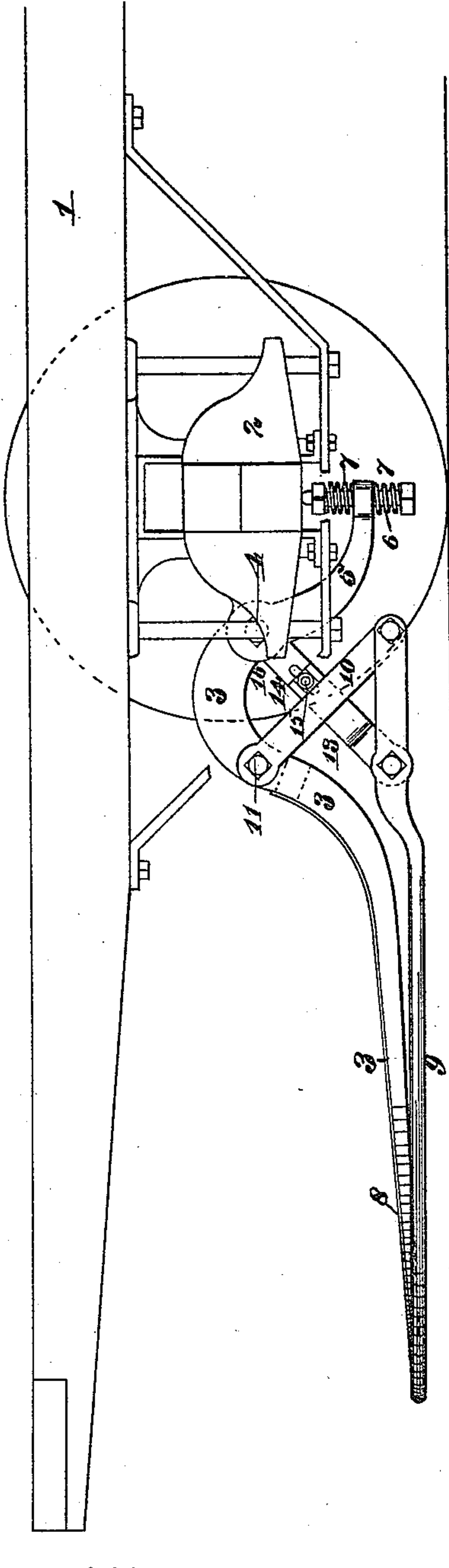
2 Sheets—Sheet 1.

W. S. LIVENGOOD.
ATTACHMENT FOR STREET CARS, &c.

No. 428,500.

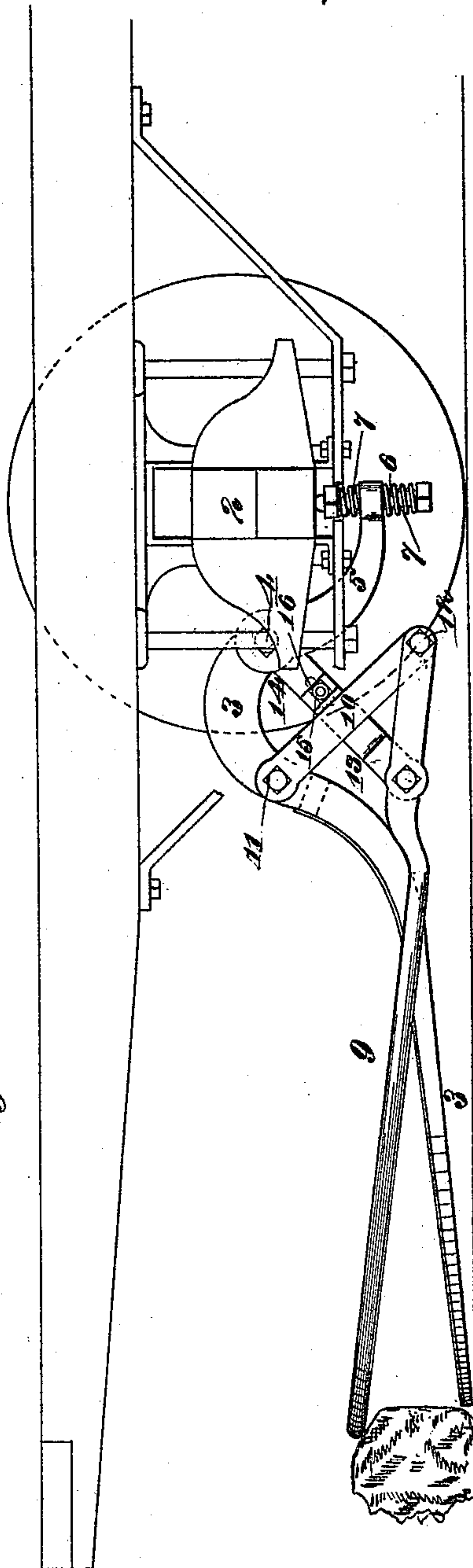
Patented May 20, 1890.

Fig. I.



Attest:
C. Arthur
Geo. H. Wheelock.

Fig. II.



Inventor:
Winfield S. Livengood;
By Knicker Bros.

Atty's

(No Model.)

2 Sheets—Sheet 2.

W. S. LIVENGOOD.
ATTACHMENT FOR STREET CARS, &c.

No. 428,500.

Patented May 20, 1890.

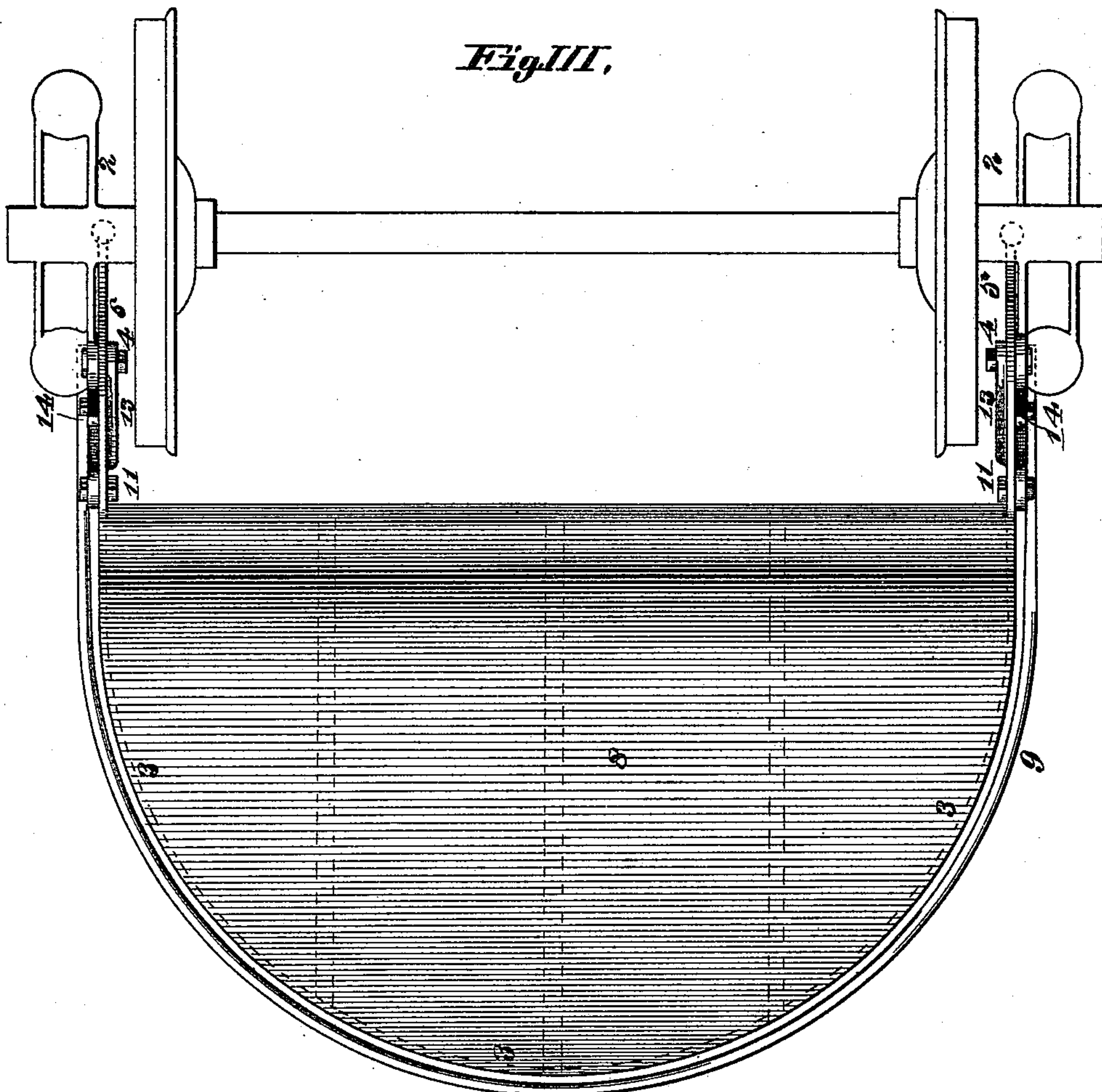
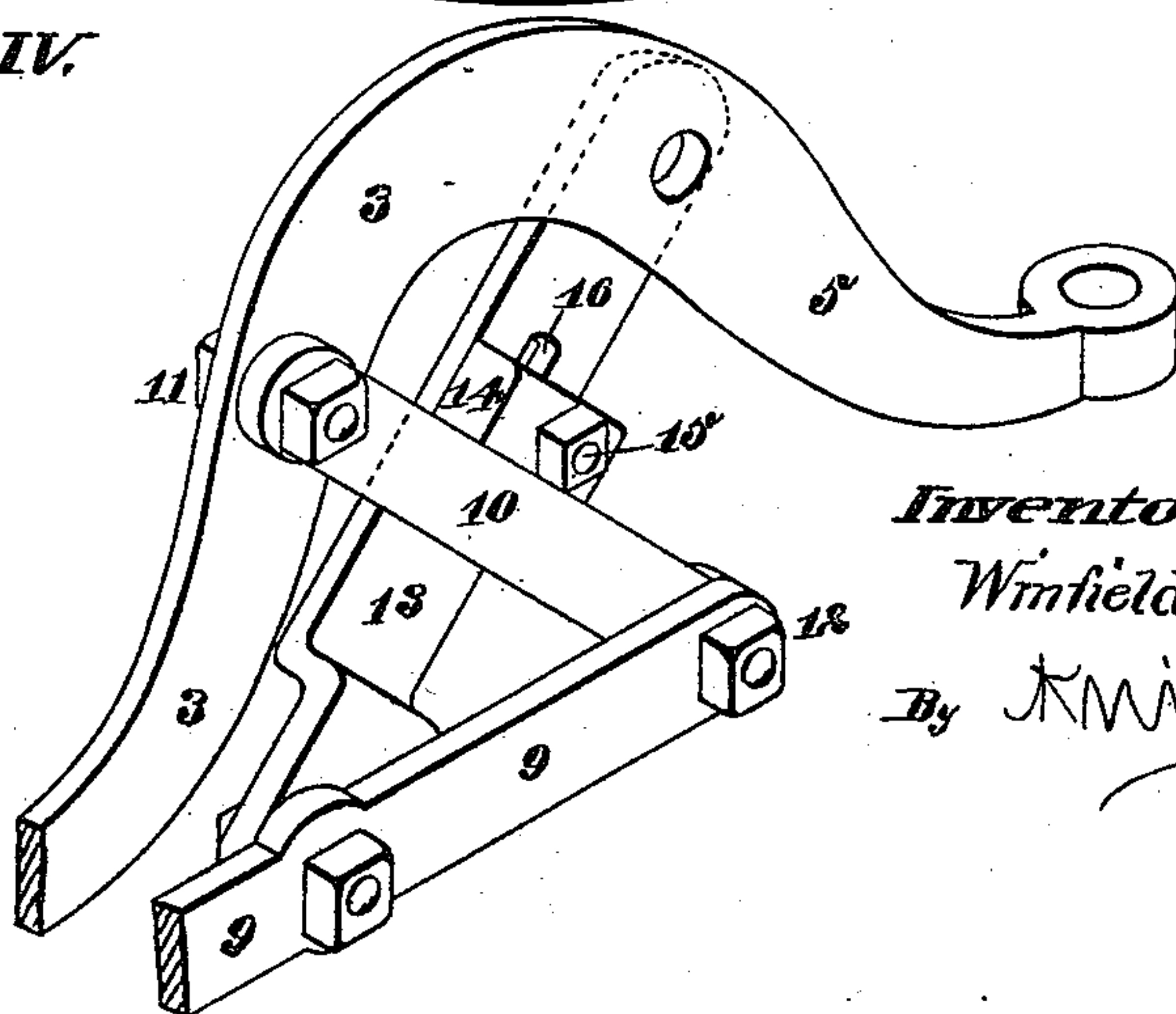


Fig. IV.



Attest,
C. Arthur
Ger. & Wheelock.

Inventor:
Winfield S. Livengood;
By *Knigh & Bros.*

Atty's.

UNITED STATES PATENT OFFICE.

WINFIELD S. LIVENGOD, OF KANSAS CITY, MISSOURI, ASSIGNOR OF ONE-HALF TO CHARLES L. BALLINTINE, OF SAME PLACE.

ATTACHMENT FOR STREET-CARS, &c.

SPECIFICATION forming part of Letters Patent No. 428,500, dated May 20, 1890.

Application filed April 2, 1889. Serial No. 305,699. (No model.)

To all whom it may concern:

Be it known that I, WINFIELD S. LIVENGOD, of Kansas City, in the county of Jackson and State of Missouri, have invented a certain new and useful Improvement in Attachments for Street-Cars, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure I is a side elevation showing part of a car and the attachment in its closed position. Fig. II is a similar view showing the attachment in its open or partially-open position. Fig. III is a top view. Fig. IV is an enlarged detail perspective view of the attachment.

My invention relates to a device to be attached to street or other cars for the purpose of removing obstacles from the track; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, 1 represents part of the body of a car, and 2 one of the trucks.

3 represents a frame comprising a fender hinged or pivoted to the truck at 4 and provided with inner extensions 5, which are perforated to receive rods or bolts 6, which bear at their upper ends against the truck, but are not secured to the truck.

7 represents springs placed on the rod 6 above and beneath the extensions 5.

The fender preferably consists of a bar bent in U form, as shown in Fig. II, and having its outer portion covered with a plate 8, of metal, canvas, or other suitable material. The fender may, however, be made of any desired shape, construction, and material.

9 represents a rod, which is bent to surround the outer end of the frame 3 to form a guard, and which is connected to the fender by means of links 10, the upper ends of the links being made fast to the fender 3 at 11 and their lower ends to the guard at 12.

13 represents additional links or arms connecting the guard 9 to the truck 2, either at the same point where the frame 3 is connected or at any other suitable point. The con-

nections between the links or arms 13 and the truck and between the guard 9 and the links 13, and also the connection between the fender 3 and the truck, are pivotal attachments. The links or arms 13 are provided with lugs or stops 14, which are preferably adjustably connected to the links or arms by means of bolts 15, fitting in slots 16 in the links or arms.

When the parts are in their normal position or the position shown in Fig. I, the links 10 bear against the stops 14, and thus hold the guard and fender in the position shown in Fig. I—that is, with the guard encircling the outer end of the fender. When an obstacle is struck by the guard, it is thrown up into the position shown in Fig. II and the fender 3 is tilted downward, and in this movement of the parts the links 10 leave the stops 14, as shown in Fig. II. The outer end of the fender 3 being thrown down close to the ground, the obstacle passes onto it under the guard 9, and as soon as the obstacle is landed on the fender the guard falls and the other end of the fender again assumes its natural or normal position. This upward movement of the forward end of the guard upon striking an object may be thus explained. The rear end of the guard always falls with the fender, and the forward end of the guard would also fall with the fender provided the object struck remained stationary; and provided its center of gravity were above the line of the guard; but the center of gravity of most objects of any consequence in this connection is below the plane of the forward end of the guard, and as the object rests movably on the guard the guard will give it a rolling motion, thus raising the guard over the obstacle and preventing injury that might be caused were the guard to have a direct thrust against the obstacle. By employing the springs 7 an elastic movement is imparted to the frame, avoiding danger of breakage.

By securing the fender and guard to the truck instead of the car they always remain at a uniform height.

By adjusting the stops 14 the outer ends of the fender and guard may be raised or lowered, and the same end may, in a measure, be

accomplished by adjusting the nuts on the bolts 6. The bolts 6 (and springs 7) are what counteract and support the outer end of the fender and guard, and by which the latter beyond the hinge 4 are supported.

The guard might in some instances be dispensed with.

I claim as my invention—

1. In a car attachment, the combination of a hinged fender, a guard encircling the outer end of the fender, links connecting the fender and guard, and links or arms provided with stops and connecting the guard to the car-truck, substantially as and for the purpose set forth.

2. In a car attachment, the combination of a hinged fender having rear extensions connected to the car-truck, a guard encircling the outer end of the fender, links connecting the fender to the guard, links or arms connecting the guard to the car-truck, and stops on the arms, substantially as and for the purpose set forth.

3. In a car attachment, the combination of

a hinged fender having rear extensions connected to the car-truck, a guard encircling the outer end of the fender, links connecting the fender to the guard, links or arms connecting the guard to the car-truck, and adjustable stops on the arms, substantially as and for the purpose set forth.

4. In a car attachment, the combination of a hinged fender having extensions, spring-bolts on the extensions, a guard bent to surround the outer end of the fender, links connecting the fender to the ends of the guard, and arms provided with lugs and connecting the guard to the car, substantially as and for the purpose set forth.

5. The combination, with the car-truck, of a fender hinged to said truck and having a rear extension and a spring between said extension and truck, substantially as set forth.

WINFIELD S. LIVENGOOD.

Witnesses:

JAS. E. KNIGHT,
FRANK W. ROTZEL.