

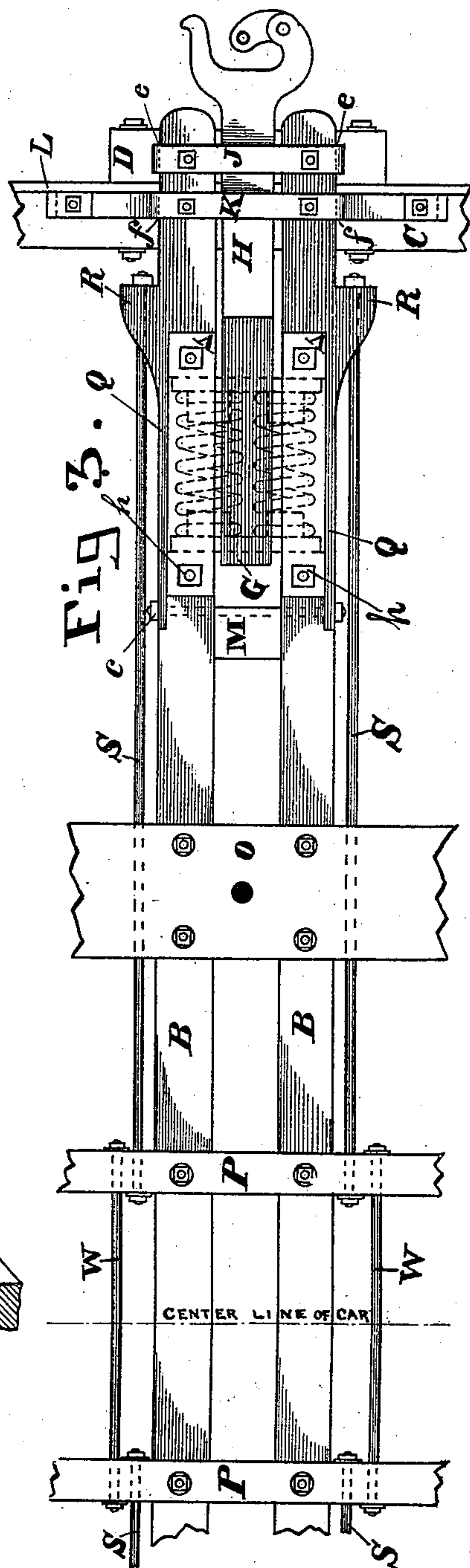
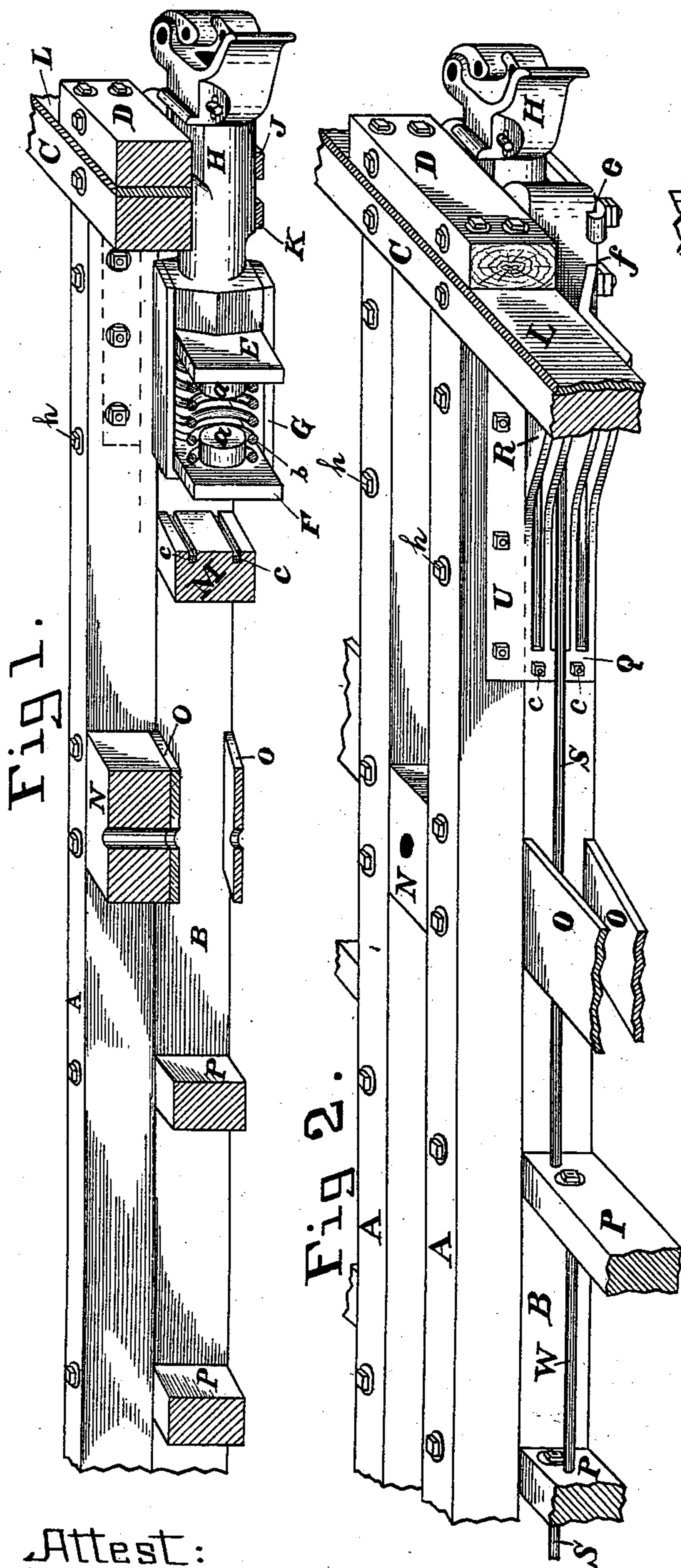
(No Model.)

2 Sheets—Sheet 1.

T. B. KIRBY.
DRAFT RIGGING FOR RAILWAY CARS.

No. 534,221.

Patented Feb. 12, 1895.



Attest:
E. B. Lehman
W. L. Silvey

Inventor.
Thomas B. Kirby
by J. Kirby
his attorney

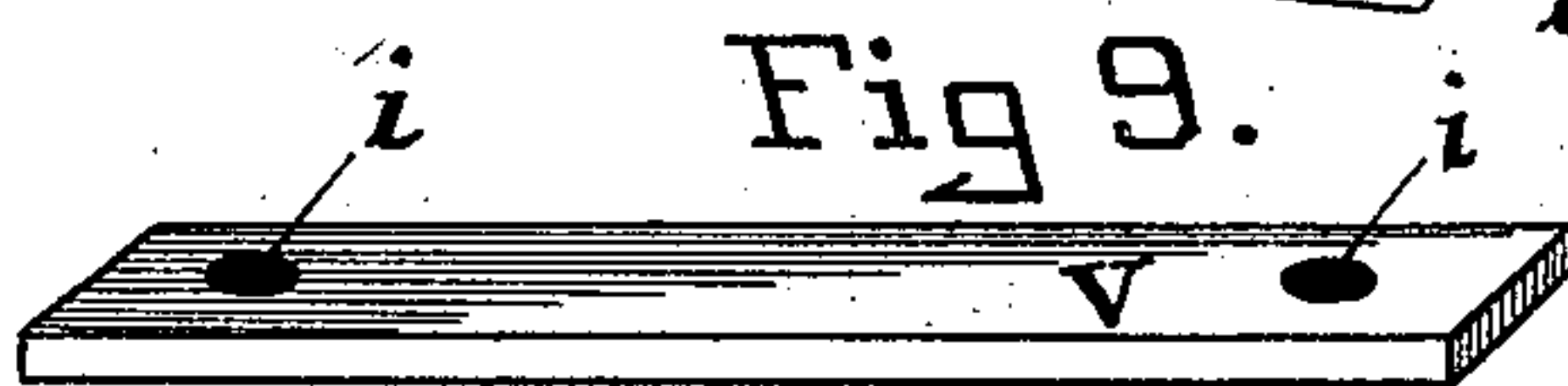
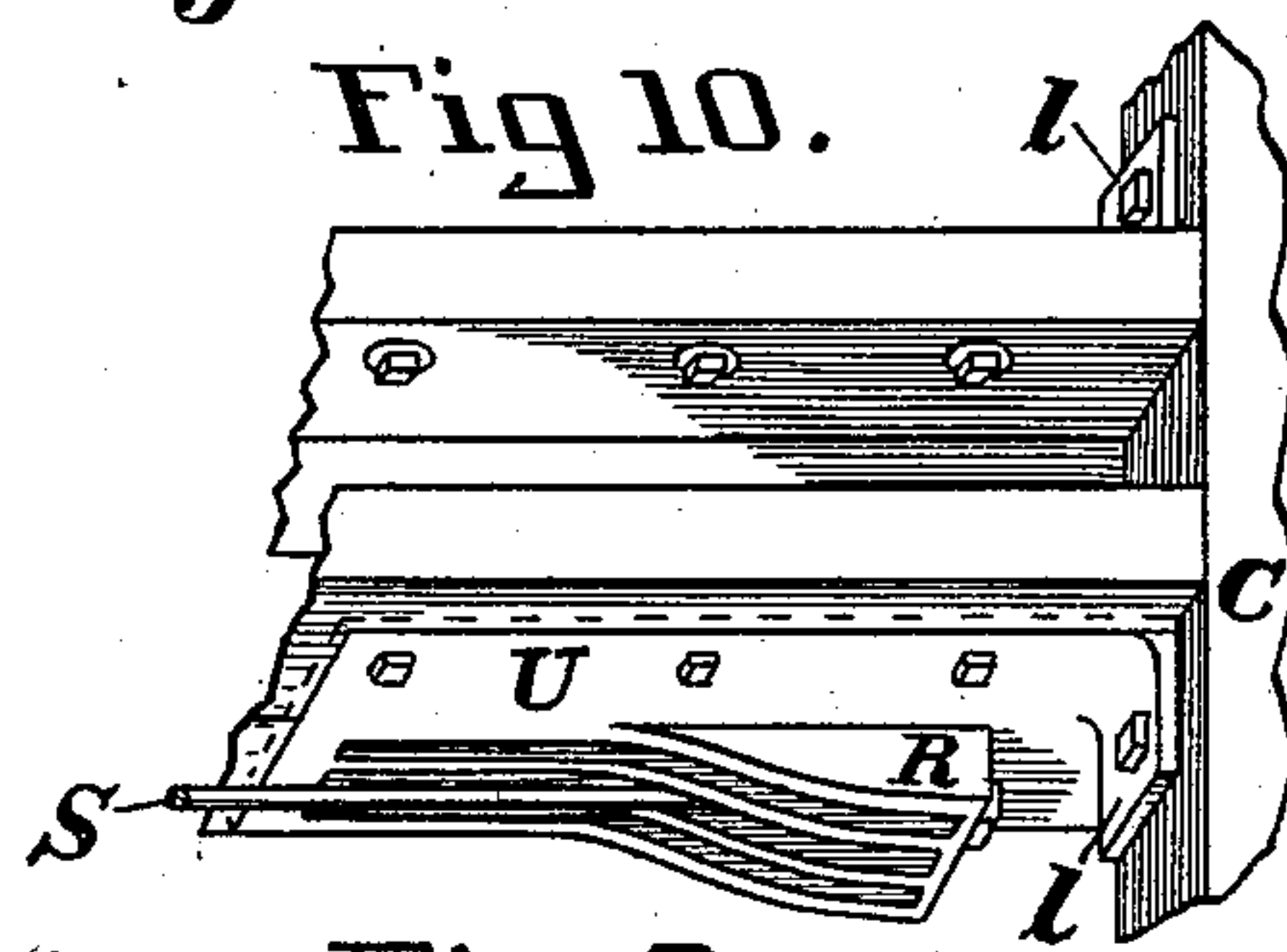
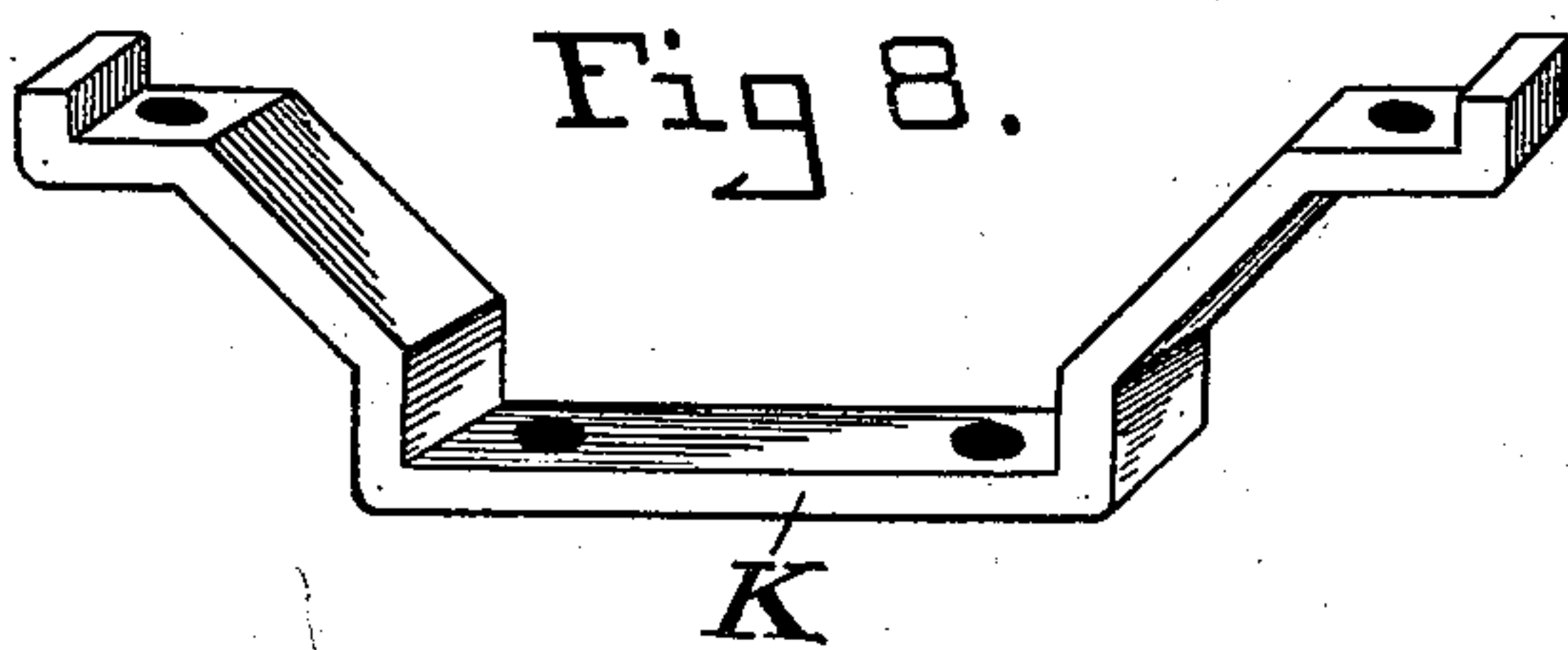
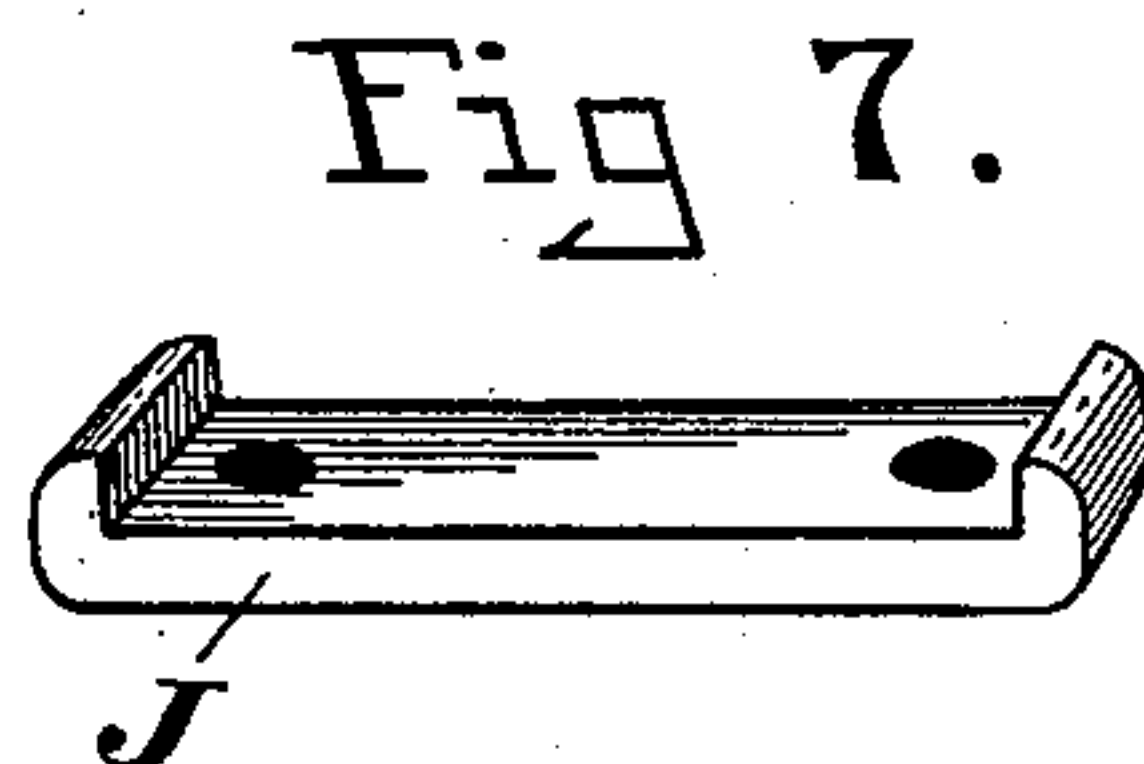
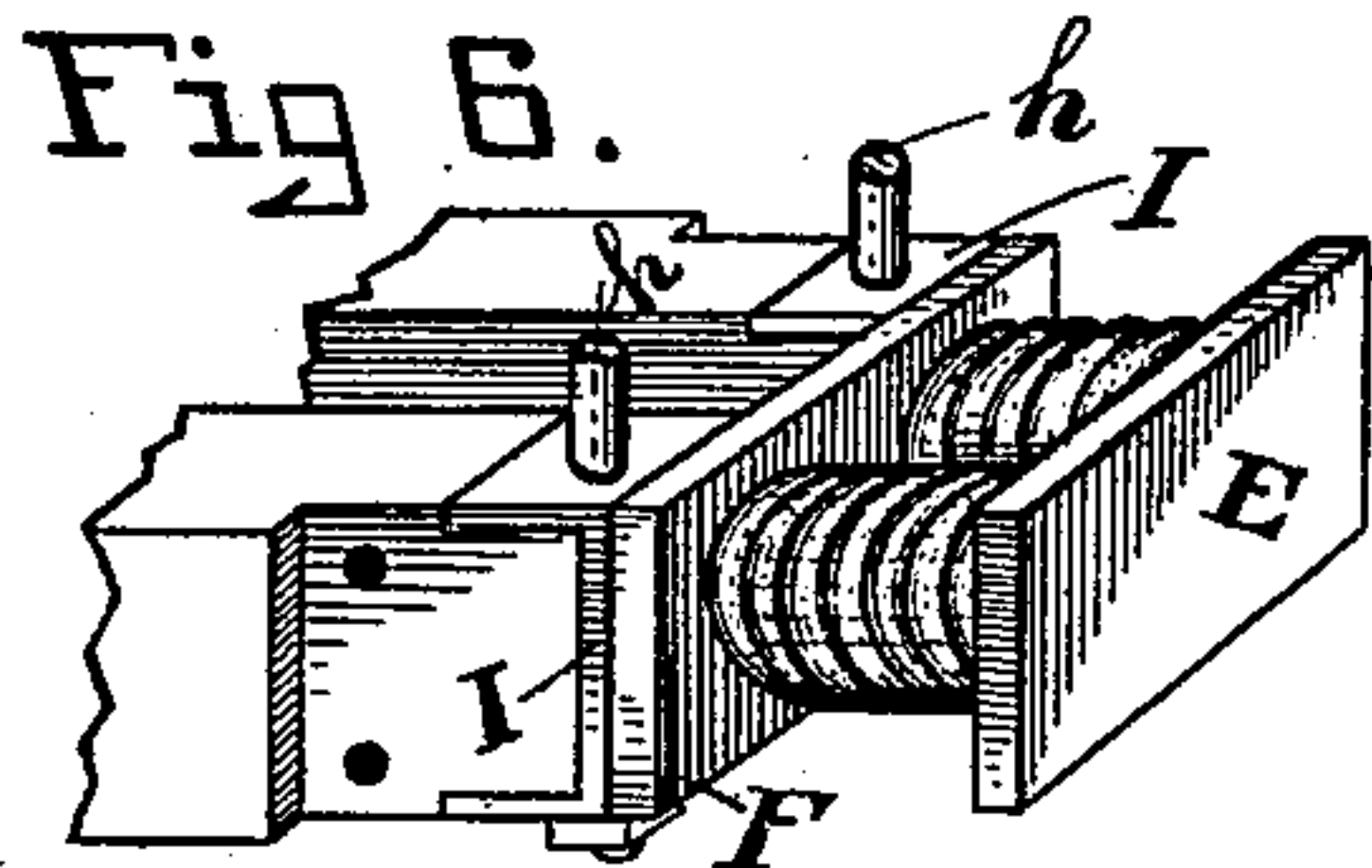
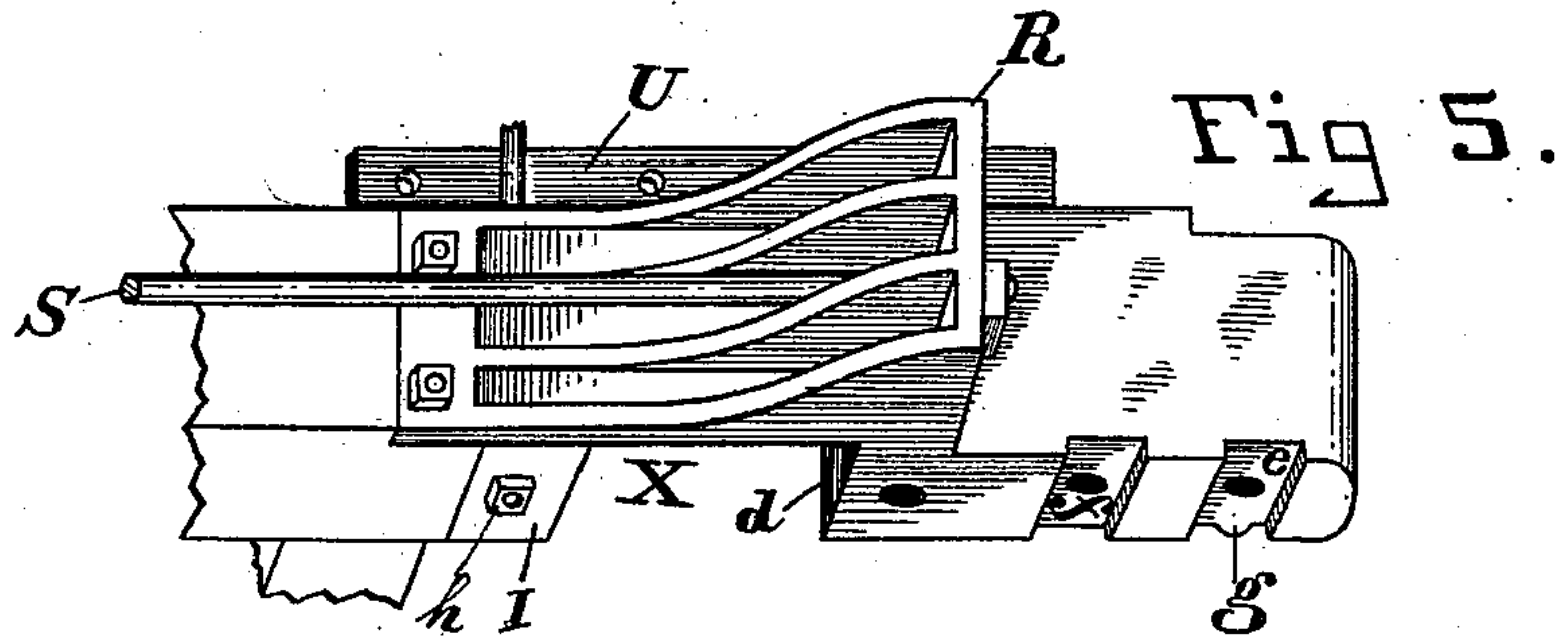
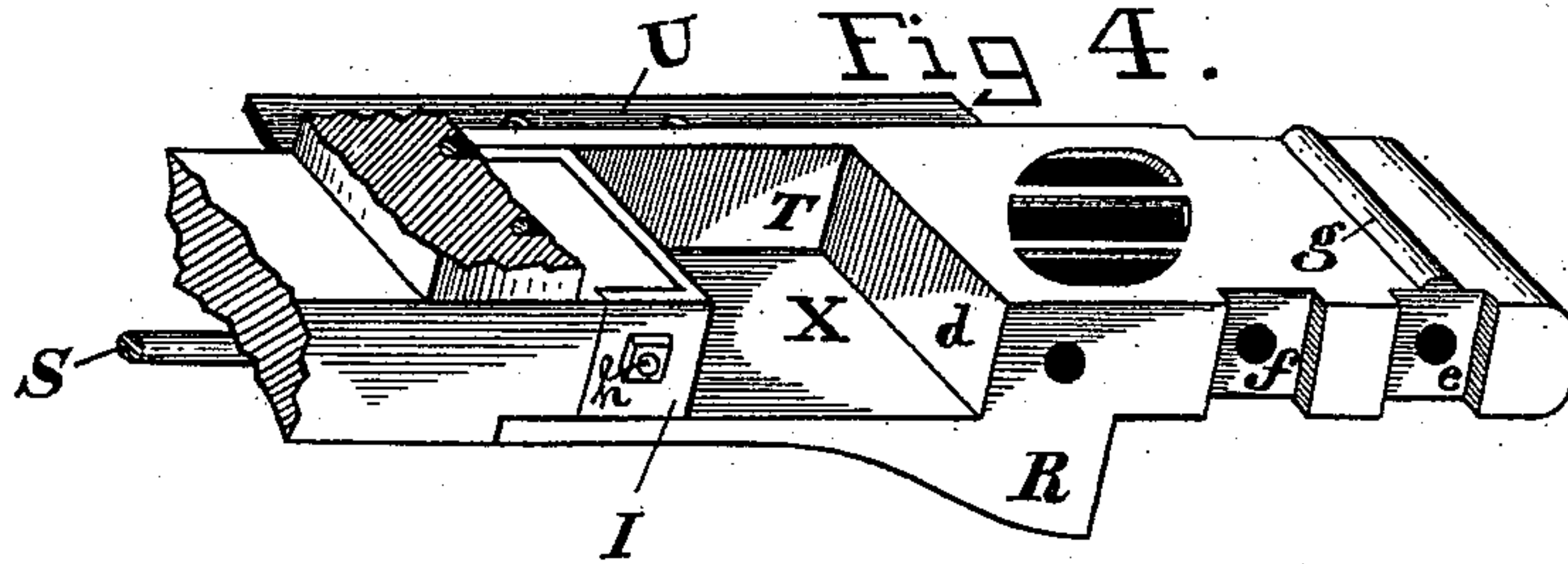
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

THOMAS B. KIRBY, OF CHICAGO, ILLINOIS.

DRAFT-RIGGING FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 534,221, dated February 12, 1895.

Application filed February 24, 1894. Serial No. 501,391. (No model.)

To all whom it may concern:

Be it known that I, THOMAS B. KIRBY, of Chicago, Illinois, have invented certain new and useful Improvements in Draft-Rigging for Railroad-Cars, of which the following is a specification.

My invention relates particularly to the draft gear or rigging of refrigerator and other freight cars.

10 The object of my invention is to provide a simple, economical and efficient draft-rigging, of such construction that the strains and shocks incident to the use of railroad cars are distributed throughout the entire length of the car, so as to relieve as far as possible the parts of the destructive effects of severe buffing or pulling shocks; and the invention consists in the features and combinations hereinafter described and claimed.

20 In the accompanying drawings, Figure 1 is a sectional perspective view of the draft rigging and the adjacent timbers, taken on a line lengthwise to the center of the car; Fig. 2, a perspective view of the center sills and adjacent parts; Fig. 3, a plan view of Fig. 2, looking at it from the top. Figs. 4 and 5 are, respectively, interior and exterior views of one of the draft arms or heads, with a portion of the buffing timber to which it is secured; Fig. 6, a perspective view of the end portion of the buffing timbers and the spring followers; Fig. 7, a perspective view of an ordinary draw-bar carry-iron; Fig. 8, a perspective view of the auxiliary carry-iron and brace; Fig. 9, a similar view of one of the follower straps; and Fig. 10 a perspective view of a portion of the draft arms, buffing timbers and center sills, illustrating a modification of my improvement.

40 A represents the usual longitudinal center sills of the car; M, an ordinary tie block or strengthening timber; N, a king-bolt block; O, transom irons; P, the cross ties or needle beams, and L the sheathing of the car frame.

45 B represents longitudinal buffing timbers which are bolted or otherwise secured to the under side of the center sills. If desired, these buffing timbers may be formed in one piece with the center sills. The latter extend from end to end of the car, while the buffing timbers terminate at a short distance inward from the ends of the car.

50 C represents the end sill and D the head

block. H is the draw bar; G, the yoke attached to the rear portion of the drawbar; E and F, the front and rear followers or follower plates arranged in the yoke, and *b* the springs interposed between the followers. These followers are preferably provided with studs, *a*, which project into the ends of the springs, for preventing displacement thereof, and which also serve as stops which limit the compression of the springs and prevent undue straining of the same.

Q represents metallic draft arms, bars or heads arranged opposite or in front of the ends of the buffing timbers and forming extensions thereof. A pair of such draft arms is arranged at each end of the car. These draft arms are strengthened by suitable ribs, as shown, and each arm is recessed on its inner side, forming a shoulder, *d*, near its middle and a longitudinal top flange, T, extending rearward from said shoulder. The rear ends of the draft arms are secured to the respective buffing timbers by transverse bolts, *c*. In order to fasten the draft arms more securely, they are preferably formed with flanges, U, which overlap the outer sides of the center sills and are secured thereto, as shown in Figs. 2, 4 and 5.

80 J represents a carrying-iron for the draw bar which is secured to the under side of the draft arms, and K is an auxiliary carry-iron and brace arranged behind the ordinary carry-iron and secured to the under sides of the draft arms and the end sill. This brace is provided with shoulders or offsets, as shown in Fig. 8, which offsets bear against the outer sides of the draft arms, thus bracing the arms against lateral displacement.

90 The flanges, T, of the draft arms form guides for the upper edges of the followers and prevent upward displacement of the followers in their pocket.

V represents the transverse follower straps applied to the under side of the draft arms, for retaining the followers in place between the arms. These straps are secured to the draft arms by vertical bolts, *h*, which preferably pass through the straps, the draft arms, the buffing timbers and the center sills.

100 The shoulders, *d*, of the draft arms and the opposing ends of the buffing timbers form, respectively, the abutments of the front and

rear followers, E F, and the recessed sides of the arms, together with such abutments, the flanges, T, and the follower straps, V, form pockets which receive the followers and springs. The shoulders, *d*, are preferably arranged directly in front of the ends of the buffing timbers, so that both draft and buffing strains are exerted in a straight line passing through the draft arms and the buffing timbers. The rear follower bears squarely against the ends of the buffing timbers; and, in order to protect such ends against splitting or other injury, they are preferably faced with impact plates, I, having lips or flanges through which the bolts, *h*, pass, as shown in Figs. 4, 5 and 6.

g represent upright draw-bar guides or ribs projecting from the inner sides of the draft arms and filling the space between the inner sides of the said arms and the adjacent sides of the draw bar.

S S W represent longitudinal tie or draft rods which firmly connect the draft arms to the ends of the buffing timbers. These tie rods are arranged on the outer sides of the buffing timbers, and each rod ties together two draft arms on the same side of the car and at opposite ends thereof. The draft arms are provided on their outer sides with lugs or flanges, R, to which the ends of the tie rods are secured by screw nuts applied to the ends of the rods and bearing against the outer sides of said lugs, as shown, or by any other suitable means. In the drawings, these tie rods are represented as composed of three sections, the sections, S, extending from the lugs, R, of the draft arms inwardly to the cross ties, P, of the car frame, and the section, W, connecting said cross ties. While this sectional construction is preferred, each tie rod may consist of a single continuous rod extending from end to end of the car; or, if desired, each rod may be composed of two sections united at their inner ends by an ordinary turn buckle.

Heretofore it has been the custom to extend the buffing or draft timbers from end to end of the car and secure cheek plates or follower supporting plates to the sides of such timbers; but this construction is objectionable because the draft and buffing strains are exerted by the followers upon the lugs of such cheek plates, causing the bolt holes to become worn and the bolts to become loose and necessitating a frequent renewal of the parts.

By arranging the rear follower to bear against the ends of the buffing timbers, the buffing strains incidental to coupling or pushing the cars are received by such timbers and distributed throughout the length thereof, thereby relieving the draft arms from such strains and preventing loosening or breakage thereof.

The draft strains incidental to drawing the cars are received first by the springs of the drawbar and the followers, and as the front follower abuts against the shoulders of the adjacent draft arms the strain is exerted upon

the latter, whence it is transmitted through the tie rods, S S W, to the draft arm at the opposite end of the car, and from said draft arm to the buffing timbers, thus distributing the strain from end to end of the car and largely relieving the draft arms.

The arrangement of the draft arms at the ends of the buffing timbers, instead of on the sides thereof, as heretofore applied, not only relieves such arms from strains which tend to loosen and displace the same; but it also permits a closer and more compact build of the center sills, thus producing a stronger structure and one which is capable of offering a more effective resistance to shocks and strains.

If desired, the draft arms may be provided—in addition to the flanges U—with a flange, *l*, arranged at right angles to the arm and secured to the rear side of the end sill, as shown in Fig. 10.

I claim—

1. In draft rigging for railway cars, the combination of buffing timbers which terminate near the ends of the car, metallic draft arms arranged opposite the ends of and substantially in line with the buffing timbers, forming recesses between the draft arms and the buffing timbers and draw-bar spring mechanism interposed in the recess between the draft arms and the ends of the buffing timbers, substantially as described.

2. In draft rigging for railway cars, the combination of buffing timbers which terminate near the ends of the car, metallic draft arms arranged opposite the ends of and substantially in line with the buffing timbers, and forming recesses between the draft arms and buffing timbers a front follower plate arranged to abut against the draft arm, a rear follower plate to abut against the ends of the buffing timbers, and spring mechanism interposed between the follower plates to receive the strains and support the draw-bar mechanism, substantially as described.

3. In draft rigging for railway cars, the combination of buffing timbers which terminate near the ends of the car, draft arms arranged opposite the ends of and substantially in line with the buffing timbers, and forming recesses between the draft arms and buffing timbers draw-bar spring mechanism interposed between the draft arms and the ends of the buffing timbers, and rigid tie or draft rods uniting the draft arms on the same side of the car and at opposite ends thereof, substantially as described.

4. In draft rigging for railway cars, the combination of buffing timbers which terminate near the ends of the car, draft arms arranged opposite the ends of and in line with the buffing timbers forming a shouldered recess between them and the buffing timbers, a front follower plate arranged to bear against the shoulders of the draft arms, a rear follower plate arranged to bear against the ends of the buffing timbers, and spring mechanism inter-

posed between the follower plates to receive the strains and support the draw-bar mechanism, substantially as described.

5 In draft rigging for railway cars, the combination of timbers which terminate near the ends of the car, draft arms arranged opposite the ends of and substantially in line with the buffing timbers, each provided on its outer longitudinal surface with a lug and forming
10 a recess on its inner side between the draft arms and the ends of the buffing timbers, draw-bar spring mechanism arranged in the recess, and tie or draft rods securing the draft arms by their lugs on the same side of the
15 car at opposite ends thereof substantially as described.

6. In draft rigging for railway cars, a metallic extension for the buffing timbers partially

secured thereto by a bolt which passes through the follower plate guide on said draft arm, one 20 of the buffing timbers, flanged strike plate at the end of the buffing timber, and through one end of the lower follower strap, the said bolt also passing through the car sills, whereby the said several parts are held in place by the 25 said bolt, substantially as described.

7. In draft rigging for railway cars, metallic draft arms forming extensions of the buffing timbers, and which in connection with the ends of the buffing timbers and lower follower 30 strap form a case for the draw-bar follower plates and springs, substantially as described.

THOMAS B. KIRBY.

Witnesses:

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W. B. CARPENTER.