

No. 775,977.

PATENTED NOV. 29, 1904.

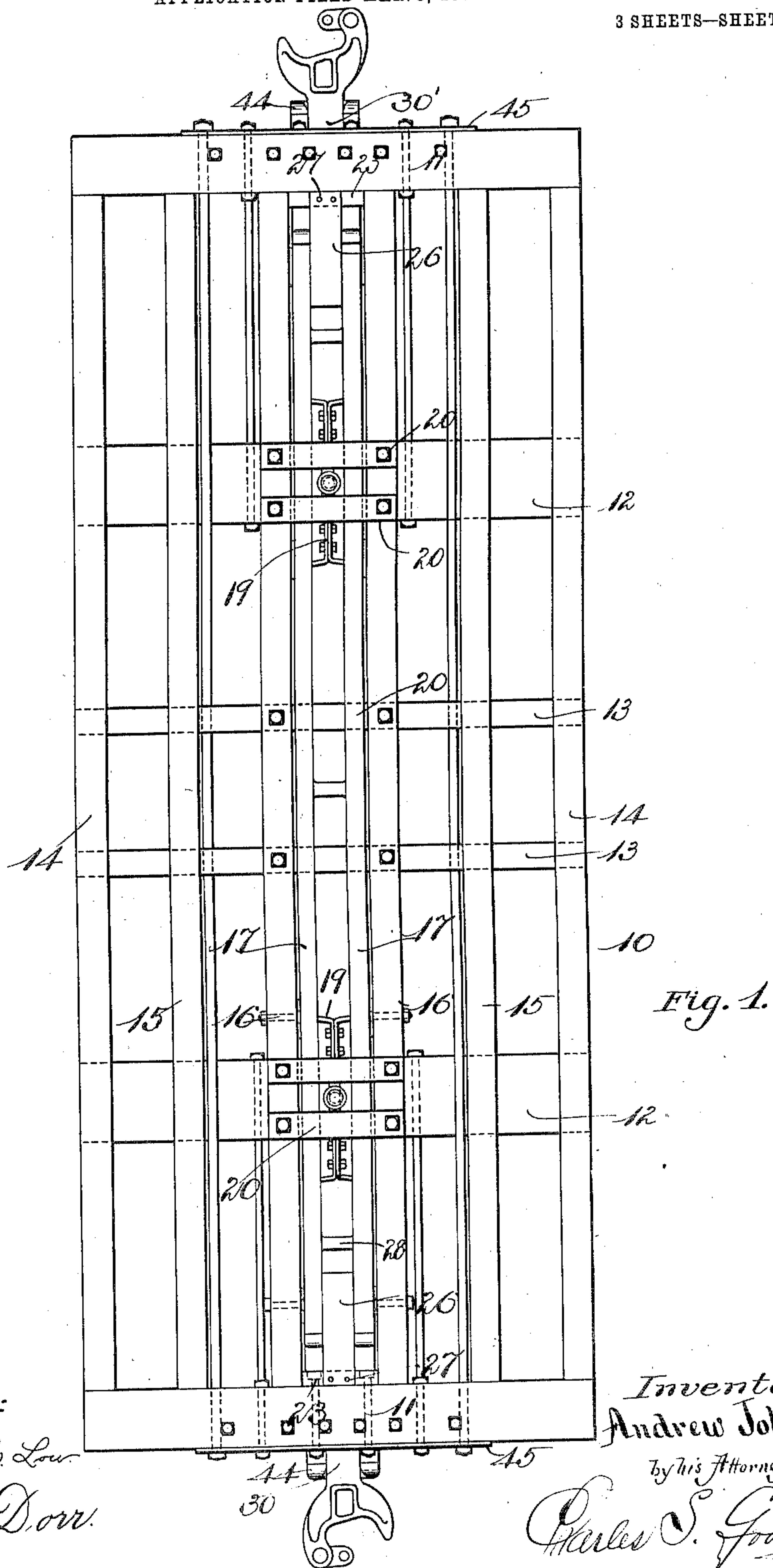
A. JOHNSON.

CONTINUOUS DRAFT RIGGING FOR CARS.

APPLICATION FILED MAR. 5, 1904.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:

Franklin C. Low.

Fred. E. Dorr.

Inventor:

Andrew Johnson

by his Attorney,

Charles S. Gooding.

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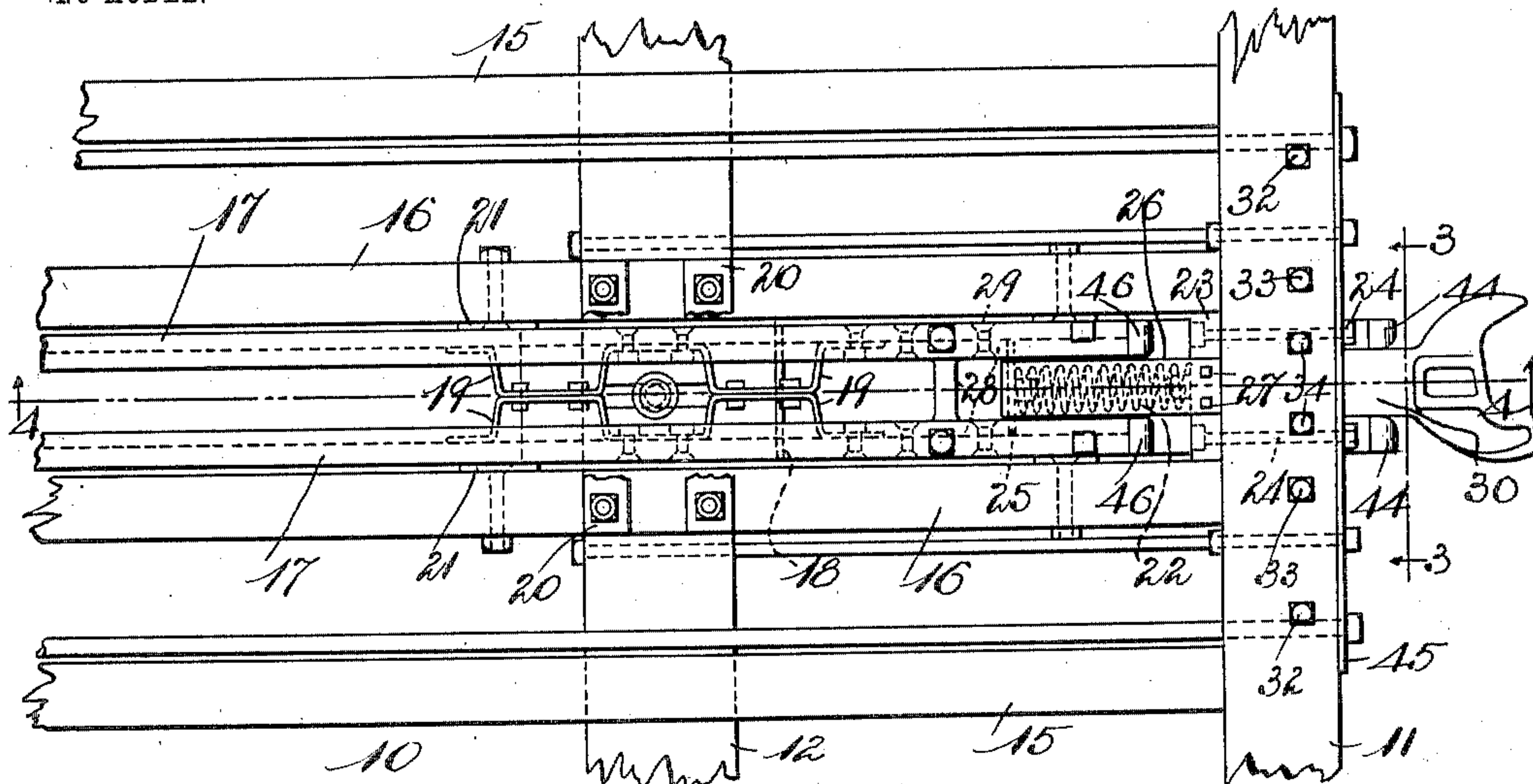


Fig. 2.

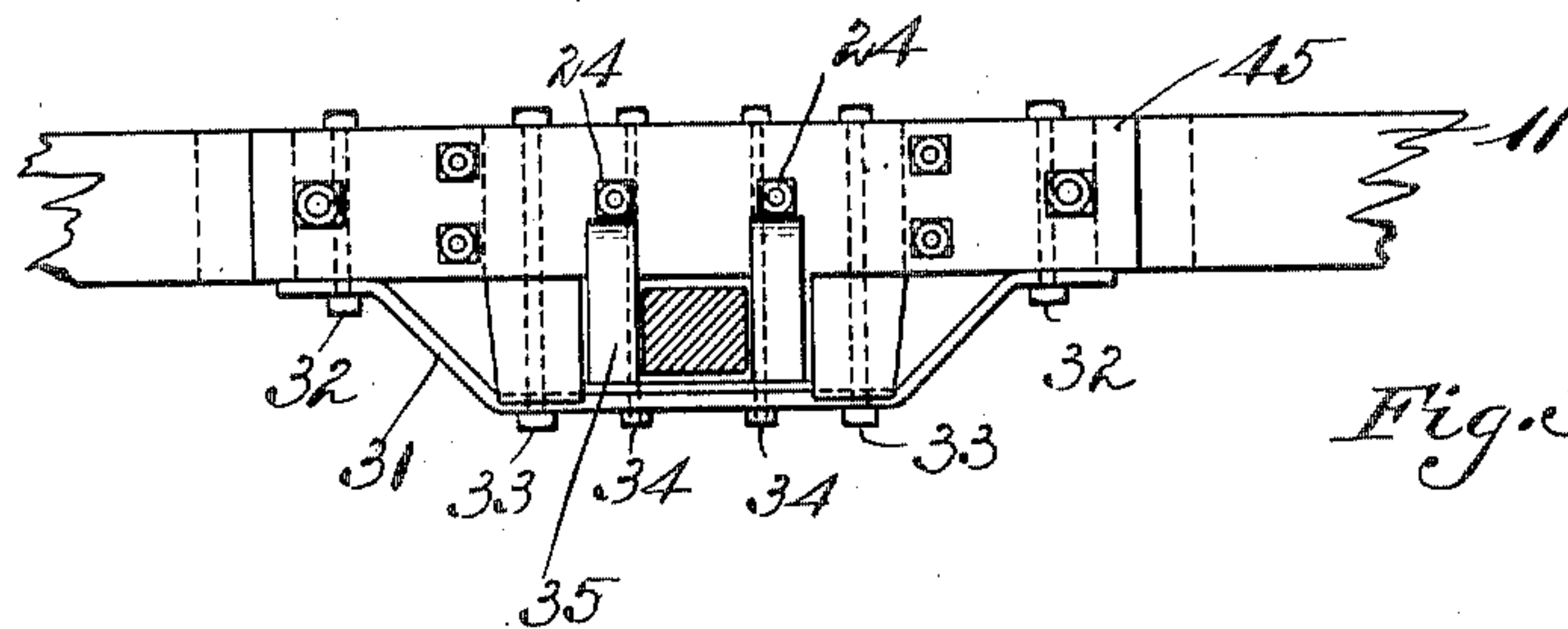


Fig. 3.

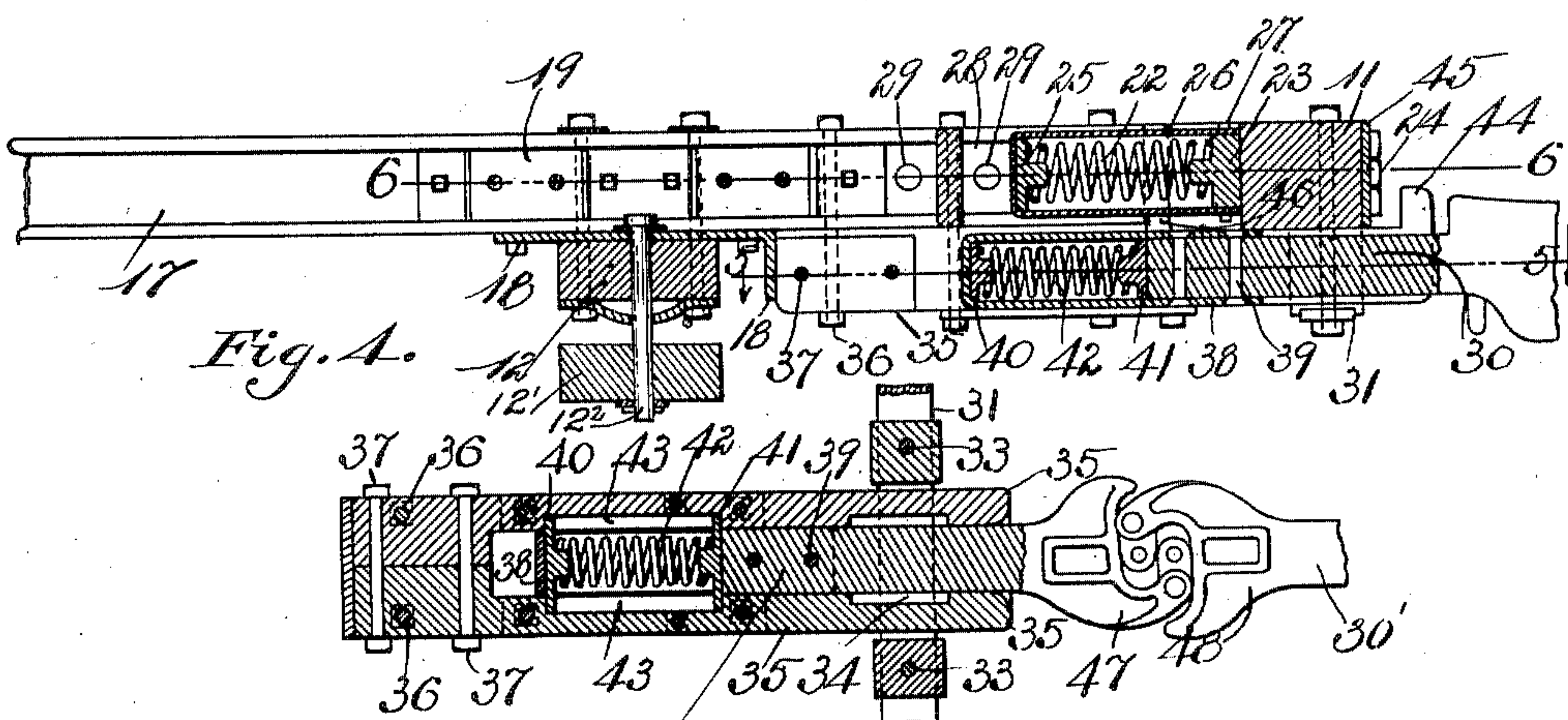


Fig. 4.

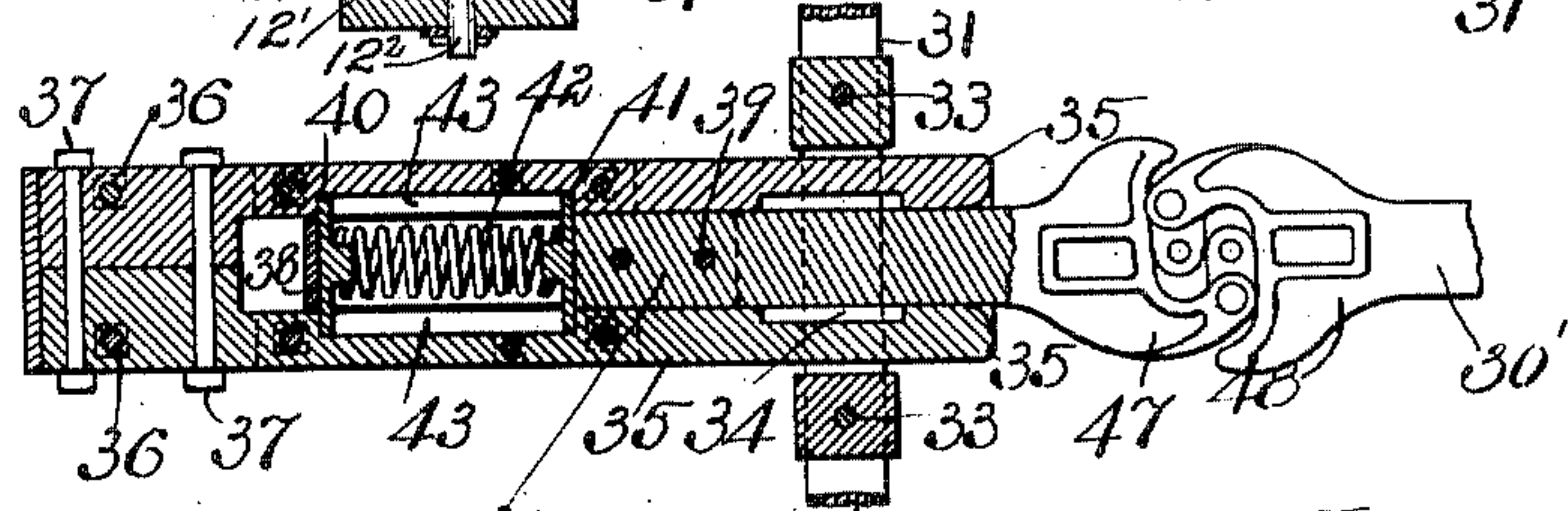


Fig. 5.

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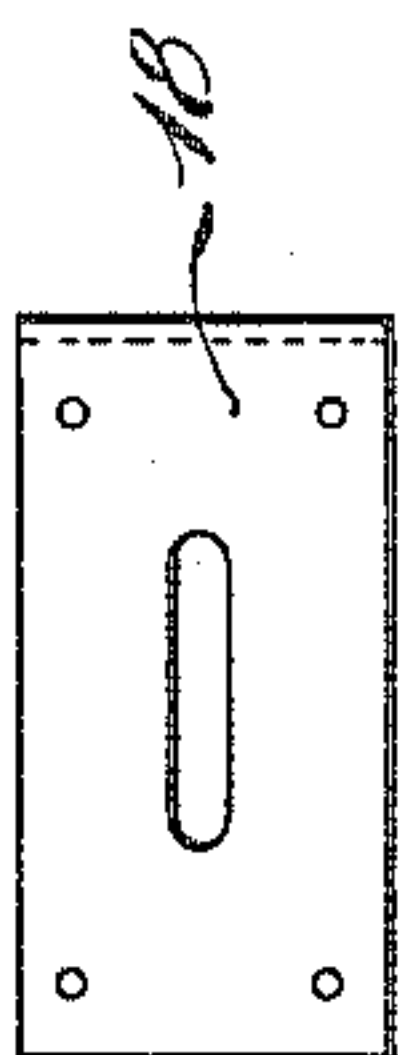


Fig. 7.

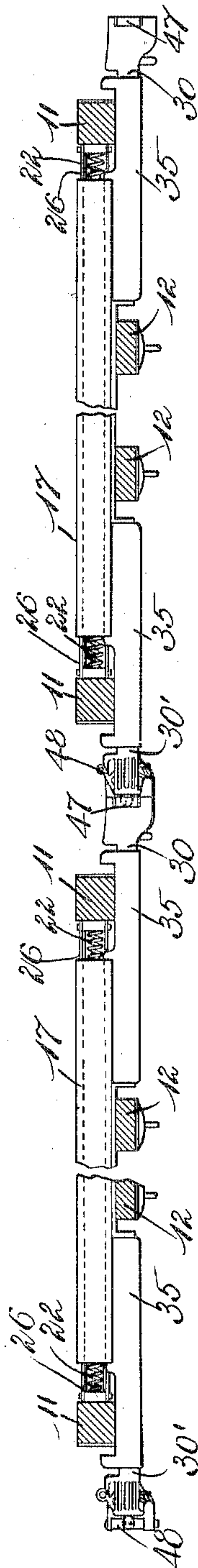


Fig. 8.

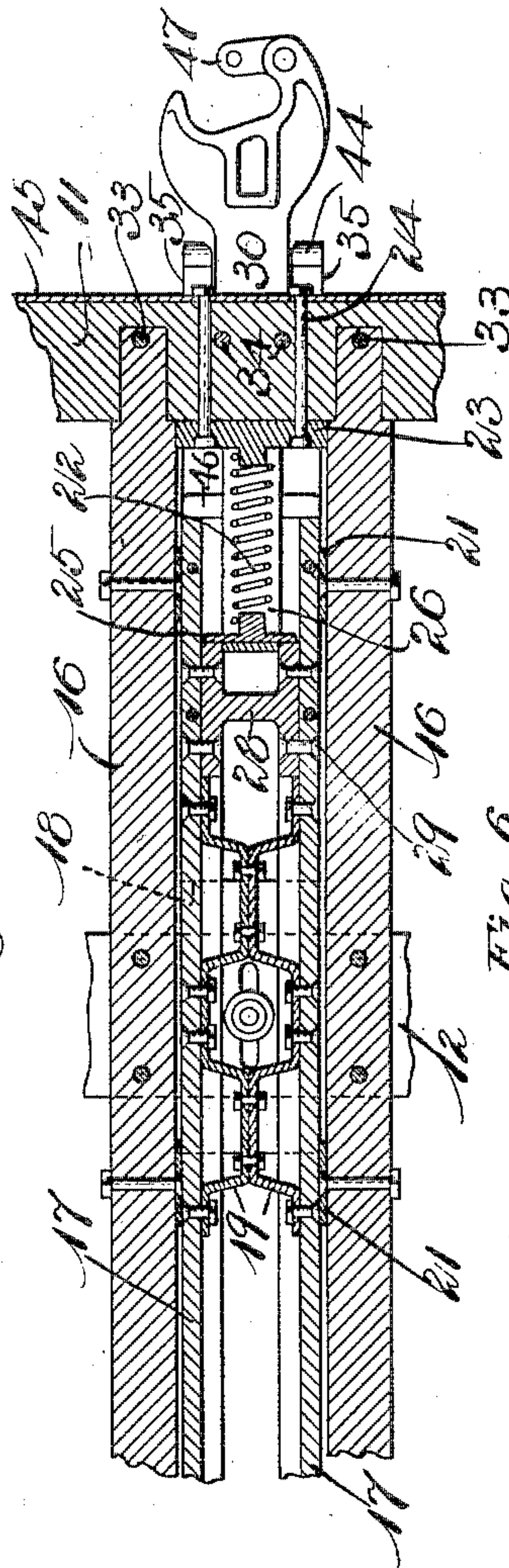


Fig. 6.

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UNITED STATES PATENT OFFICE.

ANDREW JOHNSON, OF CONCORD, NEW HAMPSHIRE.

CONTINUOUS DRAFT-RIGGING FOR CARS.

SPECIFICATION forming part of Letters Patent No. 775,977, dated November 29, 1904.

Application filed March 5, 1904. Serial No. 196,677. (No model.)

To all whom it may concern:

Be it known that I, ANDREW JOHNSON, a citizen of the United States, residing at Concord, in the county of Merrimac and State of New Hampshire, have invented new and useful Improvements in Continuous Draft-Rigging for Cars, of which the following is a specification.

This invention relates to an improved draft-rigging for cars, the object of the invention being to provide a strong, durable, and flexible rigging connecting together the draw-bars at opposite ends of the same car and also to provide a continuous flexible draft-rigging connecting one car to another throughout the entire length of a train of cars, said draft-rigging being independent of the center or draw sills of the car-frames, so that the strain upon said sills of the car-frames is lessened and the train started or stopped by a continuous flexible draft-rigging extending throughout the entire length of the train.

The object of my invention is, further, to save the wear and tear upon the car-body incident to the shocks and stresses caused by the cars being coupled, thus saving the running-gear and freight from injury and also causing a train of cars to start and stop with more flexibility and freedom from jars.

The invention consists of a car-frame, a draw-bar frame supported upon, extending longitudinally of, and adapted to slide upon, said car-frame, with a draw-bar attached to each of its opposite ends, combined with a spring interposed between said car-frame and draw-bar frame, said spring being adapted to receive an endwise thrust imparted to the draw-bar frame and transfer said thrust to the car-frame.

The invention again consists in the instrumentalities hereinbefore set forth in combination with trucks pivoted to said car-frame.

The invention again consists in a series of car-frames connected together by a draft-rigging comprising a series of draw-bar frames, each of said frames being adapted to slide longitudinally upon its respective car-frame and having a draw-bar at each of its opposite ends adapted to slide upon said draw-bar frame, a spring interposed between each of said car-frames and its respective draw-bar frame, and

means to connect each adjacent pair of draw-bars together.

The invention finally consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims thereof.

Referring to the drawings, Figure 1 is a plan view of a car-frame of well-known construction with my improved draft-rigging attached thereto. Fig. 2 is an enlarged plan of a portion of the end of a car-frame with my improved draft-rigging attached thereto. Fig. 3 is a section taken on line 3 3 of Fig. 2 looking toward the left. Fig. 4 is a longitudinal section, partly in elevation, taken on line 4 4 of Fig. 2. Fig. 5 is a section, partly in elevation, taken on line 5 5 of Fig. 4, illustrating two draw-bars attached one to the other by couplers. Fig. 6 is a detail section on line 6 6 of Fig. 4. Fig. 7 is a plan view of a channel-bar tie-plate. Fig. 8 is a side elevation, on a reduced scale, of two draw-bar frames joined together by couplers, said frames being partly broken away and shown in connection with the end sills and body-bolsters of two car-frames.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 10 is a car-frame of well-known construction. 11 11 are the end sills; 12 12, the body-bolster; 12', the truck-bolster, and 12" the king-bolt, by means of which the truck-frame is pivoted to said car-frame; 13 13, the cross-frame tie-timbers; 14 14, side sills; 15 15, intermediate sills, and 16 16 the center sills. Between the center sills 16 are two channel-irons 17 17, which extend throughout the entire length of the frame to within a short distance of the inside of each of the end sills 11. These channel-irons are fastened together by tie-plates 18, which are fast to the lower flanges of said channel-irons and extend across therebeneath, resting upon the top of the body-bolster 12. Tie-plates 19 are fastened to the web of the channel-irons 17 and to each other and form an additional means of rigidly securing said channel-irons one to the other. Tie-plates 20 20 extend across the top of the channel-irons 17 and are rigidly bolted to the center sills 16, thus form-

ing guides to prevent the channel-irons from moving upwardly between the center sills 16. The channel-irons 17 are prevented from rubbing against the inner sides of the center sills 16 by guide-blocks 21, fast to said sills. At each of the opposite ends of the channel-irons 17 a spring 22 is interposed between said channel-irons and the end sills 11, one end of said spring bearing against a plate 23, fastened by bolts 24 to the end sill 11, the opposite end of said spring bearing against a follower-plate 25, which in turn bears against a U-shaped strap-plate 26, the ends of said strap-plate being fastened by bolts 27 to the plate 23. The follower 25 projects laterally upon each side of the strap-plate 26 between the flanges of the channel-irons 17 and normally abuts against the ends of the stop-plates 28, fastened by bolts 29 to the web of the channel-irons 17.

The draw-bar 30 rests upon a carrier-iron 31, fastened by bolts 32, 33, and 34 to the end sill 11. Said draw-bar slides between two draft-arms 35, which are fastened by bolts 36 to the channel-irons 17 and are also fastened firmly together by bolts 37. A U-shaped strap-plate 38 is fastened at its ends by rivets 39 to the draw-bar 30 and extends rearwardly therefrom, inclosing two follower-plates 40 and 41 at opposite ends, respectively, of said strap-plate, and between said follower-plates a spiral spring 42 is located. Said follower-plates 40 and 41 project laterally into recesses 43, formed in the inner face of the draw-plates 35, and normally rest against the opposite ends, respectively, of said recesses.

It will be understood that the channel-irons 17, tie-plates 18, and draft-arms 35 are rigidly fastened together and form as a whole a draw-bar frame, the opposite ends of said draw-bar frame being duplicates of each other. The draw-plates 35 are provided with projections 44, which extend upwardly therefrom and abut against the buffer-plate 45 when the springs 42 and 22 are compressed, as hereinafter described. Each of the draft-arms 35 is provided with lugs 46, extending upwardly therefrom and abutting against the end of the channel-irons 17.

The operation of my improved draft-rigging is as follows: Assuming the parts to be in the position indicated in Figs. 2, 4, and 5, when the cars are brought together the draw-bar 30 will be forced toward the left, Fig. 4, first compressing the spring 42 to nearly its full capacity of compression, whereupon said draft-arms will be driven toward the left, carrying the channel-irons 17 with them and compressing the channel-iron spring 22 at the left-hand end of the frame. When the draw-bar 30 is pulled toward the right by the tension thereon of the couplers 47 and 48 and draw-bar 30' as the cars are moved toward the right, Fig. 5, the spring 42 will be first

compressed by the follower-plate 40 and strap-plate 38 and will be drawn against the follower-plate 41, which will abut against the end of the recesses 43 in the draft-arms 35, and thus said draft-arms will be drawn toward the right in said figure and will carry the channel-irons 17 with them, compressing the spring 22 at the right-hand end of the channel-irons 17 in said figure.

It will be seen that where a series of cars are equipped with my improved draft-rigging the maximum strain will not be transferred from draw-bar to draw-bar throughout the car-frame, but through the channel-irons 17 and draft-arms 35, the advantage to be derived from the construction being that the draft-rigging will form a flexible device independent of the car-body except in so far as it is connected thereto by the springs 22, and the cars will be saved from the injuries caused by shocks, so that when the train starts or stops there will be a great saving in the shock as compared with trains composed of cars as now constructed, the result being the saving of damage to freight or passengers and all running-gear and also the very important saving of the injury to and breaking of the center or draw sills, which in the present construction, where the draft-rigging is bolted to said sills, are constantly breaking over the body-bolster on account of the great strain which is imparted directly to said sills.

While I have described the best form now known to me of carrying into practical operation my improved draft-rigging, I do not wish to be understood as limiting myself to the exact construction of parts hereinbefore set forth.

Having thus described my invention, what I claim, and desire by Letters Patent to secure, is—

1. A car-frame, a draw-bar frame extending longitudinally of said car-frame and adapted to slide thereon, a draw-bar at each of the opposite ends, respectively, of said draw-bar frame adapted to slide upon said draw-bar frame, and a spring interposed between said car-frame and each of the opposite ends, respectively, of said draw-bar frame, said springs adapted to receive, respectively, endwise thrusts imparted to said draw-bar frame in opposite directions.

2. A car-frame, a draw-bar frame extending longitudinally of said car-frame and adapted to slide thereon, a draw-bar at each of the opposite ends, respectively, of said draw-bar frame adapted to slide upon said draw-bar frame, a spring, one end bearing against said car-frame, and a follower bearing against the opposite end of said spring and abutting against said draw-bar frame.

3. A car-frame, a draw-bar frame supported upon, extending longitudinally of, and adapted to slide upon said car-frame, a draw-bar attached to each of the opposite ends, respec-

tively, of said draw-bar frame adapted to slide upon said draw-bar frame, a spring interposed between each of said draw-bars and said draw-bar frame, respectively, and a spring interposed between said car-frame and each of the opposite ends, respectively, of said draw-bar frame, said springs adapted to receive, respectively, endwise thrusts imparted to said draw-bar frame in opposite directions.

10 4. A car-frame, trucks pivoted thereto, a draw-bar frame supported upon, extending longitudinally of, and adapted to slide upon said car-frame, a draw-bar at each of the opposite ends, respectively, of said draw-bar frame, and a spring interposed between said
15 car-frame and draw-bar frame and adapted to receive an endwise thrust imparted to said draw-bar frame.

5. A car-frame comprising in its construc-

tion two center sills extending longitudinally thereof, body-bolsters extending transversely of and fast to said center sills, a draw-bar frame located between said center sills and adapted to slide upon said body-bolsters, a draw-bar at the opposite ends, respectively, of said draw-bar frame and a spring interposed between said draw-bar frame and end sills at opposite ends thereof, respectively, and adapted to receive an endwise thrust imparted to said draw-bar frame.

30 In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ANDREW JOHNSON.

Witnesses:

CHARLES S. GOODING.

ANNIE J. DAILEY.