

No. 703,108.

Patented June 24, 1902.

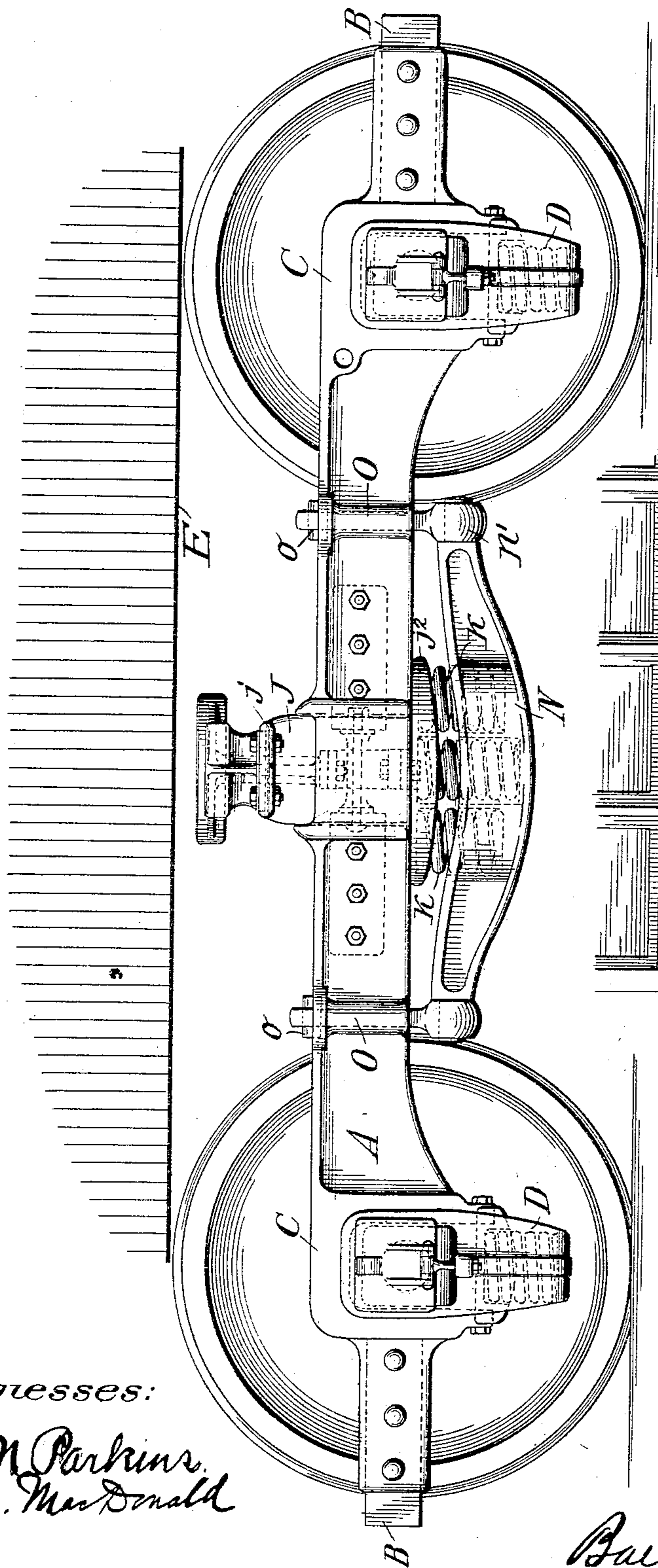
W. S. G. BAKER.
CAR TRUCK.

(Application filed Jan. 16, 1902.)

(No Model.)

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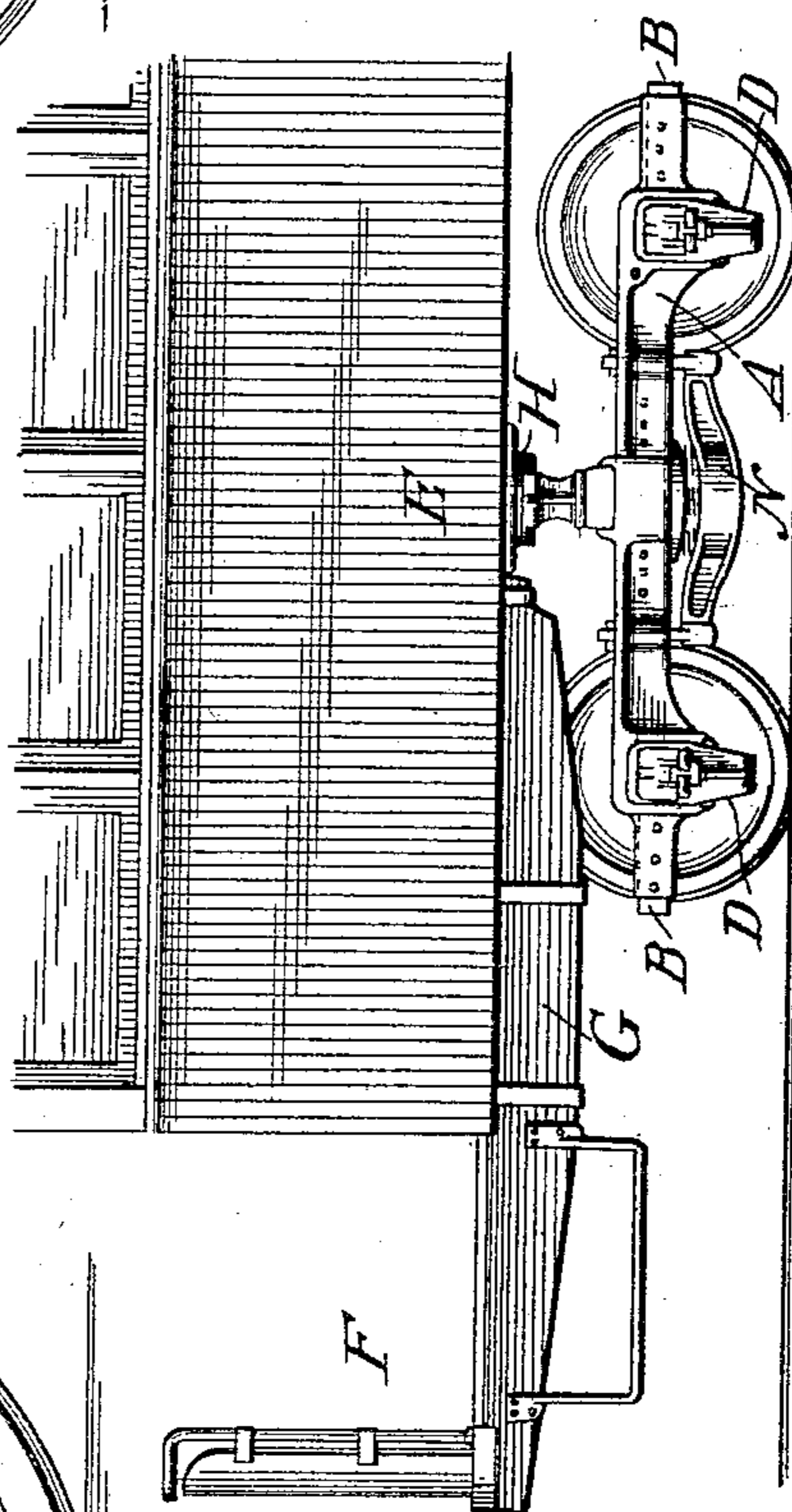
Fig. 1.



Witnesses:

A. M. Perkins.
J. A. McDonald

Fig. 2.



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W. S. G. Baker,
By his Attorneys,

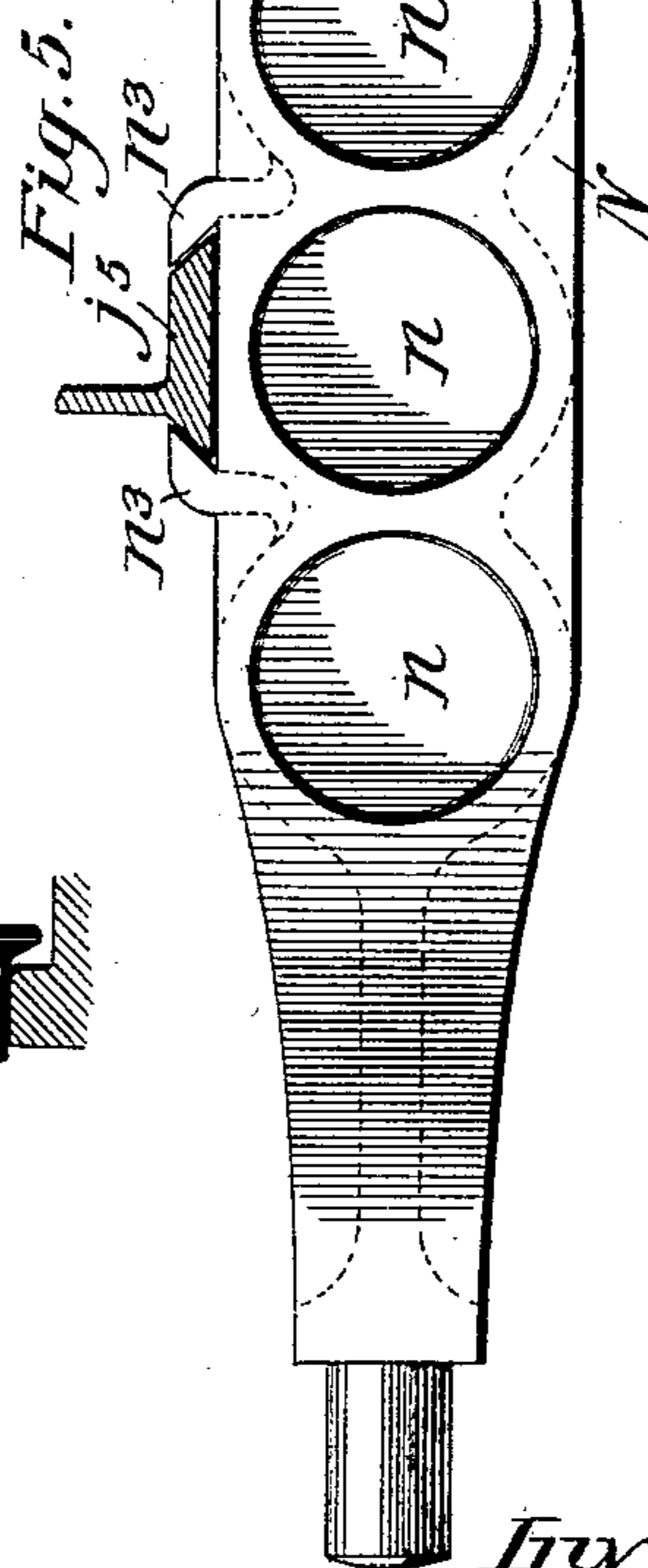
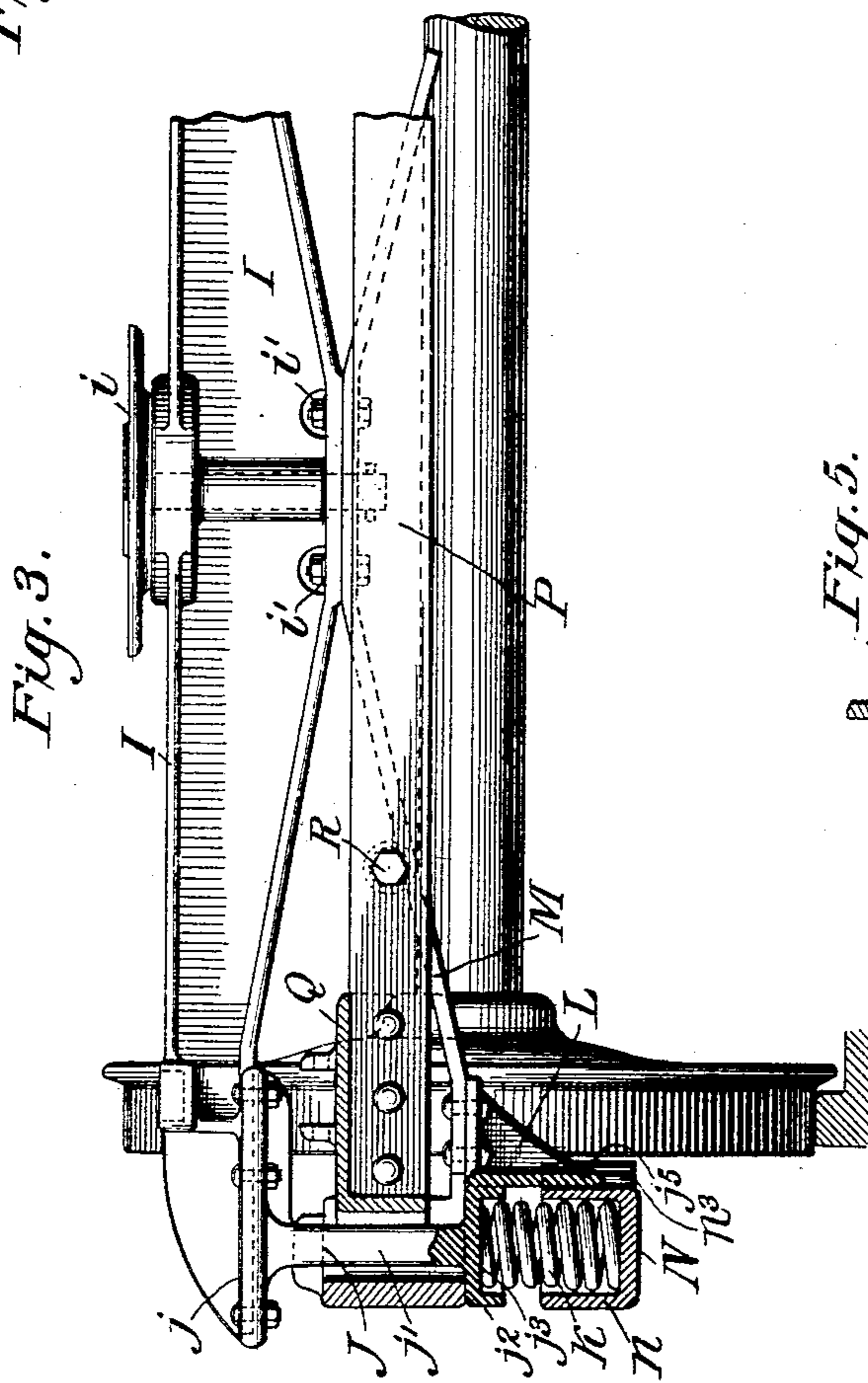
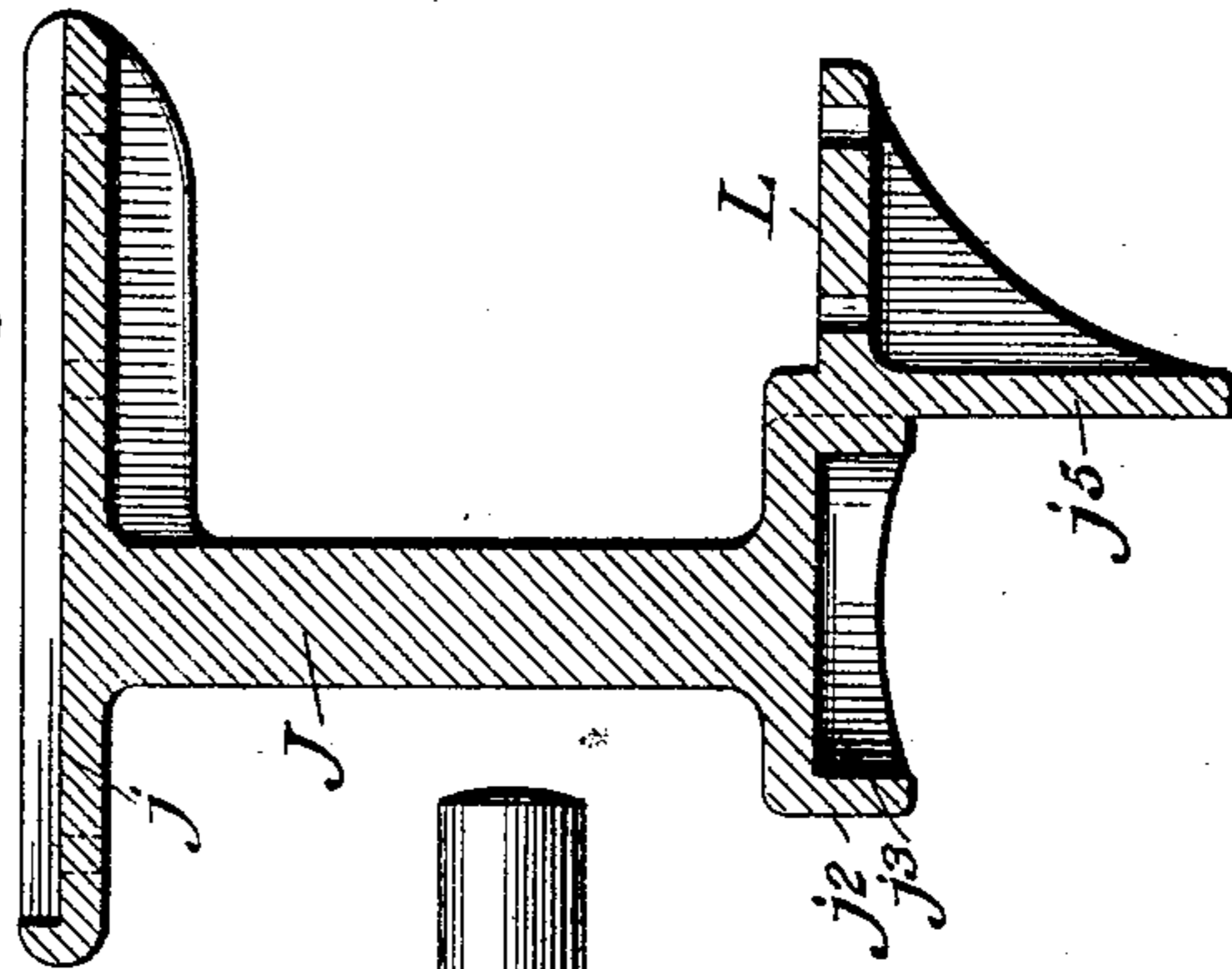
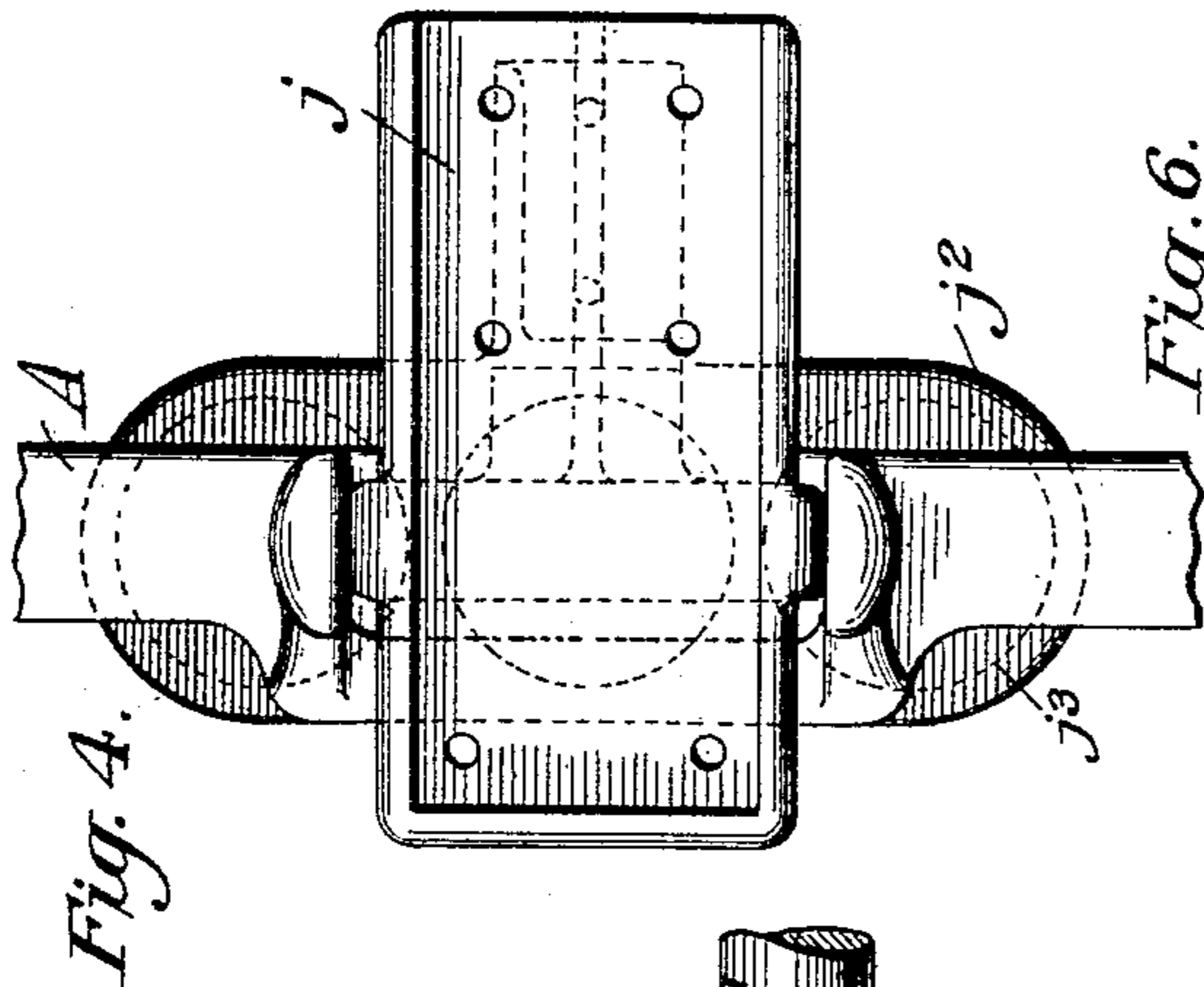
Baldwin, Davidson & Wright.

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(No Model.)

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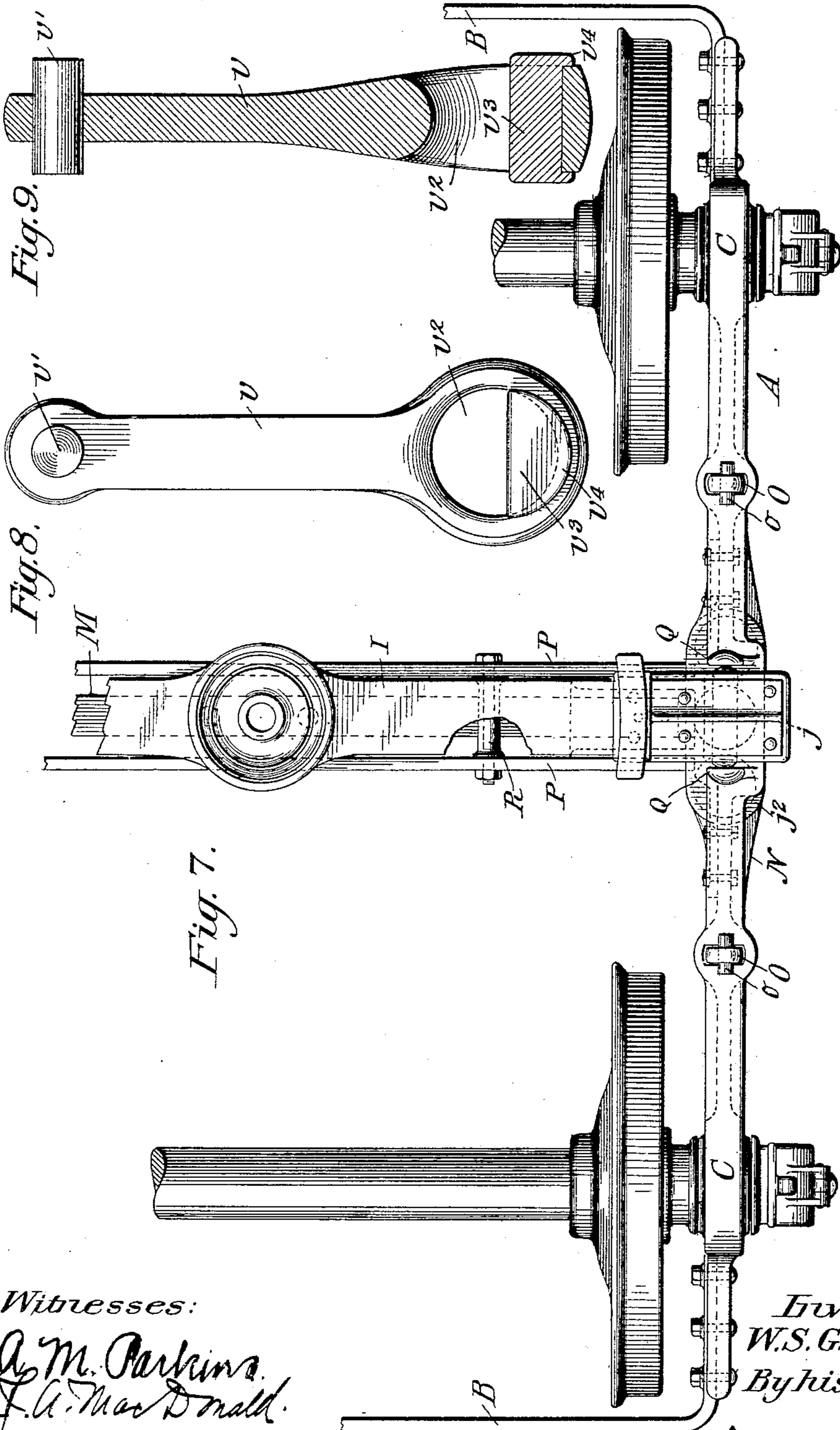
Baldwin Davidson & Wight

W. S. G. BAKER.
CAR TRUCK.

(Application filed Jan. 18, 1902.)

(No Model.)

5 Sheets—Sheet 3.



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No. 703,108.

Patented June 24, 1902.

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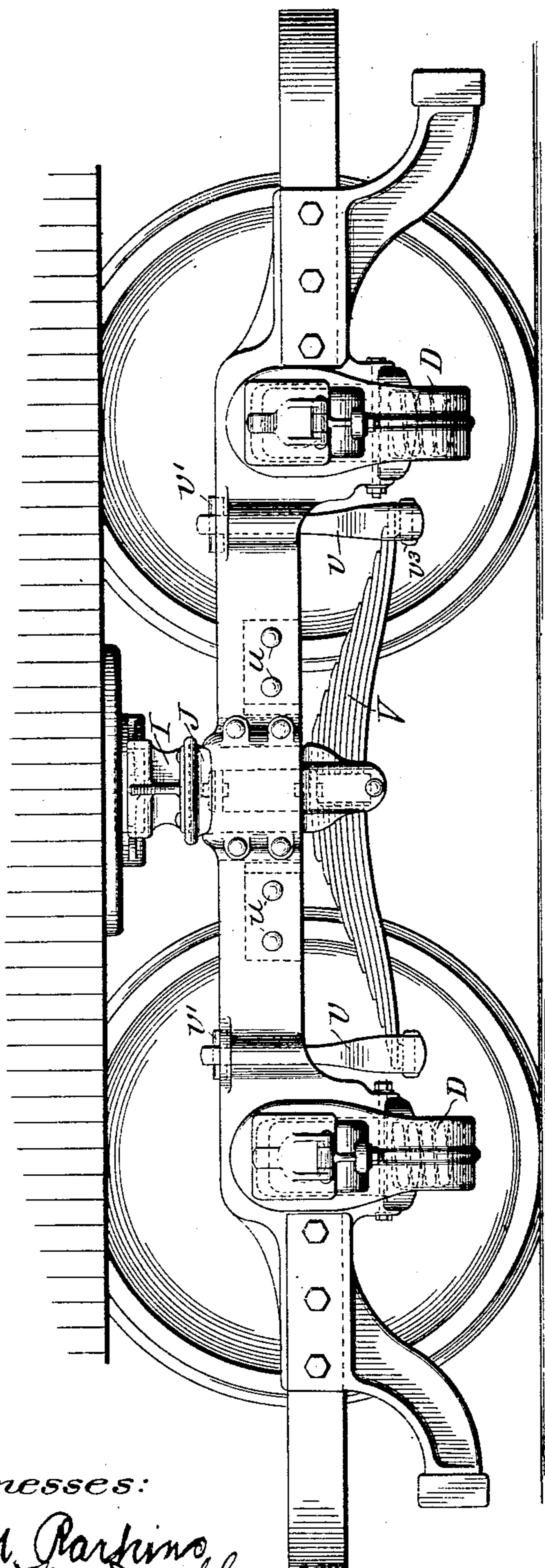
CAR TRUCK.

(Application filed Jan. 16, 1902.)

(No Model.)

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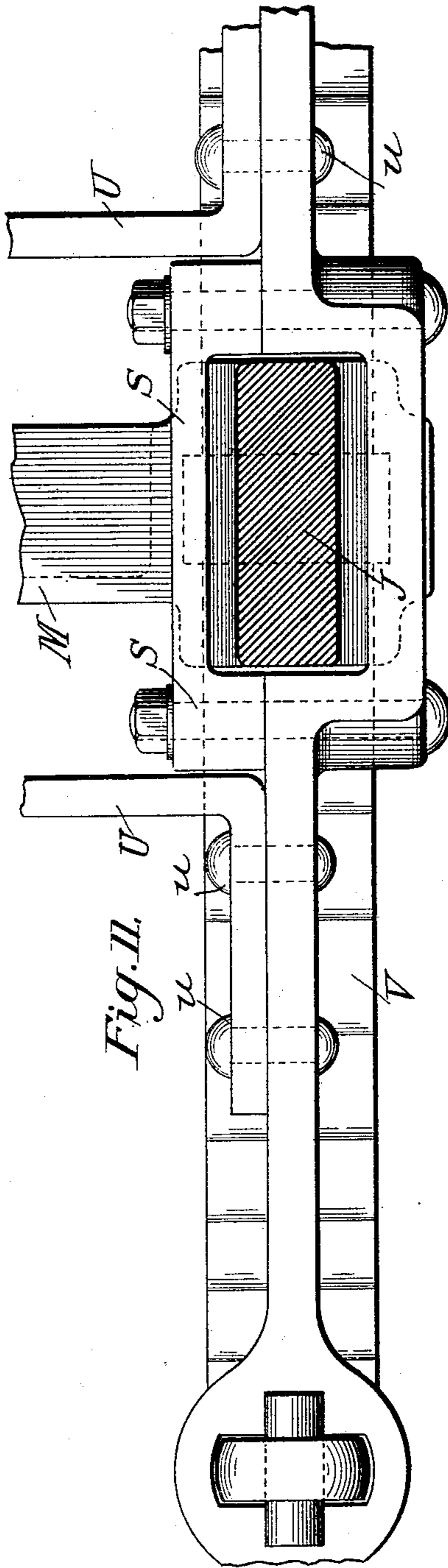
Fig. 10.



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Fig. 11.



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No. 703,108.

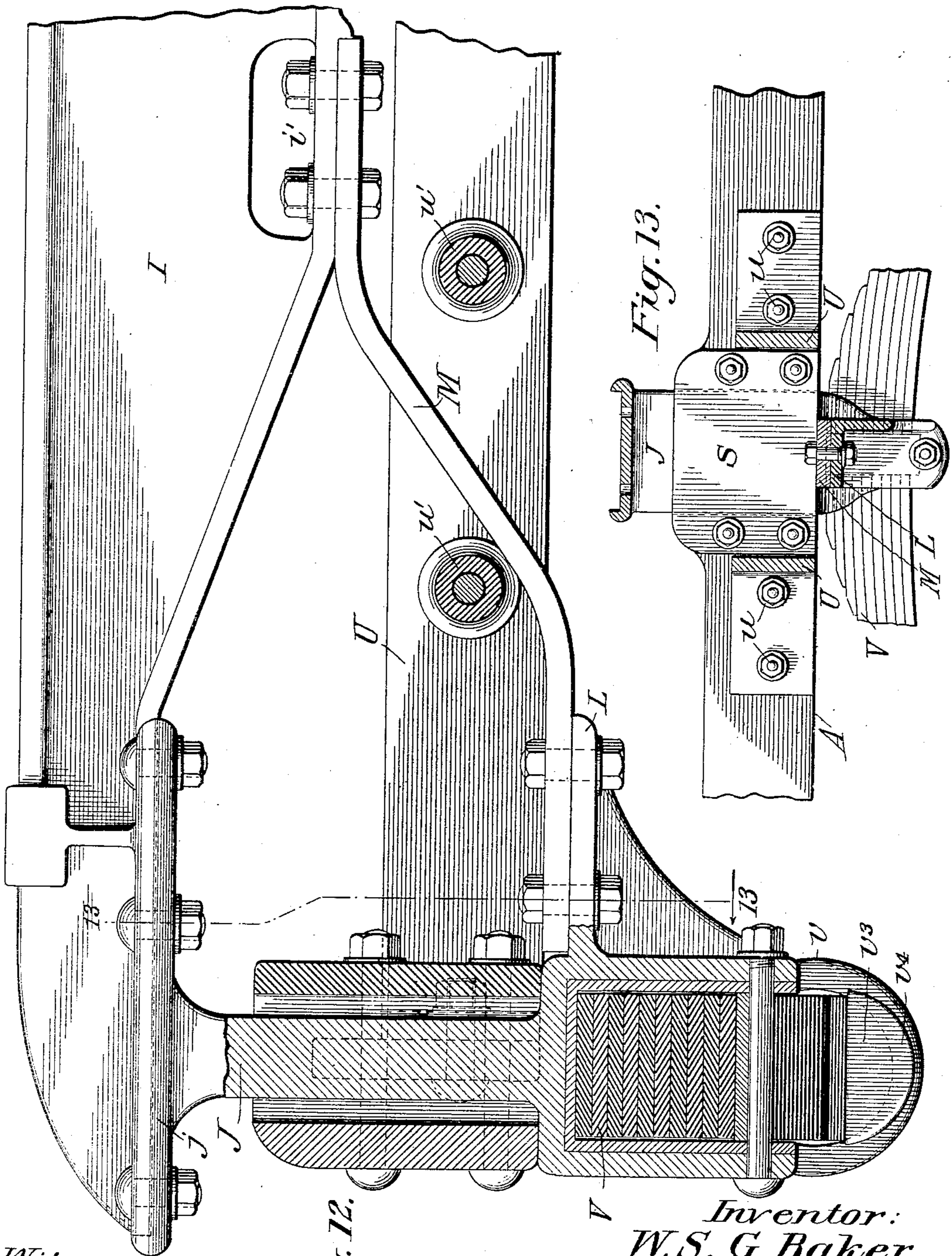
W. S. G. BAKER.
CAR TRUCK.

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Fig. 12.

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UNITED STATES PATENT OFFICE.

WILLIAM SEBASTIAN GRAFF BAKER, OF BALTIMORE, MARYLAND.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 703,108, dated June 24, 1902.

Application filed January 16, 1902. Serial No. 89,973. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SEBASTIAN GRAFF BAKER, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new Improvements in Car-Trucks, of which the following is a specification.

My invention relates to that class of car-trucks known as "center-bearing" trucks, which are pivotally connected with the car-body and in which the truck-bolster is free to swing laterally with reference to the truck. In such trucks the bolster is supported on springs, which are in turn connected with the side frames of the truck by links which permit them to swing with the bolster, and the connections between the bolster and the springs are so arranged as to move vertically in the truck-frame, as well as laterally with reference thereto.

The object of my invention is to improve the construction of such trucks and to render them more durable.

The axle-boxes in my improved truck are cushioned on springs supported on the side frames of the truck below the axle-boxes, by which arrangement the tops of the side frames are lowered, thereby permitting the lookout-timbers of the car or platform-supports to be extended over the axle-boxes and back to the body-bolster, by which arrangement a more substantial support for the end platforms is afforded. In other trucks of this type the "lookout-timbers" have terminated near the ends of the car-body and have been securely fastened thereto by extra strong fastenings, it being impracticable in such constructions heretofore to carry lookout-timbers back to the body-bolster without interfering with the springs or cushions of the axle-boxes, which in such trucks have been arranged above the side frames.

In my improved truck the truck-bolster is secured at each end to a post which extends through an opening in the side frame and rests upon springs which are suspended by links hung from the side frame. The springs are arranged in the center line of the side frames, and they may be either half-elliptical springs or they may be spiral springs. The lower ends of the posts are connected to the

lower portion of the truck-bolster by brace-bars. This arrangement insures the perfect alinement or parallelism of the posts with each other and enables them to move properly in their guides, and it also provides a rigid connection between the posts and the truck-bolster.

The details of construction of my improved truck are illustrated in the accompanying drawings and will be hereinafter described.

The subject-matter deemed novel is set forth in the claims.

In the drawings, Figure 1 shows a side elevation of one form of my improved car-truck, the relation of the truck to the body being also indicated. Fig. 2 shows a side elevation of one of my improved trucks and a portion of a car-body. This figure of the drawings illustrates the manner in which the lookout-timbers are arranged relatively to the truck. Fig. 3 is a detail view, partly in transverse section, of the truck shown in Fig. 1. It illustrates particularly the manner in which one end of the truck-bolster is supported by the springs which are swung from the side frame of the truck. Fig. 5 is a plan view, on an enlarged scale, of the spring supporting-bar used in the truck shown in Figs. 1 and 3. Fig. 4 is a detail plan view, on an enlarged scale, showing particularly the manner in which one of the posts to which the truck-bolster is secured is guided in the side frame of the truck. Fig. 6 shows, on an enlarged scale, a vertical central section through one of the posts. Fig. 7 shows a plan view of a portion of the truck shown in Fig. 1. Fig. 8 shows an end elevation of one of the links employed for supporting a half-elliptical spring in the form of truck shown in Fig. 10. Fig. 9 shows a vertical central section through the link shown in Fig. 8. Fig. 10 shows a side elevation of a car-truck embodying my improvements in which half-elliptical springs are employed instead of spiral springs. Fig. 11 is a detail plan view, on an enlarged scale, with some of the parts in section, showing particularly the manner in which one of the bolster-supporting posts is guided in the side frame of the truck. Fig. 12 is a view on an enlarged scale, partly in transverse section, showing the manner in which one of the bolster-supporting posts is guided in the

truck-frame and the manner in which said post is connected with the truck-bolster and with its supporting-spring. Fig. 13 is a detail view in section on the line 13 13 of Fig. 12.

5 The side frames A of the truck are connected at opposite ends by cross-bars B in the usual manner. These side frames are formed with pedestals C for the axle-boxes, which latter are cushioned by springs D, arranged
10 below them. The car-body E is supported on the truck in the manner indicated in Figs. 1 and 2. The lookout or platform F is supported on beams G, that extend under the car-body, being secured thereto, as indicated, and
15 they project over the side frames back to the car-bolster H. It will be observed that the beams G are clear of the side frames, the car-body being free to rise and fall relatively to the truck-frame without danger of contact of
20 the lookout-beams with the truck-frame. This is owing to the fact that the springs D for cushioning the axle-boxes are below the side frames. In other cars of this class the lookout-timbers have heretofore terminated
25 nearer to the ends of the car, not being able to pass by the axle-box springs, which in this class of cars have heretofore been arranged over the side frames.

The truck-bolster I is provided with a center-bearing i , which is connected in practice
30 with a corresponding bearing on the body-bolster of the car. The bolster I is attached at each end to a seat j on the upper end of a bolster-supporting post J, which latter is
35 formed with a body portion j' , that extends through a guide in the side frame and is formed on its lower end with an extended base j^2 , provided with seats j^3 for coiled springs K. Each post is also formed with a
40 bracket L, which is secured to the end of a brace-rod M, in turn connected to the truck-bolster I near its middle portion, as indicated at i' in Fig. 3. Preferably the brace-rod M is inclined in the manner indicated in
45 Fig. 3; but of course this rod may be secured in other ways to the bolster I, the point of this part of the invention being that each post is connected near its lower end with the truck-bolster, as well as at its upper
50 end. Each bolster-supporting post J is supported on vertically-arranged coiled springs K. Any suitable number of such springs may be employed. The drawings show three
55 such springs for each post, which are mounted in seats n , formed in a bar N, extending longitudinally under the side frame and swung on links O, hung from the side frame. Each of said bars N is pivotally connected at
60 n' with the link O, and each link O extends up through an opening in the side frame A, as indicated in Fig. 7. Each link is perforated at its upper end and receives a pin o , the ends of which rest in seats on the top of the side frame. The openings for the links
65 are sufficiently large to permit them to swing transversely to a limited extent. As indicated in Figs. 3 and 6, each post is formed

with a projection j^5 , which overlaps the swing-bar N and serves to guide the latter and to also insure the coincident movement
70 of the truck-bolster with the swing-bars. The projection j^5 moves up and down between lugs n^3 , formed on the swing-bar N, as indicated in Figs 3 and 5. By this arrangement the relation between the post and the swing-
75 bar N is maintained, and the latter is prevented from twisting. The side frames are connected together below the truck-bolster by means of two parallel plates P, which are
80 secured at their ends to castings Q, which are bolted to the side frames, as indicated in Figs. 1, 3, and 7. The brace-bars M extend up from the brackets j^5 between the plates, and the plates are spaced and secured together at intervals by bolts and thimbles R.
85

It will be observed that the side frames A are so formed as to provide recesses to accommodate the posts J, while these recesses are closed on their inner sides by the castings Q. There is sufficient space, however, between
90 each casting and the side frame to allow each post to swing laterally to the desired extent.

The above description applies particularly to Figs. 1, 2, 3, 4, 5, 6, and 7 of the drawings. The construction shown in the remaining fig-
95 ures is somewhat modified and will now be specifically described.

The general construction of the truck-frame is substantially the same as that heretofore described. The castings S for closing
100 the recesses formed in the side frames for guiding the posts J are, however, of a slightly-different form, and the side frames are connected by cross-bars U, which are bolted to the side frames, as indicated at u in Fig. 11.
105

In this instance instead of using spiral springs mounted in swing-bars I employ half-elliptical springs V, which are supported at their ends by links v , that extend through
110 openings in the side frames and are held in place by pins v' . The truck-bolster I is secured to the top of the posts J, these posts being substantially the same in construction as those described in connection with Figs. 1
115 to 7, inclusive. Similar brace-bars M are employed; but the lower ends of the posts are slightly modified, the spring-seat being properly formed to accommodate the leaf-spring V. Such spring is secured in any suitable way
120 to the lower end of the post, the details of construction for forming this connection not being important and need not be described more fully. The cross-bars U are connected
125 together and spaced by suitable devices u' , as indicated in Fig. 12. The links v are formed at their lower ends with openings v^2 to receive the ends of the spring V. Each link carries a block v^3 , that is rounded on its lower end and fits the rounded surfaces of the opening
130 in the link, and each block is flanged at v^4 to prevent it from moving out of the opening. Each end of the spring rests on top of the block. By this arrangement the ends of the spring can slide to a limited extent on the

top of the block, and the blocks can move in their bearings on the links when the links swing or move transversely of the truck. I find this construction preferable to a construction in which supplemental links or pivot-pins are employed. In assembling the parts the springs are connected with the links and then the links are passed up through the openings in the side frames, the springs being placed under compression. The pins *v'* are then inserted, and then the pressure is relieved. This causes the pins *v'* to be drawn down into the seats formed therefor in the top of the side frames. This makes a sufficiently secure connection, as the weight of the car-body and the compression of the springs prevent the links from rising. When it is desired to remove the links, it can be quickly done by placing the springs under compression and knocking out the pins *v'*. The links and swing-bars shown in Figs. 1 to 7, inclusive, are assembled and mounted in a similar way.

It will be observed that the bolster-supporting posts and the springs are arranged in the longitudinal center line of the side frames and that the posts are rigidly connected with the bolster at both their upper and lower ends, by which arrangement the posts are always held in a vertical position and the construction is made strong and rigid. The general construction is simple, and the parts may be assembled or taken apart with great facility.

I claim as my invention—

1. The combination of a car-body and a center-bearing truck connected therewith, comprising side frames formed with axle-box pedestals and provided with cushioning-springs for the axle-boxes below said boxes, and lookout-beams secured to the car-body and extending over the axle-boxes back beyond said boxes and terminating close to the car-bolster.

2. The combination with the truck-frame, of the swinging truck-bolster, the laterally-moving bolster-supporting posts secured thereto, and passing through openings in the truck-frame, and spring-supports for the

posts connected by laterally-moving links to the side frames of the truck.

3. The combination of the truck-frame, the truck-bolster, the bolster-supporting posts secured thereto, and passing through openings in the side frames of the truck, spring-supports for the posts, connected by links to the side frames of the truck, and braces connecting truck-bolster with the lower ends of the posts.

4. The combination of the truck-frame, the truck-bolster, the bolster-supporting posts secured at their upper ends to the truck-bolster, and formed with spring-seats at their lower ends, brace-rods connecting the lower ends of the posts with the middle portion of the truck-bolster, and spring-supports for the posts connected by links to the side frames of the truck.

5. The bolster-supporting post herein described, provided at the top with a seat for the end of the truck-bolster, and at its lower end with a spring-seat and with an inwardly-projecting bracket to receive the end of a brace-bar.

6. The combination with the side frames of a truck, each formed with a recess to accommodate a bolster-supporting post, a casting secured to each side frame opposite said recess, cross-bars connecting the side frames near their middle portion, the truck-bolster, the bolster-supporting posts, springs for supporting said posts, and links connecting the springs to the side frames of the truck.

7. The combination with the side frames of the truck, of the truck-bolster, the bolster-supporting posts, the leaf-springs connected therewith and the links for connecting said springs with the side frames of the truck, each provided at its lower end with an opening to receive the end of the spring, and having a block seated in said opening for the purpose specified.

In testimony whereof I have hereunto subscribed my name.

WILLIAM SEBASTIAN GRAFF BAKER.

Witnesses:

JOHN B. SANNER,

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