

No. 706,584.

Patented Aug. 12, 1902.

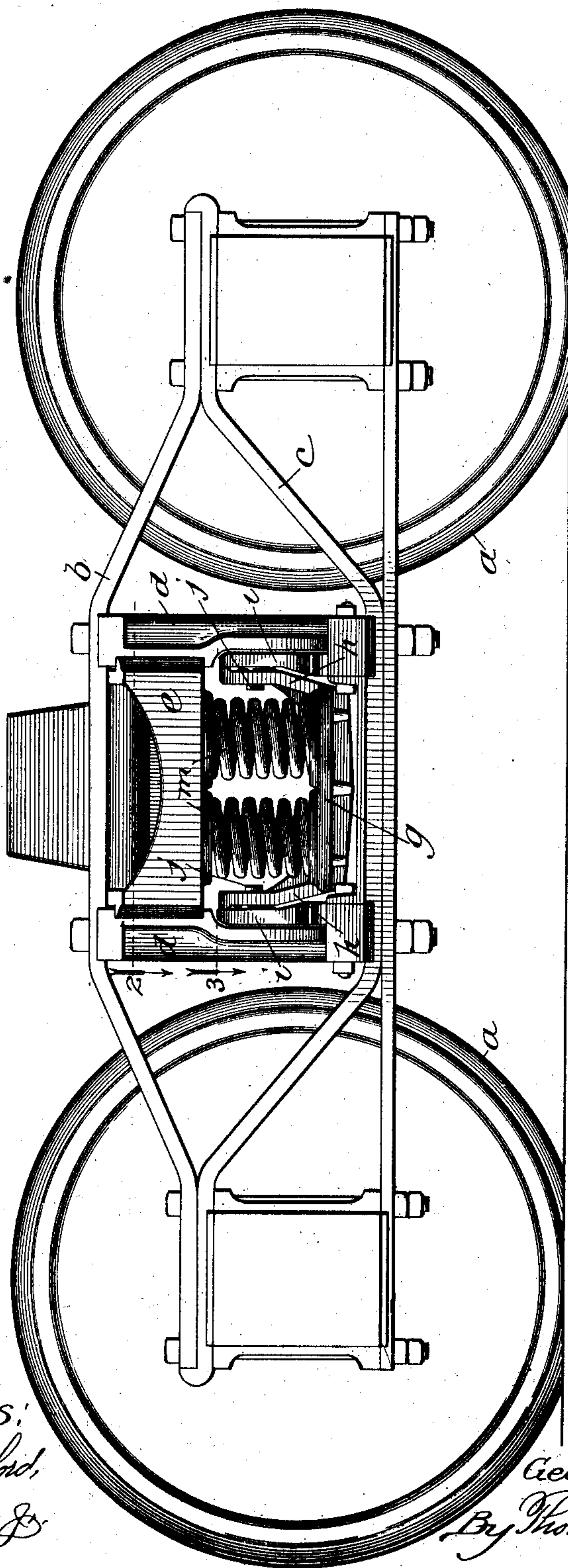
G. C. MURRAY.
CAR TRUCK.

(Application filed Mar. 8, 1902.)

(No Model.)

2 Sheets—Sheet I.

Fig. 1.



Witnesses:
Edw. J. Heyland,
John Enderes & Co.

Inventor:
George C. Murray,
By Thomas F. Sheridan,
Attorney

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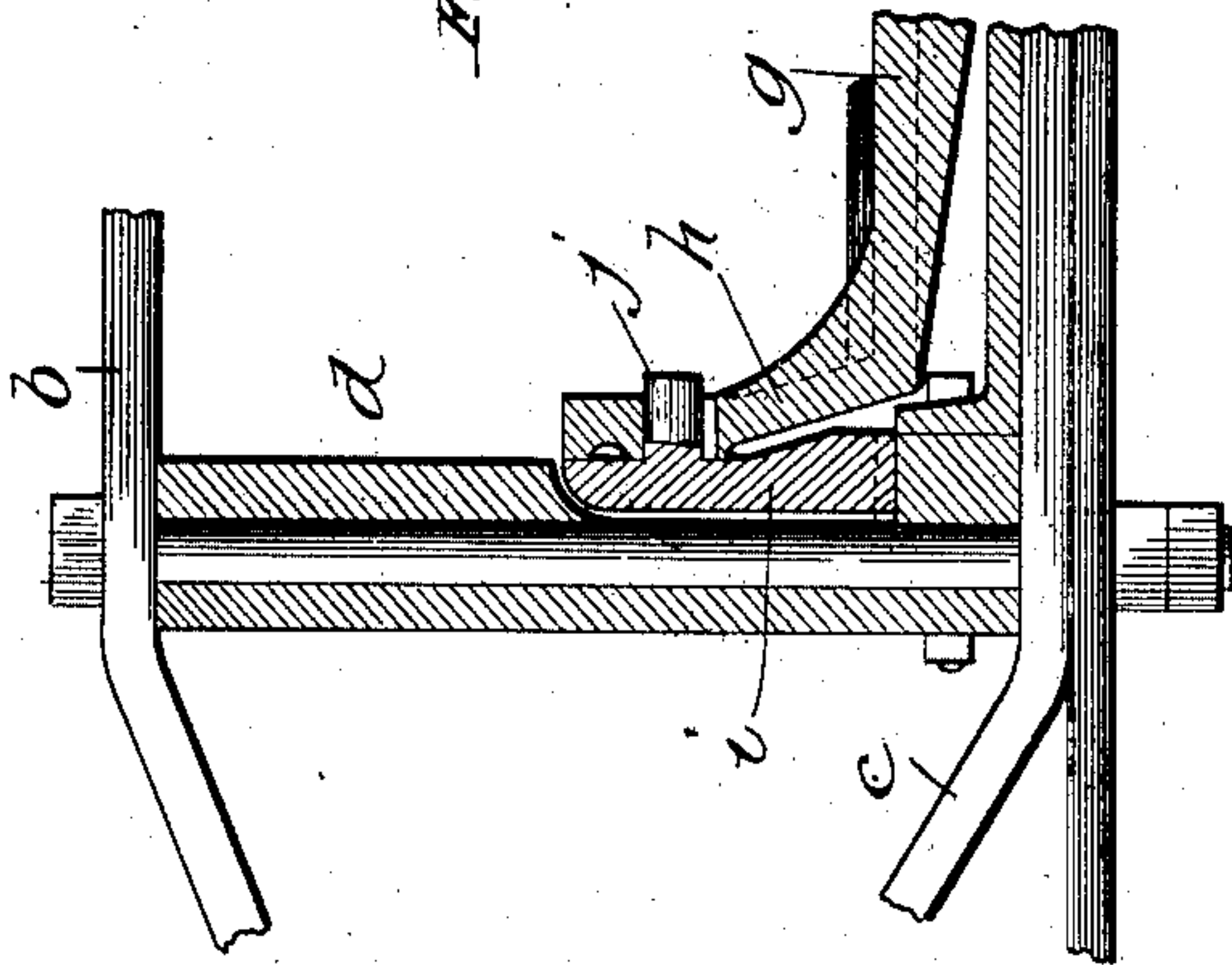
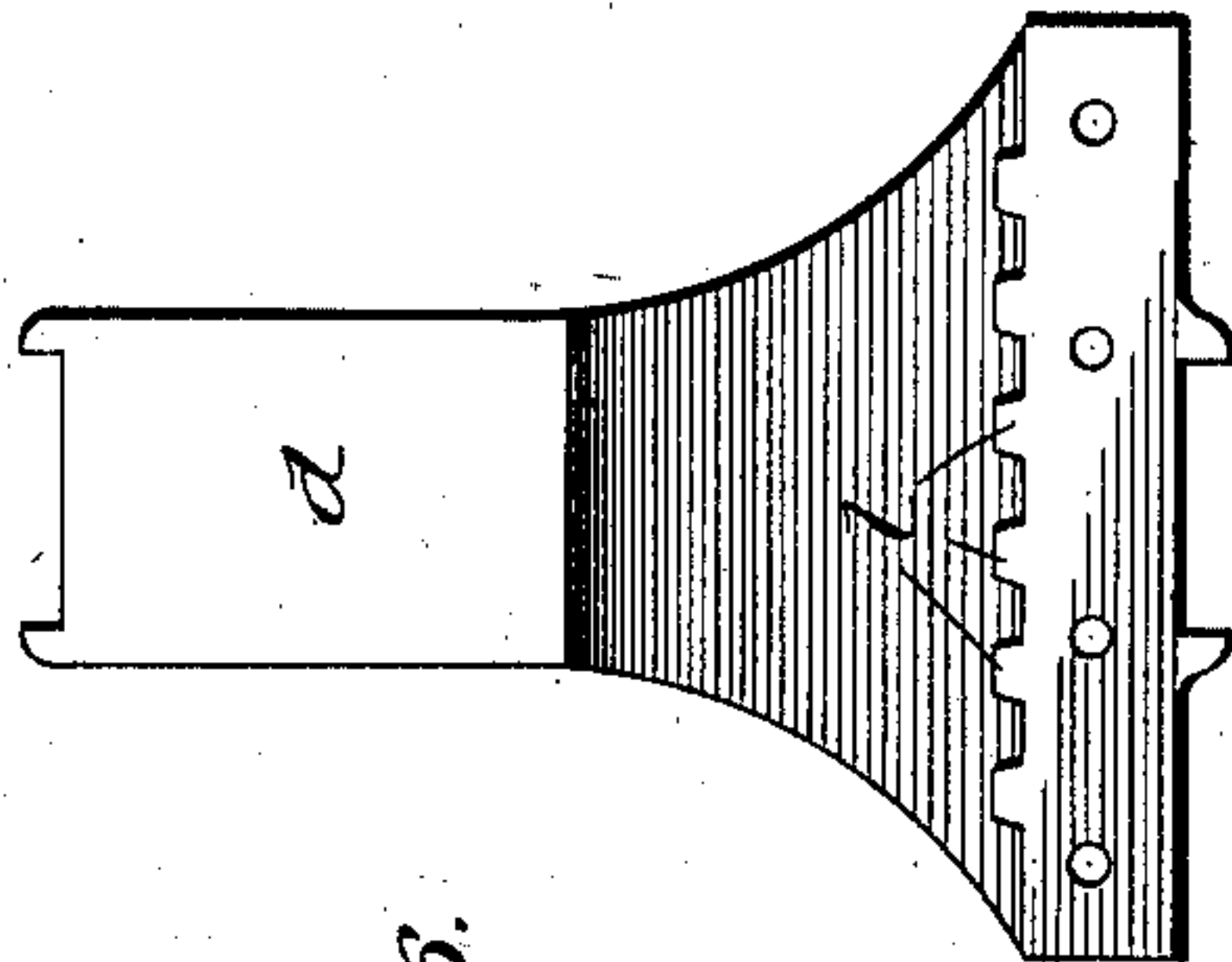
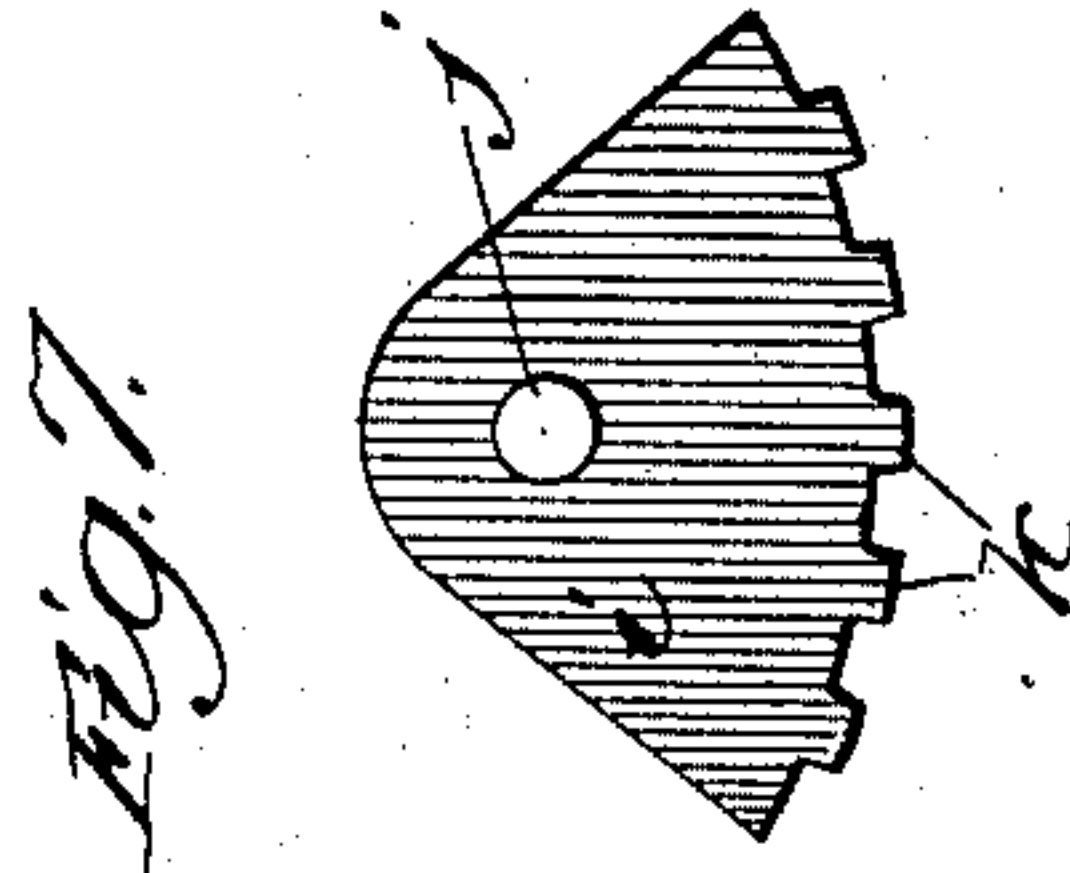
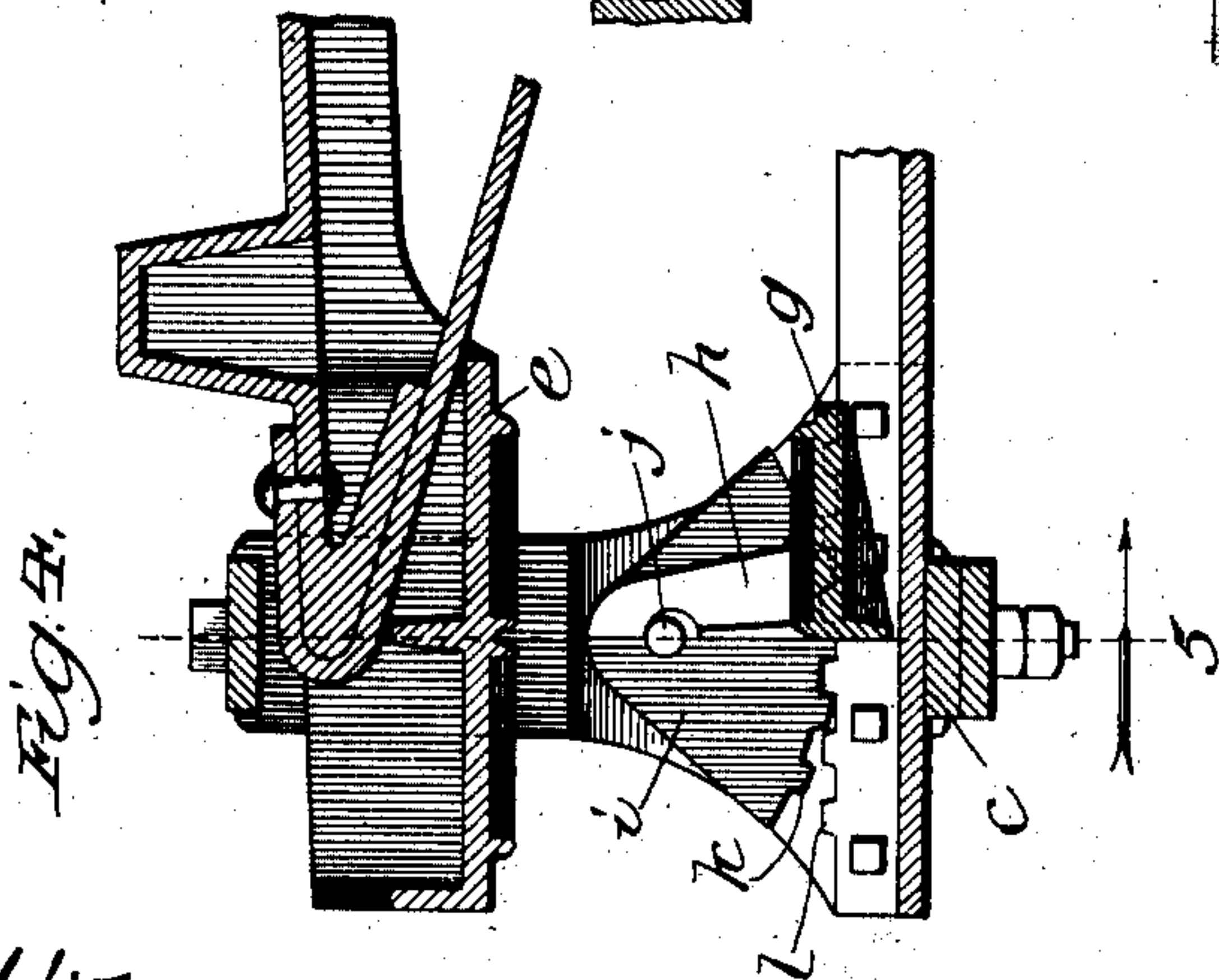
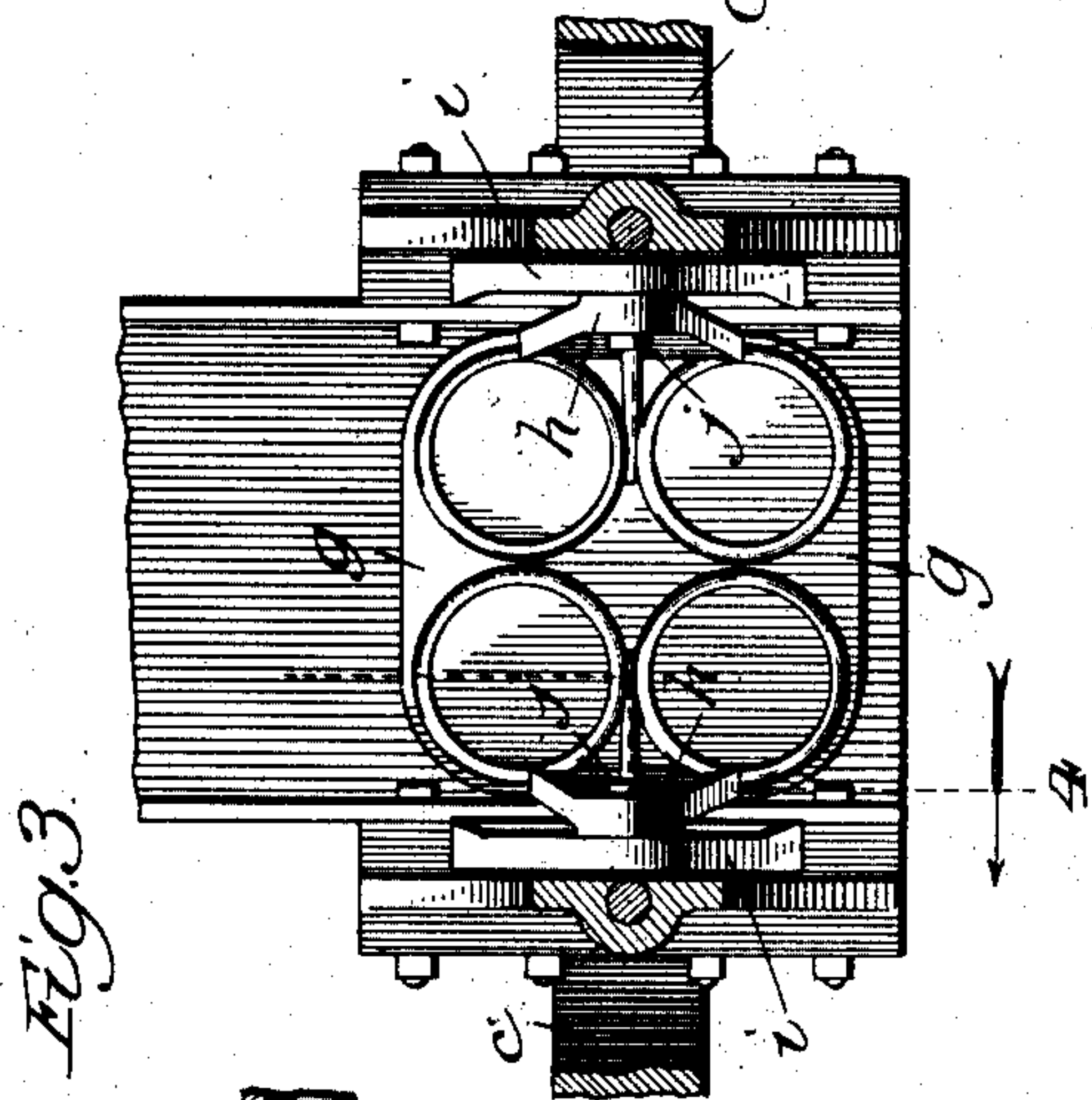
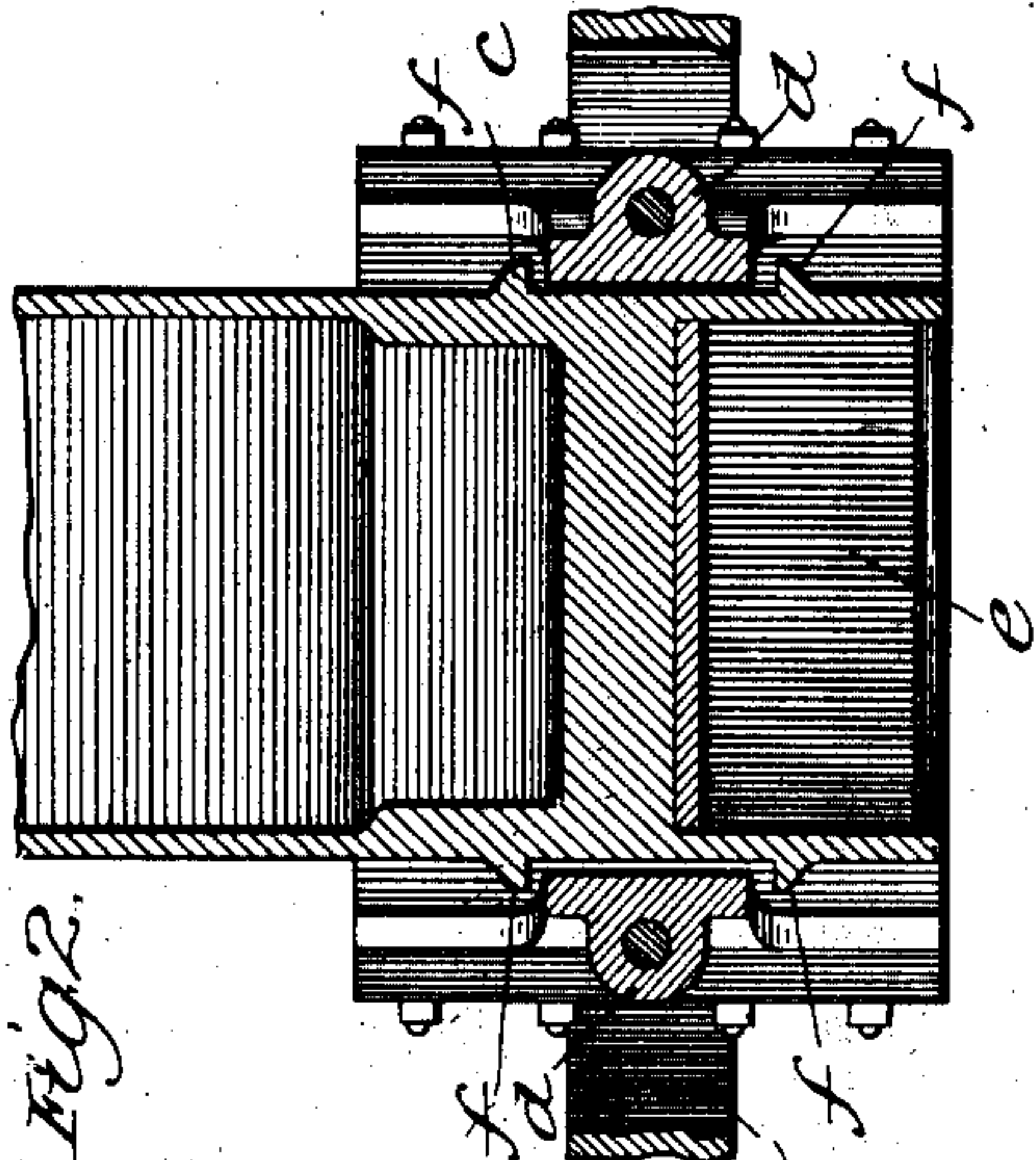
Patented Aug. 12, 1902.

G. C. MURRAY.
CAR TRUCK.

(Application filed Mar. 8, 1902.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:
E. C. Gaylord,
John Enders Jr.

Inventor:
George C. Murray,
By Thomas F. Sheridan,
Attorney

UNITED STATES PATENT OFFICE.

GEORGE C. MURRAY, OF CHICAGO, ILLINOIS.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 706,584, dated August 12, 1902.

Application filed March 8, 1902. Serial No. 97,258. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. MURRAY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Trucks, of which the following is a specification.

This invention relates to that class of car-trucks which is used in connection with railway-cars, and particularly to the arrangement and disposition of the swinging seats by which the lurching movements of the ends of the car and the swinging of the bolster from end to end thereof may be permitted without racking any of the parts, all of which will be more fully hereinafter set forth.

The principal object of the invention is to provide a simple, economical, and efficient car-truck.

A further object of the invention is to provide a simple, economical, and efficient car-truck with bolster mechanism, bolster or transom columns connected together by the usual arch-bars, with swinging and spring mechanisms by which the ordinary lurching or longitudinal displacement of the parts may be taken care of without displacing the same.

Further objects of the invention will appear from an examination of the drawings and the following description and claims.

The invention consists principally in a car-truck in which there are combined transom or bolster columns connected together and supported at their upper and lower ends by means of and with the usual arch-bars, a bolster movably mounted between the same, a spring-seat rockingly mounted between such bolster-columns, and spring mechanism interposed between the ends of the bolster and the spring-seats.

The invention consists, further, in a car-truck in which there are combined the usual bolster or transom columns connected by and with the usual arch-bars, a bolster movably mounted between the same, a spring-seat, rocking levers mounted between the transom-columns and supporting spring-seat, and spring mechanism interposed between the spring-seat and the ends of the bolster.

The invention consists, further and finally, in the features, combinations, and details

of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a car-truck constructed in accordance with these improvements; Fig. 2, a sectional plan view taken through the bolster and its columns on line 2 of Fig. 1, showing a portion thereof and looking at it from above; Fig. 3, a similar view taken on line 3 of Fig. 1 looking at it from above; Fig. 4, a longitudinal sectional detail taken on line 4 of Fig. 3; Fig. 5, a similar view taken on line 5 of Fig. 4; Fig. 6, a side elevation of one of the bolster-columns looking at it from the inside and showing the toothed platform for the rocking member, and Fig. 7 a side elevation of one of the rocking levers.

In the art to which this invention relates it is well known that a car when taking a curve, particularly when there is little or no flexure to the body of the car, the bolster in order to accommodate itself to the different positions assumed by the body of the car, incident to the lurching thereof is forced from side to side or endwise of the bolster so as to displace the parts. If no mechanism is provided for the compensation of this lurching or rigidity of the usual members of the car construction, the endwise thrust on the bolster and parts with which it is engaged is apt to result in the rapid wear, if not destruction, of some of these parts. The principal object of this invention, therefore, is to provide a truck of such construction and arrangement that the car-bolster has a limited rocking movement and, further, so constructed as regards the details thereof that there is a tendency for the parts to resume their normal positions when the car is running in its usual or ordinary manner, all of which will more fully hereinafter appear.

In constructing a truck in accordance with these improvements, one which is provided with the usual supporting car-wheels *a* and arch-bars *b* and *c*, I provide a pair of transom or bolster columns *d* and secure them between and to the arch-bars in the usual manner, all of which will be understood by those skilled in the art. I next provide a car-bolster *e*, of any desired construction, having vertical flanges *f* on each side and at or near the end

thereof, which form channels between which the bolster-columns are placed. It will be noticed that these channels are slightly wider than the width of the bolster-column, so as to
 5 permit a limited amount of end play for the bolster and so that it may rock endwise and accommodate itself to the movement of the cars.

In order to overcome the objections already
 10 noted and support the ends of the bolster in the desired tilting manner and at the same time permit the rocking thereof, I make a spring-plate *g* and preferably provide it with upwardly-extending arms *h* at each side there-
 15 of. Arranged adjacent to and outside of these arms on the spring-plate are two rocking levers *i*, which are preferably formed of the segment of a circle and provided with trunnions *j*, which pass through perforations in the arms
 20 of the spring-plate. These rocking-lever arms have their curved lower surfaces toothed, as at *k*, where they rest upon and engage with a toothed platform or rack *l* on the inner base of the transom or bolster columns in such a man-
 25 ner that the rocking-lever arms may rock but not slip thereon. The curvature of the periphery of these rocking levers is eccentric to their trunnions—that is, they are “struck” from a radius greater than the distance between the
 30 center of the trunnions and the curved surface—so that when the parts are in their normal position the central part of the rocking surface is in engagement with the platform of the column; but when there is a longitu-
 35 dinal displacement of the spring-plate they are forced to one side or the other thereof and, as it were, up on an incline or curve or cam of greater radius, so that the tendency of the parts when extraneous pressure is removed
 40 is to automatically resume their normal central position. To provide yielding mechanisms between the ends of the bolster and the spring-plates, I provide a plurality of helical coiled springs *m*, as shown particularly in
 45 Fig. 1, which rest upon the upper surface of the spring-plate and against the under surface of the ends of the bolster, as shown.

The advantages of this construction are that there is an easy spring yielding mechan-
 50 ism provided for the ends of the bolster to permit the different wheels to take different vertical positions, and, further, it provides for the compensation or endwise movement of the bolster without any destruction of the
 55 parts, while at the same time providing for the automatic return of the parts to their normal position, all of which will be understood and appreciated by those skilled in the art.

I claim—

60 1. In a car-truck of the class described, the combination of transom or bolster columns connected by and with the usual arch-bars, a bolster movably mounted between the same,
 65 a spring-seat, rocking levers mounted be-

the spring-seat, and spring mechanism interposed between the spring-seat and the ends of the bolster, substantially as described.

2. In a car-truck of the class described, the combination of transom or bolster columns
 70 provided with a platform inside the base thereof, a bolster movably mounted between such columns, a spring-plate, spring mechanism interposed between the spring-plate and the ends of the bolster, and independent rock-
 75 ing-lever arms mounted on the base at the bottom and inside the bolster-columns and pivotally engaged with the spring-plates, substantially as described.

3. In a car-truck of the class described, the
 80 combination of transom or bolster columns provided with a platform inside of the base thereof, a bolster movably mounted between such columns, a spring-plate, spring mechanism interposed between the spring-plate
 85 and the ends of the bolster, and rocking-lever arms on the base portions of the bolster-columns pivotally engaged with the spring-plates and provided with rocking curved sur-
 90 faces of greater radius than the distance between the pivots and the curved surfaces, substantially as described.

4. In a car-truck of the class described, the combination of a pair of bolster-columns, toothed platforms arranged inside of such
 95 columns, a car-bolster movably mounted between such columns, a spring-plate arranged underneath the bolster and between the bolster-columns, toothed rocking levers mounted on the toothed platforms and pivotally en-
 100 gaged with the spring-plates, and spring mechanism interposed between the spring-plates and the lower surfaces of the ends of the bolster, substantially as described.

5. In a car-truck of the class described, the
 105 combination of a pair of bolster-columns, toothed platforms arranged inside of such bolster-columns at or near the base thereof, a car-bolster movably mounted between such transom-columns, spring-plates mounted be-
 110 tween such bolster-columns, rocking-lever arms pivotally secured to such spring-plates and provided with curved toothed surfaces resting on the platform of greater radius than the distance between the pivotal points and
 115 such toothed surfaces, and spring mechanism interposed between the spring-plates and the lower surface of the bolster, substantially as described.

6. In a car-truck of the class described, the
 120 combination of a pair of bolster-columns, arch-bars connecting the same together at their upper and lower ends, toothed platforms arranged inside of such bolster-columns at their base portion, a bolster movably mount-
 125 ed between such transom-columns and provided with guides forming a channel of greater width than the bolster-columns to permit a limited movement thereof, spring-plates ar-
 130 ranged underneath the bolster between the

bolster-columns and provided with upwardly-
extending side arms, toothed levers pivotally
engaged by means of trunnions with the arms
of the spring-plates and provided with curved
5 toothed rocking surfaces engaging the toothed
platforms and formed of curvatures, the radii
of which are greater than the distance be-

tween such pivotal points and the curved sur-
faces, substantially as described.

GEORGE C. MURRAY.

Witnesses:

THOMAS F. SHERDIAN,
HARRY IRWIN CROMER.