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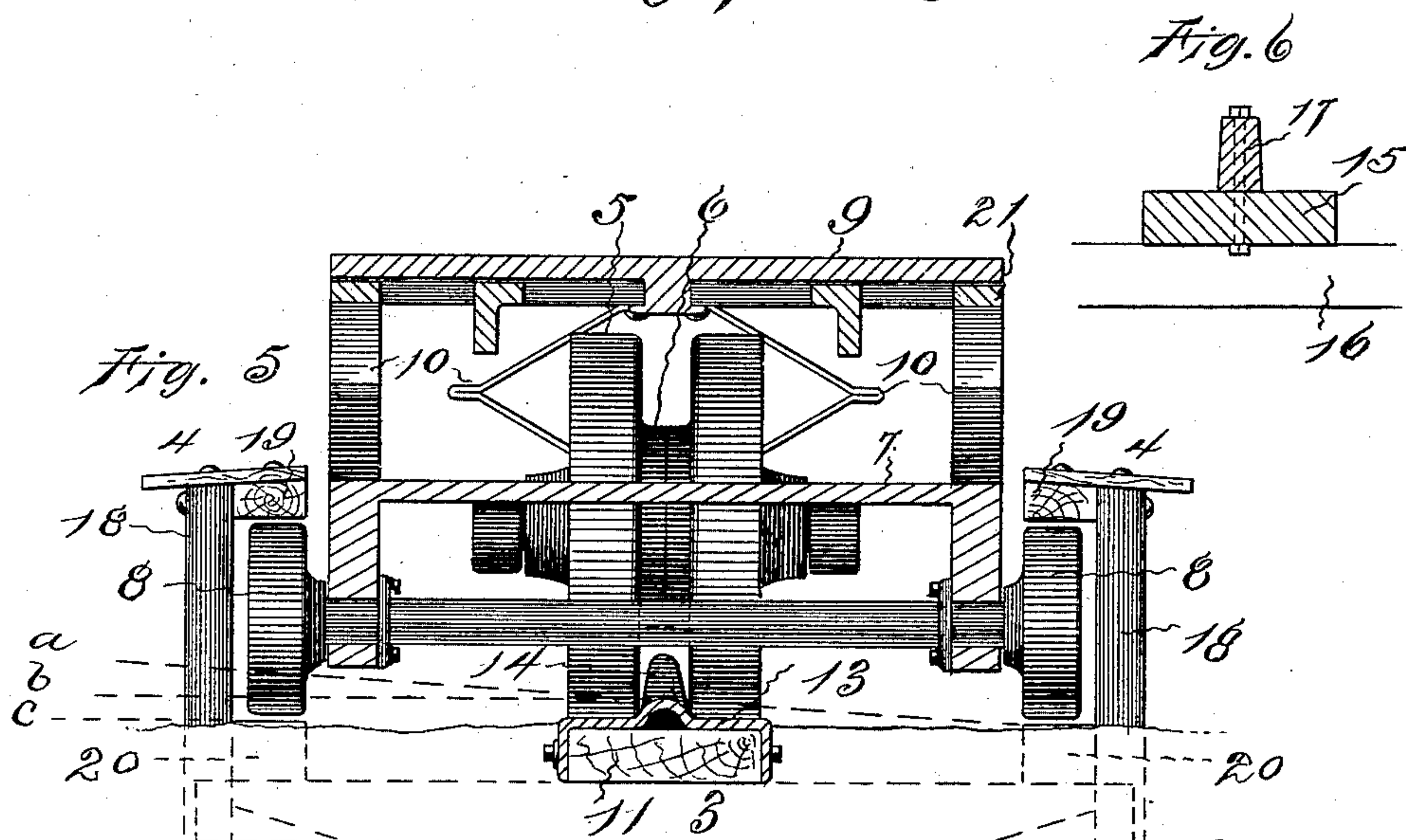
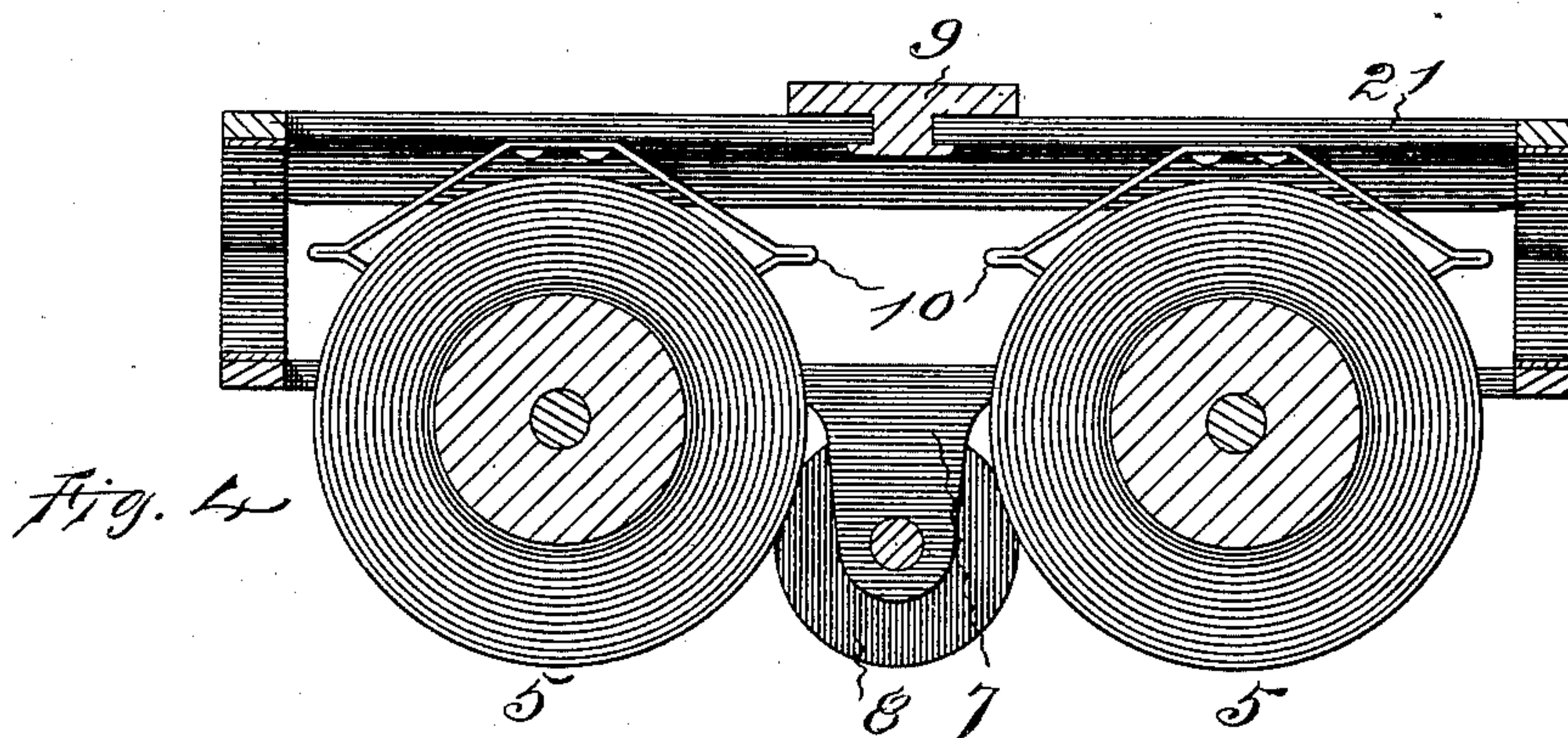
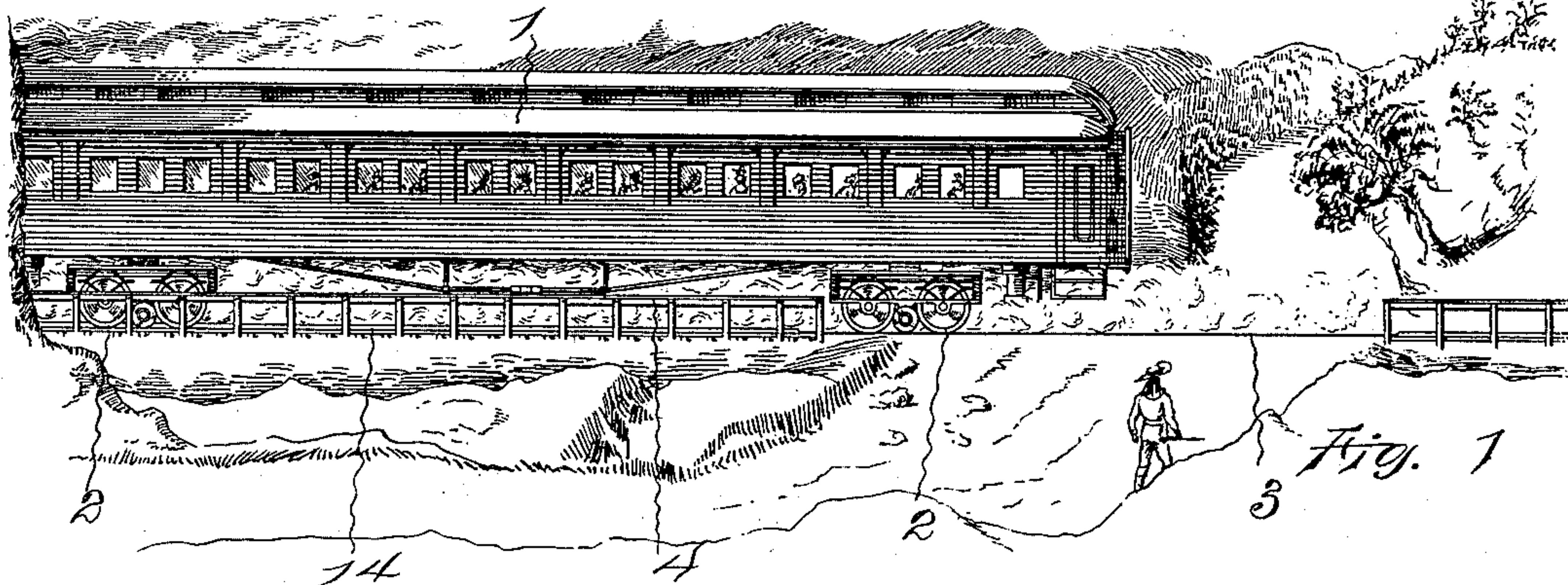
Patented Aug. 30, 1898.

G. J. CAPEWELL.
TRUCK FOR RAILWAY CARS.

(Application filed Jan. 23, 1896. Renewed Jan. 5, 1898.)

(No Model.)

2 Sheets—Sheet 1



Witnesses:

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Inventor:

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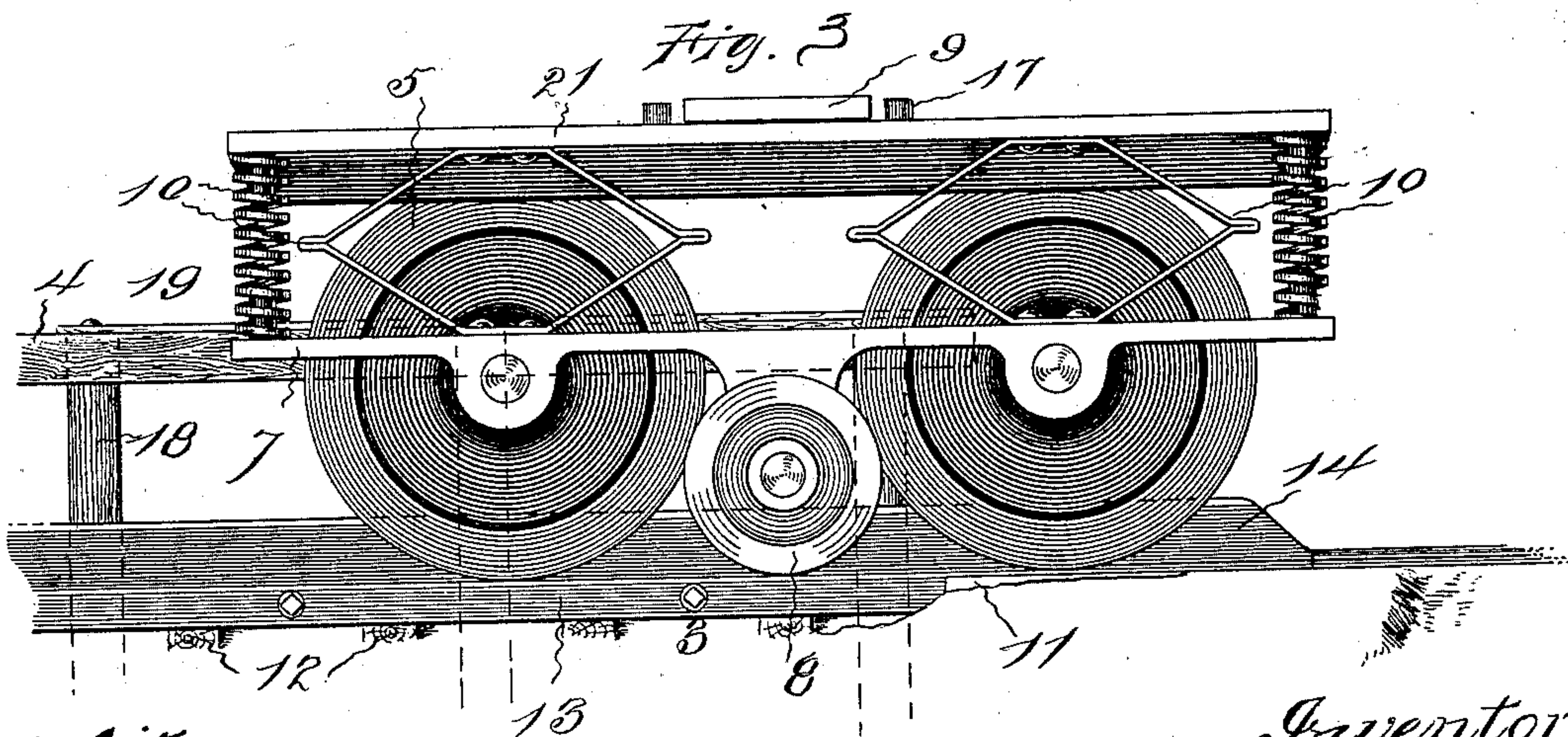
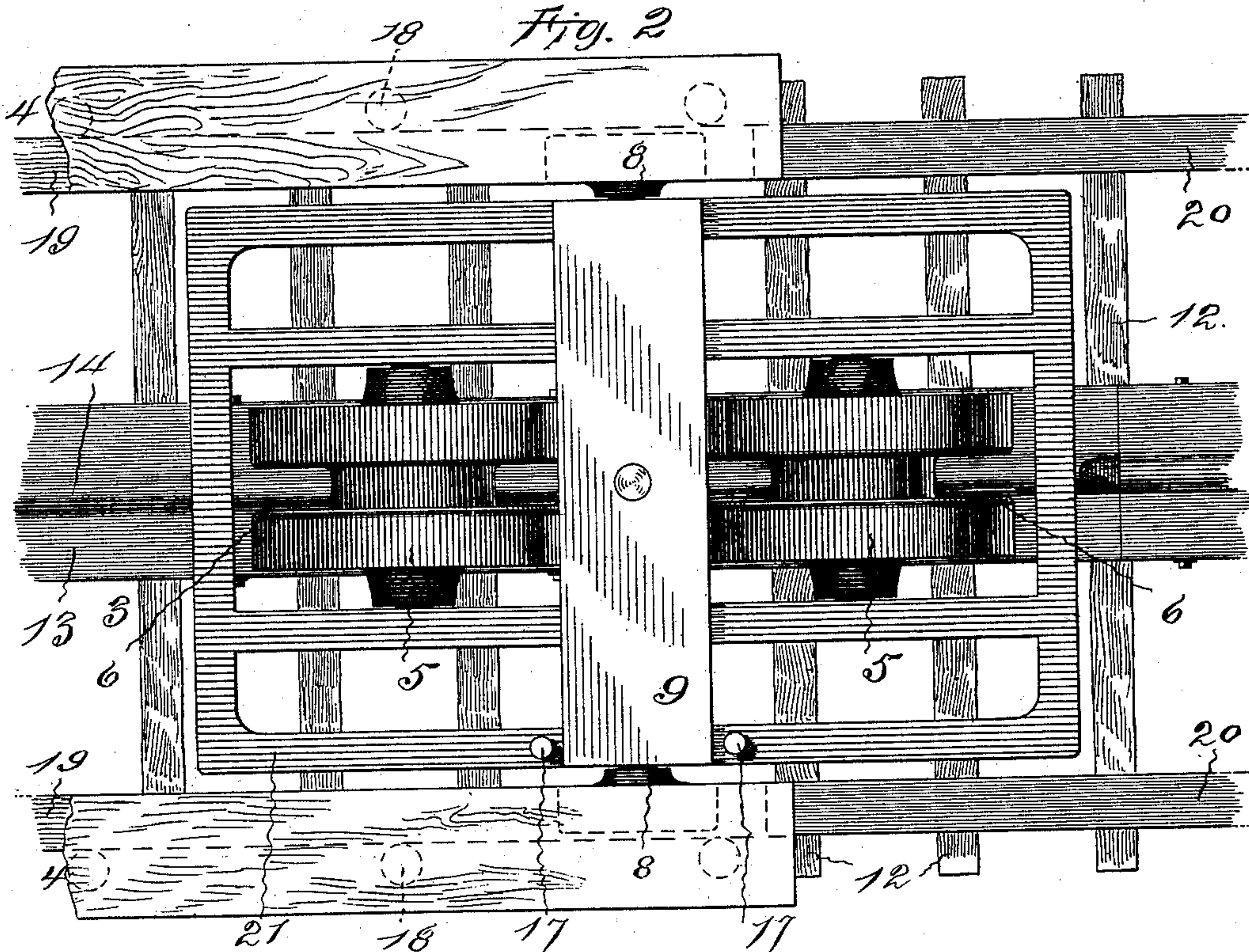
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UNITED STATES PATENT OFFICE.

GEORGE J. CAPEWELL, OF HARTFORD, CONNECTICUT.

TRUCK FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 609,783, dated August 30, 1898.

Application filed January 23, 1896. Renewed January 5, 1898. Serial No. 665,704. (No model.)

To all whom it may concern:

Be it known that I, GEORGE J. CAPEWELL, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Trucks for Railway-Cars, of which the following is a specification.

The invention relates to the class of tandem-wheel trucks for railway-cars that are designed for high speeds; and the object of the invention is to provide a cheap, strong, and durable truck which can be run at very high speeds on a track of simple form with a minimum amount of power without discomfort to the passengers and without danger of jumping the track.

To this end the invention resides in a truck having one or more centrally-arranged traction-wheels with grooved peripheries that support a wheel-frame bearing one or more pairs of guard-wheels and a truck-frame that is yieldingly connected with the wheel-frame and adapted to be pivotally connected with a plate secured to the under side of a car-body, as more particularly hereinafter described, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a general view illustrating a railway-car provided with the improved trucks and a section of the way arranged for the wheels of such trucks. Fig. 2 is an enlarged plan of one of the trucks and a portion of the way on which it is to travel. Fig. 3 is a side elevation of the same. Fig. 4 is a central longitudinal section of one of the trucks. Fig. 5 is a transverse section through the middle of the same, and Fig. 6 is a view of a cheap arrangement of track that can be provided for the use of these trucks.

In the views, 1 indicates a vestibule-car of common arrangement provided with the improved trucks 2.

3 indicates the traction-rail, and 4 the guard-rails.

The truck may have one or more traction-wheels 5, located centrally, and if more than one wheel is provided for the truck they are arranged to be tandem beneath the axis of the car. These traction-wheels have a wide

tread, in the center of which is a groove 6. The wheels can be formed so that the sides are integral, as illustrated in Fig. 2, or they can be built up, so as to provide the central peripheral groove or opening by placing two or more sections side by side, as illustrated in Fig. 5. Short journals are provided for these wheels, and these journals are held in suitable bearings in the wheel-frame 7, which is of course directly supported by the traction-wheels. The wheel-frame 7 is also provided with one or more pairs of bearings on the sides for supporting the journals of guard-wheels 8, that travel outside of the truck. Above the wheel-frame is the truck-frame 21, that is connected by any common form of king or pivot bolt with a plate 9, that is adapted to be secured to the bottom of a car-body. The truck-frame is yieldingly connected with the wheel-frame by springs 10, some of which may be leaf-springs and others spiral springs. These springs arranged in this manner allow for the relative change of position between the car and the traction-wheels due to any unevenness or roughness of the way or to the different dispositions or weights of the loads in the car.

The way for the truck of this character will have a central traction-rail for the treads of the traction-wheels, with a metal guiding-flange to keep the wheels on the flat rails. In the form shown the truck is built of a central longitudinally-placed stringer 11, of timber or other convenient material, located on ties 12, that may be embedded in the ground level with the surface, as illustrated in Fig. 1, or may be somewhat elevated on a common structure, as indicated by the dotted lines in Fig. 5. This central stringer 11 is shown as covered with a metallic rail 13, having two tread portions and a central raised guiding rib or flange 14. The two tread portions are provided for the wide treads of the traction-wheels, and the flange or rib is adapted to project upward into the central peripheral groove of the traction-wheels, so as to keep these wheels in place longitudinally on the central rail. A cheap construction of this traction-rail may be provided, as

shown in Fig. 6, by laying a central longitudinal stringer of timber 15 on the ties 16 and bolting or otherwise securing to the timber another timber 17, which will perform the function of the guiding-flange that enters the peripheral groove of the traction-wheels for retaining them in place.

On each side of the central traction-way are located posts 18, and these posts are joined together above the level of the traction-way by stringer-timbers 19, which form the guard-way. These timbers 19 are located and arranged so that the guard-wheels above mentioned will travel directly under them when the truck is in position and the traction-wheels are on the traction-way. It is preferred that these guard-timbers 19 be placed so that the guard-wheels do not run in a tight contact with them, but will come into contact with them should the truck jump up or rock slightly when in motion.

At stations or at grade-crossings on a surface road, as illustrated in Fig. 1, it is desirable to cut away or lower the central guiding-rib of the traction-rail and also to omit a portion of the guard-rails in order to facilitate crossing the way, and at these points longitudinal timbers 20 may be placed on a level with the road beneath where the upper guard-rails would come, so that the guard-wheels may run on these lower timbers should the car oscillate or be tipped sidewise when passing those points where the upper guard-rails are removed. These spaces where the guard-rails would be omitted are short, so that but one truck of a car would be removed from the control of the guard-rails, and the low central rib that would be on the traction-rail at this point, which could be the height of the ordinary rail, would retain the traction-wheels in position for these short spaces. If this central rib is the height of the ordinary rail in present use, the car would have to rise on one side twice as high as at present before the traction-wheels could leave the track. This is illustrated by the dotted lines *a b c* in Fig. 5, which show the height to which the outside wheel would have to rise in order to permit the central traction-wheels to lift up and over the central lower guiding-rib. With this construction the traction-wheels cannot leave the traction-rail, for the central rib would be sufficient to retain them in place; but added to this are the side guard-wheels that are held down by the guard-rails, so that it would be almost impossible for the truck to jump up and leave its proper place on the way. Any desired number of these guard-wheels can be used. As they are not normally intended to run against the guard-rails they do not add to the load required to be moved. The use of the central tandem wheels reduces the friction of the traction-wheels on the traction-rail and the width of the wheel permits the use of

comparatively soft and cushioning material for tires.

A car fitted up with a truck similar to that described will run very smoothly and noiselessly with but little friction, and the jar will not be transmitted to the car but be taken up by the springs between the truck-frame and the wheel-frame, so that high speeds can be maintained without danger of jumping the track and without discomfort to the passengers.

I claim as my invention—

1. In a truck, in combination, pairs of traction-wheels with wide treads located side by side a short distance apart so as to leave a guiding-groove between them, a wheel-frame supported by the traction-wheels, a truck-frame adapted to be pivotally connected with a car-bottom, and spring connections between the wheel-frame and the truck-frame, substantially as specified.

2. In a truck, in combination, pairs of traction-wheels with wide treads located side by side a short distance apart so as to leave a guiding-groove between them, said wheels arranged tandem in the center of the truck, a wheel-frame supported by the traction-wheels, a truck-frame adapted to be pivotally connected with a car-bottom, and spring connections between the wheel-frame and the truck-frame, substantially as specified.

3. In a truck, in combination, traction-wheels with wide double treads and peripheral guiding-grooves between the wide treads, a wheel-frame supported by the traction-wheels, upward-bearing guard-wheels borne by a journal held by the wheel-frame on each side of the traction-wheels outside of the line of the wheel-frame, a truck-frame adapted to be pivotally connected with a car-bottom, and spring connections between the wheel-frame and the truck-frame, substantially as specified.

4. In a truck, in combination, a pair of traction-wheels with peripheral grooves arranged tandem in the center of the truck, a wheel-frame supported by the traction-wheels, a pair of guard-wheels borne by the wheel-frame on each side of the traction-wheels, a truck-frame adapted to be connected with a car-bottom, and spiral and leaf springs connecting the wheel-frame with the truck-frame, substantially as specified.

5. In combination, a car-body, trucks having traction-wheels with grooved peripheries, a wheel-frame supported by the traction-wheels, a truck-frame pivotally connected with the car-body and yieldingly connected with the wheel-frame, a central traction-rail having wide tread-sections and a central guiding-rib projecting into the peripheral grooves of the traction-wheel, substantially as specified.

6. In combination, a car-body, trucks having traction-wheels with grooved peripheries,

a wheel-frame supported by the traction-wheels and bearing guard-wheels, a truck-frame pivotally connected with the car-body and yieldingly connected with the wheel-frame, a central traction-rail having wide tread-sections, and a central guiding-rib projecting into the peripheral grooves of the traction-wheels, and elevated guard-rails on

each side of the traction-wheels above the path of the guard-wheels, substantially as is specified.

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Witnesses:

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