

No. 656,477.

Patented Aug. 21, 1900.

P. RYAN.
AUXILIARY CAR MOVER.

(Application filed Dec. 29, 1899.)

(No Model.)

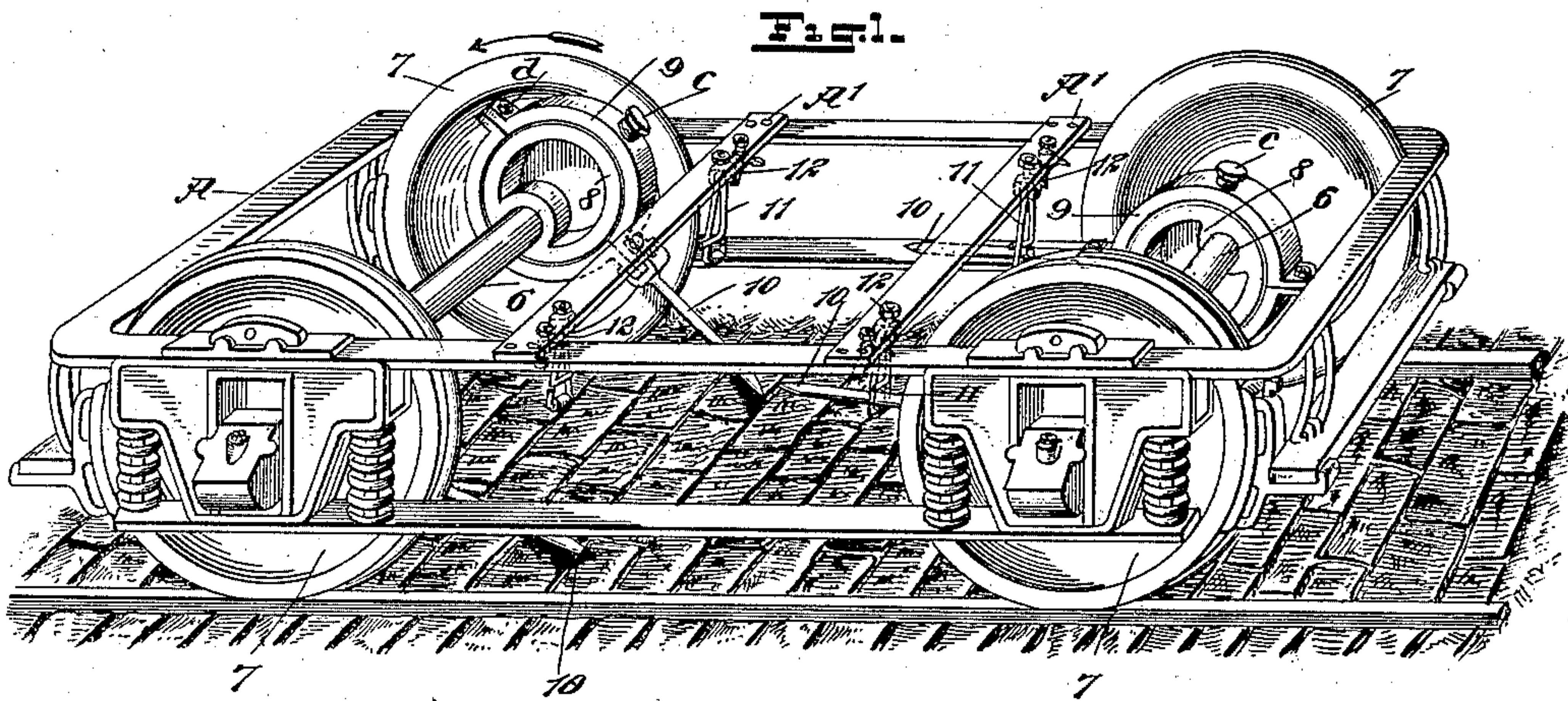


Fig. 2.

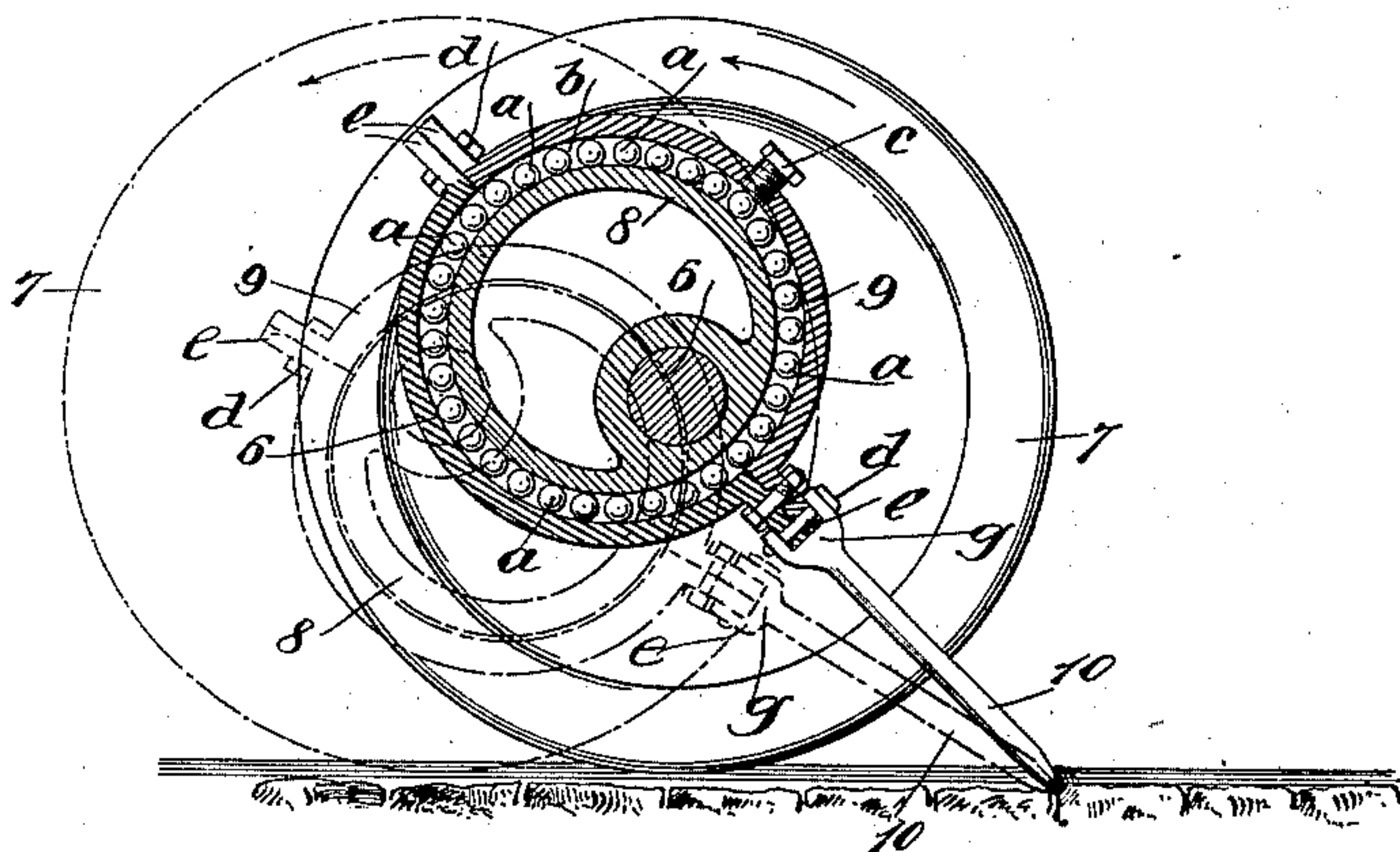


Fig. 3.

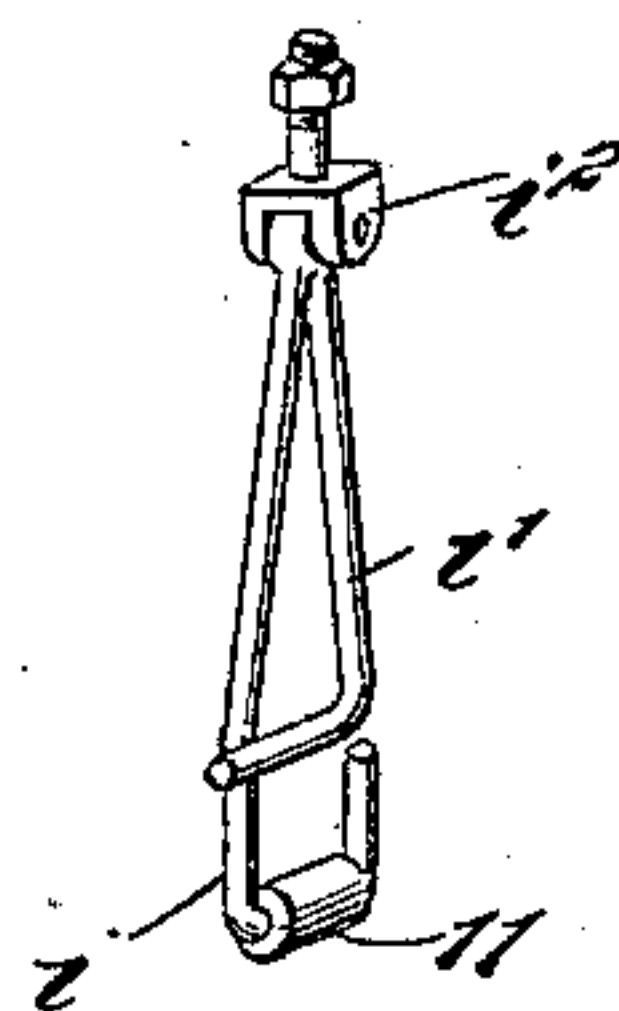
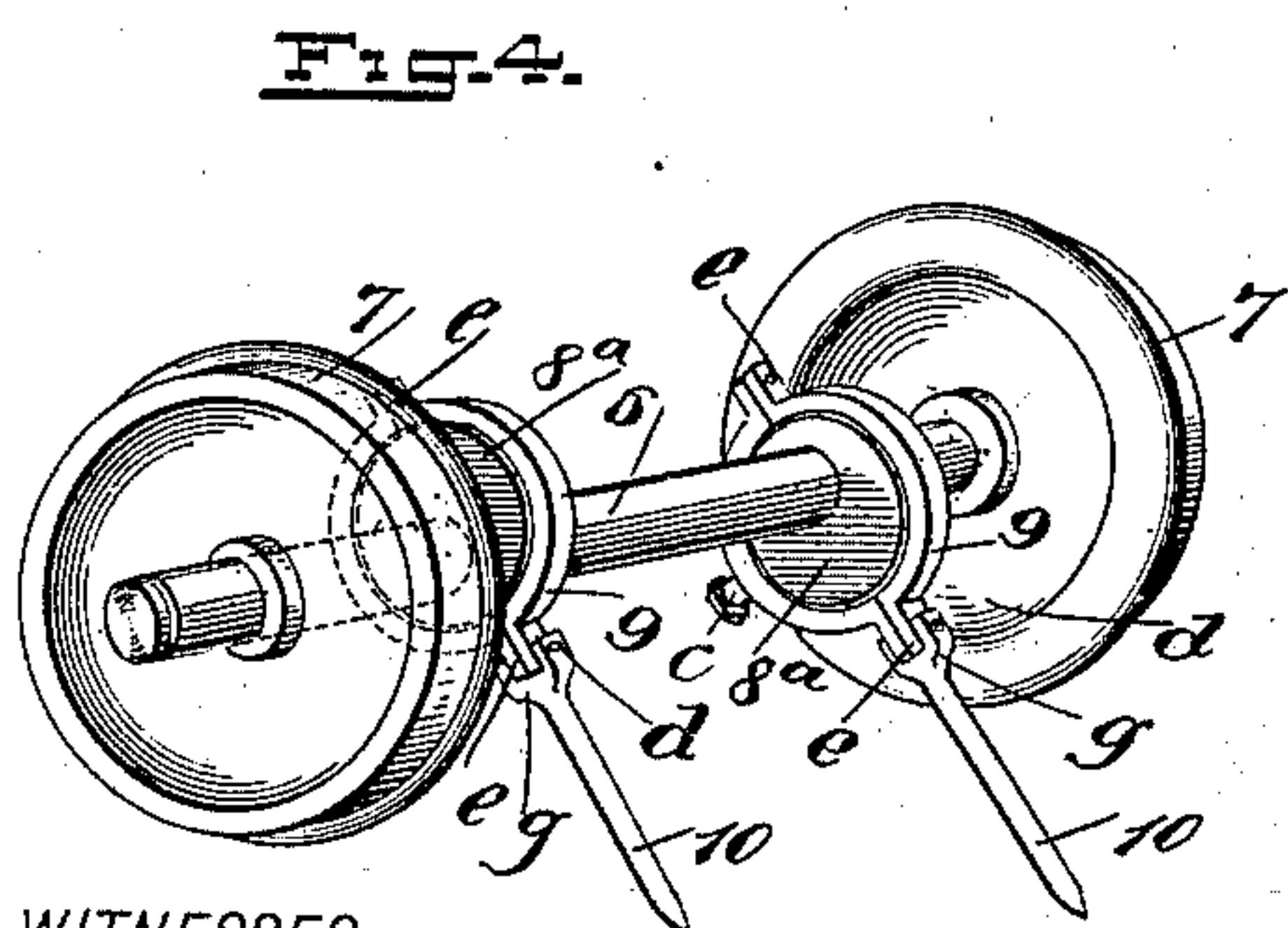


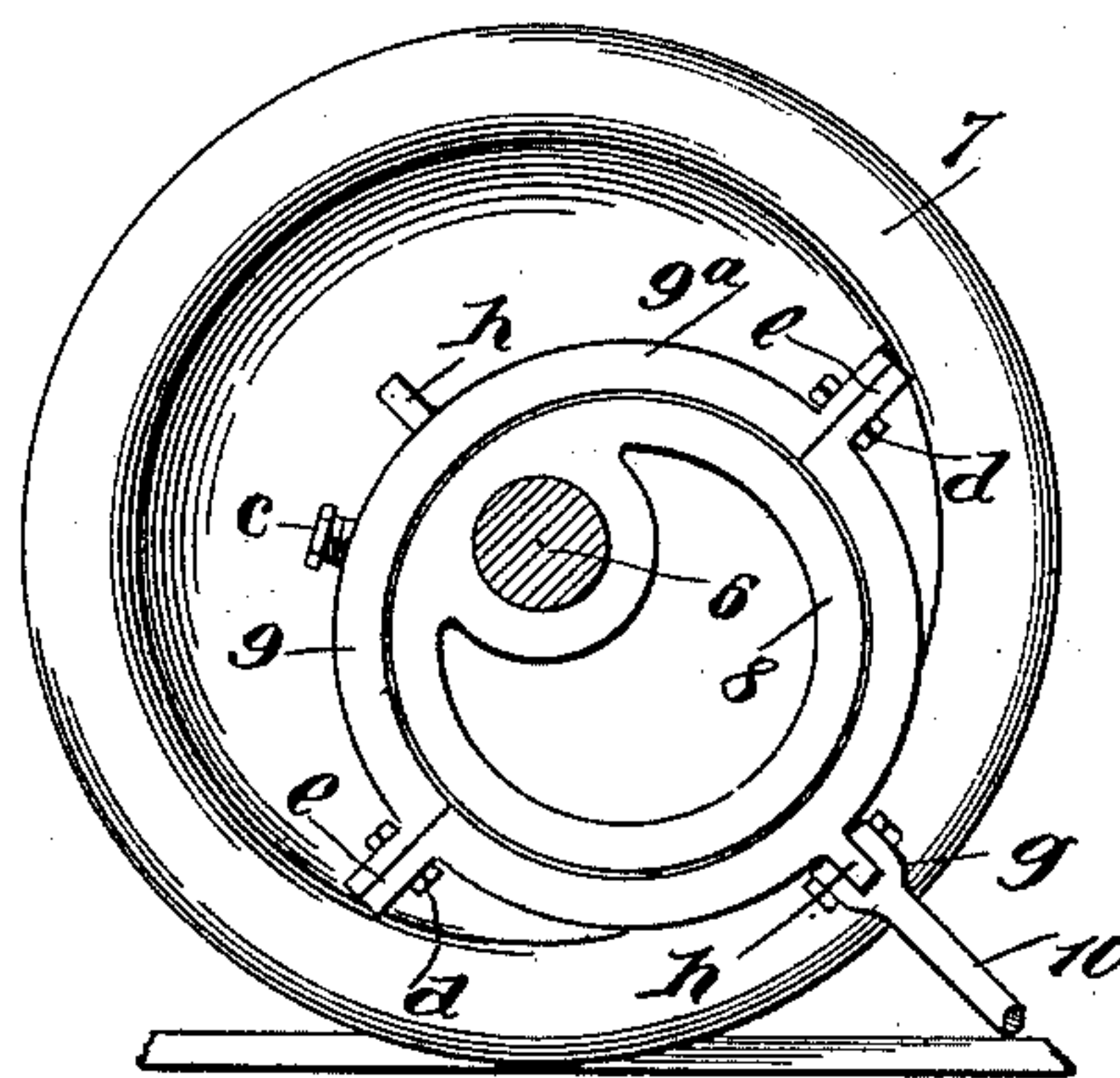
Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

PATRICK RYAN, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO THOMAS F. DUFFY, OF SAME PLACE.

AUXILIARY CAR-MOVER.

SPECIFICATION forming part of Letters Patent No. 656,477, dated August 21, 1900.

Application filed December 29, 1899. Serial No. 741,922. (No model.)

To all whom it may concern:

Be it known that I, PATRICK RYAN, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Auxiliary Car-Mover, of which the following is a full, clear, and exact description.

This invention has for its object to provide simple and practical means of novel construction which may be attached to any car and that will coact with the motive power of the car to propel the car up grades of the railroad when the tracks are slippery from any cause.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the claims.

In the drawings which form a part of this specification similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a car-truck having features of the improvement thereon. Fig. 2 is an enlarged partly-sectional side view of part of the improvement in place on a car wheel and axle, the wheel being shown in two positions by full and dotted lines. Fig. 3 is a side view of a car-wheel with the axle in section, a detail of the improvement being secured to the inner face of the wheel. Fig. 4 is a perspective view of a car-axle and two car-wheels thereon, features of the invention being mounted upon the axle; and Fig. 5 is a perspective view of one of a plurality of hangers employed.

The car-truck A (shown in Fig. 1 to illustrate the application of the invention) is preferably a portion of a street-railway car and has two parallel axles 6, which have each two car-wheels 7 secured thereon near opposite ends of the axle. Upon the inner side of each car-wheel 7 an eccentric 8 is formed or secured, and the swells on said eccentrics are projected from the axle in different radial planes, so that one eccentric will lead the other. An eccentric-strap 9 is loosely mounted upon each eccentric 8, and preferably each strap is held to rotate in place by a series of balls *a*, as shown in Fig. 2. There is a peripheral channel formed in the circular face of each eccentric 8 and a mating channel

formed in each strap 9 on its inner side, these paired channels in each eccentric and strap thereon having proper dimensions to loosely receive the series of balls *a*, that nearly fill the raceway *b*, afforded by the registering channels mentioned. A removable plug *c* is screwed into a threaded perforation formed in the strap of each eccentric and if removed will permit the free introduction of the balls *a* into the raceway *b* through the threaded orifice, which said plug will securely close when screwed into place.

The eccentric-strap 9 for each eccentric 8 may with advantage be formed in two equal portions that are connected by bolts *d*, that pass through flanges *e*, which extend out from the ends of each half-section of the eccentric-strap. On one pair of the flanges *e* the slotted or socketed end *g* of a pusher-bar 10 is mounted and secured by one or more of the bolts *d*, that pass through perforations in this end of the pusher-bar and through aligned perforations in the flanges whereon the slotted end of the pusher-bar is mounted. In Fig. 3 I have also shown lugs *h* projected from an eccentric-strap 9^a for connection of the end of a pusher-bar 10 therewith. In this case the flanges *e* are employed only for connecting together the two half portions of an eccentric-strap. Either means for attaching the pusher-bars 10 in a removable manner upon the eccentric-straps 9 or 9^a may be employed, as may be preferred.

On each of the car-axles 6 two eccentrics 8 are mounted and secured, having their swells projected one in advance of the other, and on said eccentrics similar straps 9 may be loosely mounted and held in place by bolts passing through the flanges *e* thereon. Pusher-bars 10 are held in connection with the flanges *e* at one side of each eccentric-strap 9, the same as explained with regard to the bars 10, that are secured on the flanges *e* of the eccentric-straps that are mounted upon the eccentrics 8, which are secured on the wheels 7.

When a car not having the improvements is propelled up a steep grade of the railway during sleety weather or when snow makes the rails slippery, the wheels of the trucks frequently fail to bite upon the rails, so that progress is greatly retarded or completely ar-

rested, this being particularly the case when electricity is employed as a motive agent. It will be seen that a tram-car or other car having the improvements will be reliably moved up a steep grade of a railroad-track under all conditions, as, if the car-wheels slip, the pusher-bars 10 will, if resting with their free ends upon the road-bed, successively push thereon and so coact with the regular motive power for the car as to cause a continuous progressive movement of the car up the grade. On account of the relative disposition of the eccentrics on the wheels and also on the axles the pusher-bars 10 will be given a step-by-step movement and one or more of said pusher-bars will always be pushing, while others are being retracted to subsequently receive a forward movement in accord with the rotation of the eccentrics.

From cross-bars A' on the car-truck frame hangers 11, preferably constructed as shown in Figs. 1 and 5, are hung, one above each pusher-bar 10, and a pusher-bar may be engaged with its appropriate hanger when this is desired, so as to be held away from the road-bed, as represented in Fig. 1 as to two of said pusher-bars. The hangers 11 each comprise a hook-limb *i* and a spring guard-piece *i'*, that is bent so as to project above the loop of the depending hook, these two members being joined together and pivoted in a hanger-clip *i''*, as shown in Fig. 5, the clip serving to suspend the other parts loosely from the cross-bar A'. The spring guard-piece *i'* on each hook-limb is designed to prevent an accidental displacement of a pusher-bar 10, which may be engaged with and supported by the hook member *i* of a hanger 11. It will be seen that to release the pusher-bar from a complementary hook-limb *i* and guard-piece *i'* it is necessary that the latter be manually moved from over the hook member *i* and will regain its position over the hook when free to do so.

There are duplicate pusher devices placed upon each axle and the car-wheels thereon to enable the car to be pushed upgrade thereby without regard to which end of the car is in advance, as it is obvious that only the pusher-bars on the forward axle and wheels can be utilized, while those on the rear axle and wheels are hung upon the hangers 11, as shown in Fig. 1.

To prevent percussion of the free ends of the pusher-bars 10 upon the car-floor, or from

being bent or broken by impact upon the cross-bars A' of the car-truck frame, a buffer 12, which may be spring-cushioned, is located on the under side of each cross-bar, one above each pusher-bar 10, and in case the eccentric-strap carrying a pusher-bar should become fastened upon the eccentric engaged by said strap it will be seen that the buffer will be struck by the pusher-bar if it is thrown upward by the frictional contact of the strap on the eccentric.

Slight changes might be made in the minor details of construction within the scope of my invention. Hence I do not desire to limit the same to the precise forms and location of parts shown.

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

1. The combination with a truck-frame, a car-axle thereon, car-wheels on said axle, an eccentric fast on the inner side of each car-wheel, and two eccentrics on the car-axle, of an eccentric-strap loosely mounted upon each eccentric on the car-wheels and upon the axle, and a pusher-bar secured upon each eccentric-strap.

2. In a device of the character described, the combination with a pusher-bar held to rock on an eccentric, of a hanger for supporting the free end portion of the pusher-bar, comprising a hook-limb whereon a hook is bent at the lower end laterally and then upwardly, a spring guard-piece formed on the upper end of the hook-limb so as to depend therefrom, said guard-piece having a laterally-bent member which normally projects above the upright portion of the hook, but from its resilience is adapted to be drawn laterally so as to permit said hook to receive the pusher-bar, and a clip-piece whereon the upper end of the joined hook-limb and guard-piece are pivoted.

3. In a device of the character described, the buffer-piece carried upon a cross-bar of the truck-frame above a pusher-bar, and adapted to cushion the upward movement of said pusher-bar.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PATRICK RYAN.

Witnesses:

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EVERARD BOLTON MARSHALL.