

(No Model.)

C. C. BURTON.
RAILWAY CARRIAGE.

No. 470,617.

Patented Mar. 8, 1892.

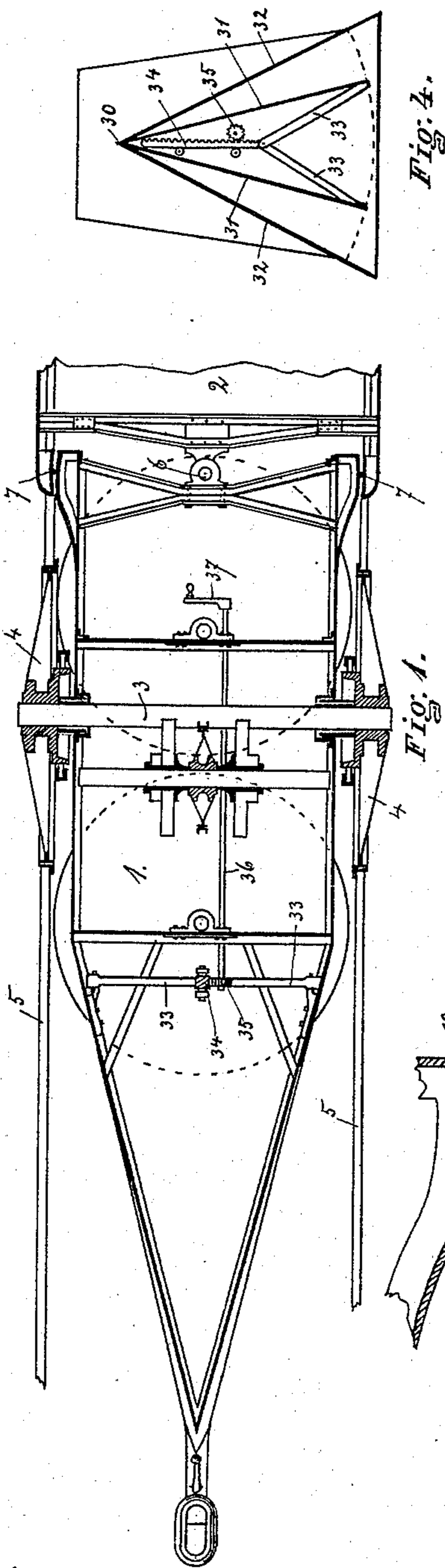


Fig. 1.

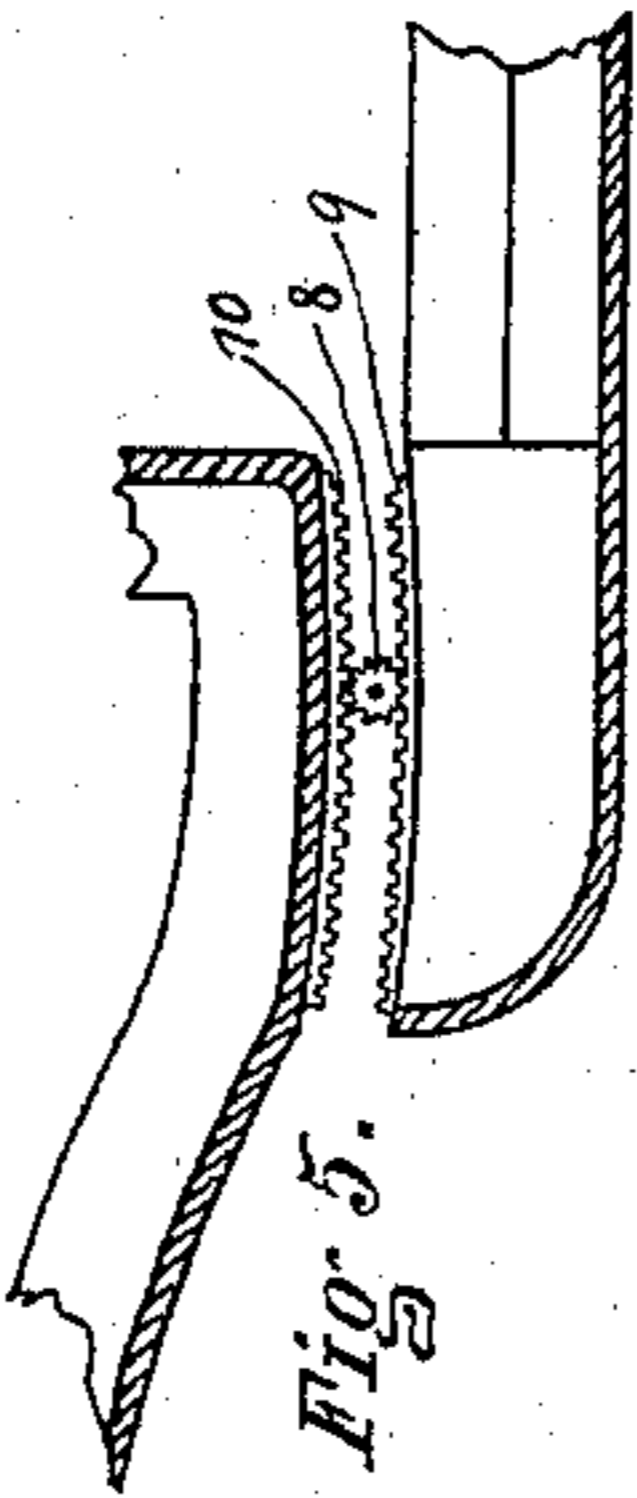


Fig. 5.

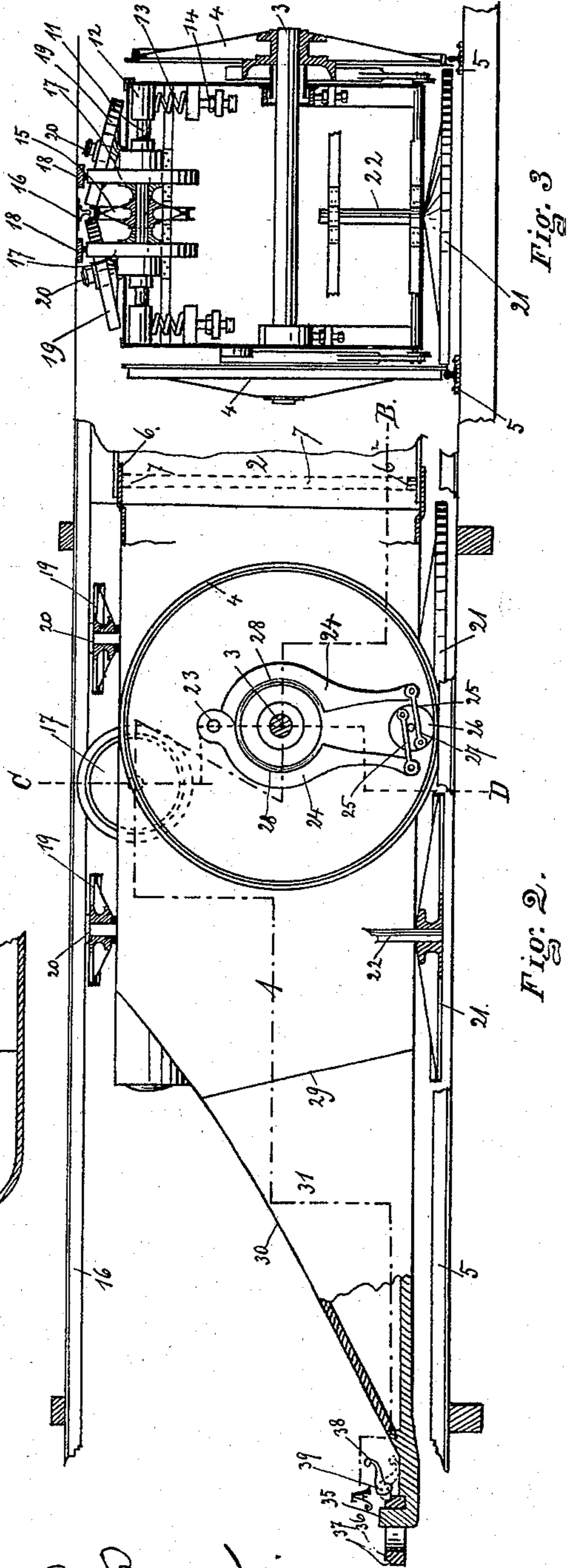


Fig. 2.

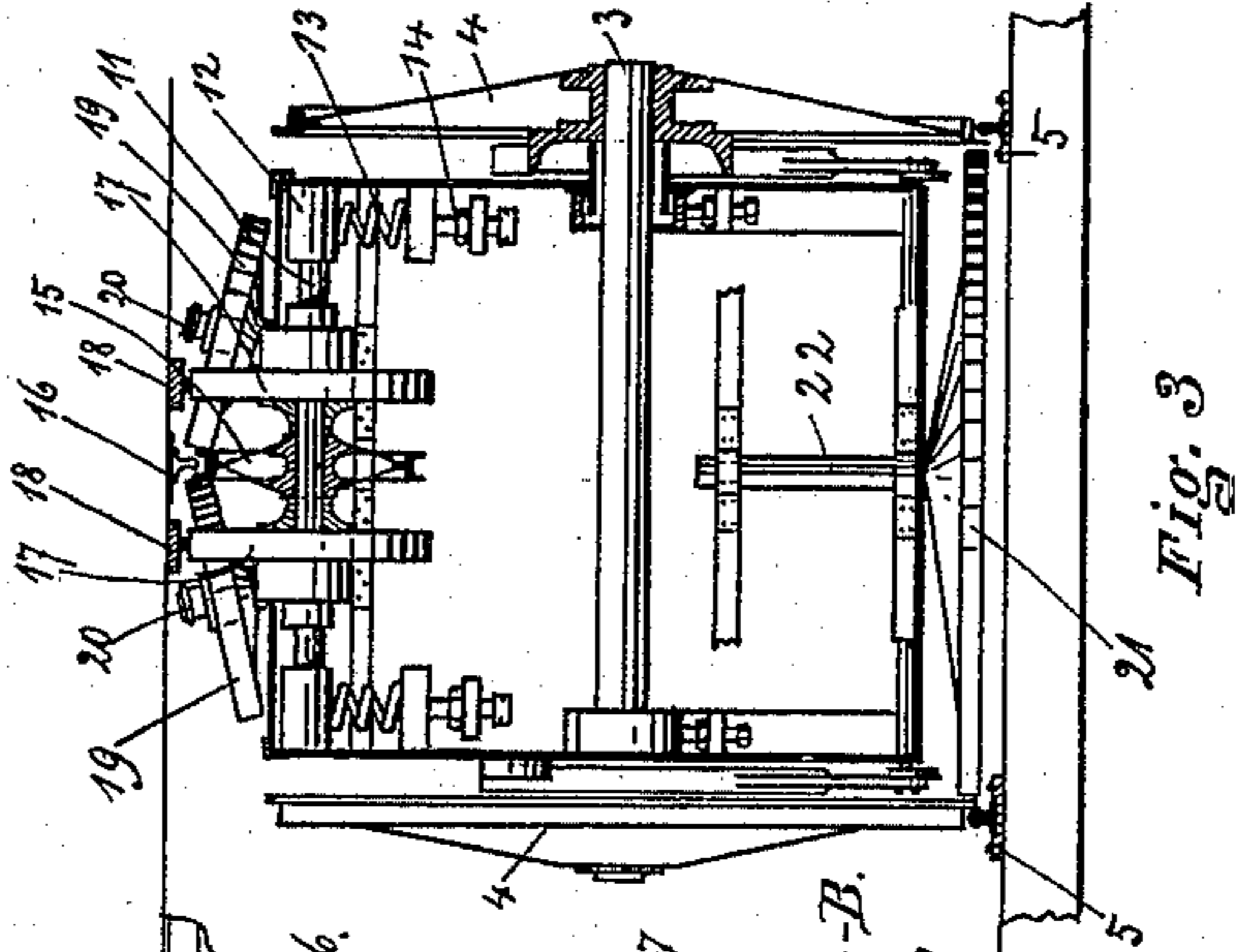


Fig. 3.

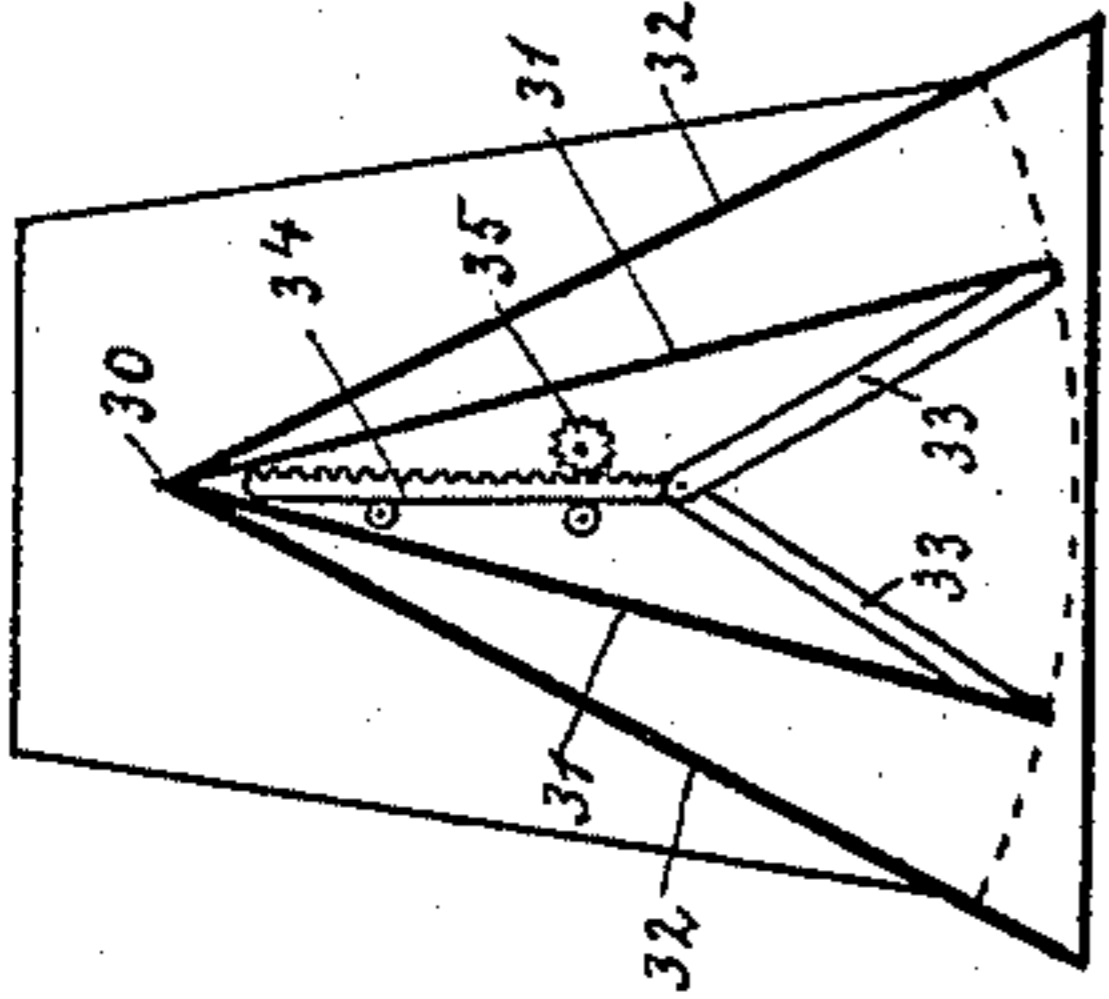


Fig. 4.

WITNESSES.

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RAILWAY-CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 470,617, dated March 8, 1892.

Application filed September 11, 1890. Serial No. 364,691. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. BURTON, of Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Railway-Carriages; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

My present invention relates to an improvement in railway-carriages and a carriage more particularly designed for attaining a high rate of speed and traveling in a girder-railway having rails above and below the carriage. The carriage is more especially designed to be propelled by electric forces.

Referring to the drawings which accompany and form a part of this specification, and in which similar numerals of reference refer to like parts in the several views, Figure 1 shows a plan view of an end section and portion of a central section of a car built on my improved plan, the said section being taken substantially on a line with A B of Fig. 2. Fig. 2 shows a side elevation of the same parts shown in Fig. 1 and the same portions of the car. Fig. 3 shows a section taken on line C D of Fig. 2. Fig. 4 shows details of construction relating to the prow or front end of the carriage. Fig. 5 shows details of construction relating to the connection between the end portion and the central portion of the car.

Referring more specifically to the reference-numerals marked on the drawings, 1 indicates an end section of my improved carriage, and 2 indicates the central section, which is suspended between two end sections, as indicated by 1. End section 1 is mounted by suitable bearings upon a shaft 3, which shaft carries the main carrying-wheels 4 4, which wheels are substantially of the diameter of the height of the car and are adapted to run upon the under rails 5 5 of the track. The central section 2 is pivoted to the end sections 1 at point 6 by suitable eyes and pins, one of which is located in the top of the car or carriage and one located at the bottom, as

indicated by 6 6 in Fig. 2. There are no wheels under the central section of the car. The outer walls of the central section of the car project and inclose the adjacent end of the end section, and the end section is provided with a rounded face, between which face and the end of the car is provided a roller 7, which roller is preferably made of elastic material, or partially so, and closes the space between the end section and the central section and forms a flexible joint so far as turning to the right or left is concerned, but a strong joint otherwise. At the upper and lower ends of the roller 7 is provided a cog-gear, (indicated by 8 in Fig. 5,) which is adapted to engage in rack 9 on the central section of the car and 10 on the end section of the car. These racks, in connection with the pinion, cause the roller to retain its proper place and to give strength and steadiness to the car.

In the top of the end section 1 of the carriage is provided a horizontal shaft 11, mounted in adjustable bearings 12, which bearings are held or forced toward their upper position by spring 13, the tension of which spring is adjusted by screw 14. The shaft 11 carries a skeleton wheel 15, preferably keyed upon the shaft 11 and adapted to engage overhead rail 16, and through the action of the springs 13 the car is held firmly downward on the bottom rails 5 5. On either side of the wheel 15 and mounted loosely on the shaft 11 are contact or trolley wheels 17 17, adapted to engage conductor-rails 18 18, located above or in the upper part of the tubular passage-way through which the car is designed to move and on either side of the rails 16. From the wheels 17 extend an electric connection, which may be made in any of several well-known manners to the motor and other electrical apparatus of the car. One of the wheels 17 is designed to carry the direct and the other the return current.

19 19 indicate a pair of inclined guiding-wheels mounted on shafts 20 20 loosely and adapted to engage on the sides of the head of rail 16 and steady and guide the end sections of the carriage. The wheels 19 19, as will be observed from Fig. 2, are located one pair in advance and one pair in the rear of a vertical line through the contact-wheel 15 or through

the shaft 3 of the carrying-wheels 4, in which position they facilitate the guiding of the car in passing curves.

Beneath the end sections 1 of the carriage, and before and behind the main carrying-wheel 4, I provide under horizontal guide-wheels 21 21, mounted on vertical shaft 22 and of a diameter substantially equal to the distance between the rails 5 5 and adapted to engage the head of the rail whenever the car deviates from its central position on the track and aid in directing the car on curves in the track, and are adapted to run in either direction as the contact with either one or the other rails 5 will necessitate.

Adapted to engage the hub of the main driving and carrying wheels 4 I provide a brake, which is pivoted to the car at 23 and is provided with a pair of substantially semi-circular arms 24 24, which surround the hub of the wheel, and projecting downward are connected by links 25 25 with the disk 26, mounted upon a shaft extending across the car and to which the opposite or mate brake is also connected. Any of several well-known means for rotating the shaft 27 may be provided. The brake is faced, preferably, at the point where it engages the hub of the wheel with wooden blocks, as indicated at 28, Fig. 2.

The nose or prow of the carriage or end section is constructed of a pair of wings 31 from line 29 forward, which wings are hinged together along the line 30 and are free at their lower edges. To the wings 31 are connected a pair of connecting-rods 33 33, which extend from the wing to movable rack 34, which rack is operated by pinion 35 and shaft and crank 36 and 37.

The purpose and operation of this part of the device are substantially as follows: When the wings are extended, the front end of the end section 1 assumes the form of a prow, gradually tapering from its forward extremity and enlarging toward the carriage-body. When the crank 37 and connecting parts are operated, the wings are swung or closed together, so as to present more of a knife-edge and leaves the front end of the device exposed to the full force for resistance of the air. It will be understood by reference to Fig. 4 that the wings 31 are partially closed together and that the lines 32 indicate the prow, as seen from the front, when the wings are partially closed together, the line 32 showing the outline of the device, taken on line 29 of Fig. 2, when the wings are partially closed, this figure (Fig. 4) being intended to show the operation of the device. When the wings are closed, the air resistance against the substantially square front section of the carriage which would be presented materially aid the brakes in stopping the carriage, as it will be understood that this carriage is intended to run at a very high rate of speed. When in normal running condition, the wings are extended so as to conform with lines 32 of Fig. 4.

I also provide a car-coupler in connection

with my carriage which is especially and peculiarly adapted for use therewith. It consists in providing a square upwardly-projecting hook 35, which is adapted to receive a link 36, having an opening adapted to receive two of the hooks 35 and provided at each end with a shoulder 37, which shoulder is adapted to be engaged when in coupled position by a gravity-catch 38, pivoted at 39 to the coupler-head.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a railway-carriage, of a three-sectioned car having the middle section pivoted to the end section and suspended between and supported thereby.

2. A railway-carriage having a middle section suspended between end sections and pivoted to the end sections at the top and bottom of the car by pivots vertically in the same line.

3. The combination, in a railway-carriage consisting of two or more sections, one of which sections incloses the end of the next section, of a vertical roller between the inner wall of one section and the outer wall of the other section, closing the space between the two, substantially as set forth.

4. Cars or section of a car having a telescopic connection, in combination with a roller or rollers closing the space between the inner wall of one and the outer wall of the other, substantially as set forth.

5. The combination, with a railway-car composed of sections telescoped together, of a roller in the space between the inner wall of one section and the outer wall of the other and racks on the inner and outer walls, and a pinion on the roller engaging in the racks, substantially as set forth.

6. A railway-carriage having a tapering nose or prow composed of movable wings or sides and a surface at right angles to the line of travel behind the prow, whereby the prow can be collapsed and the surface presented for the purpose of changing the atmospheric resistance, substantially as set forth.

7. A railway-carriage having a tapering nose or prow having movable sides or wings in front of an air-pocket, whereby the prow can be collapsed, exposing the air-pocket for the purpose of atmospheric resistance, substantially as set forth.

8. The combination, with a railway-carriage, of horizontal guide-wheels located in front and rear of the main carrying-wheels and under the carriage and substantially of the diameter between the rails of the track and adapted to engage either rail, substantially as set forth.

9. The combination, in a railway-carriage, of a horizontal shaft mounted in adjustable bearings in the top of the car, springs located at either end of the shaft adapted to actuate the bearings, a presser-wheel mounted centrally on the shaft and adapted to engage an overhead rail and exert downward pressure on the car, a conductor contact-wheel

located on each side of the presser-wheel and adapted to engage conductors on either side of the overhead rail, one of the wheels carrying the direct and the other the return current, substantially as set forth.

5 10. The combination, with a railway-carriage, of a brake consisting of two circular arms pivoted at one end to the car and adapted to inclose and grip the hub of the

main driving-wheels, a rotatable disk and connections between the free ends of the arms and the disk, substantially as set forth.

In witness whereof I have affixed my signature in presence of two witnesses.

CHARLES C. BURTON.

Witnesses:

L. S. CLARKE,

M. E. ROBINSON.