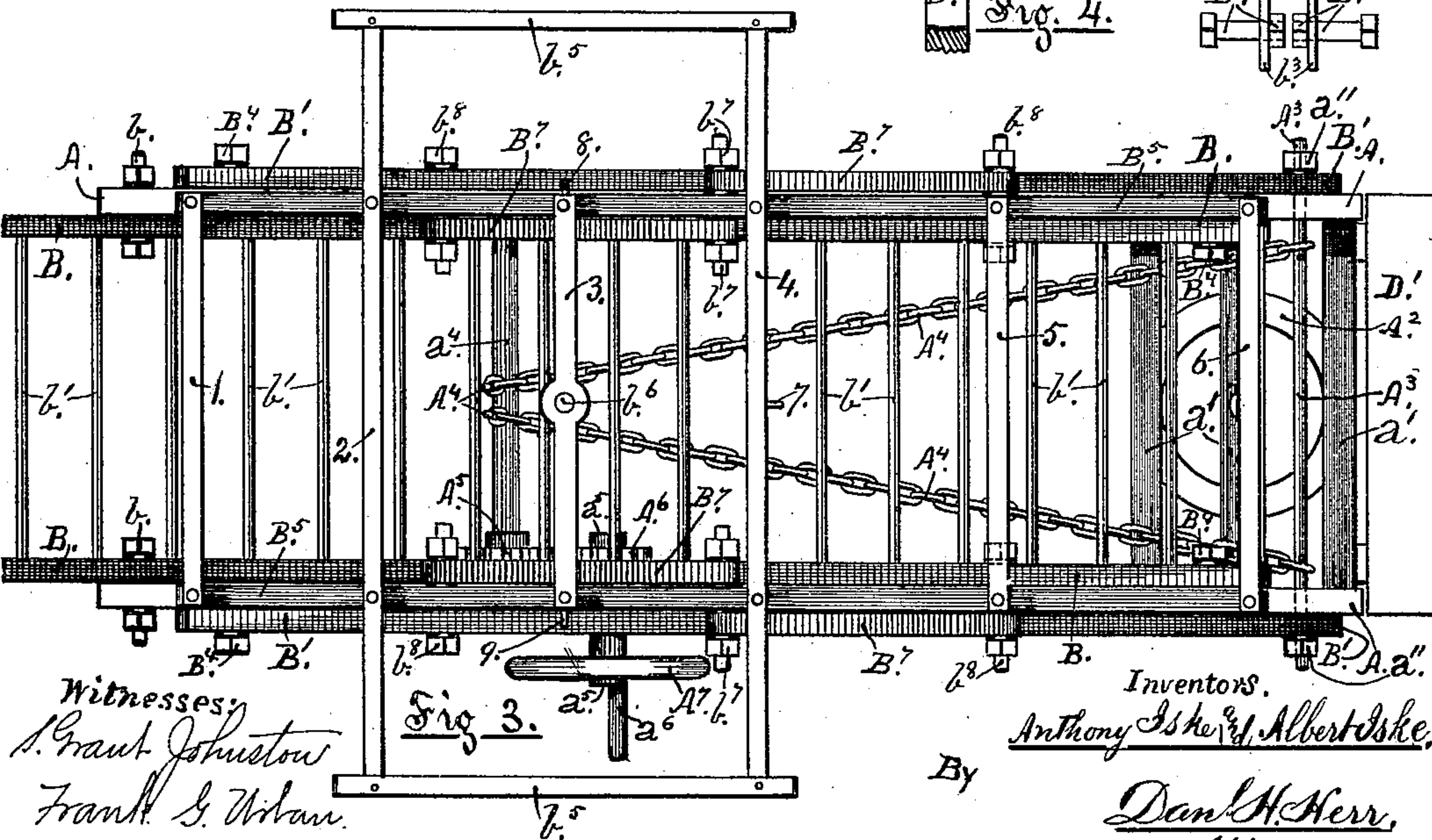
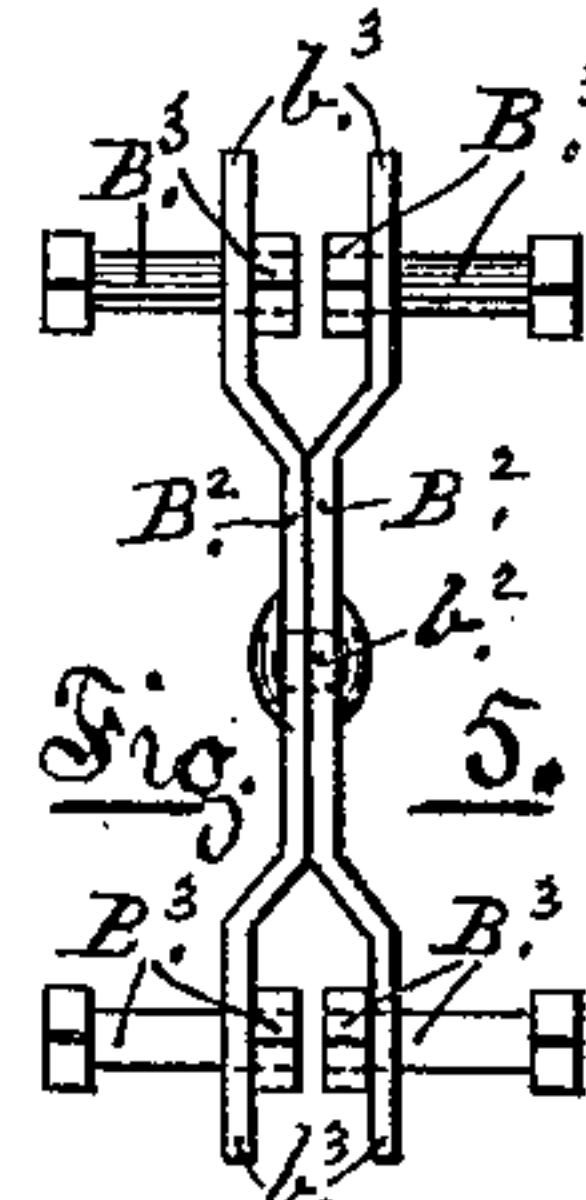
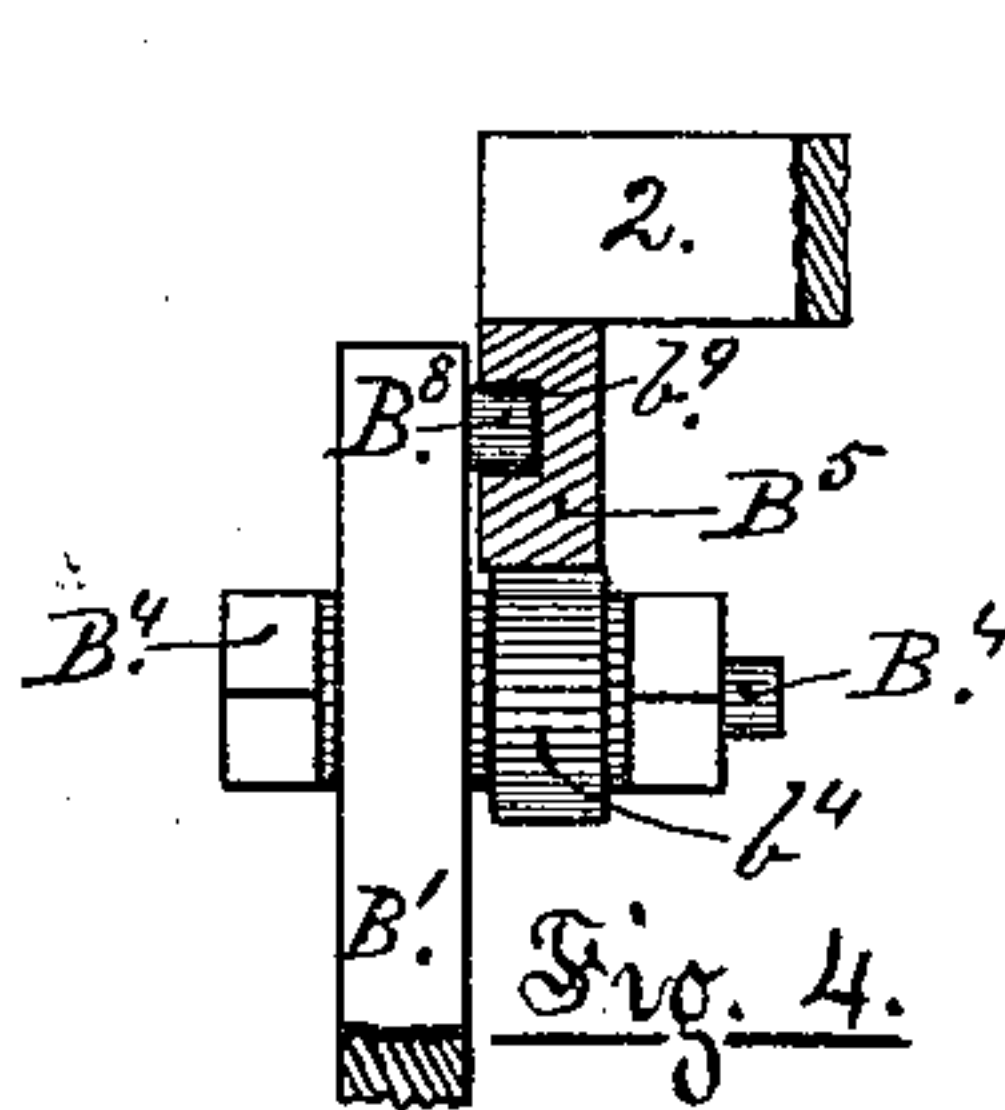
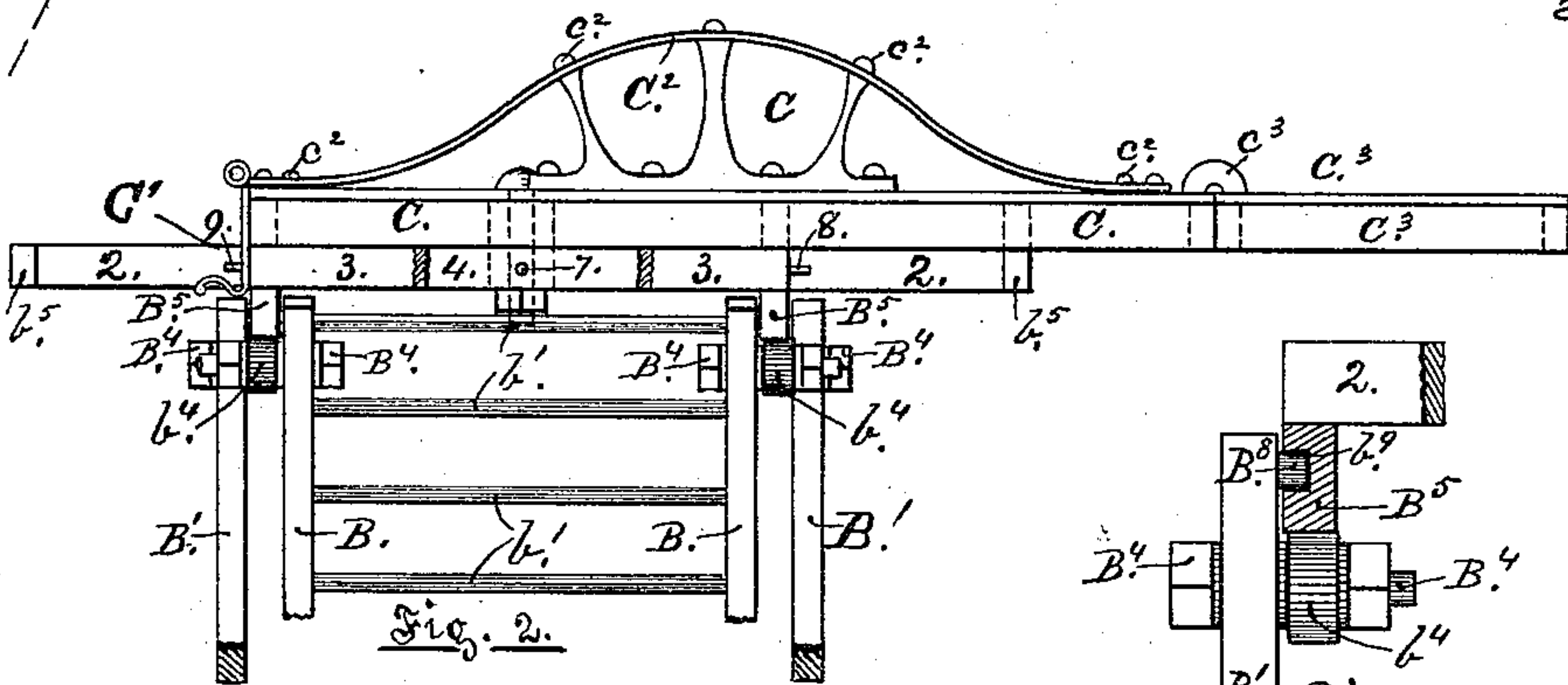
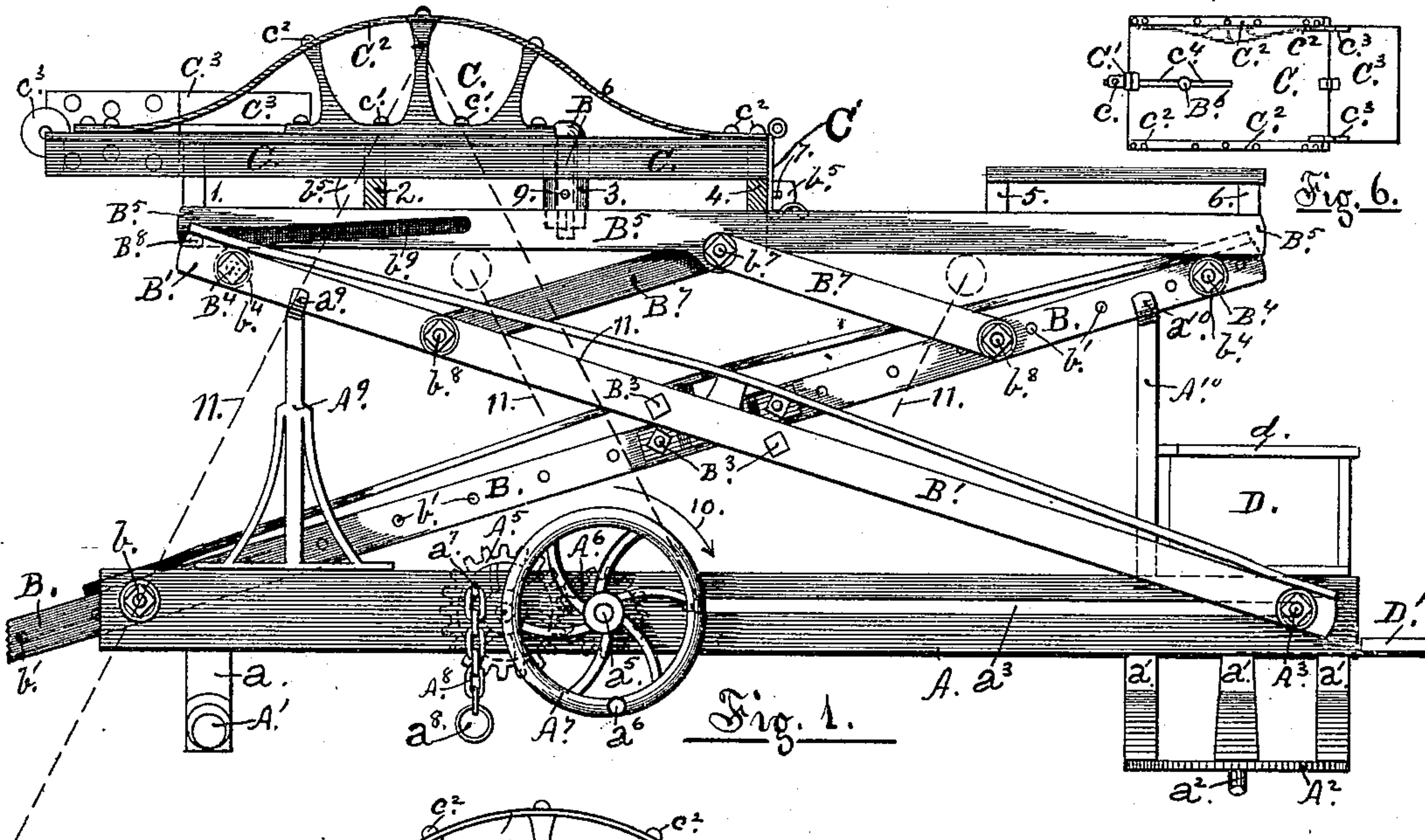


(No Model.)

ANTHONY ISKE & ALBERT ISKE.
ELECTRIC RAILWAY REPAIR WAGON.

No. 547,077.

Patented Oct. 1, 1895.



Witnesses:
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UNITED STATES PATENT OFFICE.

ANTHONY ISKE AND ALBERT ISKE, OF LANCASTER, PENNSYLVANIA.

ELECTRIC-RAILWAY REPAIR-WAGON.

SPECIFICATION forming part of Letters Patent No. 547,077, dated October 1, 1895.

Application filed December 18, 1894. Serial No. 532,231. (No model.)

To all whom it may concern:

Be it known that we, ANTHONY ISKE and ALBERT ISKE, citizens of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Electric-Railway Repair-Wagons; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in an electric-railway repair-wagon of that class in which a ladder, brace, and platform are arranged on and combined with the bed or framework of any approved vehicle.

The object of the invention is to provide convenient means for working or effecting repairs on suspended trolley-wires at any point on lines of electric railways without interfering with the running of the cars thereon at the times and places said work is being performed or said repairs are in progress.

The elements of the invention will separately and collectively appear in the following description and will be fully set forth in the claims.

The purposes of the invention are attained by the mechanism and devices illustrated in the accompanying drawings, in which similar letters of reference designate like parts throughout the several views, and in which—

Figure 1 is a side elevation, partially in section, of a device showing the elements of the invention in folded position secured to the framework of a wagon, the running-gears of which are omitted; Fig. 2, a view from the right of the platform-supporting frame with the three near cross-rails omitted, showing the platform in crosswise extension and the upper portions of the ladder and brace-bars in elevated positions; Fig. 3, a top view of Fig. 1 completed, with the platform removed; and Figs. 4, 5, and 6 are views showing details in the construction, Figs. 4 and 5 being on an enlarged and Fig. 6 on a reduced scale.

In the drawings, A A designate side rails the rear ends of which rest on and are secured to the top of a bolster-bar a , secured to the top of the rearward axle A' , and their front ends rest on and are secured to the tops of the bolster-bars $a' a' a'$, having secured to the center

of their under faces a circle or fifth-wheel A^2 , adapted to turn on a similar circle secured to the top of the forward axle, being coupled or pivoted thereto by a king-bolt a^2 in the usual way; but the axle and circle are not shown in the drawings and the lower end of the bolt is shown broken away. These several elements, as described, constitute the frame of the running-gear of the vehicle referred to in the preamble hereto, and the construction permits the front wheels of the wagon to pass under the rails A A, allowing the wagon to be turned or reversed practically on its own ground. In the forward portions of said rails A A, and extending from near their forward ends to points a prescribed distance rearward, are formed, through the bodies thereof, horizontal guide-slots a^3 , in which a shaft or rod A^3 is placed, being movable back and forth therein to raise and lower the platform, to be hereinafter described. To the rod A^3 and near to the inner sides of said rails are secured in fixed positions the forward ends of chains A^4 , which, extending rearward and forming a V, have their rear ends at the apex of the V rigidly secured to the center of a windlass or winding-shaft a^4 , having its extremities at the required distance from the forward ends of the slots a^3 journaled to the inner faces of the said side rails A A. With its hub bearing against the inner face of one of said side rails is rigidly affixed to said shaft a^4 a gear-wheel a^5 , having its teeth intermeshing with those of a pinion A^6 , rigidly secured to the inner end of a shaft a^5 , journaled through the body of said side rail and extending to the outside thereof, where to its outer end is rigidly secured a hand-wheel A^7 , provided with a crank-handle a^6 to turn said wheel, rotate the shaft a^4 , and wind the chains A^4 thereon, the V form preventing said chains from bunching on said shaft. A chain A^8 has one end, by a staple a^7 , secured to the outer face of the adjacent side rail A, and its other end provided with a ring a^8 , adapted to be slipped over the handle a^6 to keep the hand-wheel A^7 from turning back in any position to which it may have been turned, holding the upper ends of the ladder and brace-bars (yet to be described) at any desired points in elevation. Posts or standards A^9 and A^{10} , provided with cross-strips a^9 and a^{10} at their upper ends, and their

lower ends secured to the upper faces of the side rails A A, serve to support said ladder and brace-bars in folded position. Above this framework is arranged the rigging adapted to raise the platform mentioned in the preamble hereto to the required position when work is to be done thereon and to be folded again to the position shown in Fig. 1 when said platform is to be transported or housed.

This rigging and platform, constituting the chief features of this invention, will now be described. A ladder of prescribed length has its side bars B, which are preferably trussed, as shown, for strengthening, resting against the inner faces of the side rails A A, before mentioned, and pivoted at a prescribed distance from their lower ends by bolts and nuts b to said side rails, near to the rear ends thereof, so that its rungs b' will provide ready means to ascend to the platform from the ground when said ladder and platform are in raised positions. Brace-bars B' , likewise trussed for strengthening, of requisite length are placed one on each side of the ladder and outside of the side rails A A, and having their lower ends secured to the outer ends of the rod A^3 , before mentioned, by means of washers and nuts a'' screwed home thereon. The brace-bars B' and the ladder are arranged crosswise, as shown in Fig. 1, and at equal distances from the attached or lower end pivot-points are secured or hinged together by a scissors or shears joint, consisting, preferably, of two metal straps B^2 , centrally joined by a pivot-pin b^2 , and their extremities b^3 outwardly bent and arranged in parallel planes, (best shown in Fig. 5,) secured by bolts and nuts B^3 to the adjacent faces of the brace and ladder bars, where they cross each other on each side of said ladder, keeping the pairs of said bars the required distance apart or arranged in parallel planes, having a space between them gaged by the thickness of the side rail A, which lies between their attached or pivoted ends. Said joints are adapted to always work freely by not being readily affected by moisture or inclement weather.

Near to the upper end of the ladder and against the outer faces of its side bars, as well as against the inner faces of the brace-bars and at equal distances from the cross-pivot, are affixed pivot-studs B^4 , onto which, rotating freely, are secured rollers or pulleys b^4 , Figs. 1, 2, and 4, supporting the outer ends of the platform frame or base (yet to be described) in a horizontal plane at any height in vertical elevation. Rails or bars B^5 of approved dimensions, lying on top of said pulleys and held laterally in place by cross beams or pieces 1, 2, 3, 4, 5, and 6, secured to the upper edges thereof, constitute said frame or base, on top of which the platform of the invention is supported longitudinally therewith. The cross-beams 2 and 4 are prolonged a prescribed distance beyond the side rails B^5 , and the extreme ends joined by side strips b^5 , forming additional support thereto

when the platform occupies a sidewise position, Fig. 2, while the cross-beam 3 is centrally widened and provided with an orifice b^6 , through which a pin or bolt B^6 , Fig. 6, serves to rotatably pivot the platform thereto, and pins 7, 8, and 9, inserted in the order shown into the outer face of the beam 4 and into the ends of the beam 3, serve to keep the platform in fixed position in either longitudinal or sidewise direction. To the center of the side rails B^5 , and against the sides thereof, are pivoted by bolts and nuts b^7 the upper ends of brace pieces or arms B^7 , having their lower ends pivoted to the ladder and brace-bars B and B' by bolts and nuts b^8 , forming with them lazy-tongs joints adapted to keep the platform-frame always centrally in position with reference to the upper ends of said ladder and brace-bars at any height in elevation. The upper ends of the brace-bars, at the upper angles thereof and on their inner faces, are provided with rigidly-secured pins B^8 to engage upwardly and forwardly sloping grooves b^9 in the outer faces of the rearward ends of the side rails B^5 , Fig. 1, keeping said rails in close contact with the rollers b^4 , (best shown in Fig. 4,) particularly when the platform occupies the position indicated in Fig. 2.

On top of the framework just described a platform C, Fig. 6, of approved dimension is placed, Fig. 1, and the bolt or pin B^6 , before mentioned, passed through the platform and through the orifice b^6 of the cross-piece 3, serves to pivotally secure said platform to said framework. The pivot-point of the platform is placed near to one end thereof, so as to throw its other end beyond the sides of the wagon, Fig. 2, and the head of the bolt B^6 , resting on its top, holds the platform under all conditions closely to the framework; and to still better secure this end from tilting, as well as to keep the platform from turning, it has secured thereto a hinged strap C' , provided with an orifice c , to engage any of the pins 7, 8, and 9, before mentioned. The sides of the platform are provided with upwardly-projecting trussed beams C^2 , secured thereto by screws or bolts c' and c^2 , to give strength and prevent material from falling off, and at the end opposite the hinge-strap C' is an extension C^3 , hinged thereto by hinges c^3 and adapted to be folded up to allow the trolley-rod of a moving car to pass—should the platform extend beyond its track while repairs are going on, while on each side of the pivot-pin B^6 extends a longitudinal slot c^4 , allowing said platform to be moved back and forth on said pin should motion in that direction be desirable.

D designates a box having a hinged top or lid d secured to the top of the forward end of the wagon-bed framework to serve as a seat for the driver, and D' designates a foot rest or board secured to the forward end thereof.

Now the several parts hereinbefore described occupying the several positions indicated in the drawings, an inspection thereof

clearly shows, first, turning the hand-wheel A^7 in the direction indicated by the arrow 10 rotates the windlass a^4 in the opposite direction, winds the chains A^4 thereon, drawing the rod A^3 rearward in the guide-slots a^3 , which elevates the platform, the lazy-tongs joints keeping its framework centrally in horizontal position, and when the ladder and brace-bars B and B' attain to the positions indicated by the dotted lines 11 in Fig. 1 the platform will be in its highest plane in elevation; second, the ladder and brace-bars being in the position indicated by said dotted lines the rungs b' of the former provide ready means of ascent from the ground to the top thereof, when the platform may be easily turned in either direction sidewise of the wagon and readily mounted; third, when the platform occupies the position indicated in Fig. 2, with its extension C^3 underneath and beyond the suspended trolley-wire, said extension may be readily raised, allowing the trolley to pass without interfering with the running car.

Having now described the invention and set forth the manner in which it is performed, what we do consider new, and desire to secure by Letters Patent, is—

1. In an electric railway repair wagon, parallel side rails secured to the tops of bolster bars adapted to be mounted on running gears, guide slots in the forward portions of said rails, a rod extended through said slots and movable back and forth therein, a windlass or shaft extended between the rails and end-journaled against the inner faces thereof rearward of the slots, a gear wheel secured near to one end of said windlass, and chains having their rear ends together and secured to the center thereof with their forward ends apart and affixed to the rod movable within the slots, a gear pinion intermeshing with said gear wheel, a shaft the inner end secured to said gear pinion and journaled through the adjacent side rail, a hand wheel with a crank handle secured to the outer end of said shaft, and a hold-back chain the end secured to the outer face of said side rail, a ladder between the side rails and having its side bars near their lower ends pivoted to said side rails near their rearward ends, brace-bars crossing the ladder bars and having their lower ends outside of the side rails secured to the extremities of the rod within the slots, a shears-joint as described having the parallel ends of its centrally pivoted strips secured to said ladder and brace-bars on each side of the ladder and at equal distances from their attached and pivoted ends, rollers secured to the adjacent faces near the upper ends of said ladder and brace-bars and at equal distances from the central pivots of said shears-joints, longitudinal top side rails resting on said rollers and cross-beams having their ends secured to the upper edges of said side rails, the second and fourth cross-beams from the left prolonged beyond the side rails on each side thereof with longitudinal strips secured to their outer ends

and a platform pivot orifice provided at the center of the third cross-beam, pairs of lazy-tongs-arms on the opposite sides thereof pivotally connecting the centers of said top rails and the adjacent faces of said ladder and brace-bars at equal distances from the shears-pivot joints, a rotatable platform as shown toward one end pivoted through its orifice to the center of said third cross-beam, with a hinged retaining strap secured to said platform end, and a foldable platform extension rule jointed or hinged to the other end, all substantially as described and for the purpose hereinbefore set forth.

2. In an electric railway repair wagon, the wagon-bed having parallel side rails secured to the top faces of bolster bars adapted to be mounted on running gears, guide slots in the forward portions of said rails and a rod movable back and forth in said slots, a winding shaft having its ends rearward of said slots journaled in the inner faces of the parallel side rails and chains having their joined rear ends secured to the center of the winding shaft and their forward apart ends secured to the movable rod within the slots, with mechanism provided to rotate said shaft and to hold it in any rotated position, and ladder and brace bar supporting standards secured to the tops of the side-rails toward the forward and rear ends thereof, said wagon bed adapted to support a ladder and crossing brace-bars centrally pivoted together, with a rotatable platform pivoted to a frame work resting on rollers secured near to the upper ends of the ladder and brace bars, and lazy tongs-arms pivotally connecting the center of said framework with said ladder and brace bars above their pivoted centers, all substantially as described and for the purpose hereinbefore set forth.

3. In an electric railway repair wagon having a wagon bed with parallel side rails having guide slots with a rod movable back and forth therein in the forward portions thereof, and a winding shaft end journaled to the inner faces of the side rails rearward of the slots, with means provided to rotate and hold said shaft, and chains connecting the center of the winding shaft with the outer ends of the rod within the slots, all as shown and described; and an upwardly and forwardly inclining ladder between the side rails having near the lower end thereof its side bars pivoted to the rear ends of said side rails, and rollers near the upper ends pivoted to their outer faces; upwardly and rearwardly inclined brace-bars, one on each side of the ladder and outside of the side rails, having their lower ends secured to the extremities of the rod in said guide slots, and pulleys near the upper ends pivoted to their inner faces, and inwardly projecting pins secured to the upper angles thereof, said ladder and brace-bars where they cross each other pivoted together by shears-joints as shown adapted to be raised and lowered as described, and to support on top of said rollers the plat-

form frame-work as shown, the angle pins engaging grooves in longitudinal side rails of said frame-work; lazy-tongs-arms having their upper ends pivoted to the opposite sides thereof at the centers of said side rails and the lower end pivoted to said ladder and brace bars, and the platform as described toward one end thereof rotatably pivoted to the top of said frame-work, with means provided as shown to hold said platform longitudinally and sidewise in place, all substantially as described and for the purpose hereinbefore set forth.

4. In an electric railway repair wagon, a wagon bed as described, a platform supporting rack comprising a ladder having its side bars pivoted to the rear end of said bed as shown and brace-bars centrally pivoted to the sides of said ladder and having their lower ends secured to the outer ends of a rod movable back and forth in the longitudinal slots in the forward portions of the side rails thereof with mechanism provided to raise said rack and to

hold it in place, rollers pivoted near to the upper ends of said ladder and brace bars, and a platform supporting frame as described having its longitudinal side rails on said rollers, lazy-tongs-arms having their upper ends pivotally secured to the centers of said side rails and their lower ends pivoted to the adjacent faces of said ladder and brace-bars, a platform with a longitudinal slot therein toward one end thereof and pivoted by a pin through said slot to the top of said framework with a hinged strap provided at said end by engaging pins in said frame-work as shown to keep said platform from tilting as well as longitudinally or sidewise in place, all substantially as described and for the purpose hereinbefore set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ANTHONY ISKE.
ALBERT ISKE.

Witnesses:

DANL. H. HERR,
EDWIN BOOKMYER.