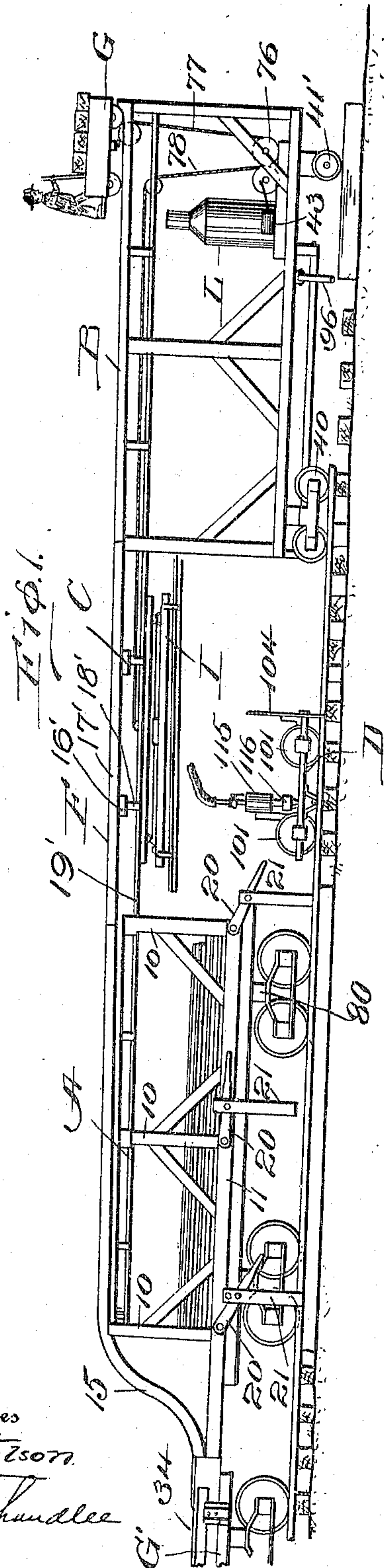


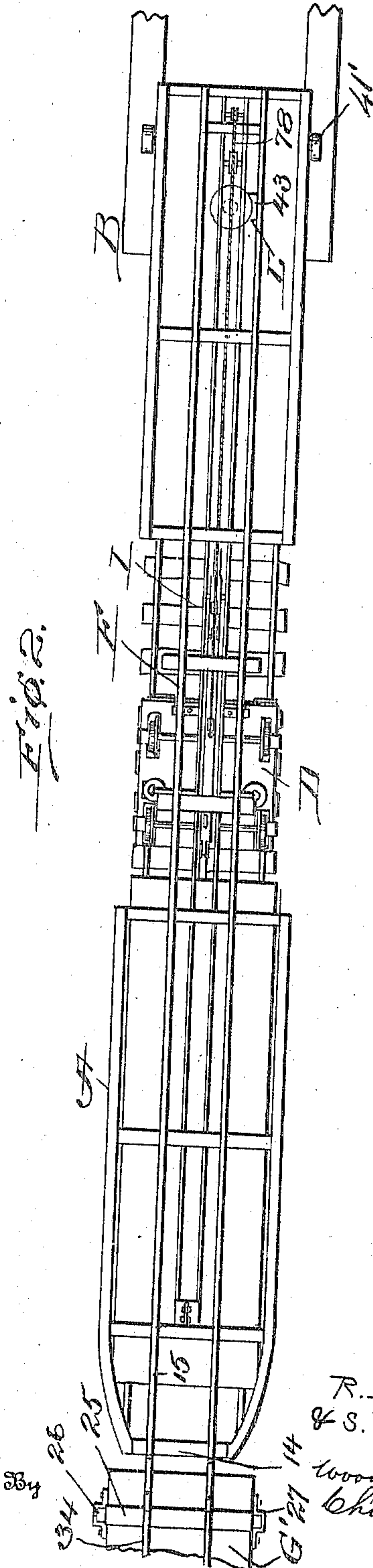
950,814.

R. L. BROWN & S. F. BATES.
RAILWAY TRACK LAYER.
APPLICATION FILED FEB. 25, 1909.

Patented Mar. 1, 1910.
10 SHEETS—SHEET 1.



Witnesses
G. H. Tolson
E. L. Chandler



Inventors
R. L. Brown
& S. F. Bates
Woodward &
Chandler
Attorneys

950,814.

R. L. BROWN & S. F. BATES.
RAILWAY TRACK LAYER.
APPLICATION FILED FEB. 25, 1909.

Patented Mar. 1, 1910.
10 SHEETS—SHEET 2.

Fig. 3.

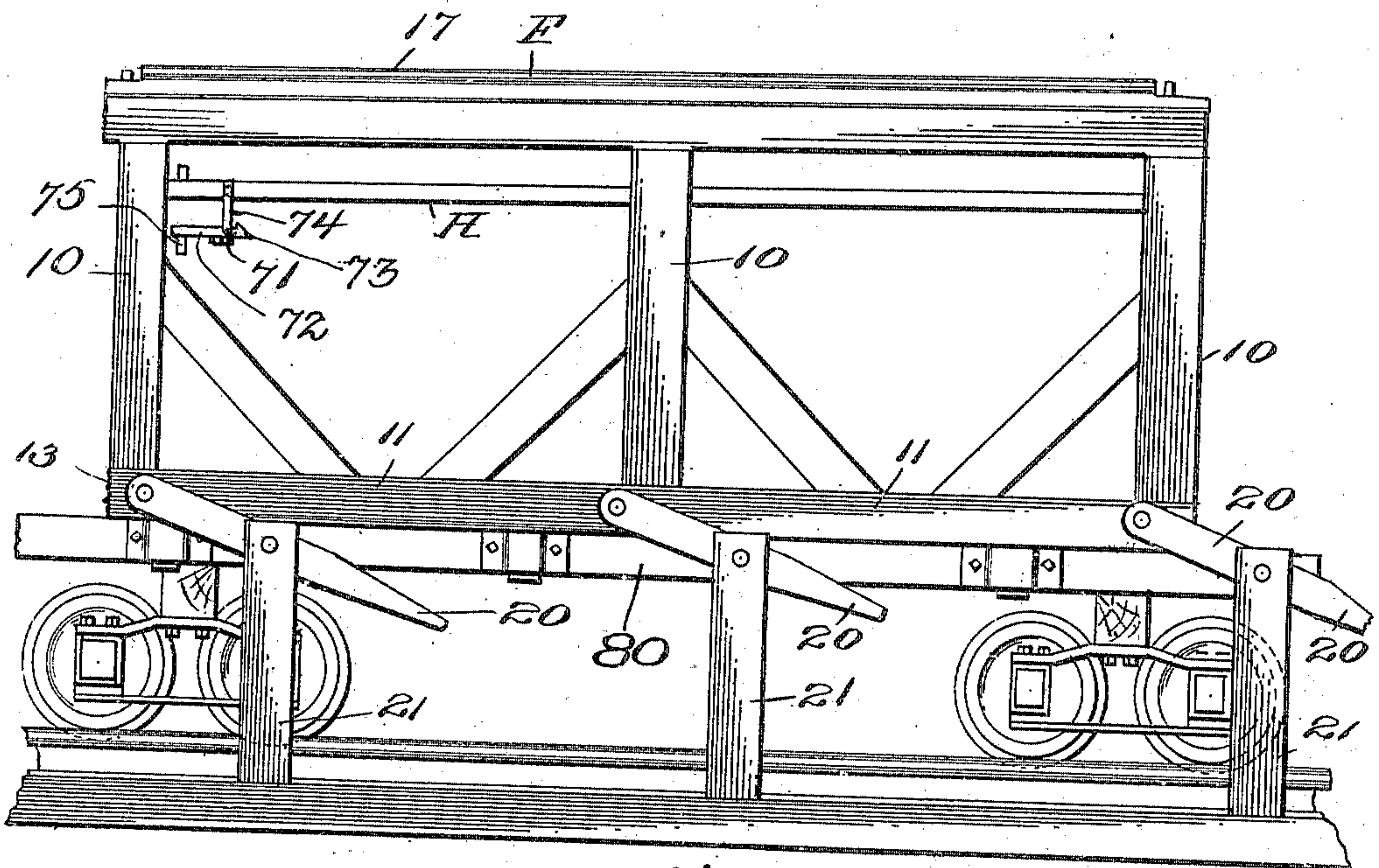
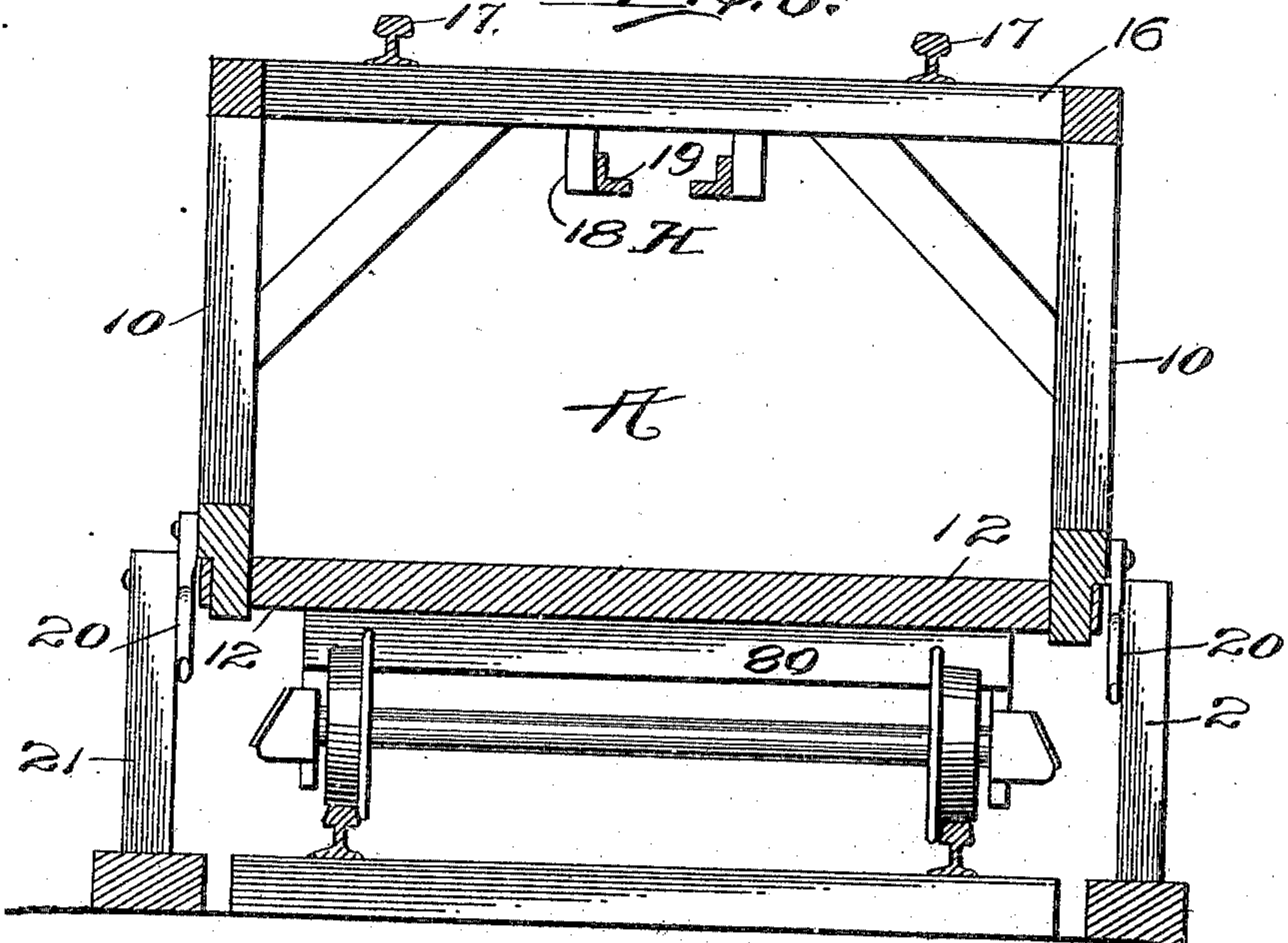


Fig. 6.



Witnesses
G. F. Tolson,
C. L. Chandler

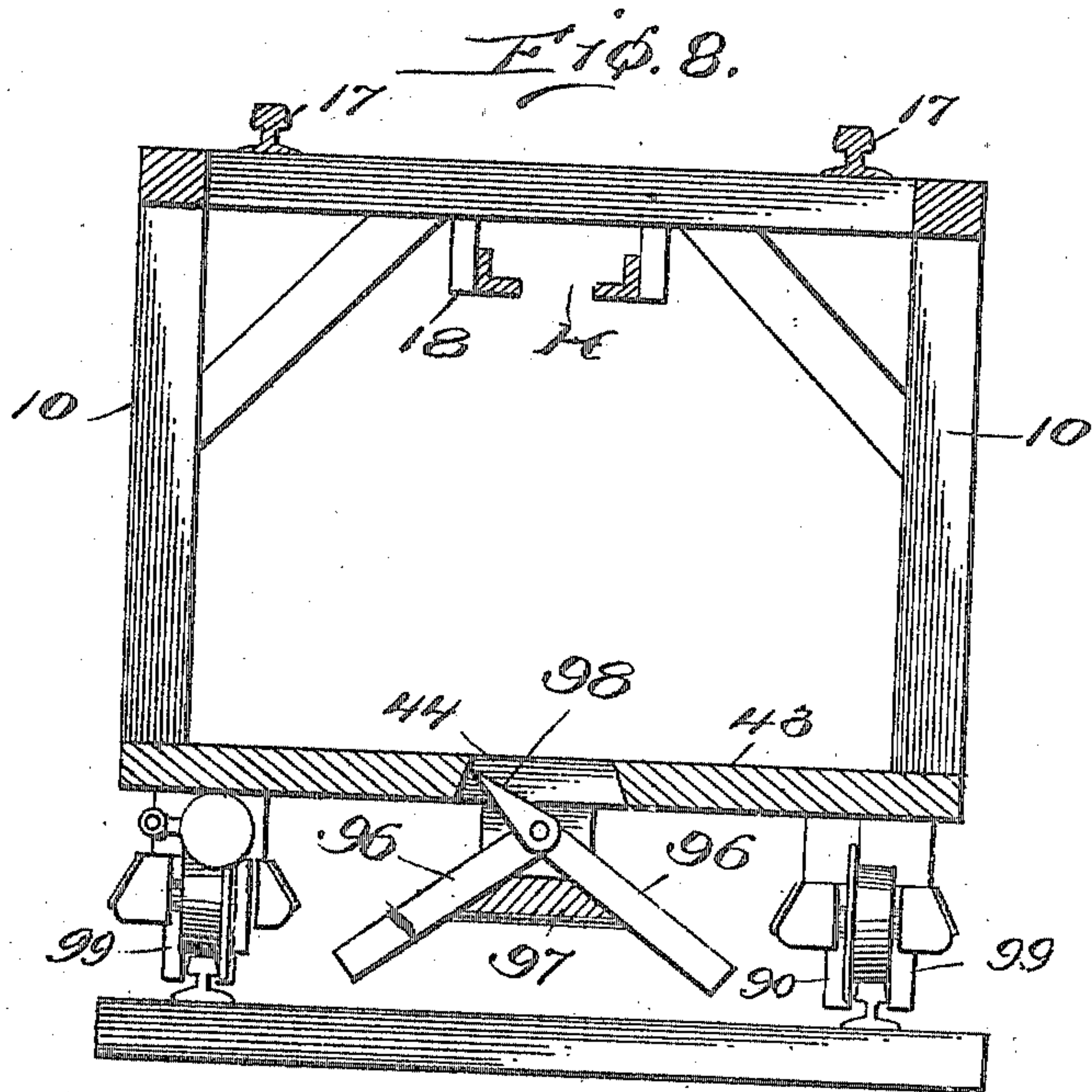
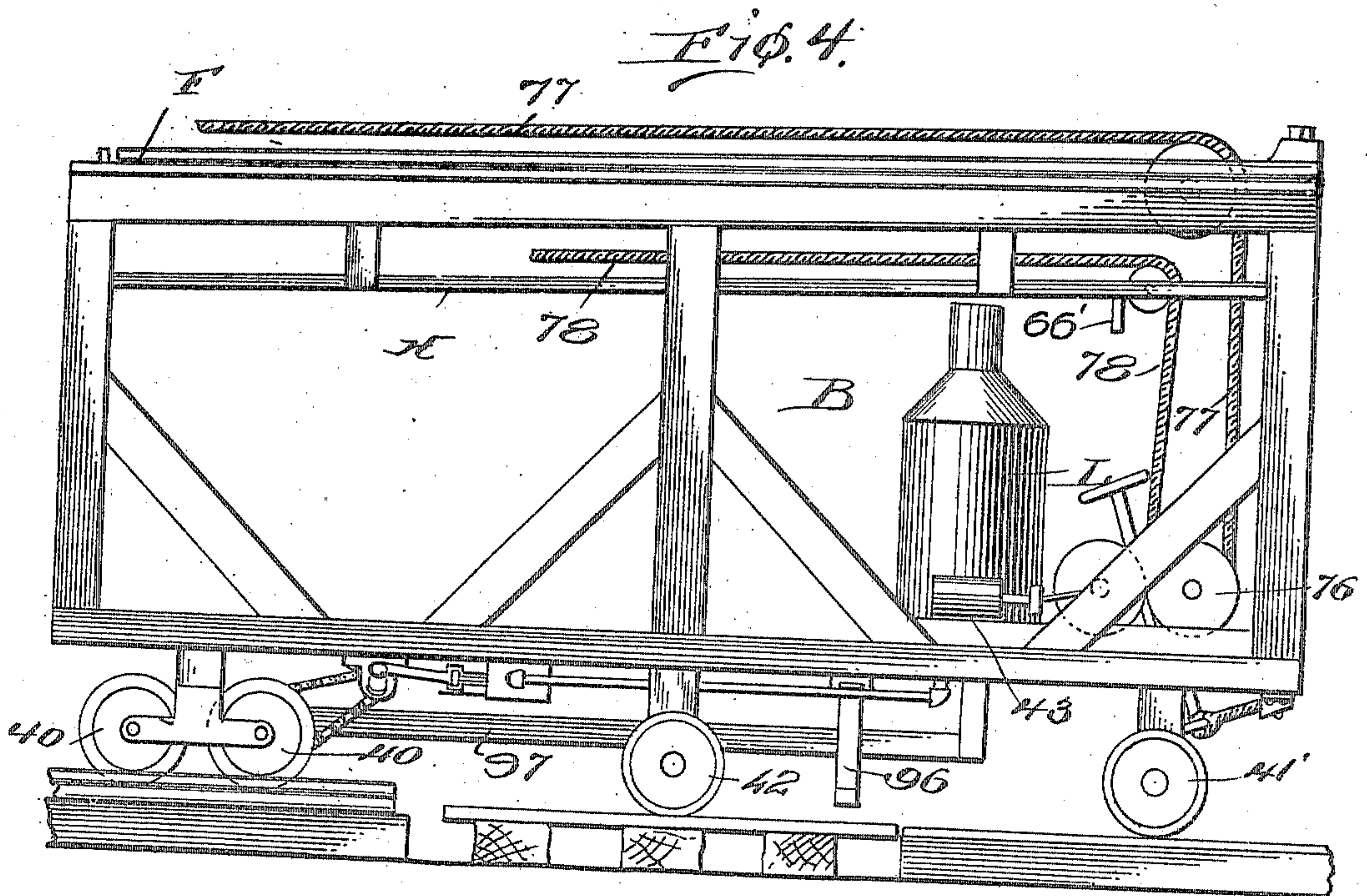
Inventors
R. L. Brown,
and S. F. Bates.
By Woodward Chandler
Attorney

R. L. BROWN & S. F. BATES.
RAILWAY TRACK LAYER.

APPLICATION FILED FEB. 25, 1909.

950,814.

Patented Mar. 1, 1910.
10 SHEETS—SHEET 3.



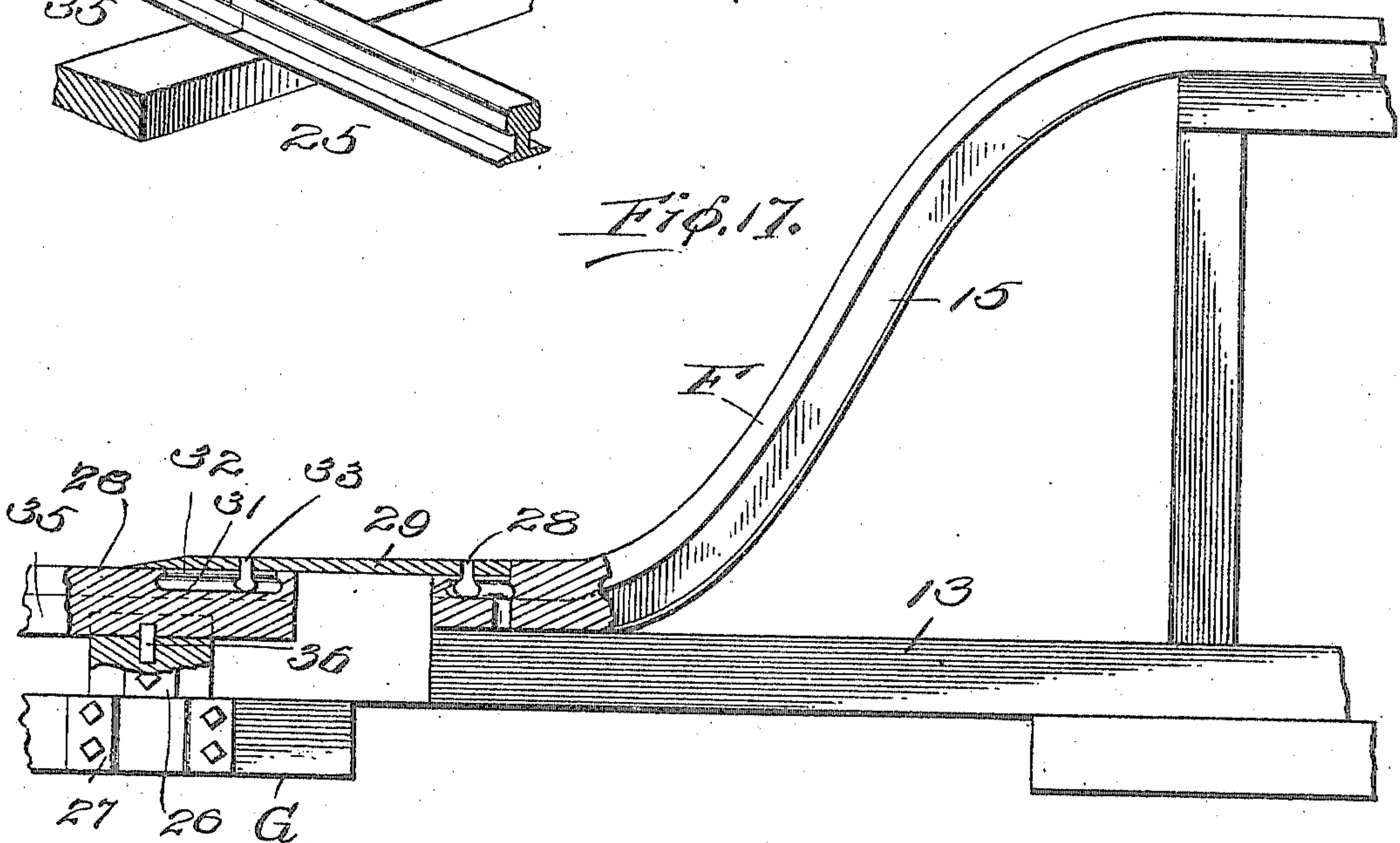
Witnesses
G. F. Tolson.
E. L. Chandler

Inventors
R. L. Brown and
S. F. Bates

By
Woodward Chandler
Attorneys

APPLICATION FILED FEB. 25, 1909.

10 SHEETS—SHEET 4.



334
Woodward & Chandler
Attorneys

R. L. BROWN & S. F. BATES.

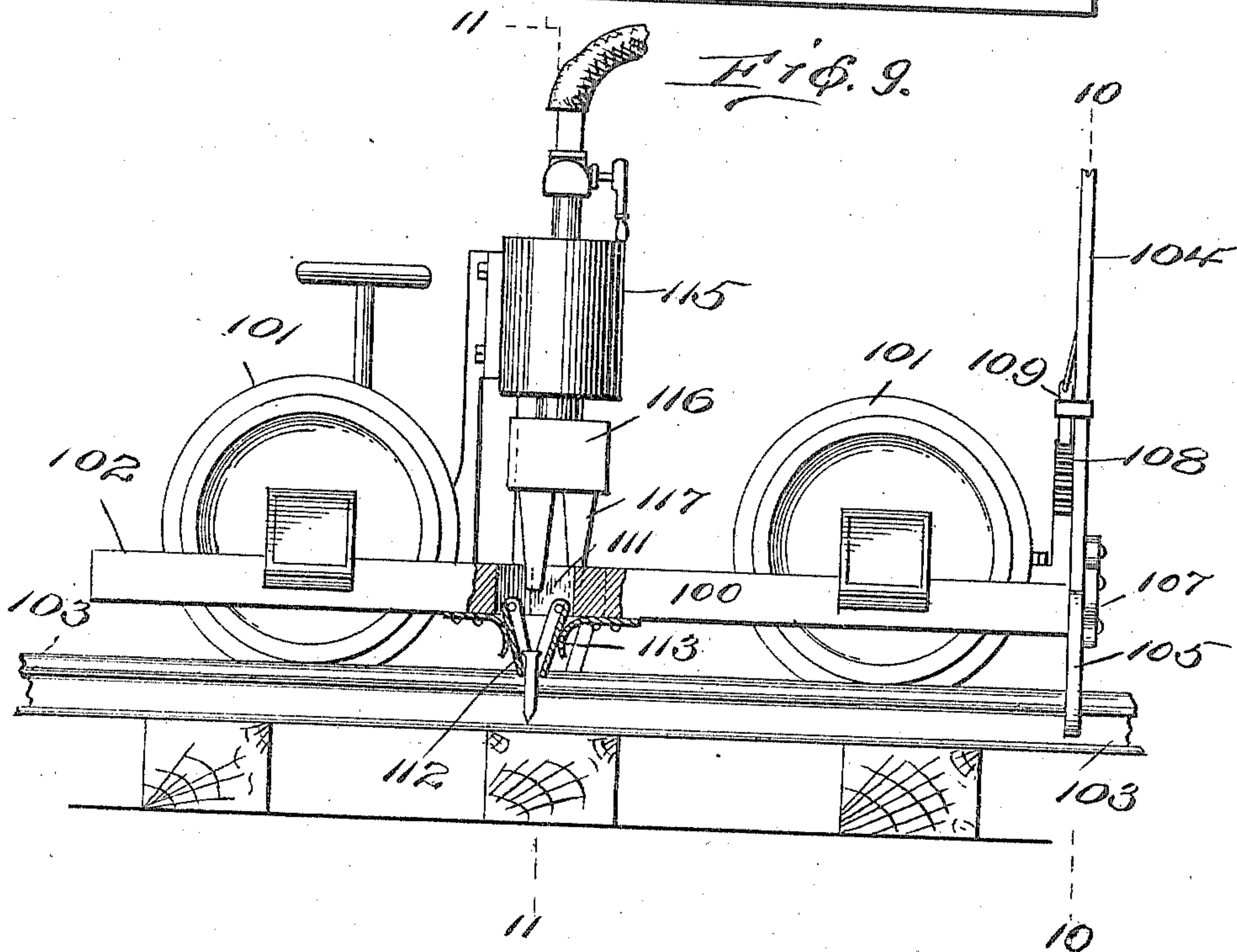
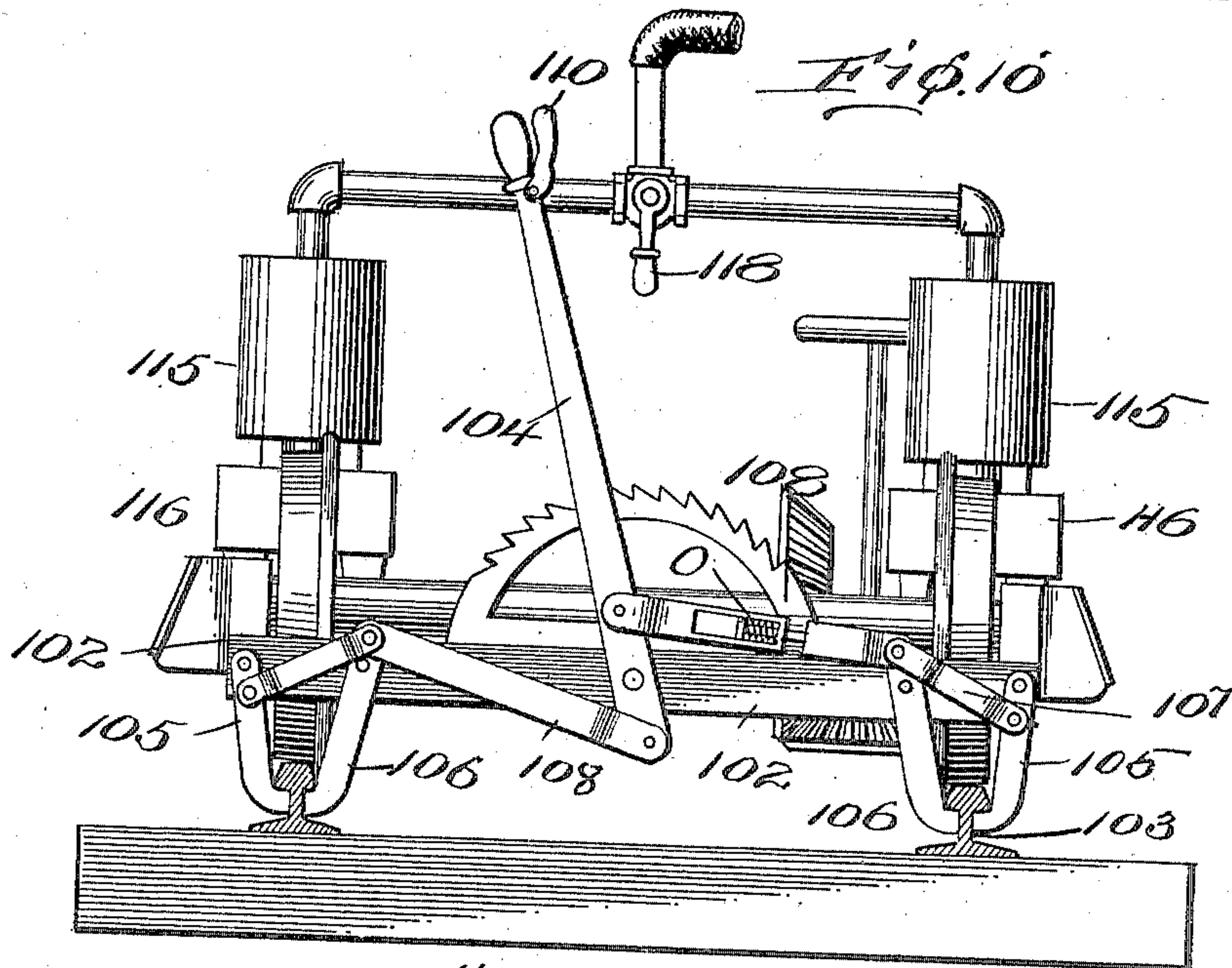
RAILWAY TRACK LAYER.

APPLICATION FILED FEB. 25, 1909.

950,814.

Patented Mar. 1, 1910.

10 SHEETS—SHEET 5.



Witnesses

G. E. Tolson.

E. L. Chandler

Inventors
R. L. Brown and
S. F. Bates.

By
Woodward & Chandler

Attorneys

R. L. BROWN & S. F. BATES.

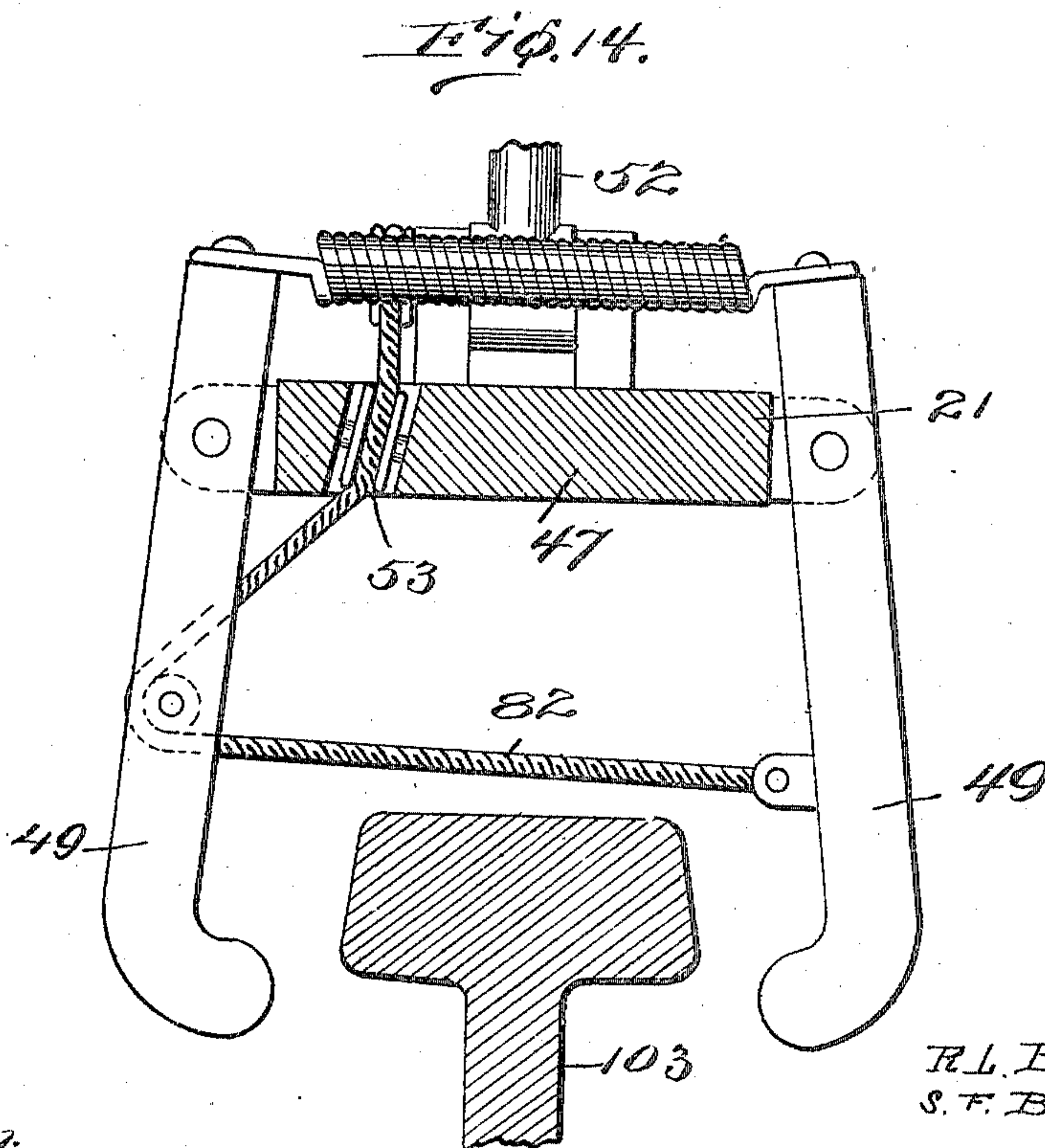
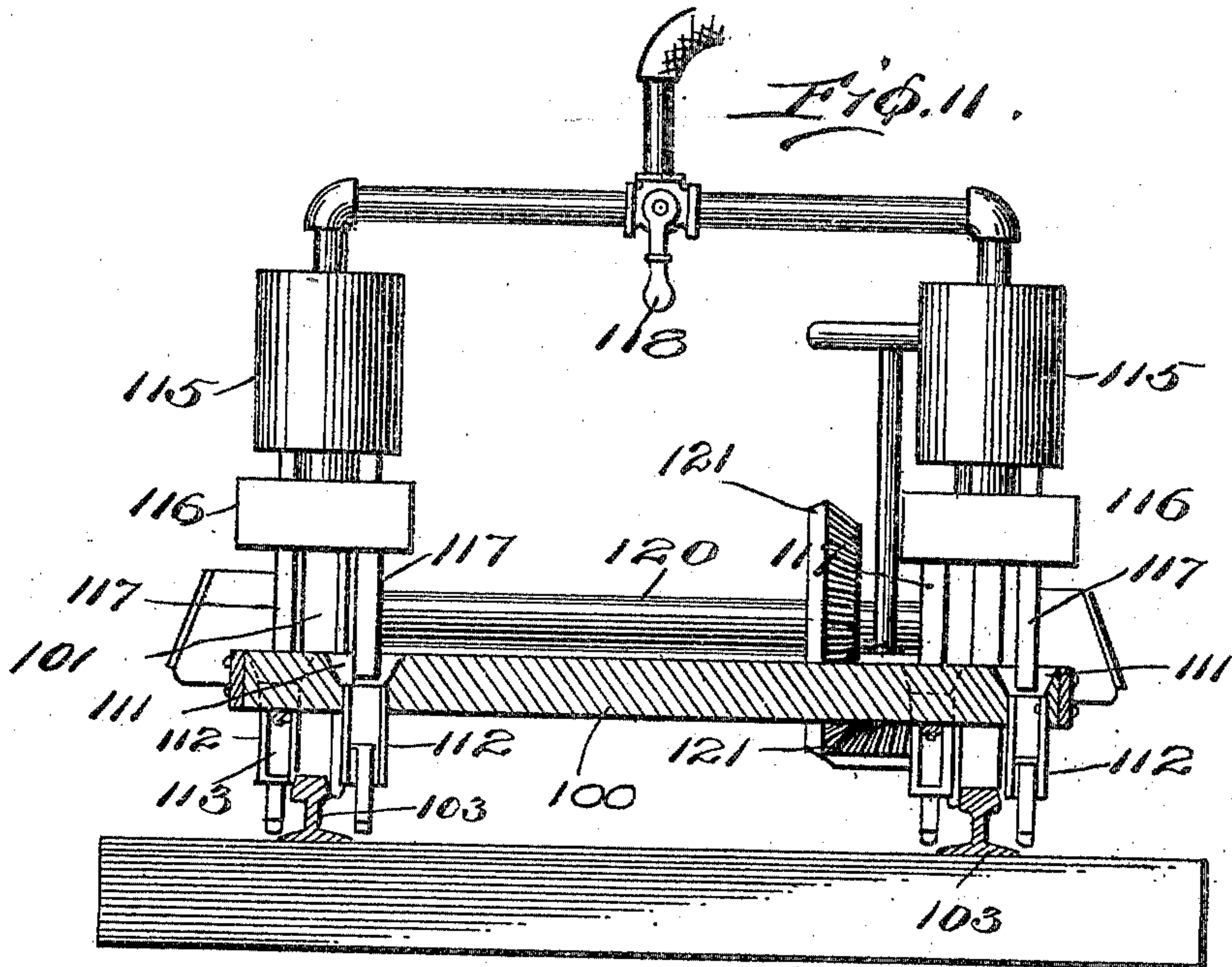
RAILWAY TRACK LAYER.

APPLICATION FILED FEB. 25, 1909.

950,814.

Patented Mar. 1, 1910.

10 SHEETS—SHEET 6.



Witnesses

G. F. Tolson

E. L. Chandler

Inventors

*R. L. Brown and
S. F. Bates*

By

Woodward Chandler

Attorney

R. L. BROWN & S. F. BATES.

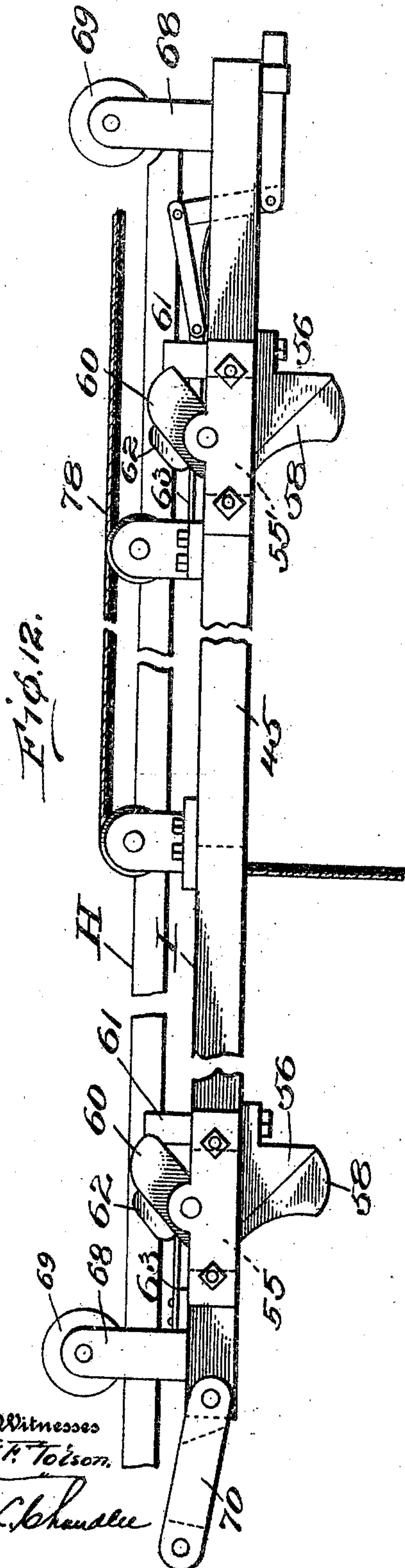
RAILWAY TRACK LAYER.

APPLICATION FILED FEB. 25, 1909.

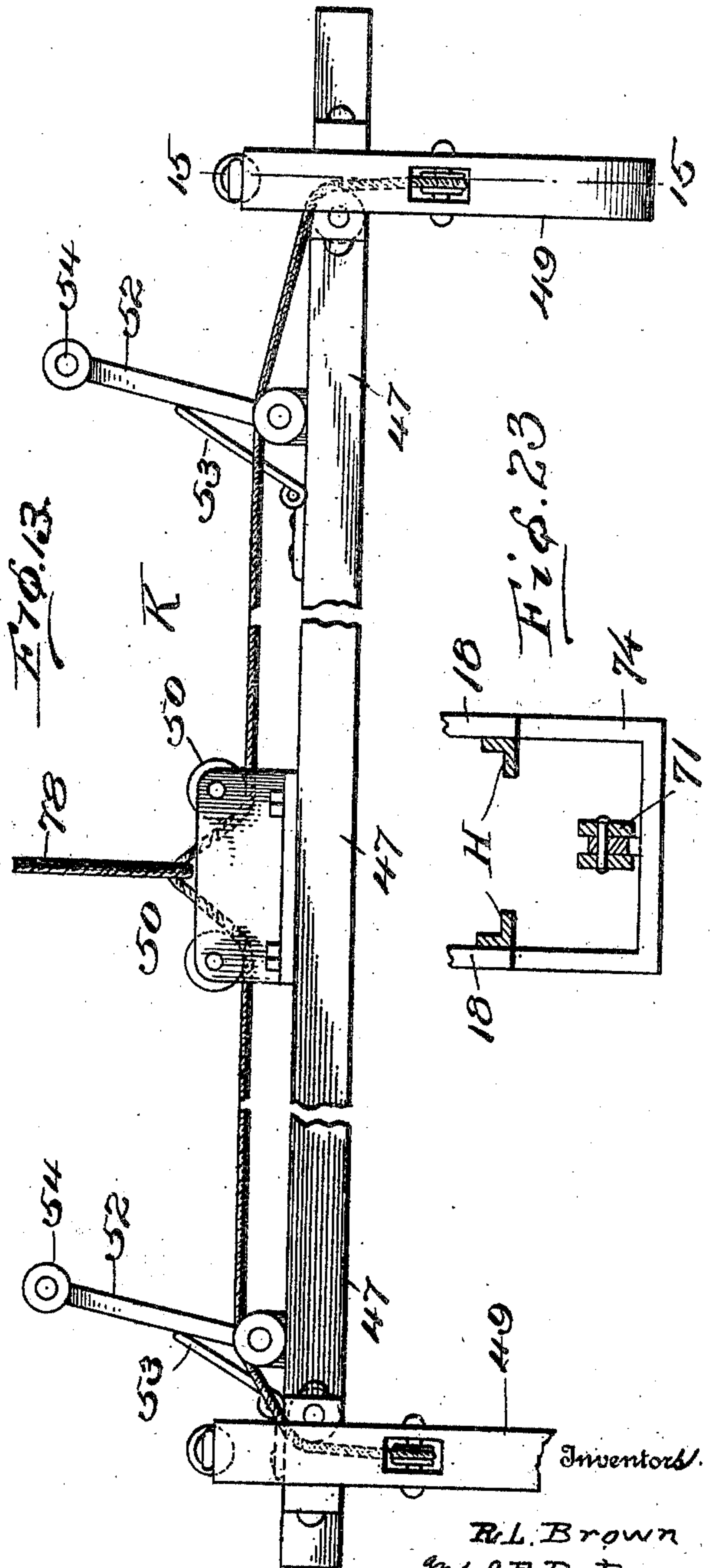
950,814.

Patented Mar. 1, 1910.

10 SHEETS—SHEET 7.



Witnesses
G. R. Tolson.
E. L. Chandler



Inventors.

R. L. Brown
and S. F. Bates

By Woodward Chandler

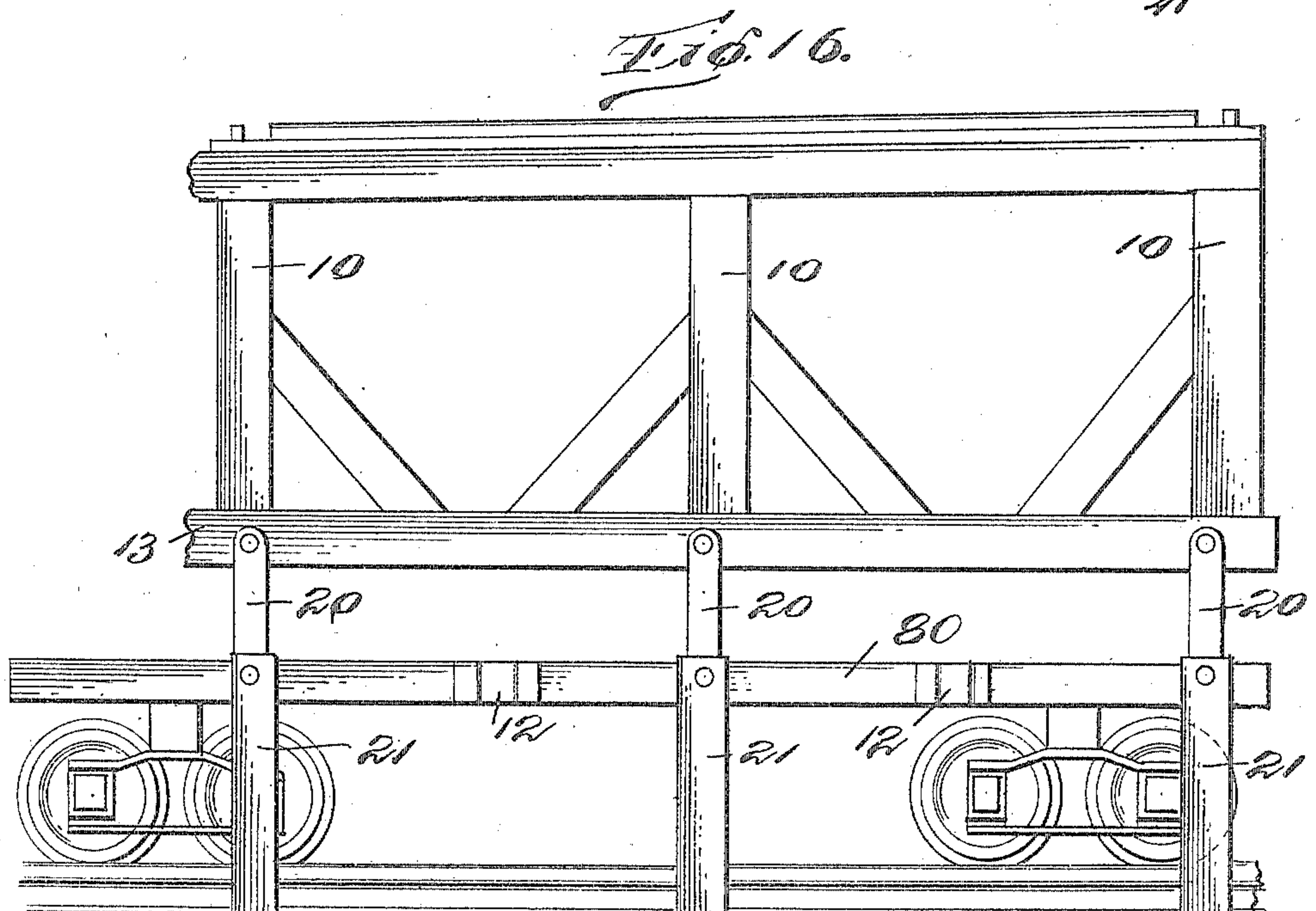
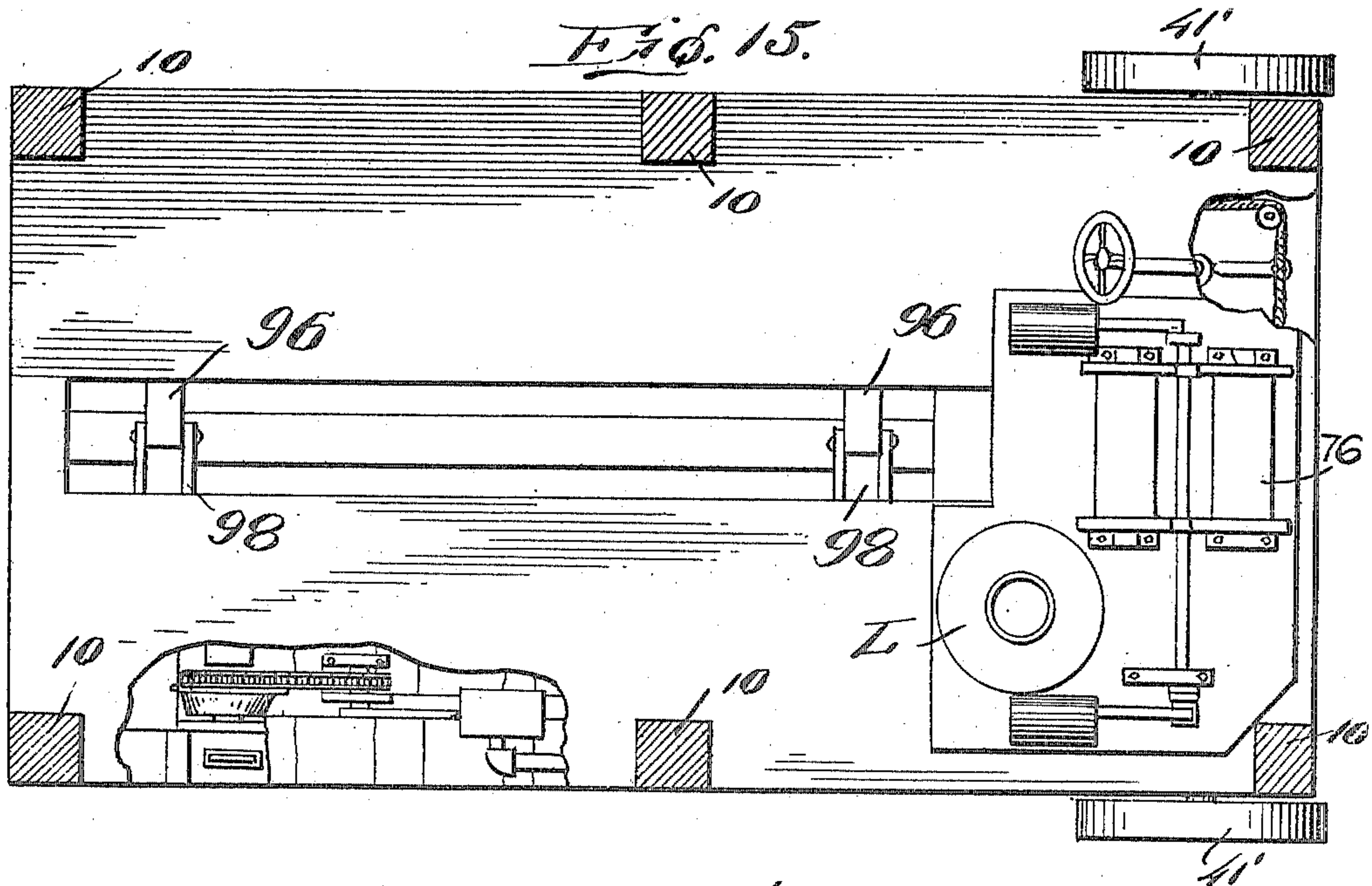
Attorneys

R. L. BROWN & S. F. BATES.
RAILWAY TRACK LAYER.
APPLICATION FILED FEB. 25, 1909.

950,814.

Patented Mar. 1, 1910.

10 SHEETS—SHEET 8.



Inventors
R. L. Brown
and S. F. Bates

Witnesses

G. F. Tolson
E. L. Chandler

By Woodward & Chandler

Attorneys

R. L. BROWN & S. F. BATES.

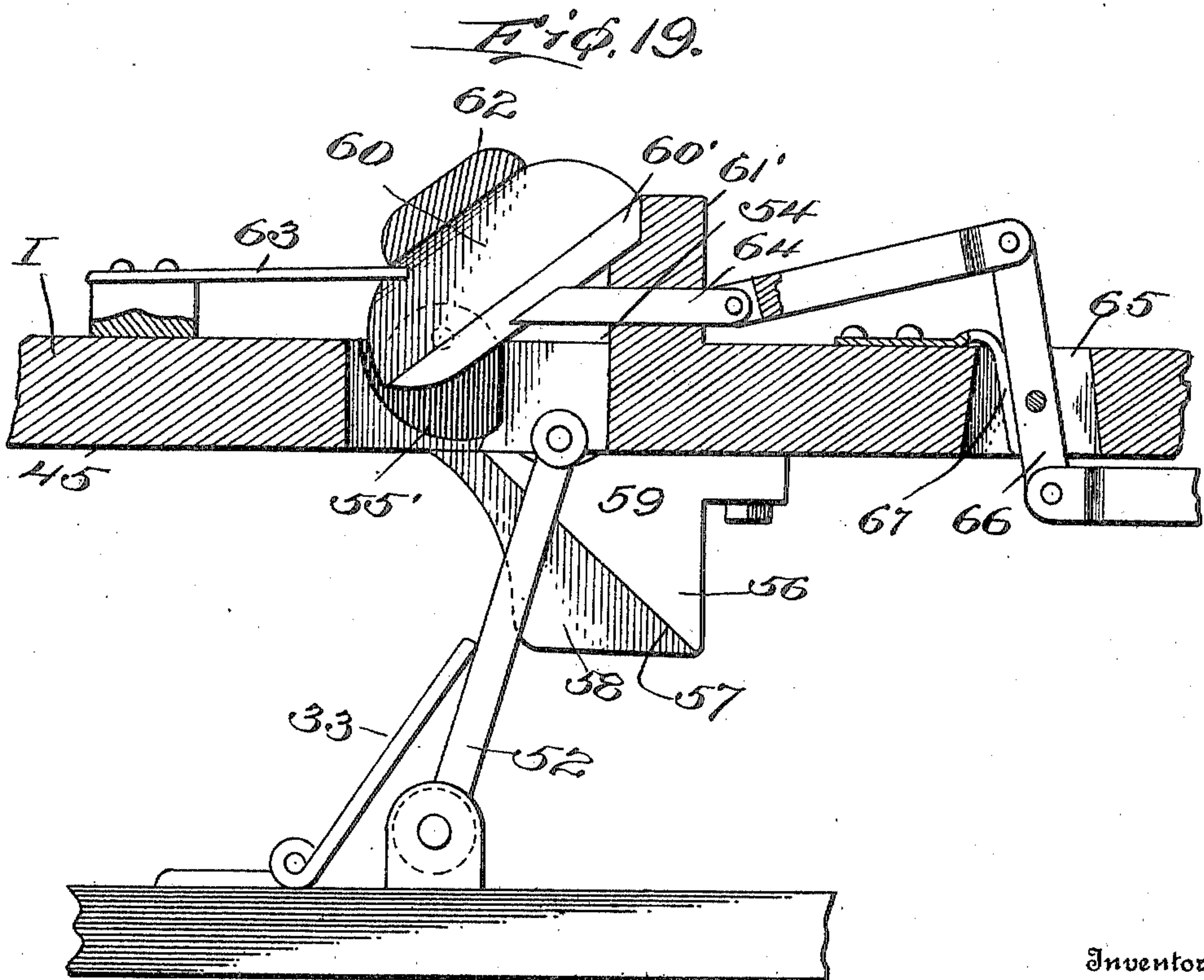
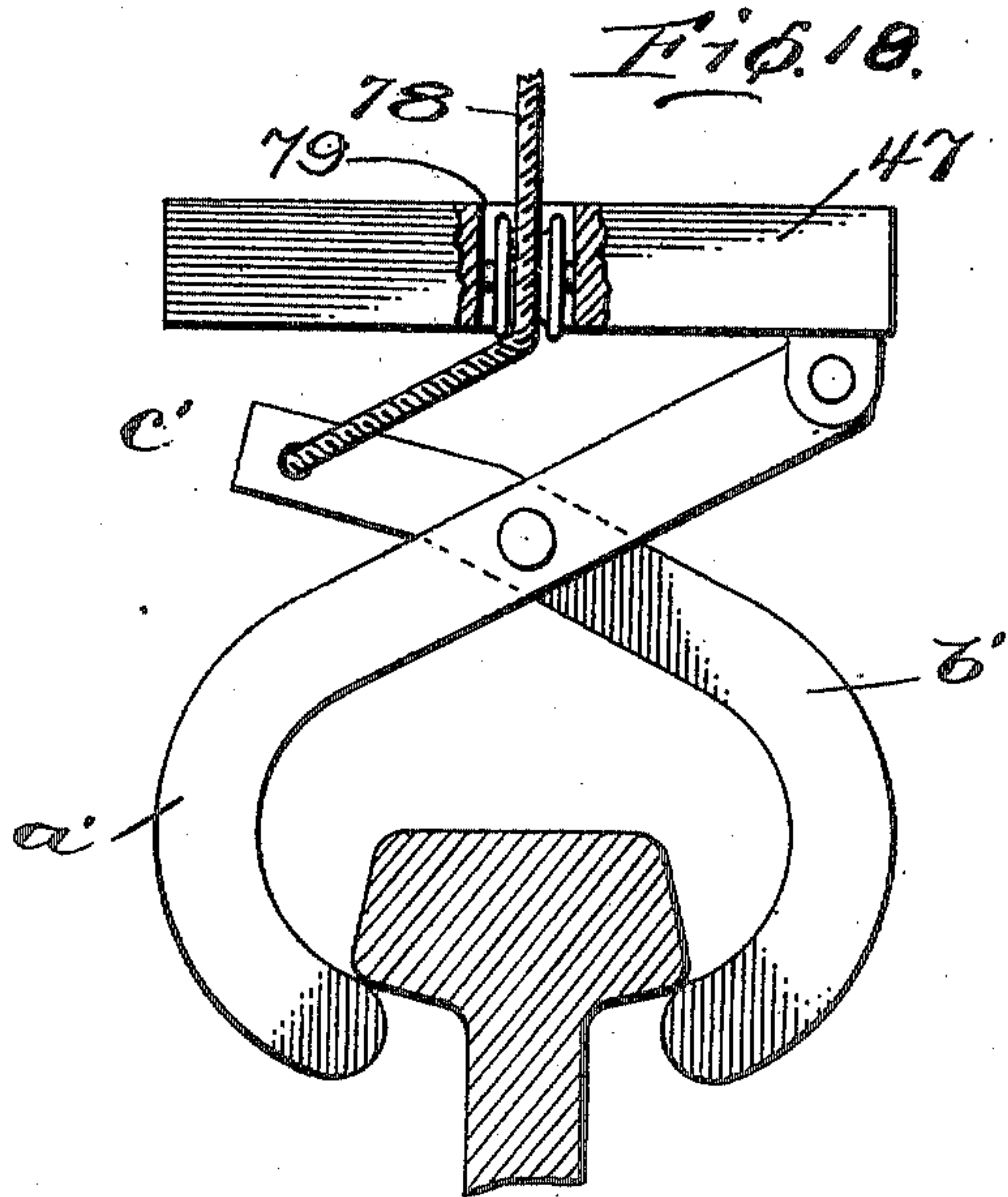
RAILWAY TRACK LAYER.

APPLICATION FILED FEB. 25, 1909.

950,814.

Patented Mar. 1, 1910.

10 SHEETS—SHEET 9.



Witnesses

G. T. Tolson.

E. L. Chandler

Inventors

*R. L. Brown
and S. F. Bates*

By

Woodward Chandler

Attorneys

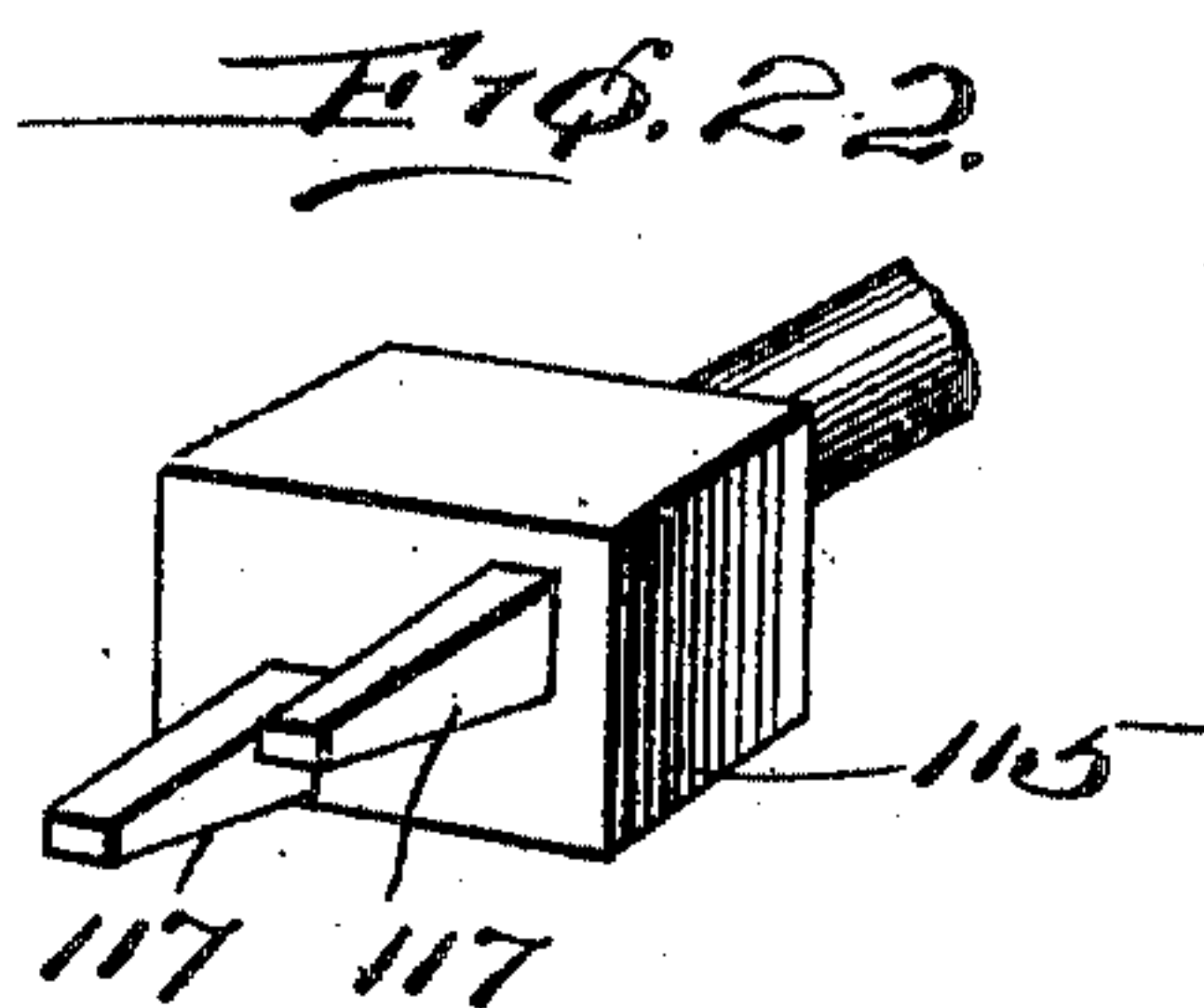
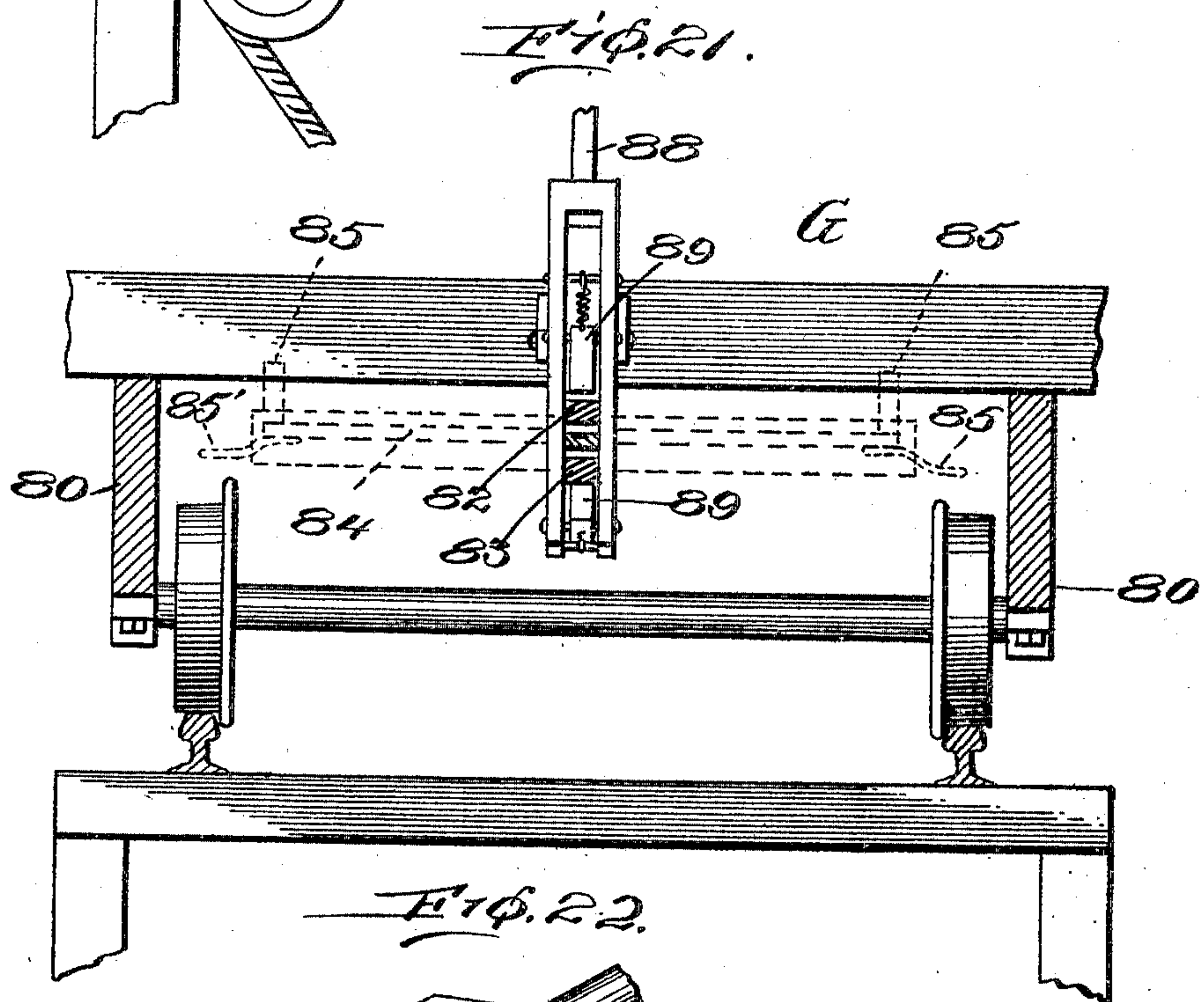
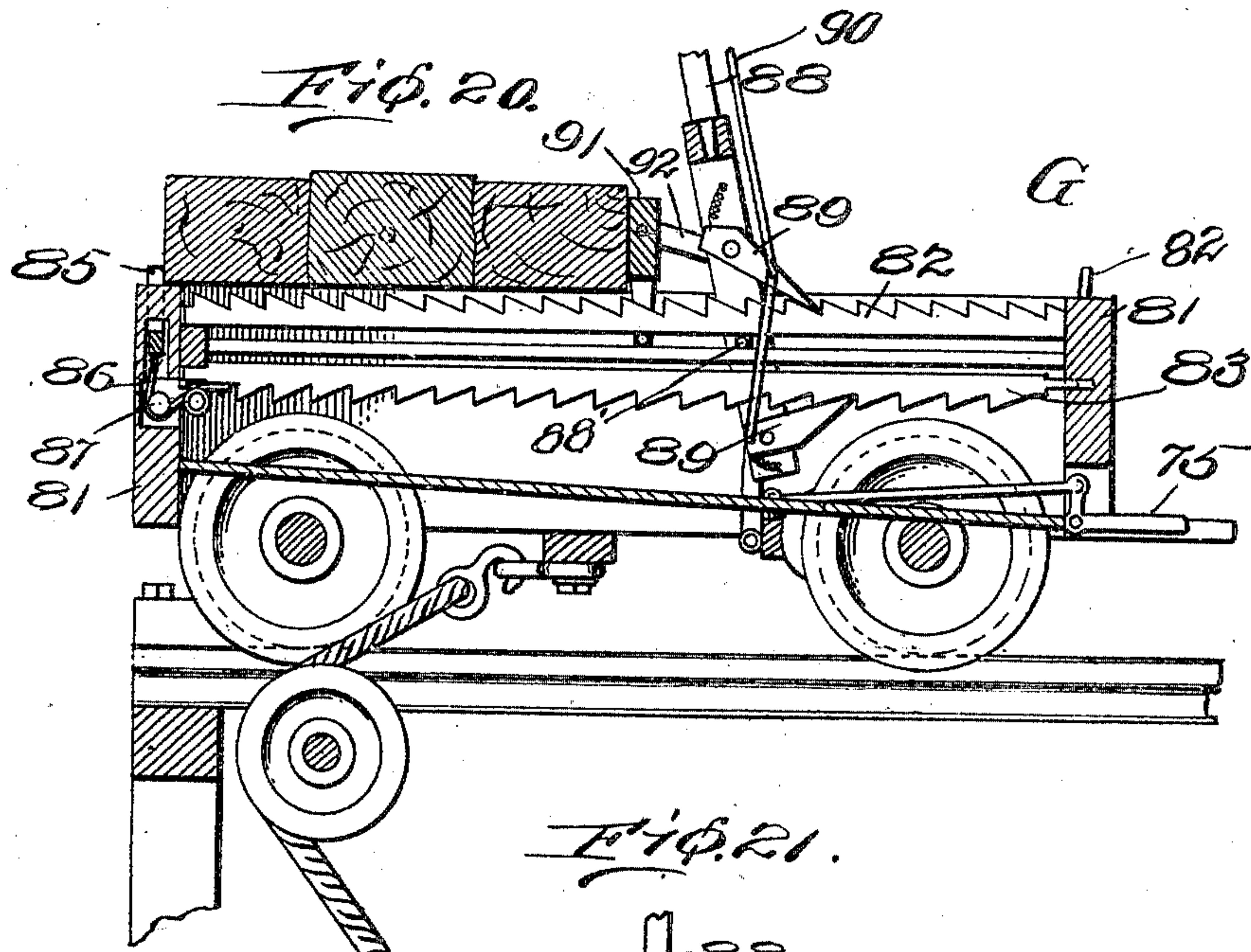
R. L. BROWN & S. F. BATES.
RAILWAY TRACK LAYER.

APPLICATION FILED FEB. 25, 1909.

950,814.

Patented Mar. 1, 1910.

10 SHEETS—SHEET 10.



Witnesses
G. E. Tolson
E. L. Chandler

Inventors
R. L. Brown
and S. F. Bates

By Woodward Chandler

Attorneys

UNITED STATES PATENT OFFICE.

RICHARD L. BROWN AND SAMUEL F. BATES, OF LESLIE, MISSOURI.

RAILWAY-TRACK LAYER.

950,814.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed February 25, 1909. Serial No. 479,991.

To all whom it may concern:

Be it known that we, RICHARD L. BROWN and SAMUEL F. BATES, citizens of the United States, residing at Leslie, in the county of Franklin and State of Missouri, have invented certain new and useful Improvements in Railway-Track Layers, of which the following is a specification.

This invention relates to railways, and more particularly to machines for laying railroad tracks, and has for its object to provide a self contained device adapted for the transportation and laying of ties and rails, and the spiking of the rails in position.

An important object of the invention is to provide such a device adapted to allow the disposition of loaded railway cars thereunder, carrying materials for use in track building, and adapted to allow the removal of cars after unloading and replacement by loaded cars.

Another object is to provide a novel means for handling ties, in transferring them from a loaded car to the point of use.

Another object is to provide a novel means for handling rails for moving from a car upon which they have been loaded to the point of deposit upon the ties.

A related object is to provide a novel form of hoisting and gripping means for engaging the rails, and adapted to operate for the release of the rails in a novel manner.

Another important object of the invention is to provide a new and desirable method of spiking the rails upon the ties, with a minimum of expense for labor.

Another important object is to provide a novel means for supporting the unloading section of the device.

Other objects and advantages will be apparent from the following description, and it will be understood that changes in the specific structure shown and described may be made within the scope of the claims, and that any suitable materials may be used without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like characters of reference indicate similar parts in the several views, Figure 1 is a side elevational view of the complete device in operative position, Fig. 2 is a top plan view of the device, Fig. 3 is a detailed side view of the unloader section A, Fig. 4 is a detailed side view of the building section B, Fig. 5 is a

cross section of the connection for the track upon a car to be unloaded of ties, Fig. 6 is a cross sectional view through the unloader section A, Fig. 7 is a detail of the sectional rail joints for the tie car, Fig. 8 is a similar view through the building section B, Fig. 9 is a side view of the spiker machine, Fig. 10 is a transverse section of the spiker on the line 10—10 of Fig. 9, Fig. 11 is a similar view on the line 11—11 of Fig. 9, Fig. 12 is a side view of the carriage portion of the rail moving mechanism, Fig. 13 is a similar view of the rail-engaging means, Fig. 14 is a detail of the engaging and detaching means of the rail lifter, Fig. 15 is a horizontal sectional view of the building section, showing the locomotive mechanism, Fig. 16 is a side view of the unloading section in raised position, Fig. 17 is a longitudinal section of the adjustable rail sections for the tie car, Fig. 18 is a modified form of rail engaging means for unloading, Fig. 19 is a sectional detail of one end of the rail carriage, Fig. 20 is a longitudinal section through the truck G, Fig. 21 is a cross section through the truck G, Fig. 22 is a perspective detail of the spike hammer head, Fig. 23 is a fragmentary section illustrating the supporting means for the dog.

Referring to the drawings, there is shown a railroad track builder comprising an unloading section A, and a building section B, the first mentioned being adapted to be supported upon a railway car of suitable type, and the second being adapted to be supported either upon the ground or upon stringers laid upon ties as the road is constructed. The sections A and B are spaced as shown, and are connected by a bridge section C. Disposed beneath the bridge section C, there is a spiker D adapted for independent longitudinal movement between the sections A and B, upon the newly laid track, to gage the space between the rails and spike them securely upon the ties in the usual manner.

The sections A, C, and B are arranged in the order named for constructive work, and are designed primarily to carry elevated trackways F and H, the trackway F being carried upon the extreme upper portion of the super-structure of the section and being designed to support a tie truck G; and the track H being suspended centrally beneath the track F, and intended to support a rail lifter I. These parts will be subsequently

described in detail. The section A comprises a frame work including upright portions 10, carried upon longitudinal stringers 11 which are in turn supported upon cross pieces 12 at opposite ends, and adapted for detachable engagement across a bar. It will be understood that if desirable the beams 12 may be eliminated and other means utilized for securing the device upon the car, this being a mechanical detail not involved by the invention. The stringers 11 have a rearward extension 13, projecting over the adjacent car G', and carrying a cross piece 14, upon which there is supported the outer end of an extension 15 of the track F, which is thus brought to the level of the car floor and adapted to engage with a continuation of this track formed in sections 30 adapted to be temporarily disposed upon the floor of a car to be unloaded. The upright portion 10 supports cross beams 16, upon which suitable rails 17 are disposed, forming the track F. Centrally of the members 16, there are pendent bracket members 18, carrying rail members 19 forming the track H. Pivoted upon the stringers 11 at suitable intervals, there are levers 20, carrying fulcrum members 21, the fulcrum members comprising spaced uprights secured pivotally on opposite sides of the levers at their upper ends, and coengaged outwardly of their pivot points, so that when not in use, the levers may be moved upwardly, and engaged against the side of the frame, the fulcrum portions being supported thereon and held out of operative position, as shown centrally of the frame in Fig. 3. The device is thus adapted to be lifted by means of the lever 20, to allow the removal of an unloaded car, and replacement by a loaded one. It will of course be understood that the frame-work is slightly wider than the standard freight car, and the fulcrums 21 are intended to engage with the ground or other suitable support. The continuation of the track F outwardly of the sections 15, comprises a series of cross ties 25 having pendent trunnions 26 adapted to engage over the sides of the car, and within suitable strap loops 27 carried upon the sides of the car. It will be understood that if desirable, any other suitable means may be utilized for supporting the supplementary track sections. Carried upon the cross ties 25 there is a rail section 28.

As illustrated in Fig. 17 the outer ends of the rail sections 15 have their upper faces beveled for a short distance, and are rounded on their outer sides. Formed a spaced distance from the end of each rail there is an L-shaped slot one arm of which extends laterally and downwardly through the adjacent inner face of the rail, and the other arm of which extends longitudinally inwardly. The slots are enlarged inwardly and have

engaged slidably therein a ball member carrying a pin projecting outwardly of the slot and having engaged thereon a pivotal rail section 29 having an opening there-through receiving the pin of a second ball 33 slidably engaged in a passage 31 formed in a rail section 30 carried upon the cross piece 25. The passage has a slot 32 opening through the upper face of the rail for sliding movement of the pin therein. The passage and slot are arranged to allow the section 29 to turn laterally into a vertical plane at times, to compensate for both vertical and horizontal movement relatively of the adjacent ends of the rails 15 and 28. The rail section 30 is pointed at its end opposite the slot 32, and adapted for engagement in a V-shaped recess on the inner end of an adjacent rail section 34. The rail sections last mentioned are provided with flange portions 35, having recesses in their under faces adjacent their ends adapted for engagement over pins 36 carried in transverse recesses 37 formed in the cross pieces 25.

The bridge section C comprises rails 17' carried upon cross pieces 16', and rails 19' suspended from brackets 18' centrally of the cross pieces. The bridge section is intended to be supported by the engagement of the opposite rails 17' upon the adjacent sections A and B. These connections may be of any suitable longitudinally adjustable type, to allow for relative movement between the adjacent portions of the sections incident to operation of the machine or its turning upon a curve. As before mentioned, the spiker D operates independently in the space between the sections A and B and beneath the bridge section C, and this structure will be subsequently described.

The forward truck 41 of the section B is provided with wheels 41' having broad tires adapted to be supported directly by the earth, or upon stringers suitably laid outwardly of the ties and the rear truck 40 may be provided with wheels suitable for engagement upon newly laid rails, though it will be understood that mechanical changes in these particular details may be made within the scope of the claims to adapt the machine particularly to different methods of work. It will also be understood that as many trucks may be utilized as necessary, those centrally of the sections requiring to be of a caster type as shown at 42. The section B includes a platform 43, centrally of which there is a longitudinally extending slot 44 adapted to allow the passage of rails downwardly therethrough, as will be subsequently described. The section also includes upright portions 10' supporting sections of the tracks F and I similar to those upon the section A.

Carried upon the track H, there is a rail lifting mechanism comprising a carriage I

including suspension trucks 46 at each end thereof, carrying a central body portion 45 having engaging means adjacent its end adapted for engagement with a clutch mechanism K subsequently to be described. The clutch member K comprises a longitudinal member 47 carrying at each end pairs of rail-gripping dogs 49 pivoted at opposite sides of the central member 47. One of the members 49 at each end of the grip has a line attached thereto extending over a pulley wheel in the opposite member, and then upwardly through the member 47 and under a pulley 50 disposed centrally thereof. The lines from each of the members 49, are joined after their passage beneath the pulley 50, and extend upwardly through a central opening in the member 45 and over a pulley therein, thence forwardly to the forward end of the section B, being carried over a pulley there and thence downwardly and to a suitable drum 51 properly connected to an engine. In Fig. 19 there is shown a detailed view of a modified form of clamp member which may be found more suitable for use with this device.

The member 47 is provided with pivoted upwardly extending arms 52 carrying cross heads 54, each being engaged by a resilient spring 53 under tension normally to force the arms 52 in a common direction with respect to the longitudinal axis of the member 47. The arms 52 are normally set at a slight incline forwardly and away from the springs 53. The carriage I comprises a longitudinal central section similar to that numbered 47, and adjacent each end is provided with vertical passages 55 and 55'. Secured upon the under side of the member 45, there are guide blocks 56, projecting over the passage 55 to form a seat and having upwardly and rearwardly inclined faces 57 provided with divergent guide flanges 58 adapted to engage the cross heads 54 of the arms 52, as will be subsequently described. A passage 59 is formed between the blocks communicating with the passage 55. Pivoted upon the opposite sides of the passage and extending diagonally upward therefrom, at right angles to the inclined faces 57 of the block 56 there are trap dogs 60, bearing against a block 61 carried upon the upper face of the member 45 and forming a continuation of the adjacent end wall of the passage 55. The dogs 60 are provided with inwardly extending flanges 60' lying in a plane parallel to that of the face 57 of the block and are engaged by a cross portion 62, engaged yieldably beneath which there is band spring 63 secured to the base of the member 45 in a suitable manner. Each of the openings 55 and 55' are provided with similarly arranged elements with the exception that the dog 61' disposed adjacent the opening 55' is provided with a passage therethrough open-

ing longitudinally with respect to the member 45, and having a pawl member 64 engaged slidably therein and projecting over the opening 55 to close the opening until disengaged in a manner now to be described. A third vertical passage 65 is formed a spaced distance from the passage 55' and has pivoted therein a lever 66, connected pivotally to the adjacent end of the pawl 64, and engaged by a spring 67 under tension normally to force the pawl 64 over the slot 55. It will thus be seen that when the lever is engaged upon its side toward the adjacent end of the member 45, the pawl 64 will be operated to leave the passage 55' free of obstruction. The member 45 is provided adjacent each end with standards 68, having lateral wheels 69 on each side thereof, adapted for engagement over the rails of the track H, the carriage I thus being suspended below the track H. At the rear end of the carriage I, there is pivoted a clevis 70, adapted for engagement over a dog 71 pivoted adjacent the rear end of the track H, and slightly therebelow as shown. The dog comprises a horizontal shank portion 72 and a beveled head having a bill 73, extending above the shank 72, the beveled portion being disposed toward the forward end of the track and the shank extending rearwardly. The dog is carried by an upright 74, which is arranged to engage against the shank 72 to prevent downward movement of the shank beyond the horizontal. Pivoted at the end of the shank 72, there is a pendent arm 75 for a purpose to be subsequently indicated.

Located at a suitable point in the mechanism, there is an engine L having a suitable drum 76 carrying lines 77 and 78 running respectively to the tie trucks G and the carriage I. The line 78 extends through the central opening 79 in the center of the truck I, and divergently beneath the pulley 50 to the hooks 49 of the rail clutch member 47 as previously described.

In use, a car 80 loaded with rails being disposed beneath the section I, the carriage I is moved into position with the clevis 70 engaged over the dog 71 and the clutch member 47 disposed loosely upon the load of rails. The pivoted dogs 49 of the clutch are then adjusted manually upon a rail, and one of the drums 76 operated to hoist the clutch member. It will be seen that as the tension is applied to the line 78, the dogs 49 will be operated to co-engage the rail securely and continued movement of the line will then lift the clutch member and the coengaged rail. The clutch member is lifted until the arms 52 thereon engage the blocks 56 and are guided upwardly into engagement with the lower ends of the dogs 60, against the resistance of the springs 53. Upon cessation of the upward movement

of the clutch, the springs 53 press the arms between the dogs 60 and blocks 56, the cross arms 54 being engaged thereover as shown in Fig. 20. As the cross arms 54 engage the base of the dog 60, the lower end of the pend-
 5 ent arm 75 carried by the dog 71 is engaged by the upwardly moving clutch, and the dog 71 operated to release the clevis 70. This immediately allows the forward movement of
 10 the carriage I under the tension of the hoisting rope 78, which checks the upward movement of the clutch and allows the engagement of the cross arms 54 upon the guide blocks 56 as will be understood, to
 15 support the clutch and coengaged rail.

When the carriage I reaches the forward end of the section B, the lever 66 is engaged by a block 66' carried by the track H, which checks the forward movement of the car-
 20 riage. Continued strain upon the line 78 then moves the carriage forward against the tension of the spring 67, and operating the pawl 64 to leave the passage 55' open. The clutch 47 is then lifted farther, the
 25 cross arms 54 engaging the inclined faces of the dogs 60 and being directed upwardly and outwardly thereof. Release upon the tension of the line 78, will then allow lowering movement of the clutch 47 and the
 30 arms will engage the upper faces of the flanges 60' carried upon the inner faces of the dogs 60 which will deflect the arms 52 and the cross arms 54 will engage the lower ends of the dogs 60 pressing them against
 35 the block 56 and allowing the escape of the cross arms therebelow and thus allowing uninterrupted lowering movement of the clutch 47, to allow the coengaged rail to be disposed in position upon the newly laid
 40 ties beneath the section B. The return operation is believed to be apparent. The tie truck G comprises a simple frame mounted upon wheels and disposed upon the track F. The frame includes two side stringers 80
 45 and end portions 81.

It will be noted that upper edges of the stringers 80 are inclined downwardly toward the forward portion of the truck, and carry adjacent their rear end upwardly
 50 extending projections 82 designed to prevent ties from slipping backwardly off of the truck during its movement. Secured between the end portions 81, there is a longitudinally extending rack member 82 extending the full length of the truck, and
 55 having its teeth presented upwardly and directed toward the forward end of the truck as shown. A similar longitudinally slidable bar 83 is disposed beneath the bar 82, its teeth being presented in a forward direction and extended downwardly. The bar
 60 83 is engaged to a vertically movable cross rod 84 extending laterally of the truck being secured slidably to the front thereof, and
 65 carrying standards 85 projecting upwardly

above the floor of the truck to interrupt the forward slipping movement of ties disposed upon the floor. The rod 84 is engaged by a spring 85' under tension to normally hold
 70 the standards 85 in operative position. The rack bar 83 is engaged to the bar 84 by means of a cord 86 extending around a roller 87, or other suitable connection which may be desirable. Engaged slidably over
 75 the rack bars 82 and 83, there is a tie moving lever 88 having a bifurcated pivot portion carrying upper and lower dogs 89 under suitable tension to normally engage the teeth of the bars 82 and 83. A suitable
 80 connection 90 is made between the dogs 89 and the handle of the lever 88, to simultaneously release the dogs from engagement with their respective rack bars.

The bifurcated portion of the lever is provided with a socket and the handle portion
 85 of the lever is detachably engaged therein as shown, for a purpose to be subsequently indicated. A tie engaging member 91 is disposed slidably over the upper bar 82, being provided with a bifurcated lower por-
 90 tion carrying a roller therebetween disposed upon the bar 83 to support the member 91 as will be apparent from the illustration. The lever is similarly supported, as at 88'. The member 91 is connected by
 95 means of a link 92 to the bifurcated portion of the lever 88, said link being secured pivotally thereto as shown. The line 77 from the engine 43 is connected to the forward end of the truck G, for movement
 100 thereof as will be understood. At this point it may be noted that as shown, the tracks F and H, are inclined rearwardly from the forward end of the section B to the rear end of the section A, and the truck G and the
 105 carriage I would thus be induced to return to their loading points without the application of power; but it will be understood that if desired a suitable connection may be made between the rear ends of the trucks
 110 and an engine drum by means of a flexible drum, as is common in such machines, which detail is not believed essential to illustrate, as it is simply a mechanical expedient involving no invention.

In operation, the truck G is moved rearwardly onto the tie car G' provided with the supplementary track section 34, and there loaded with ties, which are disposed transversely of the truck in a single layer
 120 as shown in Fig. 5. The truck is then hauled to the forward end of the sections, where it is secured by means of a foot brake 95 shown in cross section in Fig. 21. During the loading of the truck, the handle 88
 125 of the lever is removed, in order that the ties may pass freely over the operative portion thereof. When it is desired to unload the ties, the handle is engaged with the socket in the bifurcated portion of the lever
 130

and it will be seen that upon oscillation thereof the dogs 89 will engage alternately with the rack teeth on the bars 82 and 83, to force the member 91 forwardly, shoving the ties toward the front of the truck. Here they will engage the standard 85, and upon forward movement of the handle of the lever after ties become engaged by the standard 85, the rack bar 83 will be forced rearwardly, removing the standard 85 from in front of the ties and allowing one tie to fall off. Upon release of pressure from the lever, the spring 85' will return the standards 85 to their operative position. The lever is so pivoted that after one tie has been discharged, a reverse oscillation thereof will be required before a second tie may be moved to the forward edge of the car, and the release of the standards is thus assured so that they may return to their operative obstructive position. The lever may be returned to the rear end of the truck G by operating the member 90 to release the dogs 89 and sliding it to loading position. The truck G is intended to carry a sufficient number of ties to cover, when properly laid, a distance equal to half a rail-length. The machine is intended to be moved forward continuously during the unloading of ties, and when they have been laid over a distance of half a rail-length the machine is stopped while the truck G is reloaded. Meantime, the carriage I is loaded and brought forward and a rail laid, the rails being deposited alternately on opposite sides of the track at each stop, so that the joints shall be in "staggered" relation.

Fig. 8 illustrates a novel means provided for guiding the rails to either side of the track, and comprises downwardly divergent pairs of inclined members 96 adjacent the ends of the section carried upon a longitudinally extending beam 97 disposed centrally below the slot 44. A pawl 98 is pivoted at the juncture of the members 96, extending upwardly and adapted to be inclined against either side of the slot 44 to direct a downwardly moving rail to the opposite side of the track as will be understood. The engine 43 may be connected to suitable engine and winding drums 76 for the operation of the lines 77 and 78 and corresponding return lines if necessary: Preferably, the engine is operated by steam supplied by the engine used to propel the machine, but as shown, there is a suitable boiler L adjacent the engine for supplying steam thereto. This boiler may also be utilized to supply power to the spiker D, if desired. The front truck 41 is pivoted and arranged to be operated by a suitable mechanism of any desirable type for guidance of the section. The spiker comprises a suitable platform 100 suspended from the axles of wheels 101 of the usual type, as shown in Fig. 10. The wheels 101

may be disposed upon the newly laid rails. It may be noted here that the section B is provided with a rail gage 99 to adjust the newly positioned rails properly. The platform 100 carries a cross beam 102, extending transversely of the track and outwardly of the newly placed rails 103. Pivoted centrally of the beam 102, there is a lever 104, and adjacent each end of the beam there is a pair of pivoted dogs 105 and 106, the outer dogs 105 being pivoted to the beam 102 by their extreme upper ends, outwardly of the rails 103, and the dogs 106 being pivoted inwardly of their upper end and disposed inwardly of the rails. A link 107 is coengaged between each pair of the dogs 105 and 106, being engaged intermediately of the lever 105, and pivoted to the upper end of the lever 106. Links 108 are connected with the lower end of the lever 104 and one of the dogs 106, and between the lever 104 above its pivot point and the remaining dog 106. It will thus be seen that upon oscillation of the lever 104, the dogs 105 and 106 will be oscillated simultaneously for engagement or releasing operation with the rails 103. The pairs of dogs just described are spaced accurately to hold the rails precisely at the required gage during the spiking operation subsequently to be described.

Carried by the platform 100 adjacent to the lever 104, there is a suitable rack segment 108 adapted to be engaged by a dog 109 carried by the lever 104 and operated by a grip release member 110 to hold the rail gripping mechanism in rigid coengagement with rails during spiking operation. Spaced on each side of the lines of the rails 103, there are vertical passages 11 through the platform 100, spaced longitudinally of the rail axes, in which there are pivoted pendent fingers 112 engaged by springs 113 under tension to force the fingers toward each other. The openings and fingers just described are intended for the reception of spikes, to be held in position on each side of the rail flange and upon the adjacent tie, to be driven by a hammer subsequently to be described. Sets of openings as above described are provided at each side of the truck as will be apparent from the drawings. The openings are spaced longitudinally of the axis of the rail in order that the spikes will not be disposed on a common line longitudinally of the tie, and tend to induce splitting of the tie. Carried upon the platform 100, there are suitable hammers 115, which may be of any desirable type, either pneumatic, steam, or otherwise operated and carry hammer portions 116 comprising a block having diagonally spaced driving heads 117 adapted for sliding engagement through the openings 11 for impingement against spikes disposed in the openings between the fingers 112. Each of the ham-

mers 115 is operated by means of a lever and suitable connected valve 118 disposed adjacent to each, and adapted for use to operate the hammers independently or coördinately. The rear wheels 101 carry an axle 120 therebetween, upon which there is disposed a gear 121 adapted for engagement by suitable connections for propulsion of the spiker truck, which may comprise either an electric motor or suitable engine connections of any suitable type, which it is not deemed essential to show in detail as they do not comprise a novel element in the invention.

The modified form of rail engaging dogs for the clutch mechanism, shown in Fig. 18, comprises a main pivoted arm *a'* having its lower end portions turned laterally, and a supplementary dog member *b'* pivoted intermediately thereof and having an inwardly turned portion extending in spaced relation with the lower end of the member 49', and having an operating arm *c'* extending at an angle therefrom and adapted to be engaged by the line 78. The operation of this device is thus somewhat on the principle of ice tongs and may be found more desirable than the form first described.

It will be apparent from the foregoing description that an apparatus is provided by the use of which the laying and building of a new road bed may be conducted with ease and efficiency and with a minimum cost for labor.

As shown, the wheels for the section B are detachable, in order that either broad tired wheels suitable for use directly upon the ground, or flanged wheels suitable for use directly upon railway tracks when the machine is to be transported, may be used.

It should be noted that the links 108 are sectional and are provided with suitable springs O interposed between the sections to compensate for any difference in their extent of action. One of the sections of each link is provided with a longitudinal recess in its side opening restrictedly on its end, and the other section is provided with a reduced portion disposed slidably in the restricted portion of the recess and having a head at its extremity movable in the central portion of the recess, the spring O being interposed between the head and the outer end of the recess.

What is claimed is:

1. An apparatus for constructing railways, including longitudinally movable unloading and building sections spaced apart, a bridge section therebetween, said sections carrying a rail transporting track, and a superposed tie transporting track, detachable extensions for the last named track, adapted for use to extend it upon the floor of an adjacent car, and a spiker section independently movable beneath said bridge section.

2. A device of the class described including spaced longitudinally movable unloading and building sections, carrying continuous superposed trackways, said unloading section being adapted for detachable engagement upon a car, and rail and tie carrying means movable upon said tracks.

3. A device of the class described including longitudinally movable unloading and building sections, carrying superposed trackways, a tie carrying truck movable upon one of said trackways, and a rail carrying truck movable upon another of said track ways, said rail carrying means including a detachable section carrying rail engaging members, flexible rail hoisting connections, engaged with the truck and rail engaging members, said truck being adapted to be propelled by said rail hoisting means.

4. A railroad building apparatus of the class described comprising an unloading and a building section, continuous superposed trackways, a tie carrying truck movable upon one of said tracks, means carried by the truck for discharging ties singly therefrom in succession, a rail carriage disposed upon another of said trackways, and means for moving said truck and carriage.

5. A railroad building apparatus of the class described including an unloading and a building section, trackways carried thereby, a tie carrying truck disposed movably upon one of said trackways, means carried by the truck for discharging a plurality of ties singly in succession; means for moving said truck longitudinally upon the trackway, a rail carriage disposed movably upon another of said trackways, said carriage having a detachable section carrying rail gripping means, draft means for said carriage, said gripping means being adapted to be operated and hoisted by said draft means, said carriage and detachable section being adapted for automatic locking coengagement after hoisting of the detachable section, and means for releasing said sections from locked coengagement automatically when the carriage reaches an unloading point.

6. An apparatus of the class described including a trackway, a carriage disposed movably thereon, a detachable gripping section carried by the carriage, said gripping section carrying material engaging members, a flexible hoisting member engaged through the carriage and with the grip section, said hoisting member being adapted to operate said material engaging members for gripping and lifting engagement upon material, and a latch device adapted to hold said carriage suspended upon hoisting of the grip member into engagement with the carriage, said flexible hoisting member being adapted also to serve as a draft means for the carriage.

7. In an apparatus of the class described, the combination with a wheeled truck, of

means carried thereby for engaging spaced rails to hold them rigidly at a predetermined gage, means for holding spikes in position on opposite sides of a rail for driving, and a hammer having a driving head provided with integral extensions adapted to straddle a rail and engage spikes thus held.

8. In an apparatus of the class described, the combination with a movable support, of a pair of pendent rail engaging dogs, pivotal link connections between the dogs for synchronous movement thereof in opposite directions, means for oscillating the dogs toward and away from each other, and means for securing said dogs in gripping engagement with a rail.

9. In an apparatus of the class described, the combination with a support, of laterally spaced pairs of dogs, link connections between the dogs of each pair to move said dogs simultaneously in opposite directions, an intermediately pivoted lever between said pairs of dogs, link members engaged oppositely of the pivotal point of the lever and with respective pairs of the dogs for simultaneous operation thereof, said dogs being adapted for simultaneous engagement with parallel rails to hold them at a predetermined gage, and means for locking the dogs in engaged position.

10. An apparatus of the class described including a trackway, a carriage disposed movably thereon, a detachable gripping section carried by the carriage, said gripping section carrying material engaging members, a flexible hoisting member engaged through the carriage and with the grip section, said hoisting member being adapted to operate said material engaging members for gripping and lifting engagement upon material, and a latch device adapted to hold said carriage suspended upon hoisting of the grip member into engagement with the carriage, and means for moving the carriage upon the track.

11. In an apparatus of the class described, the combination with a carriage portion, of a detachable gripping section carried thereby, said carriage carrying a horizontal seat portion and a guide portion inclined therebeneath, a track member thereabove, a spring pressed arm carried by the gripping section having a projecting portion adapted to be engaged by said inclined guide portion for engagement upon said seat, means for hoisting said gripping section, said projecting portions of the arm being adapted to be engaged by said inclined guide portion into engagement with the seat upon lifting of the gripping section to a predetermined point, said track member being adapted to allow passage of projections upon the arms thereabove, and guidance of said projections out of engagement with the seat upon downward movement thereof.

12. In a mechanism of the class described, the combination with a superior member having a seat and a trap member thereabove, of an inferior member movable with respect to the superior member and carrying a spring pressed portion adapted to be engaged upon said seat, said trap being adapted to allow said member to pass thereabove upon movement above the seat and to guide said member out of engagement with the seat upon its downward movement.

13. In a mechanism of the class described, the combination with a superior member having a seat and a trap member thereabove, of an inferior member movable with respect to the superior member and carrying a spring pressed portion adapted to be engaged upon said seat, said trap being adapted to allow said member to pass thereabove upon movement above the seat, a slidable member projecting over said seat to prevent upward movement of the spring pressed member past the trap and being movable by engagement with an obstruction to the movement of the superior member out of position over said seat.

14. In a mechanism of the class described, the combination with a carrying member, of a gripping member detachably engaged therewith, said carrying member having seat portions projecting in opposite directions thereon, oppositely inclined guide surfaces leading thereto, a gripping member carrying movable seat engaging members, resilient means engaged with said members forcing them in a direction to engage said inclined faces for movement into position upon the seats, and means for diverting said members from engagement upon the seats upon movement above the seats and subsequent downward movement, and means for raising the gripping member into engagement with the carrying member.

15. In an apparatus of the class described, the combination with a support, of oppositely inclined rail guiding members diverging downwardly, and a movable guide member pivoted centrally thereof for inclination oppositely of either of said first named guide members for initial guidance of a rail as described.

16. In a mechanism of the class described, a discharging tie truck comprising support portions, longitudinal rack bars one rigid and the other movable, a tie moving lever pivoted between said bars and having pawls adapted to engage alternate bars respectively upon oscillation of the lever in opposite directions, a vertically movable check member projecting in the path of the movement of ties carried upon the support portions, connections between the check member and the movable bar, said bar being engageable by one of said dogs upon operation of the lever for ejecting engagement of said

ties to withdraw the check member from the path thereof, and resilient means for holding said check member normally in obstructing position.

- 5 17. In an apparatus of the class described, the combination with a discharging tie truck including a support portion, of a movable rack member disposed longitudinally with respect to the path of movement of the ties
10 from the truck, an ejecting lever adapted for engagement with the ties and carrying a dog adapted to engage said rack bar upon ejecting operation; a vertically movable

check member, connections between the check member and the rack bar for movement of the 15 check member out of operative position upon engagement of the lever with ties, and means for retaining the check member normally in operative position.

In testimony whereof we affix our signatures, in presence of two witnesses. 20

RICHARD L. BROWN.
SAMUEL F. BATES.

Witnesses:

EDWARD H. BRECKENKAMP,
GEO. W. STREHLMANN.