

No. 887,607.

C. E. DRUMMOND.
TRACK LAYING MACHINE.
APPLICATION FILED OCT. 26, 1907.

PATENTED MAY 12, 1908.

5 SHEETS—SHEET 1.

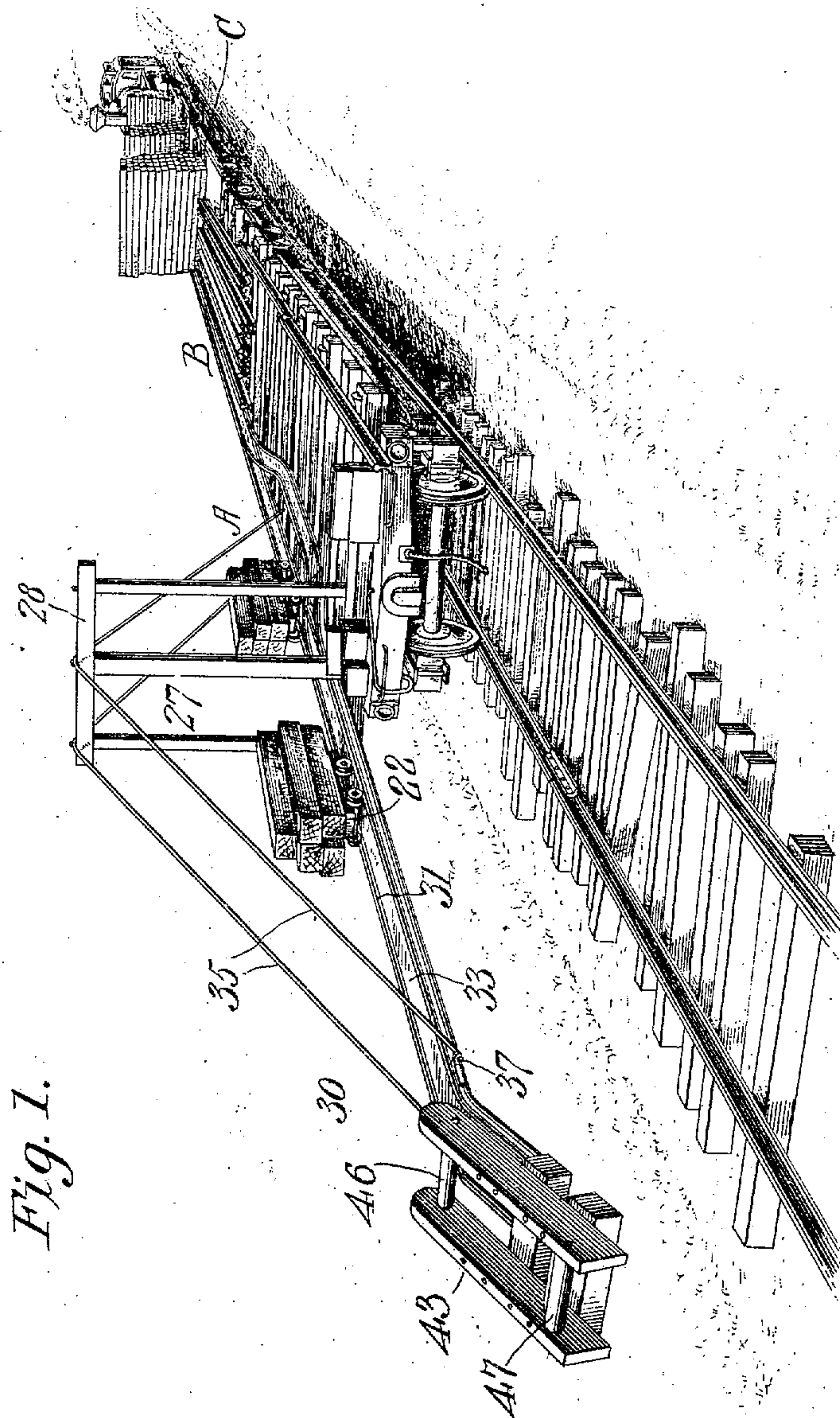


Fig. 1.

Witnesses:

Fenton Stolt
W. E. Lowell

Inventor:

C. E. Drummond

By Chas. Bagge & Co.

Attorneys

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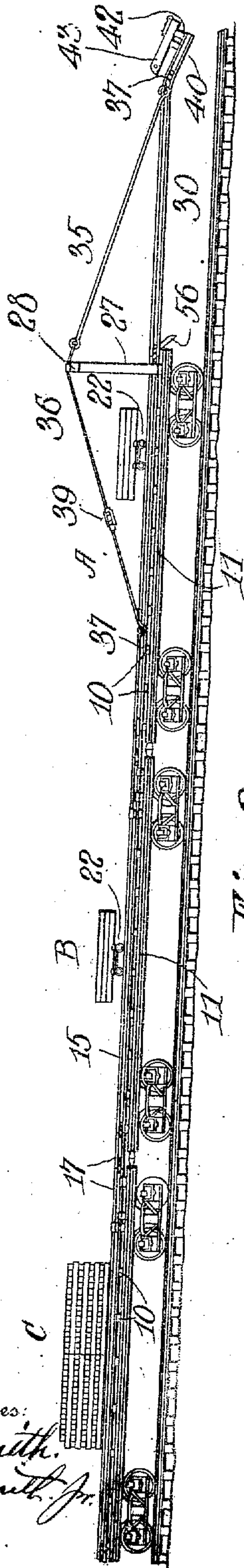


Fig. 2.

Witnesses:
C. E. Smith.
T. V. Smith, Jr.

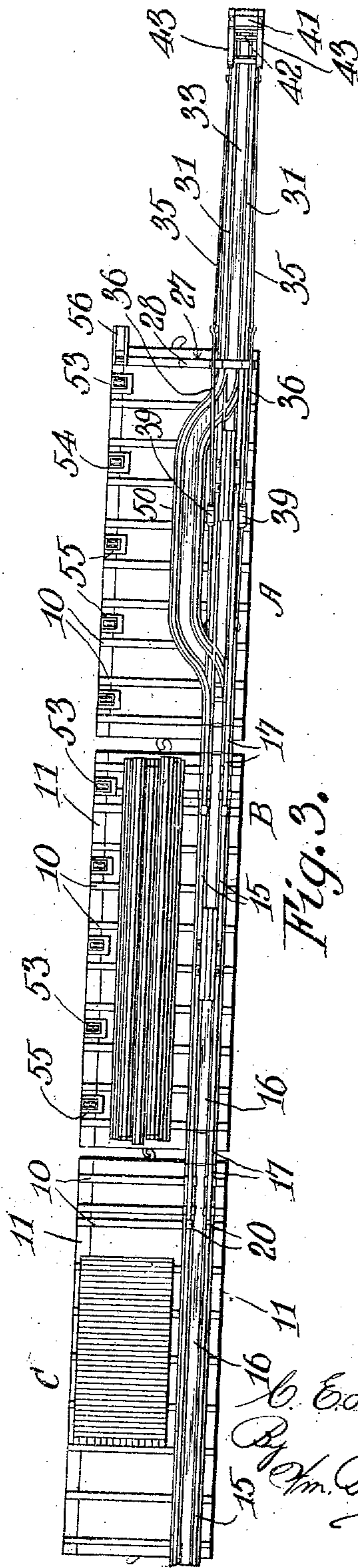


Fig. 3.

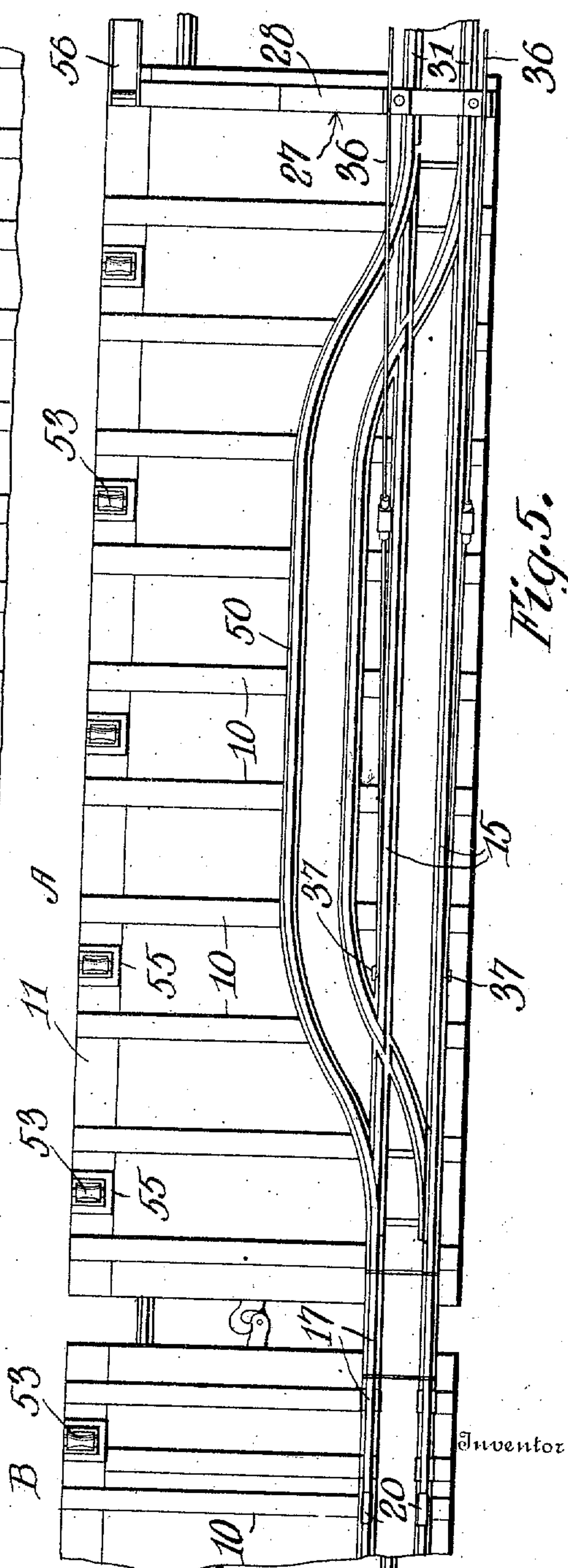
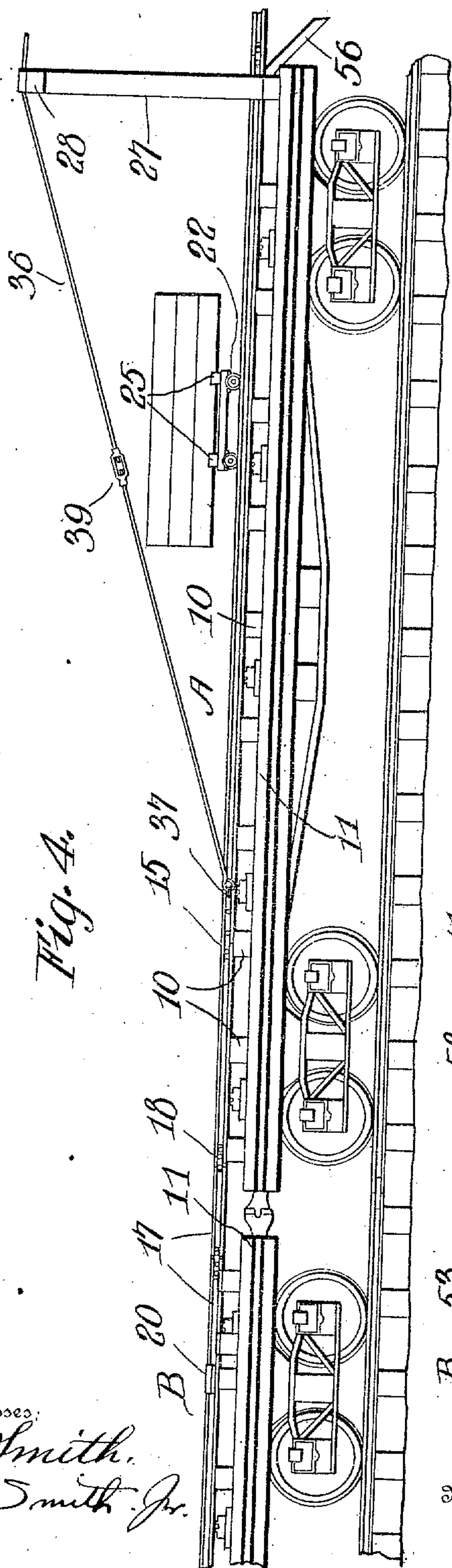
Inventor:

C. E. Drummond
By Wm. R. Ruggles & Co.
Attorneys

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5 SHEETS—SHEET 3.



Witnesses:
C. E. Smith.
T. V. Smith, Jr.

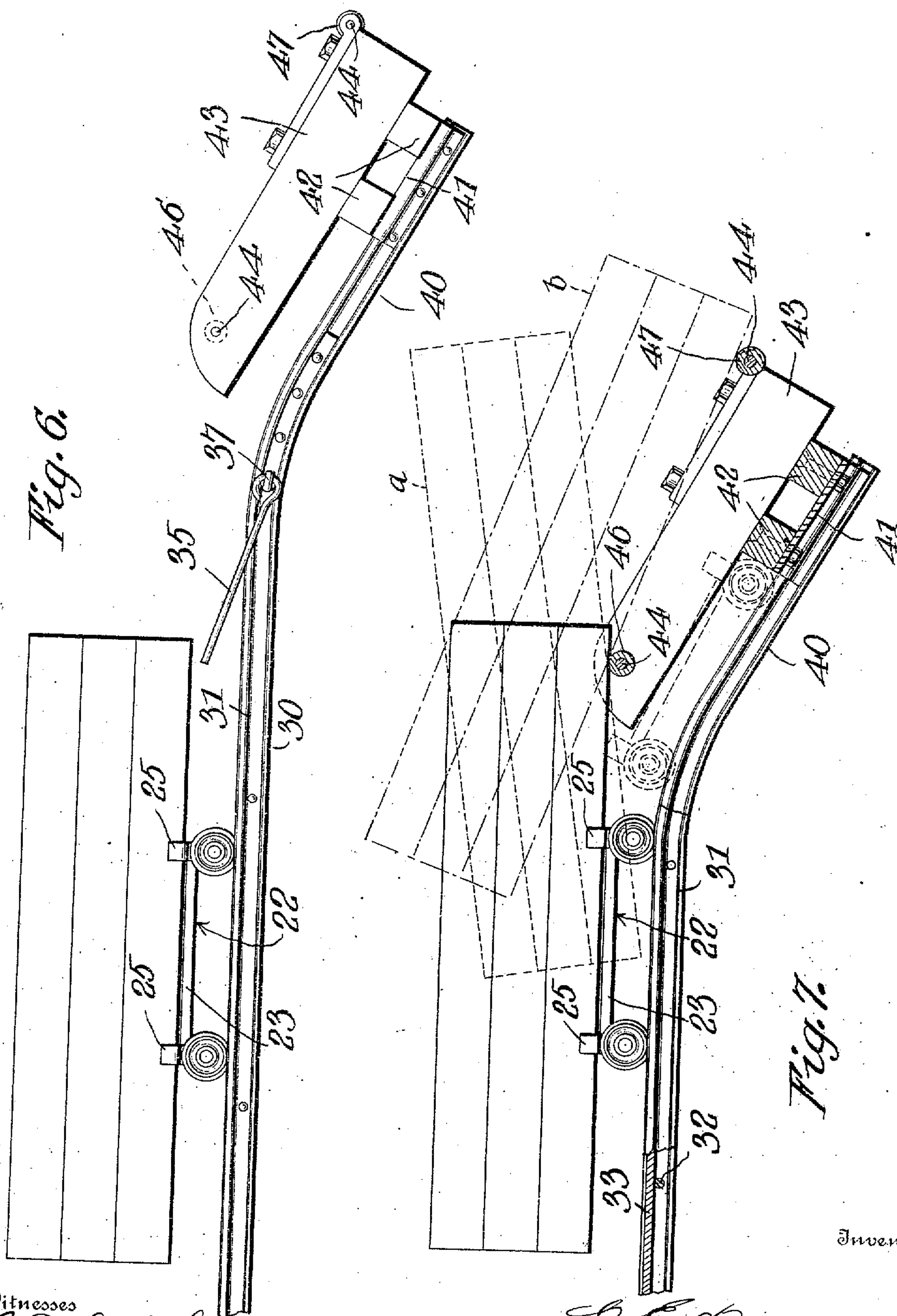
By *B. E. Drummond*
Wm. Bagge & Co.
Attorneys

Inventor:

No. 887,607.

C. E. DRUMMOND. PATENTED MAY 12, 1908.
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5 SHEETS—SHEET 4.



Witnesses
C. E. Smith,
T. V. Smith, Jr.

Inventor
C. E. Drummond
By *Chas. Ruggen* Attorneys

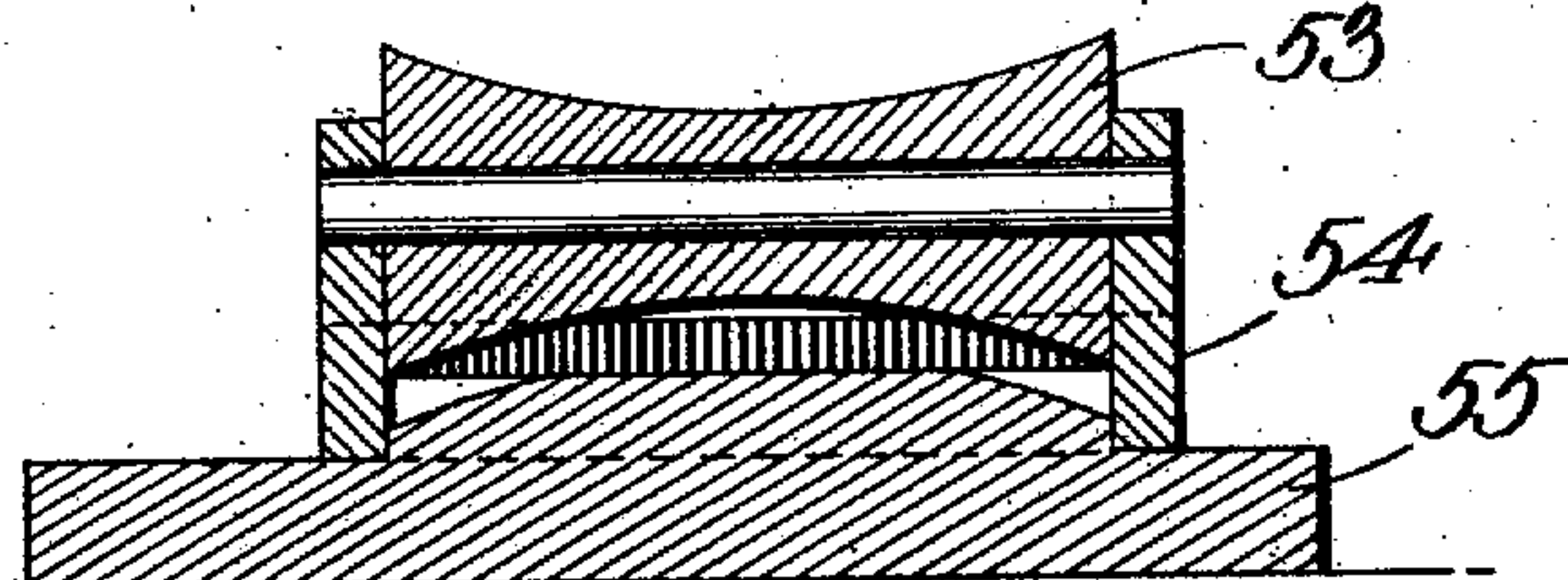
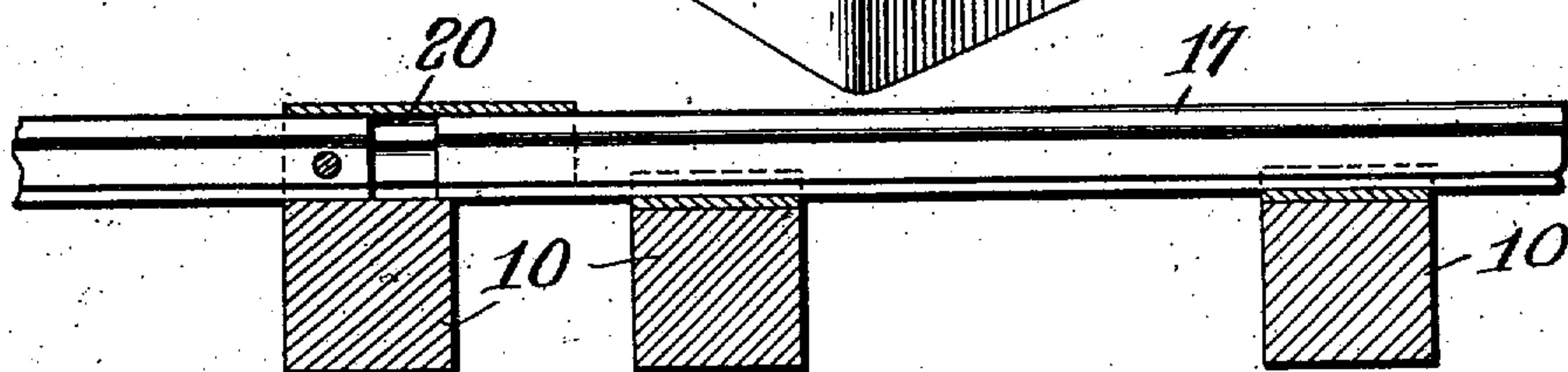
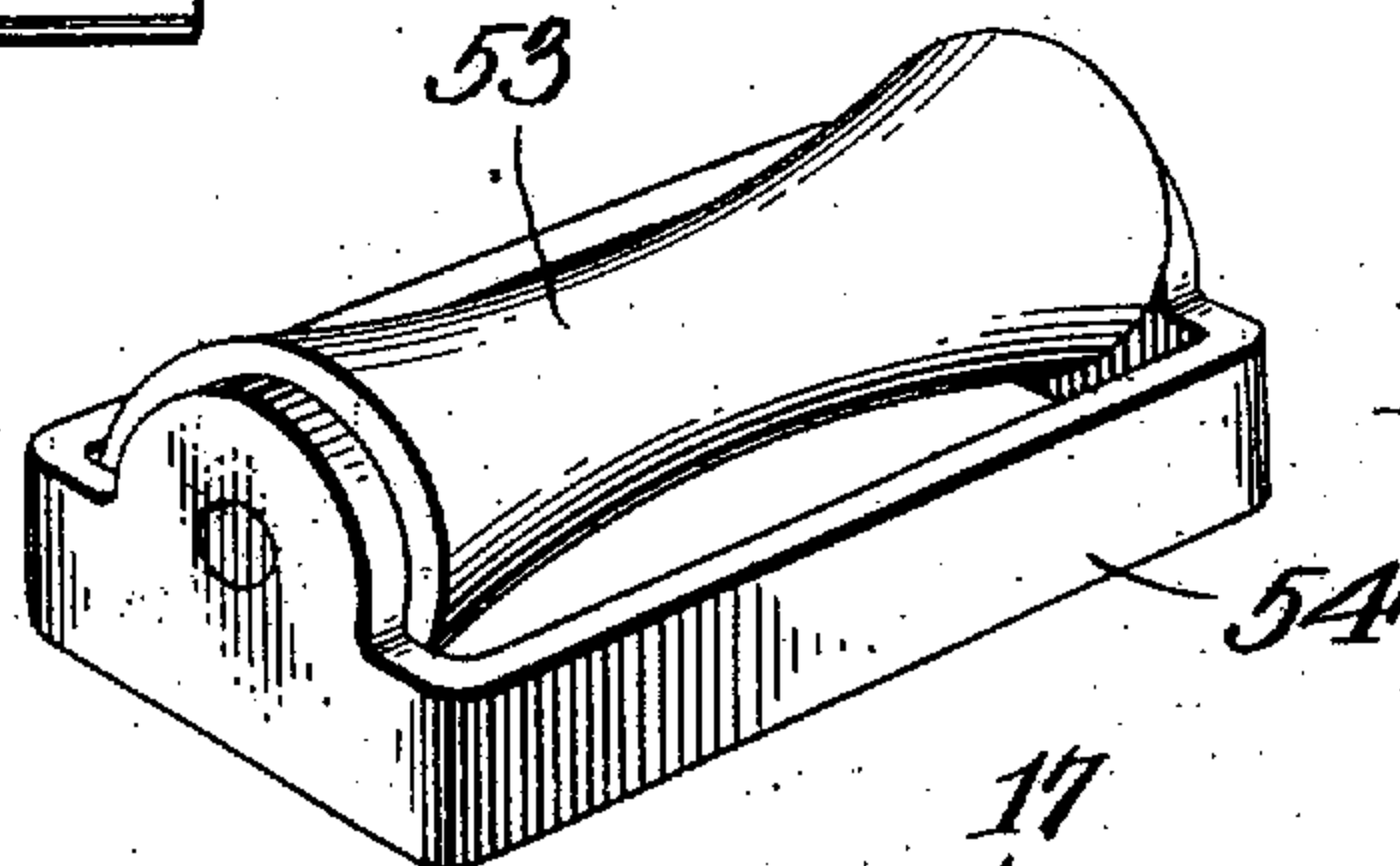
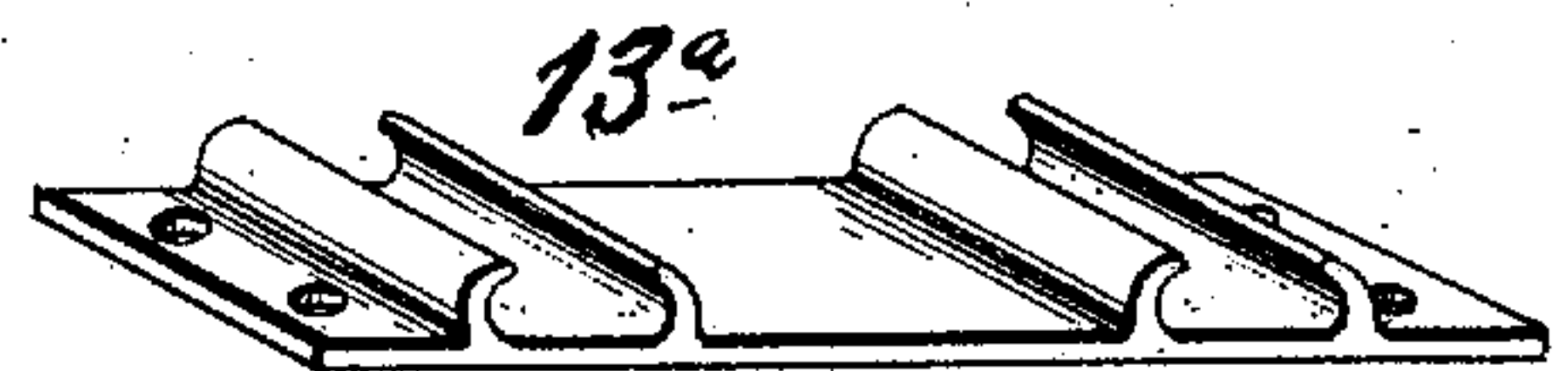
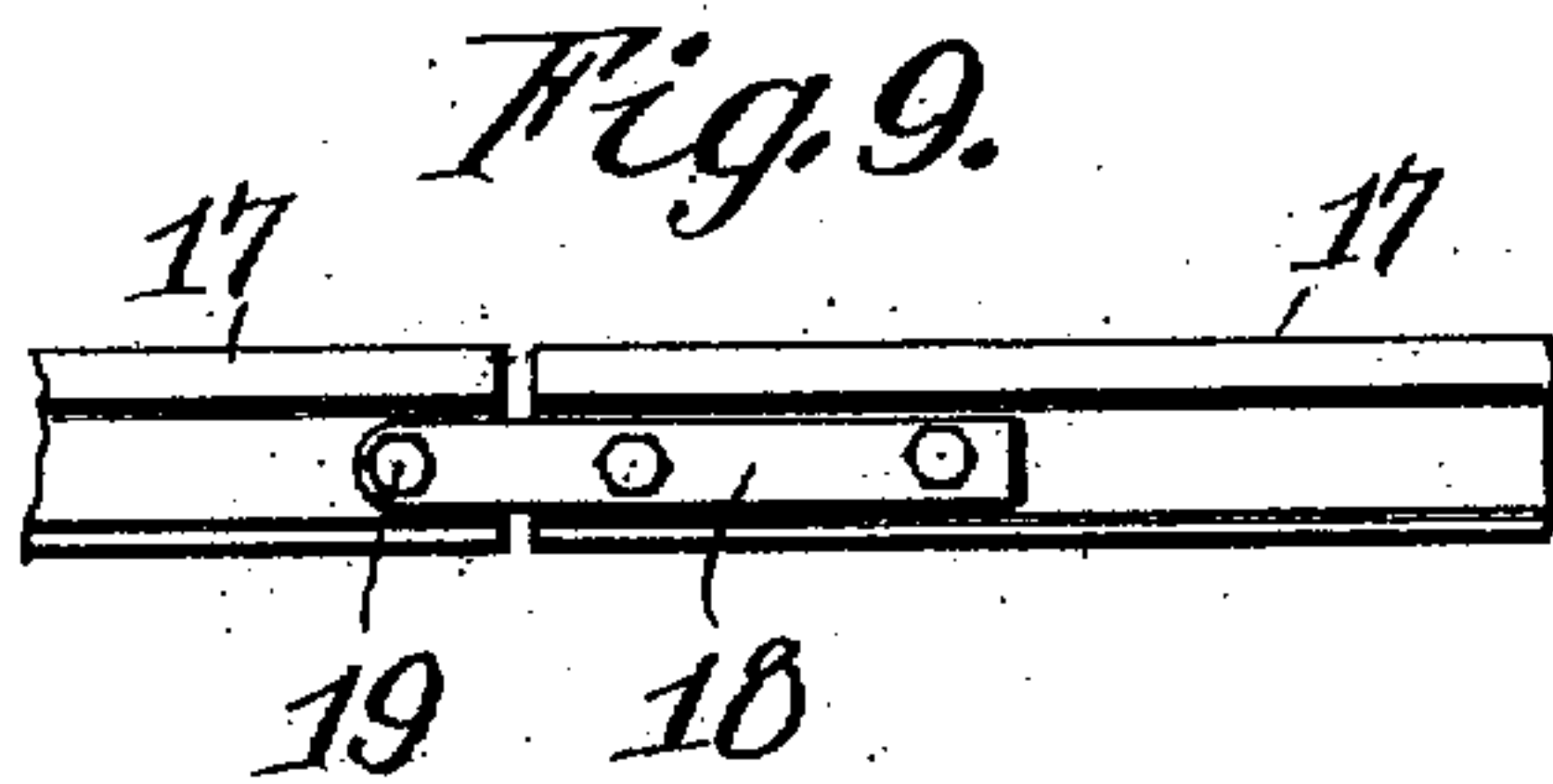
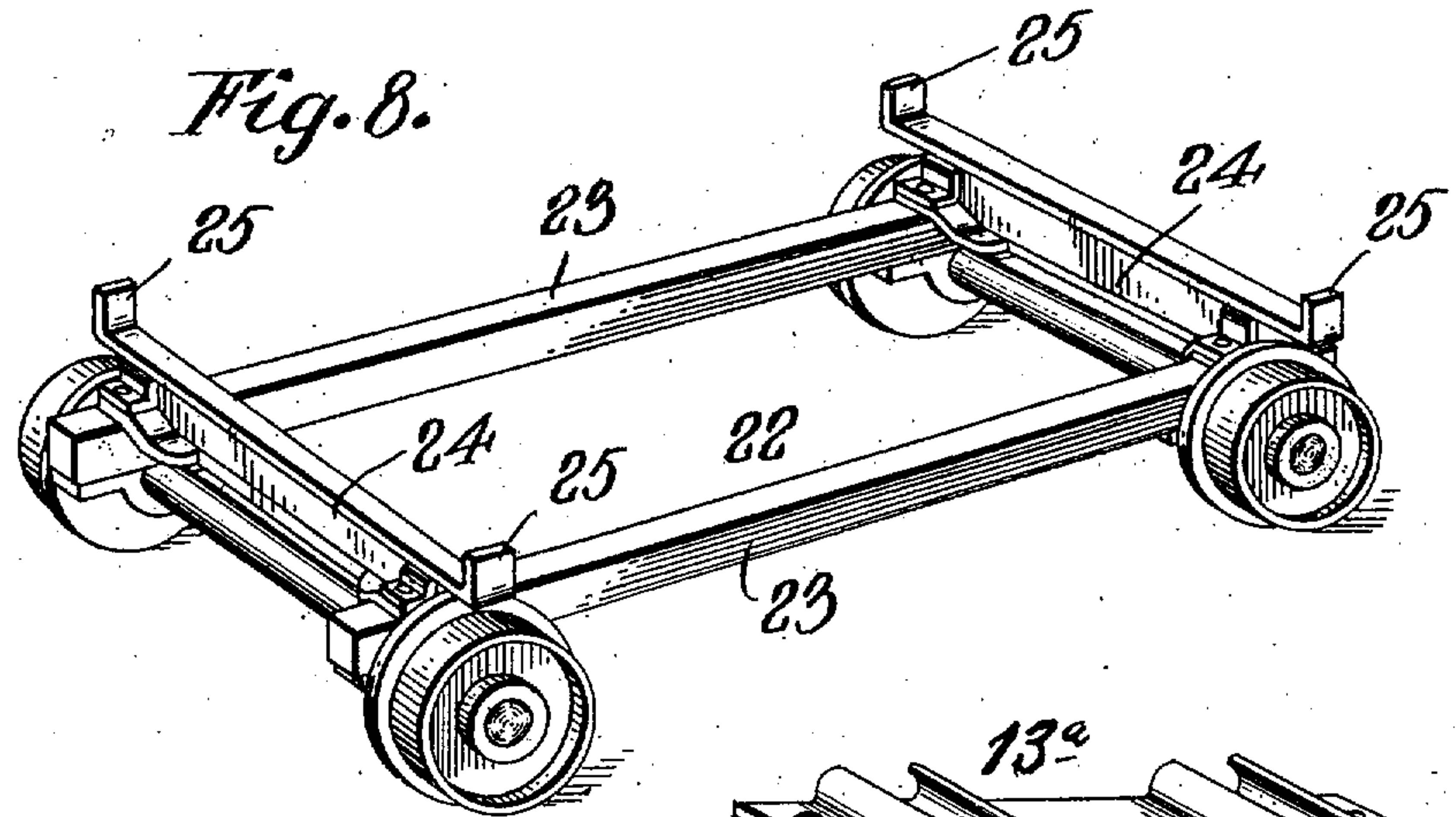
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C. E. DRUMMOND.
TRACK LAYING MACHINE.

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6 SHEETS—SHEET 5.



Witnesses:

C. E. Smith.
T. W. Smith, Jr.

Fig. 12.

By

C. E. Drummond,
Chas. Bayne & Co.,

Attorneys

UNITED STATES PATENT OFFICE.

CHARLES E. DRUMMOND, OF TWIN FALLS, IDAHO.

TRACK-LAYING MACHINE.

No. 887,607.

Specification of Letters Patent.

Patented May 12, 1908.

Application filed October 26, 1907. Serial No. 399,340.

To all whom it may concern:

Be it known that I, CHARLES E. DRUMMOND, a citizen of the United States, residing at Twin Falls, in the county of Twin Falls and State of Idaho, have invented certain new and useful Improvements in Track-Laying Machines, of which the following is a specification.

This invention relates to track laying machines.

The principal object of the invention is to provide a track laying device in the form of a construction train that is arranged to carry cross ties and rails, and in which all of the ties and rails may be readily delivered at a point directly in front of the forward car of the train, thus avoiding the unnecessary work and inconvenience usually involved in the handling of material from ordinary flat cars, where the rails and ties are usually dumped at the sides of the car and must be conveyed from thence to the point where they are to be laid.

A further object of the invention is to provide an apparatus of this type wherein the forward car, as well as the following cars, is utilized as a carrier for material, thus avoiding the necessity of employing a crane or like structure for handling the material on the remaining cars.

A still further object of the invention is to provide for the rapid conveyance of ties and rails from the rearmost cars to the forward end of the front car with minimum labor and expense.

A further object of the invention is to facilitate the separate handling of the ties and rails, so that the track construction may proceed with uniformity, the ties and rails being delivered just as rapidly as needed and the cars advancing over the rails as fast as they are laid and spiked.

A still further object of the invention is to provide the train of cars with an auxiliary track and tie carrying cars, the latter being arranged to receive loads of ties from the rearmost cars and to travel over the tracks from car to car, and thence out over the tram to the dumping point.

A still further object of the invention is to provide a dumping tram at the delivery end of the front car, the tram being so arranged as to permit the delivery of the ties at the point approximately a rail length, that is to

say, about thirty feet in advance of the forward end of the car in a position most convenient for the workmen.

A still further object of the invention is to provide an automatic dumping means at the extreme end of the tram, so that when the cars reach this point the ties will be automatically shot forward and dumped on the road bed or grade.

A still further object of the invention is to provide auxiliary ways at the opposite sides of the cars one for the handling of the ties, as before described, and the other to facilitate handling of the rails, the rails being delivered in such position that they may be readily heeled in place and the angle bars attached.

A still further object of the invention is to provide a dumping tram of the character described which may be readily detached from the forward car and allowed to remain at the end of the track, while the train returns to the material yard for another load of ties and rails.

A still further object of the invention is to provide an improved form of yieldable connection for the auxiliary rails of the small tie carrying cars, for the purpose of allowing the flat cars to yield as when traveling on an uneven track, or in rounding curves.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a perspective view of a track laying apparatus constructed in accordance with the invention. Fig. 2 is a side elevation of the same. Fig. 3 is a plan view. Fig. 4 is a side elevation of the front car. Fig. 5 is a plan view of the same. Fig. 6 is a side elevation of the front end of the tram, showing the dumping mechanism. Fig. 7 is a similar view showing the dumping operation. Fig. 8 is a detail perspective view of one of the small tie unloading cars. Fig. 9 is a side ele-

vation of the yieldable rail joint. Fig. 10 is a sectional elevation showing a yieldable rail joint of modified construction, as used at the end of each car. Fig. 11 is a detail perspective view of one of the rail dollies. Fig. 12 is a vertical longitudinal sectional view of one of the rail dollies. Fig. 13 is a perspective detail view of one of the rail supporting slide plates.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In carrying out the invention, eight ordinary flat cars are preferably employed, this number having been found most convenient in practice, although the number of cars may be varied to any extent.

On top of the cars are secured crossbeams 10 which project beyond the sides of the car, preferably for about twelve inches, more or less, and to the lower faces of these beams are secured planks 11, so that the width of the car is approximately two feet greater than that of the standard flat car. In a train now constructed and in use, it has been found convenient to employ three forward cars similar to A and B for the carrying of rails, and five rear cars; such as C, for the carrying of cross ties, only one of these rear cars being illustrated in the present instance. The cross beams 10 may be attached in any suitable manner and serve to give greater width for the loading of track material, and they may be readily removed when necessary, so that the car may be used for ordinary purposes.

On the right hand side of the cars are secured rails 15, preferably to form a track of about fourteen inches gage, and between these are laid planks 16 to form a foot-way for the workmen. As the flat cars move together and separate from the jolting of the train, and there is more or less independent movement of the cars due to unevenness of the track and in rounding curves, it becomes necessary to form yieldable joints for the auxiliary rails at points between the cars, and for this purpose small rail sections 17 are placed at these points, these rail sections being held in place by fish plates 18 that are attached at one end by single bolts 19, the bolts forming loose pivots which will readily permit both vertical and horizontal play. In order to compensate for endwise movement, the track sections adjacent the end of each car are slightly separated from each other and are connected by a sleeve 20 shaped to follow the cross sectional contour of the rail, and within which the track sections are free to slide as the cars move together or apart, so that the continuity of the rails will be preserved without regard to movement of the cars. Each slide rail of the yieldable track section is held in place and in

line with the rail of the fastened sections by means of two plates 13^a, best seen in Fig. 13 of the drawings. These two slide plates allow free movement of the yieldable rail endwise but firmly hold it in line with the fastened rail to which the sleeve 20 is bolted and prevents the slidable or yieldable rail from binding in the sleeve when the train is moving over crooked track or rounding curves. On these rails are placed small trucks or cars 22 to the ends of the side sills 23 of which are secured cross bars 24, having upturned end flanges 25 that form side guards to prevent accidental falling of the ties. Each of these cars is loaded with ties from the rearmost tie carrying cars of the train and it is found in practice that five ties constitute a readily handled load, and are convenient both to the workmen on the cars and the men on the roadbed.

At the forward end of the front car is erected a frame 27, two of the uprights of which are arranged on opposite sides of the small trackway, the cross bar 28 at the top of the frame being of sufficient height to permit the passage of the workmen.

In advance of the forward car is arranged a tram 30. This tram comprises a pair of rails 31 which are connected by cross bars 32 of such construction as to prevent movement of the rails either toward or from each other, and on these cross bars is laid a platform 33 for convenience of the workmen. The rear ends of the rails are connected to the forward ends of the rails 15 by means of suitable angle bars, and the forward end of the tram is supported by truss rods, each truss rod being formed in two sections 35—36. The lower ends of these truss rods are provided with eyes that fit over hooks 37 projecting from the tram, and the car, respectively, and the truss bars 36 overhang the frame 27 and are detachably connected to the rods 35, so that the tram may be readily removed from position and allowed to remain on the roadbed, while the flat cars return to the material yard for another load of rails and ties. The truss rods 36 are preferably made in adjustable sections connected by suitable turn buckles 39 in order that the position of the tram may be adjusted with accuracy.

The forward ends of the tram rails are inclined downward as indicated at 40, and bolted across these rails is a plate 41. To this plate are secured cross bars 42 against which the forward wheels of the small tie carrying trucks strike at the limit of the delivery movement. To these cross bars 42 are secured two spaced beams 43 that are disposed parallel with the inclined portions 40 of the track, and these beams are connected by shafts 44 on which are mounted two freely revoluble rollers 46 and 47. The upper surface of the roller 46 is arranged in

the same horizontal plane with the upper or load carrying surface of the truck, as will be evident on reference to Fig. 7, it being observed that the truck in this position is near the end of its movement, and the ties being passed slightly on to the roller 46.

As the movement of the truck continues from the full line to the dotted line position shown in Fig. 7, the momentum of the ties will carry them approximately first to the dotted line position and then as the center of gravity of the load passes beyond the vertical plane of the roller 46, the forward ends of the ties will tilt downward to the dotted line position *b* of Fig. 7, the ties then resting on the two rollers 46 and 47 and running by gravity over these rollers and falling to the roadbed at the end of the tram.

As before remarked, the end of the tram is approximately one rail length, or thirty feet, in advance of the car, and the ties being kept about a rail length or more in advance of the car, so that there will be no delay in the delivery and placing of the rails.

For unloading the ties, any number of the small tie trucks may be used, and for convenience, the forward car A is provided with a siding 50, the ends of which are connected to the main track 15 by suitable switches of any desired type, but preferably by automatic switches of such nature that returning cars from the tram will automatically enter the siding in order to allow the passage of loaded cars on the main track, and in some instances a gasoline motor or the like may be installed for the purpose of handling the tie trucks, although for ordinary purposes unskilled labor is found more convenient and less expensive.

At the left hand side of the rail cars A and B are arranged small dollies 53, these being in the form of small concaved rollers which are mounted in rectangular metallic frames 54. On the projecting portion of the car platform are secured small blocks 55 of a contour corresponding to that of the rectangular frames 54, and over which said frames fit, the opposite ends of the blocks being slightly recessed to receive the larger ends of the rollers. These frames may be readily placed in position over the blocks, and require no further fastenings, being held in place by their own weight and the weight of the rails which pass over them to the point of delivery. When the cars are to be loaded, these dollies may be readily lifted off the block and thrown to one side.

Extending forward of the endmost dolly is a small metal chute 56, and as the rails are moved forward over the dollies, the end of the rail will project past the forward end of the car in position to be grasped by the front men of the steel gang on the road bed, and as these men draw the rail forward, its rear end will strike against and slide down the chute

into the hands of the rear men of the steel gang. The entire rail now being in the hands of the steel gang is heeled in between the angle bars which have been fastened with one bolt to the last rail in the track while the spiking of the same was being done. After the two rails have been put into place and fastened at their rear ends with one bolt in each and each rail spiked in three places, the train is moved forward a rail length into position for laying another length of rails.

As before pointed out, one of the principal advantages of the apparatus resides in the fact that the forward car, as well as the remaining cars of the train, may be used for carrying material and it is not necessary to employ cranes, hoists, or similar expensive machinery for the purpose of handling loads.

I claim:—

1. In a track laying apparatus, a series of cars, tie carrying trucks arranged to run along the cars, and an automatic dumping device carried by the forward end of the front car, the same including an inclined plane, and means for suddenly checking or stopping the trucks upon said inclined plane.

2. In track laying apparatus, a series of cars, auxiliary rails mounted on the cars and forming a trackway, tie carrying trucks arranged to travel on said trackway, and an automatic dumping mechanism arranged at the forward end of the front car, the same including an inclined plane, and means for suddenly checking or stopping the trucks upon said inclined plane.

3. In track laying apparatus, a series of cars, an auxiliary trackway arranged on the cars, trucks arranged to travel on said trackway, and a forwardly extending tram forming a continuation of the trackway, there being an automatic dumping apparatus at the end of the tram, the same including an inclined plane, and means for suddenly checking or stopping the trucks upon said inclined plane.

4. In track laying apparatus, a series of cars, tie carrying trucks arranged to run along the cars, a tram extending from the forward end of the front car, an auxiliary trackway extending over the cars continued out on the tram and terminating in an inclined plane, and means for engaging and suddenly checking or stopping the trucks and delivering their loads by the momentum of said loads at the end of the tram.

5. In track laying apparatus, a series of cars, a tram extending forwardly from the front car, detachable truss rods forming a support for the tram, an auxiliary trackway running over the cars and terminating in the tram at the forward end of the front car, the forward end of the trackway being downwardly inclined, tie carrying trucks arranged to travel on the trackway, stops for limiting the movement of the trucks, and delivery

rollers, on to which the ties pass from the trucks through acquired momentum.

6. In track laying apparatus, a series of cars, a detachable tram supported at the forward end of the front car, auxiliary rails running over the cars and extended out on the tram, the outer ends of the rails being downwardly inclined, tie carrying trucks arranged to travel on said trackway, truck stops at the ends of the inclined rails, beams supported at the end of the tram, and tie receiving rollers mounted between the beams and arranged to receive the load of the trucks.

7. In track laying apparatus, a series of cars, a frame arranged at the forward end of the front car, a detachable tram extending forwardly of the front car, truss rods extending over the frame and supporting the tram, said rods being formed of detachable sections, an auxiliary trackway extending over the cars and tram, tie carrying trucks arranged to travel over the auxiliary trackway, and an automatic dumping means arranged at the delivery end of the tram, the same including an inclined plane, and means for suddenly checking or stopping the trucks upon said inclined plane.

8. In track laying apparatus, a train of cars having laterally extended platform sections, an auxiliary track in part supported by one of the side extensions of the platform, tie carrying trucks arranged to travel on said auxiliary trackway, and rail delivery rollers in part supported by the extended portion of the car platform at the opposite side of the car.

9. In track laying apparatus, a train of cars provided at one side with auxiliary tracks for the reception of tie carrying trucks,

and at the opposite side with dollies for facilitating the delivery of rails.

10. In track laying apparatus, a train of cars, a tram at the forward end of the front car, said tram being extended approximately a rail length in advance of the car, an auxiliary track extending over the cars and tram, tie carrying trucks arranged to travel on said trackway, and a series of rail dollies terminating at the forward end of the front car.

11. In track laying apparatus, a train of cars, a tram in advance of the forward car of the train, an auxiliary track extending over the car and tram, a siding arranged on the forward car, and tie carrying trucks arranged to travel over the trackway to the end of the tram, and thence to return over the siding.

12. In track laying apparatus, a series of cars, a plurality of spaced blocks supported at one side of the cars, and rail dollies, each comprising a rectangular frame adapted to fit over the blocks, and a concaved roller journaled in the frame.

13. In track laying apparatus, a series of cars, a series of projecting blocks extending along one side of the cars, and rail dollies detachably connected to the block and each comprising a metallic frame shaped to conform to the contour of the block to which it is to be attached, and a concaved rail carrying roller journaled in said frame.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES E. DRUMMOND.

Witnesses:

STUART H. TAYLOR,
C. M. HILL.