H. HALL.

TRACK LAYING MACHINE.

APPLICATION FILED FEB. 6, 1920.

1.345,175.

Patented June 29, 1920.

4 SHEETS—SHEET 1.

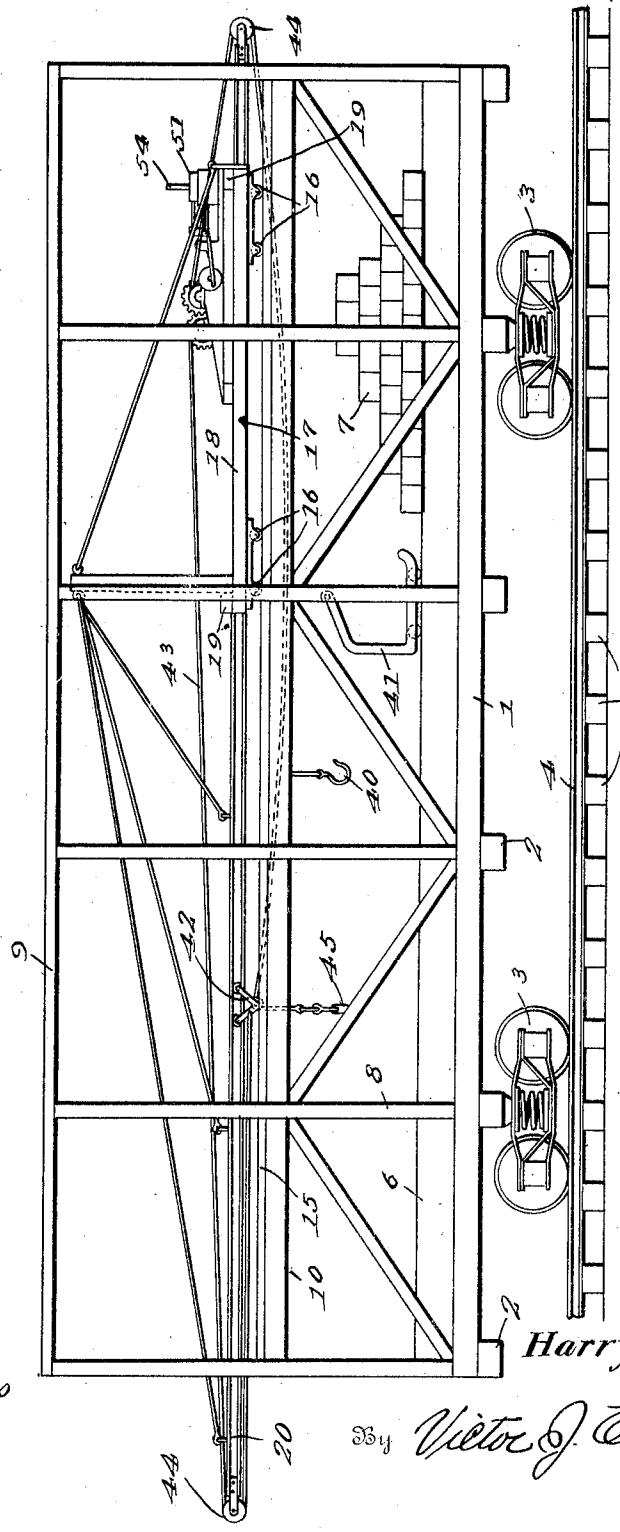


Fig. 1.

Witnesses
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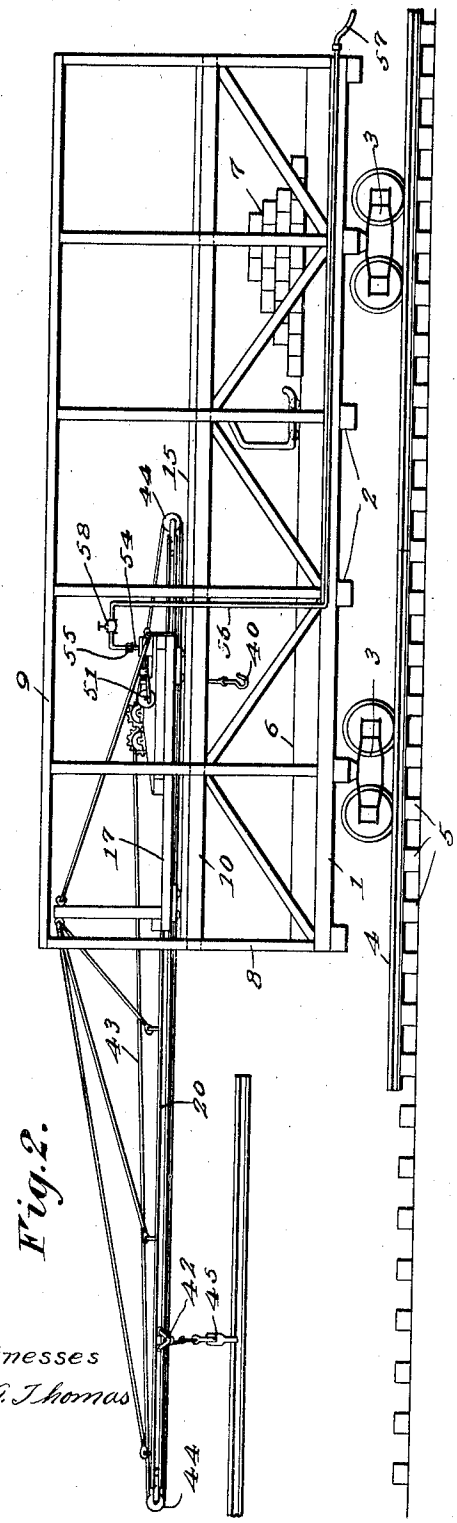


Fig. 2.

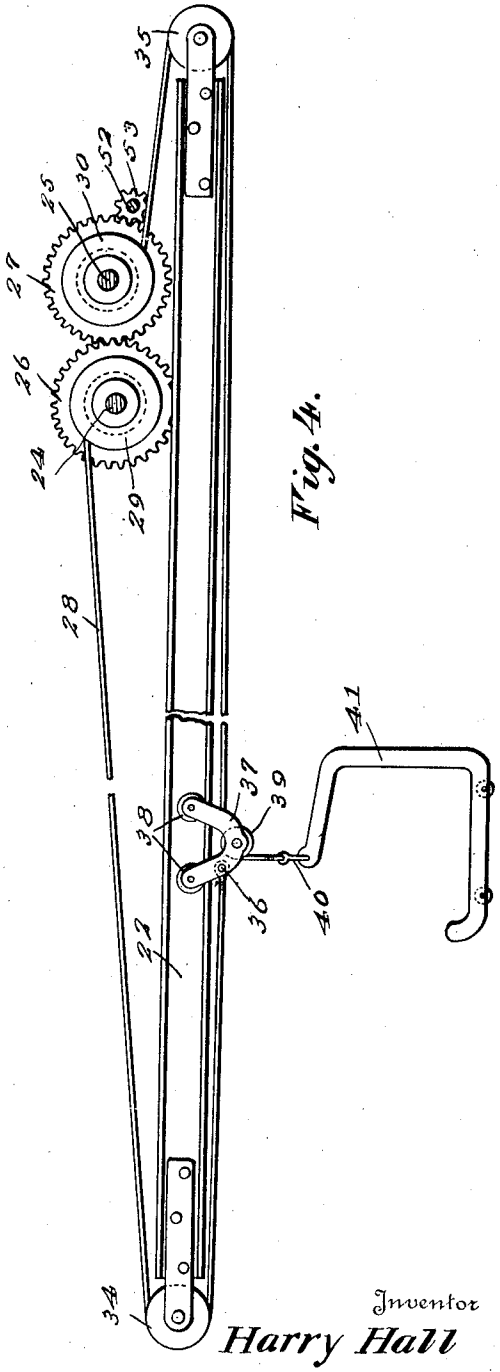


Fig. 4.

Witnesses

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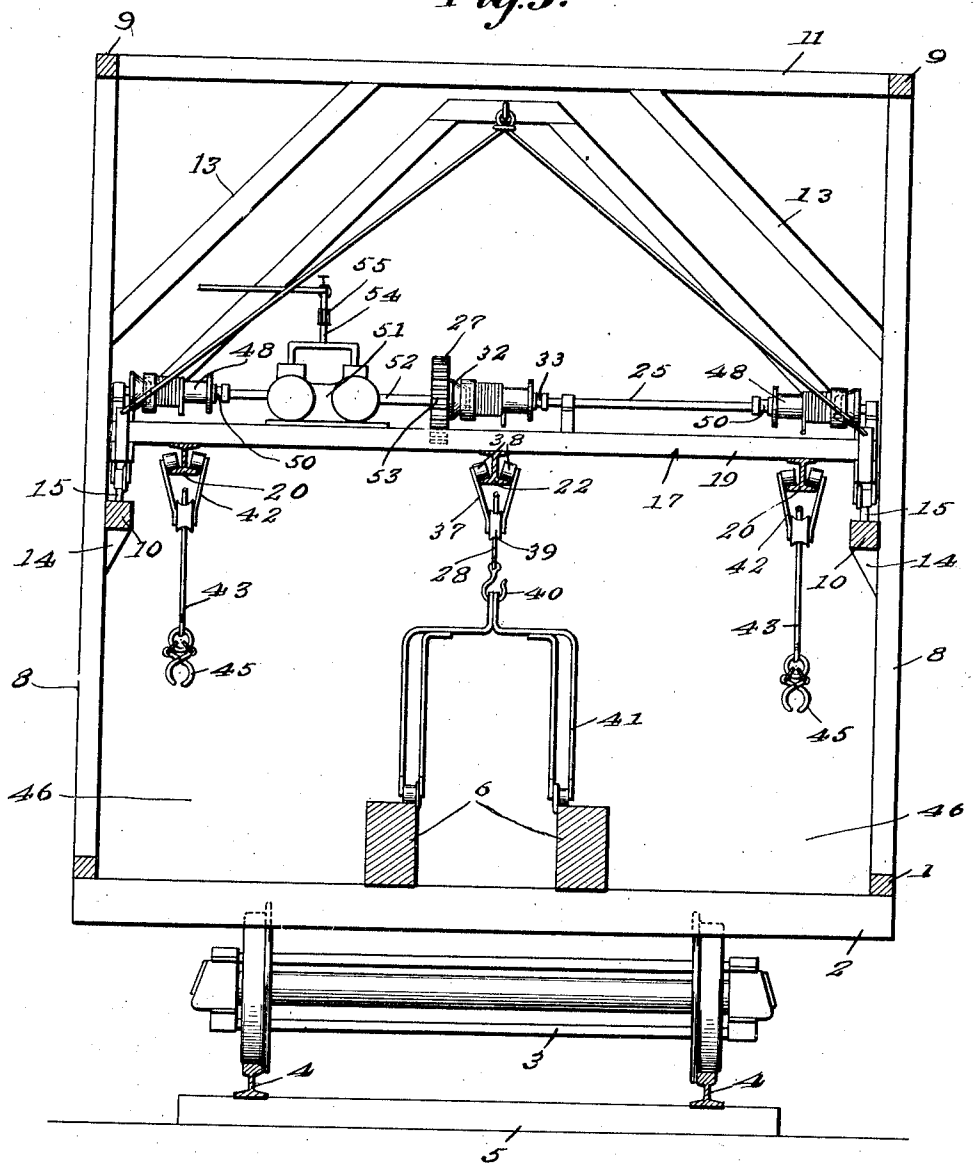
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4 SHEETS—SHEET 3.

Fig. 3.



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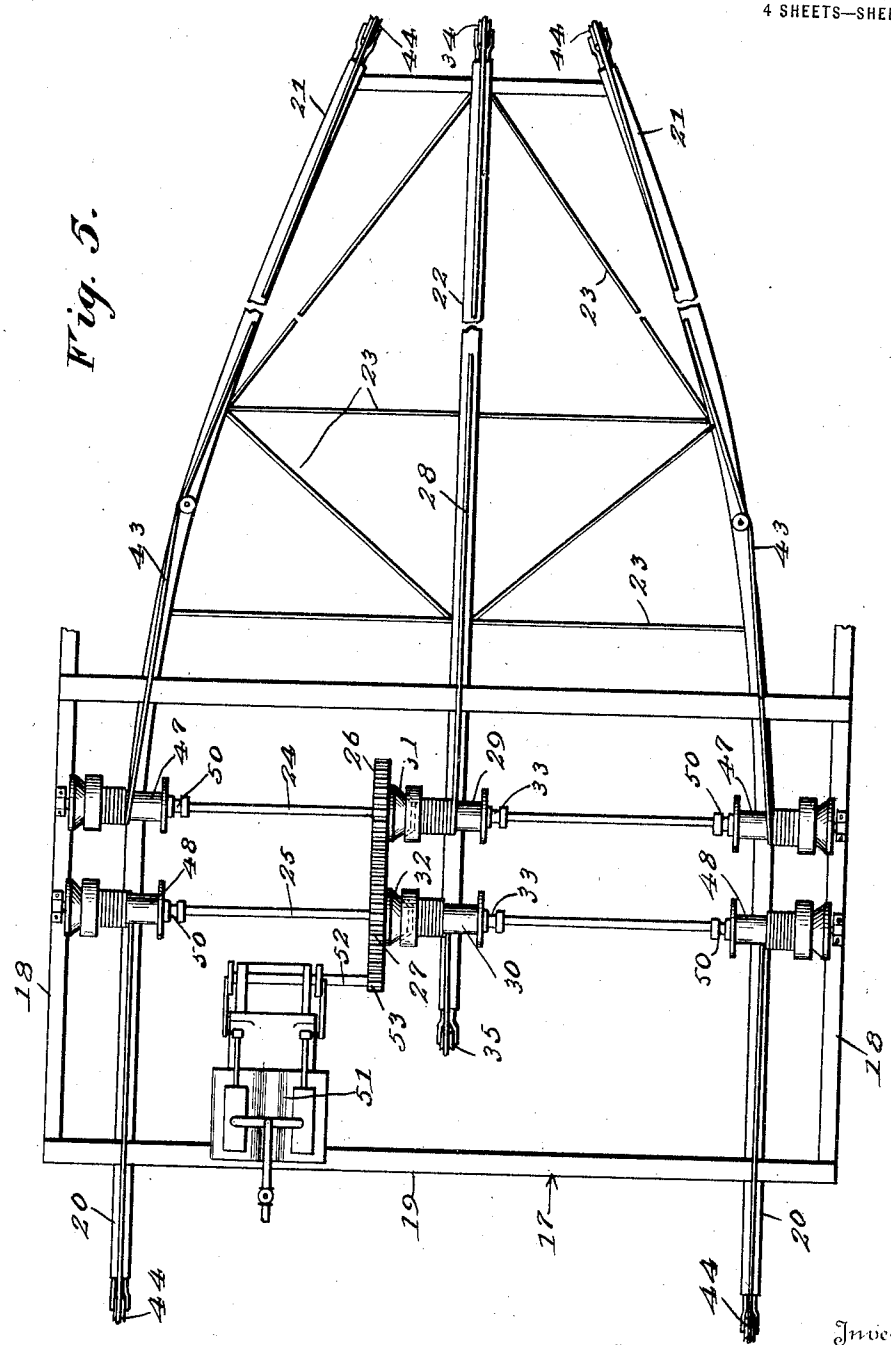
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4 SHEETS—SHEET 4.

Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

HARRY HALL, OF MANTON, MICHIGAN.

TRACK-LAYING MACHINE.

1,345,175. Specification of Letters Patent. Patented June 29, 1920.

Application filed February 6, 1920. Serial No. 356,716.

To all whom it may concern:

Be it known that I, HARRY HALL, a citizen of the United States, residing at Manton, in the county of Wexford and State of Michigan, have invented new and useful Improvements in Track-Laying Machines, of which the following is a specification.

The invention relates to track laying machines, the object in view being to provide a simple portable machine mounted on wheels and designed to move along a railway roadbed for the purpose of carrying and laying the elements of a railroad bed particularly the ties and rails thereof, the machine being also adapted for wrecking purposes such as the raising and transportation of such rails and ties.

A further object of the invention is to provide in conjunction with a wheeled car adapted to travel upon the rails of the roadbed as the roadbed is constructed, a skeleton frame rising from the platform of the car and a traveling trolley frame being shifted longitudinally of the skeleton frame and embodying a novel arrangement of track rails and carriages for shifting the rails from their position on the car to their approximate positions in readiness for laying, said rails being guided by the carriages and the track rails of the trolley frame so that two rails moved at the same time will be brought into the desired distance apart in accordance with the gage or width of the roadbed.

With the above and other objects in view the invention consists in the novel construction, combination and arrangement herein fully described, illustrated and claimed.

In the accompanying drawings:—

Figure 1 is a side elevation of the complete apparatus, showing the trolley frame in its folded or housed position.

Fig. 2 is a similar view showing the projected position of the trolley frame.

Fig. 3 is a vertical transverse section through the machine.

Fig. 4 is an enlarged side elevation of the trolley frame, showing the cable operating and controlling drums and their shafts.

Fig. 5 is a plan view of the same.

The track laying machine in the preferred embodiment thereof, and as illustrated in the drawings, comprises a main frame or platform 1, mounted upon suitable underlying cross sills, 2, the whole structure being mounted upon wheeled trucks, 3 designed to run upon the track rails 4 of the roadbed, the ties of which are indicated at 5.

Extending longitudinally of the main body or platform of the car are two parallel side supporting rails or beams 6 upon which the ties 7 are adapted to rest as shown in Figs. 1 and 3. Rising from the body or platform of the car is a skeleton frame comprising two longitudinal series of uprights or standards 8 which are connected by top longitudinal beams 9 and intermediate horizontal beams 10, said skeleton frame further comprising top and intermediate cross bars 11 and 12 respectively and toner braces 13.

Secured to the inner faces of the uprights 8 are the horizontal beams 10 which are supported upon brackets 14. Secured to the upper faces of the beams 10 are track rails 15 upon which move the wheels 16 of a trolley frame 17, the latter comprising the main longitudinal side beams 18 and the end cross bars 19.

Secured to the underside of the trolley frame 17 are track rails 20, portions of which are parallel and in widely spaced relation to each other as shown, said track rails converging toward their opposite ends as shown at 21 until the gap between the projecting ends of the guides of the track rails 20 is about equal to the gap of the road bed or in other words the distance between the rails of the railway when laid in proper relation to each other. Another track rail 22 extends longitudinally and centrally of the trolley frame and is secured to the underside thereof. The rails 20 and 22 are braced relatively to each other by means of suitable guides or stays 23 thereby forming a light rigid structure.

Journaled in bearings on the top of the trolley frame are two parallel drum shafts 24 and 25, which are connected together for simultaneous rotation in the opposite directions by means of gears 26 and 29 meshing with each other. A flexible cable 28 is wound at its end portions around drums 29 and 30 which are normally loose upon the shafts 24 and 25 but adapted to be engaged positively therewith and rotated thereby by means of clutches 31 and 32, the drums 29 and 30 being shiftable into engagement with clutch faces on the shafts 24 and 25 as shown in the plan view Fig. 5. For this

purpose, each of the drums 29 and 30 is formed with a groove 33 therein to receive a suitable drum shifting fork.

As shown best in Fig. 4, the cable 28 extends around guide pulleys or rollers 34 and 35 at the opposite ends of the trolley frame and one end of the cable is connected to a bolt or pin 36 on a carriage 37 which is movable longitudinally of the center beam 22, the latter being in the form of an eye beam and the carriage 37 being provided with rollers 38 which roll against the top surface of the bottom flange at opposite sides of the web of the eye beam. The other end portion of the cable passes around a guide pulley 39 journaled in the carriage 37 and said end of the cable is attached by a suitable means 40 to a sling 41 adapted to raise and lower a quantity of ties as illustrated in the drawings.

The track rails 20 hereinabove referred to are also of eye beam construction illustrated in the drawings and connected with each of said eye beams I employ a wheeled carriage 42 resembling in all respects the wheeled carriage 37 hereinabove described. In connection with each of the track rails 20 I also employ an additional cable 43 which passes over end rollers 44 at the opposite extremities of said track rail and thence under the track rail where said cable bears the same relation to the carriage 42 as the cable 28 bears to the carriage 37 as illustrated in Fig. 4. The cable 43 has attached thereto a sling or grapple 45 suitable for engaging, and raising and lowering the railway rail as clearly shown in Fig. 3. Spaces 46 are allowed at opposite sides of the tie supporting beams 6 as shown in Fig. 3 to receive a large number of rails either for the purpose of building a railroad or for the purpose of removing rails from an old roadbed.

In connection with each of the cables 43 the shafts 24 and 25 carry cable winding drums 47 and 48. Said drums are like the drums 29 and 30 normally loose on the shafts 24 and 25 but are adapted to move into and out of engagement therewith by clutch means 49, brought into action by longitudinal shifting movement of the drums 47 and 48, the latter being formed with grooves 50 for the purpose of receiving suitable shifting forks not shown.

Motion is imparted through the rotary shafts 24 and 25 by means of an engine 51 shown in the form of a steam engine, the shaft 52 of which is connected to one of the gears 27 by means of a pinion 53 fast on the engine shaft. The engine is provided with a steam supply pipe 54 to which is adjustably connected by means of a coupling or union 55, a main supply pipe 56 which leads to one end of the car where it is connected by a flexible pipe 57 to the locomotive engine. The pipe 57 is furnished with a stop cock 58 to provide for turning on and cutting off the steam supply.

The engine controls and the clutch controls are all preferably located adjacent one end of the car for convenient operation by the person standing in one position who thereby has entire control over the track laying and wrecking machine. Without moving from his position, he may pick up or lay rails and perform the same operation with regard to the ties. It is also possible to handle many other supplies and materials by means of the structure hereinabove described, and shown in the accompanying drawings. When the rails are elevated from their position on the roadbed, they are first raised directly upward from their positions and are then caused to move in opposite direction or apart from each other as they move inwardly over the body of the car. When they are lowered they are placed in the spaces 46 at opposite sides of the beams 6 upon which the ties are supported. The reverse is the case when laying the rails, the rails being picked up from the spaces 46 and then moved toward each other as they are advanced toward the projecting end of the trolley frame, the rails being finally deposited approximately in proper spaced relation to each other upon the ties which have previously been laid. This greatly expedites and facilitates the operation of laying and taking up the rails of a roadbed.

When the machine is not in use, the trolley frame 17 is moved inwardly over the body or platform of the car, so that it is held within the skeleton frame which rises from said platform or body of the car. While in this position, the car as a whole may be coupled to an engine or to other cars and forms a unit of the train. When it is desired to use the machine, it is only necessary to run the trolley frame forward to the projecting position shown in Fig. 2, and then connect the steam supply pipe with the engine. The trolley frame is thus held in position although any suitable fastening means may be used for that purpose.

What I claim is:—

1. A track laying machine, embodying a wheeled railway car, a skeleton frame rising from the platform of said car, and comprising uprights, track rails supported on the inner sides of said uprights, a wheeled trolley frame, supported and movable upon said rails, an engine carried by said trolley frame, guide rollers at opposite ends of said trolley frame, engine operable drums journaled on said trolley frame, a cable wound upon said drums and passing over said guide rollers, and a sling attached to said cable.

2. A track laying machine embodying a wheeled railway car, a skeleton frame rising from the platform of said car, and com-

prising uprights, track rails supported on the inner sides of said uprights, a wheeled trolley frame, supported and movable upon said rails, an engine carried by said trolley frame, guide rollers at opposite ends of said trolley frame, engine operable drums journaled on said trolley frame, a cable wound upon said drums and passing over said guide rollers, a sling attached to said cable, a track rail extending longitudinally beneath and secured to said trolley frame, and a cable supporting wheeled carriage movable along the last named track rail.

3. A track laying machine embodying a wheeled railway car, a skeleton frame rising from the platform of said car, and comprising uprights, track rails supported on the inner sides of said uprights, a wheeled trolley frame, supported and movable upon said rails, an engine carried by said trolley frame, guide rollers at opposite ends of said trolley frame, engine operable drums journaled on said trolley frame, a cable wound upon said drums and passing over said guide rollers, a sling attached to said cable, a track rail extending longitudinally beneath and secured to said trolley frame, and a cable supporting wheeled carriage movable along the last named track rail, track rails extending longitudinally and secured to the bottom of said trolley frame and converging toward one end to leave a gap equal to the gage of the road bed, and cable supporting wheeled carriages movable along the last named track rails.

4. A track laying machine, embodying a wheeled railway car, a skeleton frame rising from the platform of said car, and comprising uprights, track rails supported on the inner sides of said uprights, a wheeled trolley frame, supported and movable upon said rails, an engine carried by said trolley frame guide rollers at opposite ends of said trolley frame, engine operable drums journaled on said trolley frame, a cable wound upon said drums and passing over said guide rollers, a sling attached to said cable, parallel shafts geared together to rotate in opposite directions and having said drums normally loose thereon, and clutch means for throwing one or the other of said drums into engagement with the respective shafts.

In testimony whereof I affix my signature.

HARRY HALL.