G. D. BALDWIN.

TRACK LAYING APPARATUS.

APPLICATION FILED FEB. 7, 1918.

1,286,495.

Patented Dec. 3, 1918.

3 SHEETS—SHEET 1.

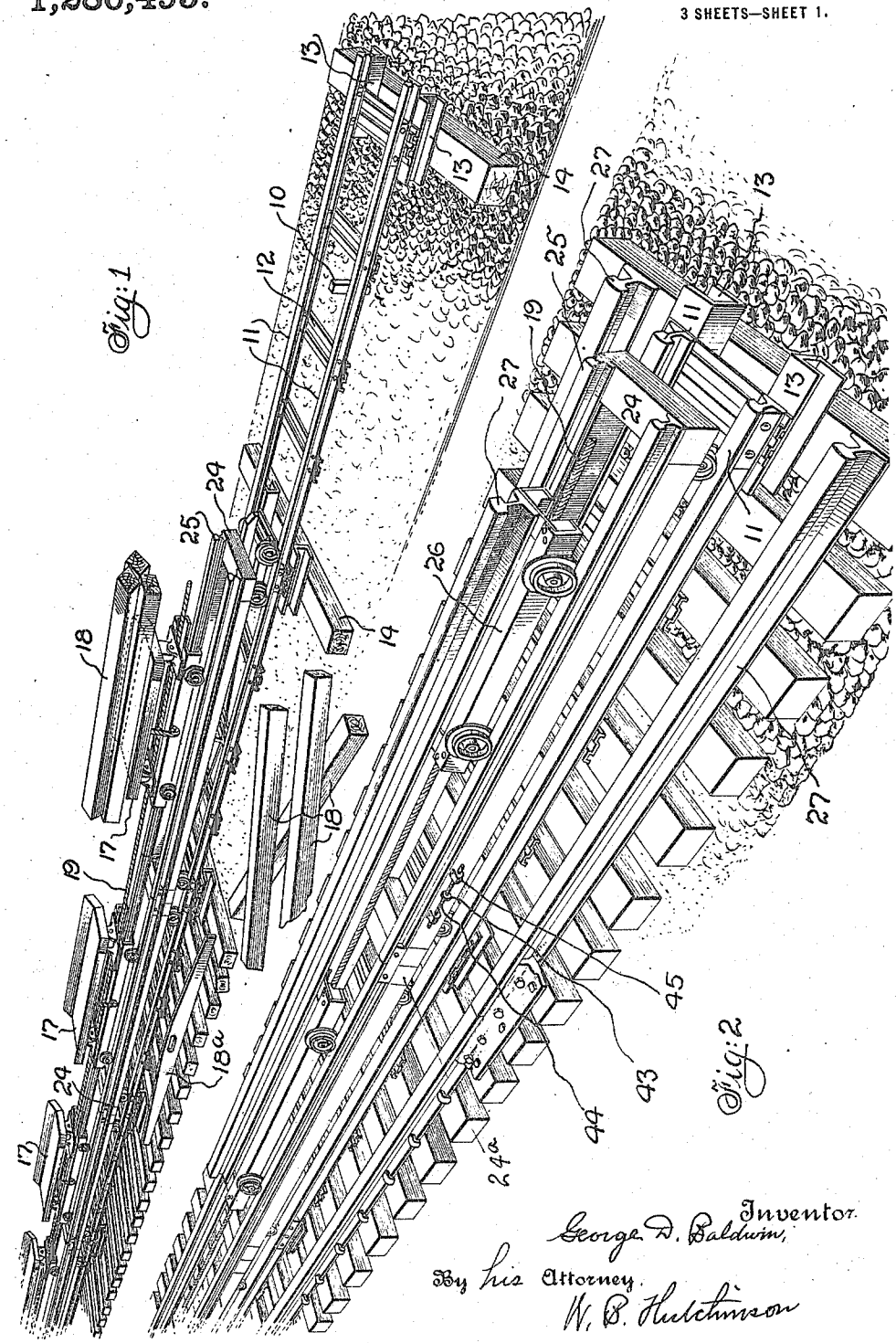


Fig: 1

Fig: 2

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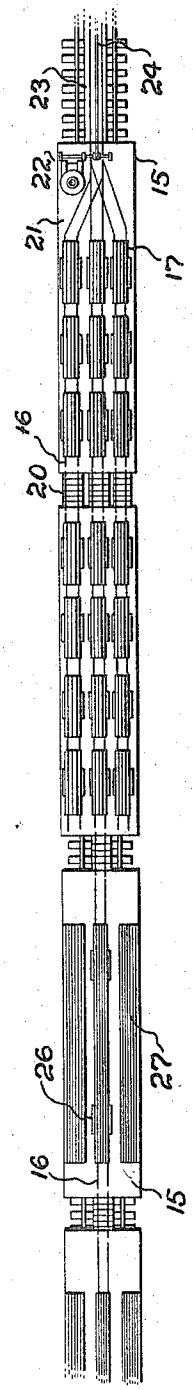


Fig: 3

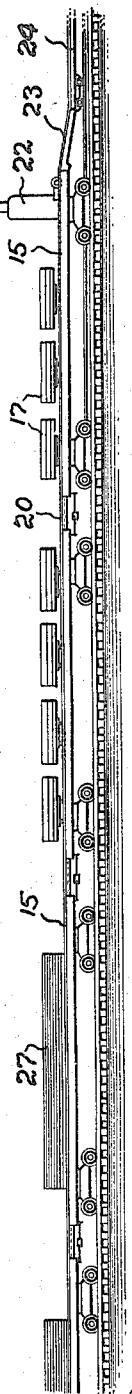


Fig: 4

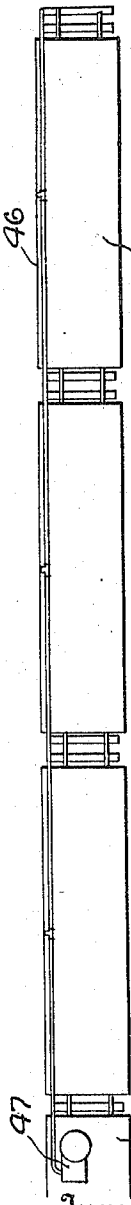


Fig: 5

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3 SHEETS—SHEET 3.

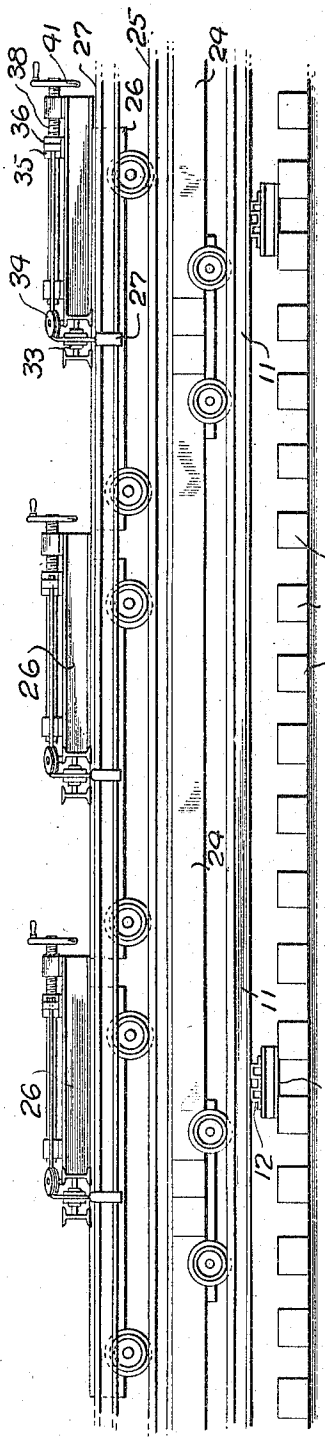


Fig. 6

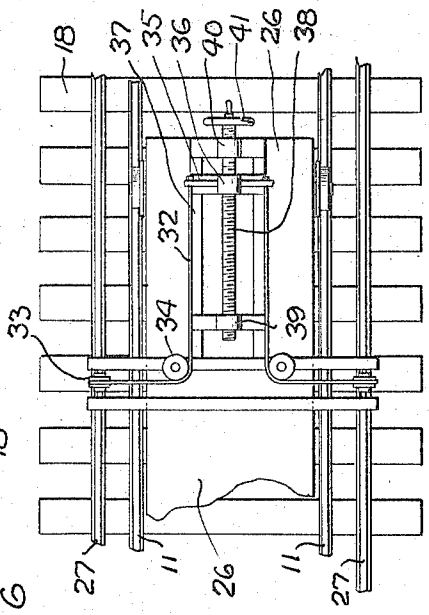


Fig. 8

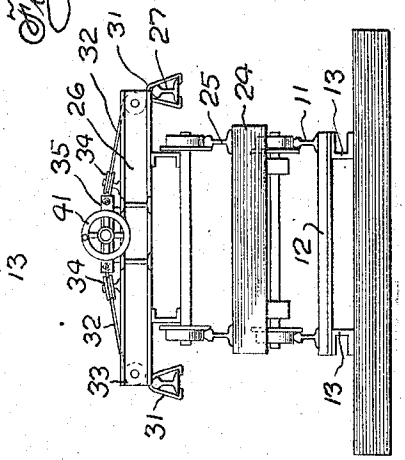


Fig. 7

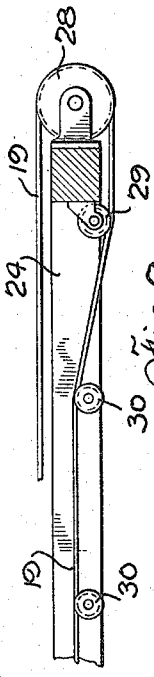


Fig. 9

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UNITED STATES PATENT OFFICE.

GEORGE D. BALDWIN, OF HOBOKEN, NEW JERSEY.

TRACK-LAYING APPARATUS.

1,286,495. Specification of Letters Patent. Patented Dec. 3, 1918.

Application filed February 7, 1918. Serial No. 215,746.

To all whom it may concern:

Be it known that I, GEORGE D. BALDWIN, a citizen of the United States, and a resident of Hoboken, county of Hudson, and State of New Jersey, have invented a new and useful Improvement in Track-Laying Apparatus, of which the following is a full, clear, and exact description.

My invention relates to improvements in apparatus for laying railway tracks after the roadbed has been prepared. The object of my invention is to produce apparatus by means of which a railway track can be laid much faster, cheaper and better than by the means usually employed. My invention is also intended to produce an apparatus by which a smaller crew than is generally used can lay more track than by ordinary means, and further to produce apparatus by which the track can be permanently laid so that when finished the regular service trains can run over it as usual. In the ordinary course of track laying, a partly completed roadbed is provided, permanent rails are laid to the gage of the ordinary track, and the construction train is run out on these rails and the roadbed built up and finished as fast as possible. This sometimes involves the practical destruction of the rails as they are fractured and twisted by the heavy construction train. Furthermore the construction train generally used has at its forward end a car provided with derricks and conveying apparatus intended to reach out in advance of the car to perhaps the length of the car or a little more, and has a gang of men employed to work on this short section of track, after which the train is advanced and the operation repeated. The result is that the gang of men employed are in one another's way, and enough men cannot be used to make very rapid progress. My invention is intended to obviate these difficulties and provide means whereby a long stretch of track, say half a mile or more, can be quickly, cheaply and permanently laid, and the men employed to the best possible advantage, which will appear clearly from the description to follow.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a broken perspective view showing the apparatus in use and conveying the ties to the point where they are to be used.

Fig. 2 is a similar view showing the rails as they are conveyed to the point where they are to be laid.

Fig. 3 is a diagrammatic view showing how the construction train can be laid out.

Fig. 4 is a diagrammatic side elevation of the structure shown in Fig. 3.

Fig. 5 is a diagrammatic plan showing how a pipe line can be carried by some of the trucks.

Fig. 6 is a side elevation of a part of the apparatus showing means for handling the permanent rails.

Fig. 7 is an end view of one of the rail carrying trucks and the means for depositing the rails.

Fig. 8 is a broken plan view of one of the rail carrying trucks and the rails which it carries, and

Fig. 9 is a detail showing how the truck actuating cable can be supported at the end of the extensible track.

My invention is used after the roadbed is laid. The first thing to do is to place the engineers' stakes 10 as usual, these being laid out along the line of the roadbed for a long distance and marked to indicate the line and grade of the track. A light narrow gage track is then laid out in sections 11, these sections comprising a pair of rails coupled together by suitable cross-ties 12 and provided at their end portions with supports 13 which are laid on the ties 14. The several sections 11 are connected together by any suitable couplings, and the supports 13 may be of any suitable character, the supports shown being preferred, and these are simply sections of channel iron of suitable size. The ties 14 on which the temporary track 11 is laid are spaced apart at convenient distances, say fifteen feet, and the ties 14 are laid to permanent grade and line in accordance with the indications of the engineers' stakes. A tie 14 can be laid and graded, a section of the track 11 laid thereon, then another tie laid, then another section of track 11 laid and coupled to the next section, and this arrangement can be carried out to the distance intended to be covered by the ties and rails on the construction train as pres-

ently described. It will be seen that this arrangement may be extended for an indefinite distance, limited only as above stated by the capacity of the construction train, and this can easily carry the materials for laying a half mile of track at one operation.

As soon as the temporary track is laid as stated the track laying crew is strung out along the distance of track to be laid, preferably about four men to each fifteen foot section, two on each side of the track 11, and then a train of light conveyer cars 24 is run out on the temporary track 11 to the desired limit. The conveyer cars form an extensible track, and they are provided with rails 25 for the trucks to be presently referred to, and the extensible cars 24 can be coupled together as shown at 24^a by any suitable means.

The flat cars 15 of the construction train have meanwhile been brought up on the permanent track to the point where the new track is to be laid, and these flat cars 15 are provided with parallel tracks 16 of the same gage as the track 25, and trucks 17 which are loaded with ties 18 have previously been arranged on the construction train as shown in Fig. 3, and the cars or trucks 17 can be propelled in any convenient way. To provide for rapid work, however, means should be provided for handling them quickly, and a convenient means is to provide a cable 19.

The trucks 17 can be provided with any suitable form of cable grip, and the flat cars 15 are connected by bridges 20 so that the tracks 16 are continuous along the desired number of cars. On the forward car 15 switches 21 are provided so that the trucks 17 can be switched to the tracks 25, and an inclined bridge 23 connects the forward car with the movable track or conveyer 24. A double acting winch 22 is also provided at the front end of the forward car 15 so that the cable can be wound forward or back as desired. The cable 19 can be supported on the train of flat cars in any usual or preferred way, and at the front end it can be conveniently run over a pulley or sheave 28 at the end of the forward truck or conveyer 24, and thence back over idlers 29 and 30.

The rails 27 for the permanent track can be carried on trucks 26 which can be propelled by the cable 19 after the trucks 17 have been drawn back on the flat car, but I prefer to have these trucks adapted to carry two rails at a time, one on each side, and the rails, to facilitate the work, can be bolted together end to end for long stretches on the flat cars. While I do not limit myself to any particular form of truck and rail depositing mechanism, I have shown a truck which in connection with the other apparatus is new, I believe, and which is suitable for the purpose. The truck can be provided on opposite sides with rail carriers 27 which are supported on cables 32 and are arranged at opposite sides of the trucks 26, and these are spaced apart as shown in Fig. 6. The cables 32 can be run over guide pulleys 33 and 34 and connected with the arms 35 of a nut 36. The arms can run along a framework 37 which will prevent them from turning. The nut 36 travels on the screw 38 which is mounted in bearings 39 and 40 and can be turned by the handwheel 41. It will be seen that the screw will serve to support the rails while they are being transported, and that by turning the handwheel and screw, the nut 36 will be made to move longitudinally so as to lower or raise the rails 27, and thus when the trucks have been propelled forward the required distance the rails can be deposited on the previously laid ties 18 all ready to be spiked down.

To further facilitate the laying of the track the forward conveyer truck 24 of the extensible track may be provided with an indicator 43 which is simply a disk carried on a screw 44 which turns in brackets 45 on the side of the track conveyer. Obviously any other suitable indicator can be used, but this is adjusted so that the member 38 will come opposite the desired point of a track joint. Then when the permanent track is laid if the joint varies slightly from the point indicated, the indicator may be moved forward or back just enough to make it register accurately with the joint, and when the extensible track is again moved forward the indicator will be at the exact point to indicate where the rail joint should come and the appropriate ties be laid.

In Fig. 5 I have shown the trucks 26 provided with a pipe line 46 which can be any suitable pipe capable of carrying steam, air or other pressure fluid, and this can be supplied from a tank 47 on one of the flat cars 15. The object of this is to have a source of power available wherever necessary along the line which is to be laid to operate tamping machines, spiking machines, or other machinery which may be used in laying the track.

For convenience I desire to use the extensible track 25 on the trucks or cars 24, as these can be conveniently run out on the temporary track 11 and conveniently connected with the flat cars, but obviously the cars 24 could be dispensed with and the trucks 17 run directly out on the track 11 without departing from the principle of my invention.

Assume that the trucks with the movable track 25 which is laid thereon, has been pushed out to the desired distance. The trucks 17 are then propelled forward in a long train covering the entire distance of track to be laid, the ties 18 on the trucks are then dumped and the trucks are ar-

ranged so that there will be the appropriate number of ties for each section between the ties 14 already laid. The empty trucks 17 are then drawn back to the construction train and the crew at once proceed to lay the ties 18, tamp them and grade them properly for a permanent track. This can be assisted by means of the ordinary leveling board 18[a] or by any usual or preferred appliance. As soon as the train of trucks 17 is withdrawn the cable carries forward the trucks 26 which are arranged on flat cars behind the trucks 17, and these trucks carry the permanent rails 27. The trucks 26 are propelled forward to the same extent that the trucks 17 have previously covered, and by the time the rails 27 are carried forward as stated, the crew will have laid the ties 18 permanently so that the rails can then be unloaded and spiked down permanently on the previously laid ties.

It will be noticed that in this way the crew are not interfering with each other and that the work can be carried forward to the best possible advantage. If desired still other cars can be arranged behind the flat cars 15 carrying the rails 27, and these may be loaded with ballast, and the ballast can be carried forward in the way already indicated, after the permanent rails have been laid, and the track can be ballasted.

Thus it will be seen that with my apparatus I can lay a very long section of permanent track and have every man in the crew working to good advantage. After the section of track has been laid as stated, the trucks are hauled back on the flat cars, the construction train pulled back out of the way, and a new train advanced along the just laid permanent track and the operation repeated.

Obivously the details of construction of my apparatus can be departed from very largely without affecting the principle of the invention, that is the form of truck used, the means of propelling the truck, and other details can be changed, as my invention does not relate to details, but to the organization of the apparatus as a whole.

Attention is called to the fact that where the apparatus is to be used for laying track on a roadbed over a viaduct or an elevated structure or the like where the ties are already laid, the apparatus can be used for carrying forward and laying the rails as herein described.

I claim:—

1. An apparatus of the kind described comprising a temporary track adapted to extend for a long distance along a roadbed, an extensible track adapted to run on the temporary track and mounted on cars adapted to be connected together, and a series of trucks adapted to run on the said extensible track.

2. An apparatus of the kind described comprising a temporary track consisting of pairs of rails of a narrower gage than the permanent track and adapted to be coupled together, a train of conveying trucks spaced apart, and means for propelling the trucks along the temporary track.

3. An apparatus of the kind described comprising a temporary narrow gage track consisting of sections of rails in pairs adapted to be coupled together, an extensible track mounted on the temporary track and carried on cars adapted to be coupled together, and conveying trucks spaced apart and having means for propelling them along the extensible track.

4. An apparatus of the kind described comprising a temporary narrow gage track consisting of pairs of rails connected together and adapted to be coupled to other similar pairs of rails, supports near the ends of the pairs of rails, and an extensible track mounted on wheels and adapted to be run out upon the said temporary track.

5. An apparatus of the kind described comprising a temporary narrow gage track adapted to be supported on the roadbed, and an extensible track mounted on wheels and adapted to be extended along the temporary track.

6. An apparatus of the kind described comprising flat cars having narrow gage tracks thereon to support material carrying trucks, a temporary narrow gage track adapted to be laid out in front of the construction train, and means for moving the aforesaid trucks from the flat cars out over the temporary track.

7. An apparatus of the kind described comprising a temporary narrow gage track adapted to be extended along the roadbed, a series of flat cars having narrow gage tracks thereon, an extensible track mounted on wheels and adapted to be run out on the aforesaid temporary track, a bridge connection between the extensible track and the flat cars, and means for running out trucks from the tracks on the flat cars to the extensible track in advance of the flat cars.

8. An apparatus of the kind described comprising a series of flat cars having narrow gage tracks thereon, a series of material carrying trucks on the aforesaid tracks, a temporary track adapted to stretch out in advance of the flat cars, and a cable mechanism for propelling the trucks back and forth over the tracks on the flat cars and over the said temporary track.

9. An apparatus of the kind described comprising a series of flat cars having narrow gage tracks thereon, a series of material carrying trucks on said tracks, a temporary track adapted to be laid out in advance of the flat cars, an extensible track mounted on wheels and adapted to be extended out on

the temporary track, and means carried by one of the flat cars for propelling the aforesaid trucks back and forth over the tracks on the flat cars and the aforesaid extensible track.

10. An apparatus of the kind described comprising a temporary track, a series of rail conveying trucks adapted to run on the track and arranged to carry track rails connected together end to end, and means for depositing the track rails on opposite sides of the temporary track.

11. An apparatus of the kind described comprising a temporary track, an extensible track adapted to run out on the temporary track, rail carrying trucks on the extensible track, means on said trucks for carrying track rails connected together end to end, and means for depositing the track rails on opposite sides of the temporary and extensible track.

12. An apparatus of the kind described comprising a series of flat cars having tracks thereon, a temporary track adapted to be laid out in front of the flat cars, an extensible track adapted to run out on the temporary track, rail carrying trucks on the flat cars adapted to run out on the extensible track and having means for carrying track rails attached together end to end, and means for depositing the track rails from the truck upon the roadbed on opposite sides of the temporary and extensible tracks.

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Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."