

J. G. SCOTT.

MECHANISM FOR HAULING AND CONTROLLING CARS.

APPLICATION FILED OCT. 24, 1904.

3 SHEETS—SHEET 1.

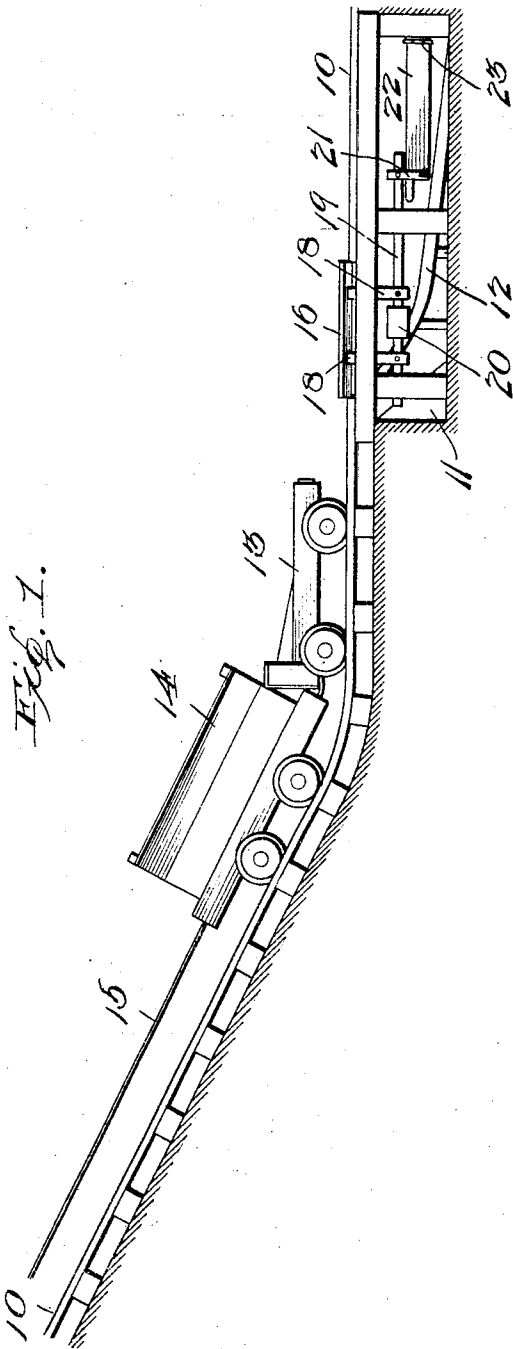


Fig. 1.

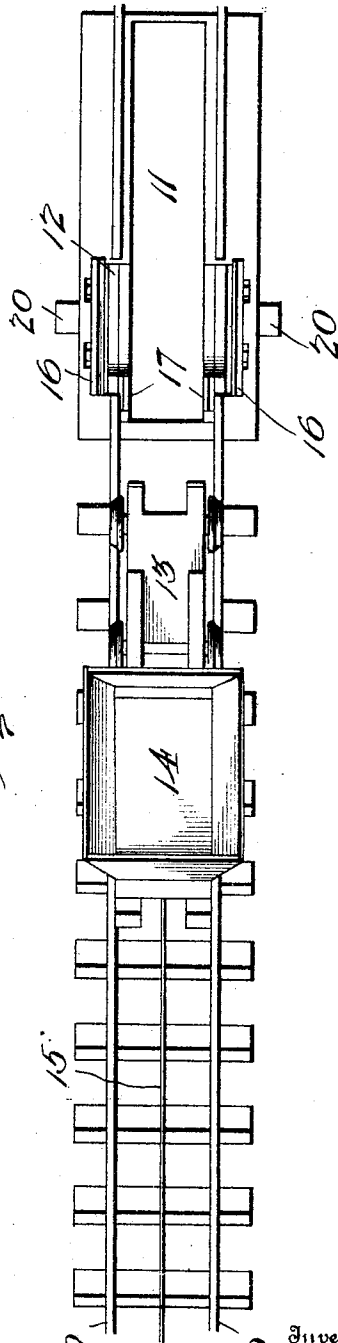


Fig. 2.

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No. 784,898.

PATENTED MAR. 14, 1905.

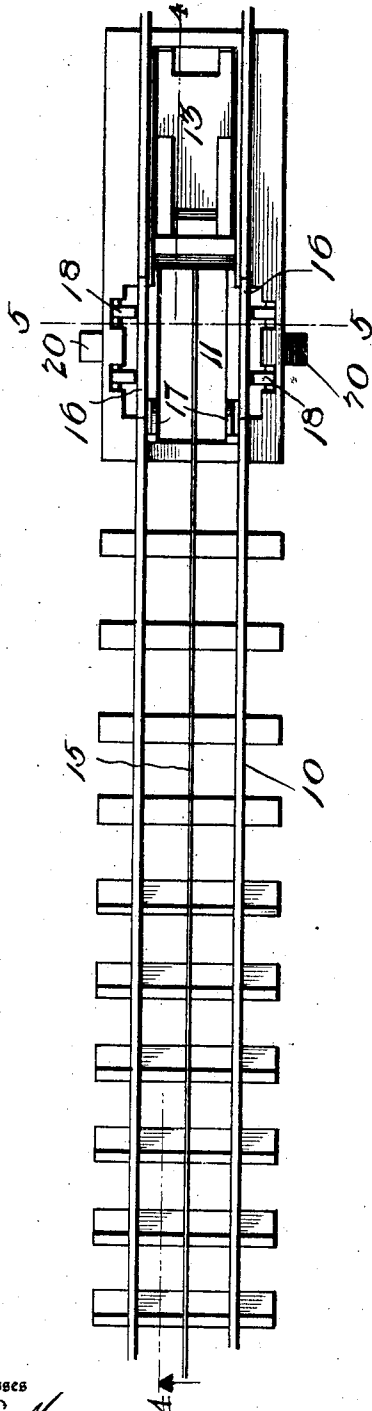
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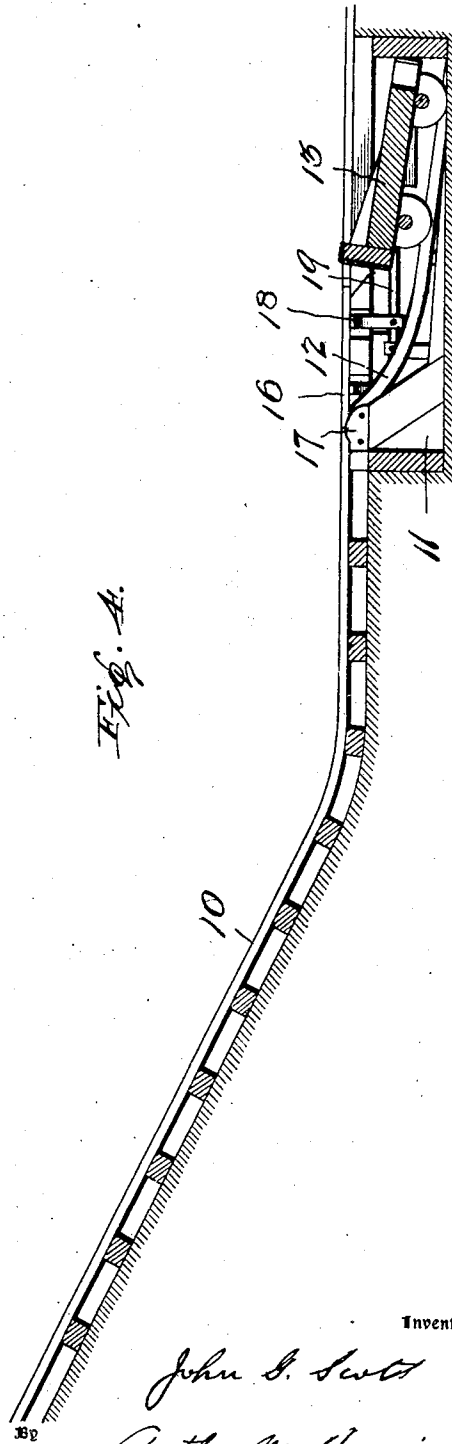
3 SHEETS—SHEET 2.

Fig. 3.



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Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

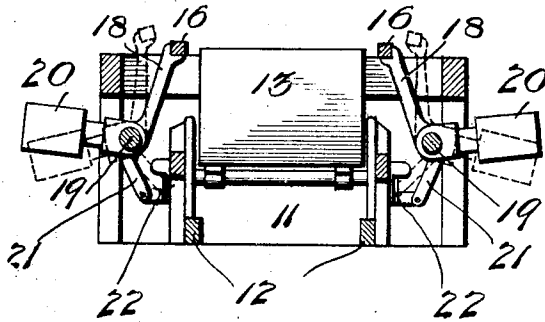


Fig. 6.

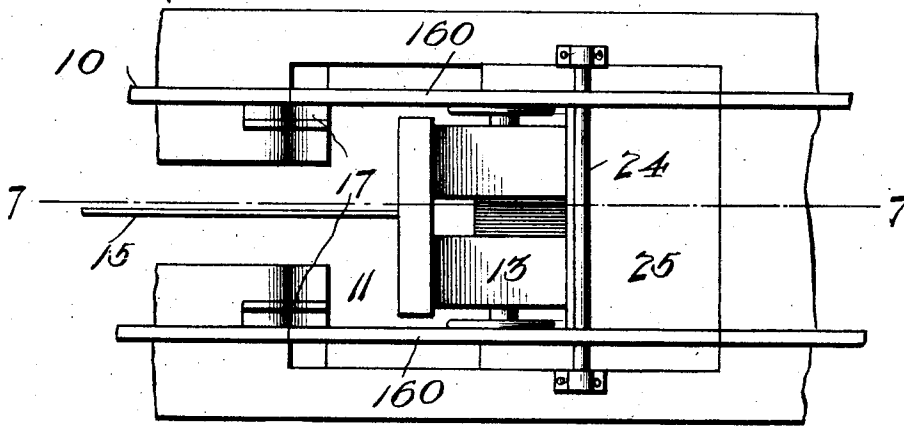
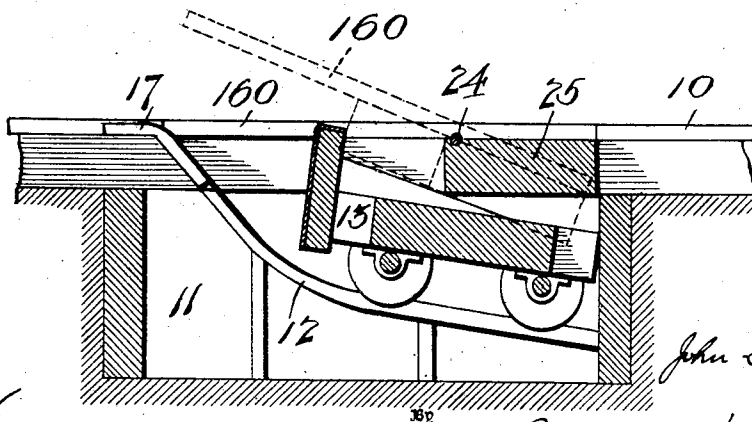


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

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MECHANISM FOR HAULING AND CONTROLLING CARS.

SPECIFICATION forming part of Letters Patent No. 784,898, dated March 14, 1905.

Application filed October 24, 1904. Serial No. 229,843.

To all whom it may concern:

Be it known that I, JOHN GOVAN SCOTT, a citizen of the United States, residing at Girardville, in the county of Schuylkill and State of Pennsylvania, have invented new and useful Improvements in Mechanism for Hauling and Controlling Cars, of which the following is a specification.

This invention relates to mechanism for propelling cars on an inclined railway, and has particular reference to that class of mechanism which involves the use of what is commonly termed a "barney."

Heretofore mechanism of this type used for propelling cars containing ore, coal, or other material up an inclined roadway has, so far as I am aware, employed two tracks of different gage, one for the cars and the other for the truck or pusher, (commonly termed a "barney," the latter being connected to the end of a rope or cable. This mechanism has been adopted to avoid the loss of time and trouble due to coupling the end of the rope or cable to the car itself; but in such type of mechanism the barney is adapted to descend into a pit, so as to carry it below the plane of the main track in order that the car may move over the barney to or from a point below or beyond the lowest point of travel of said barney. In all respects so far mentioned, excepting as to the number of tracks or rails used, my invention operates upon the same principle.

The particular object of my invention is to dispense with the necessity for a separate track for the barney, and to this end I adapt the barney to run upon the same track or rails as the car which contains the ore or coal or other material, and to attain this object I provide sections of the rails which practically form switches, which will be normally open when the barney is in use, and consequently out of the pit, but which will be positively closed by the descent of the barney into the pit, so as to leave the main track continuous for the car.

Other objects of the invention are to provide a simple and effective apparatus or mechanism of the character described and one which

is relatively inexpensive, all as will be more fully pointed out hereinafter.

Of the accompanying drawings, Figure 1 is a side elevation representing a preferred embodiment of my invention, the barney being in the act of pushing a car up a portion of an inclined railway. Fig. 2 represents a plan of the same. Fig. 3 is a view similar to Fig. 2, but showing the barney as having descended into the pit, leaving the sections of the rails which form the switches continuous with the main-track rails, the car itself being omitted in this figure. Fig. 4 represents a section on line 4 4 of Fig. 3. Fig. 5 is a section, somewhat enlarged, on line 5 5 of Fig. 3. Figs. 6 and 7 are detail plan and longitudinal sectional views, respectively, of a modified embodiment of the invention hereinafter described.

Similar reference characters indicate the same or similar parts throughout the several views.

The rails of the track are represented at 10, the drawings indicating only a short portion of the inclined road-bed and a short portion of a horizontal or level road-bed. Below the level or horizontal portion of the road-bed is formed a pit 11, which may be an excavation in the ground or may be a space inclosed within suitable trestle-work. The only essential feature of this portion of the structure is that rails or a trackway shall be formed in said pit or in said portion of the structure below the rails 10. Said rails or trackway are indicated conventionally at 12 and are merely to accommodate the barney when the latter moves into the pit.

The barney as a whole is represented at 13 and a car at 14. The latter may be of any ordinary or well-known construction, and the same is true of the barney, it being of course essential that the barney shall have a portion which is adapted to engage the buffer of the car, so that the former may be employed to push the latter up the inclined railway.

15 represents the cable or rope, which is connected to the barney and which of course extends under the car.

To permit the barney to ride or descend into the pit, although its wheels run on the same

rails as those for the wheels of the car, short sections of rail 16 are adapted to be displaced, and, in fact, are normally displaced out of alignment with the rails 10, the said sections 16 constituting switch-sections and being located over the end of the pit which receives the barney.

In the embodiment of the invention represented in Figs. 1 to 5, inclusive, the switch-sections swing bodily in a lateral direction between the positions indicated in Figs. 2 and 3. When in the position shown in Fig. 2, the barney is adapted to run from the rails 10 onto the rails 12, the hubs of the wheels of the barney clearing the switch-sections 16 on their movement into or from the pit. To permit the wheels of the barney to pass to or from the pit without shock or jar, short curved rail-sections 17 are provided slightly inside of the lower ends of the rails 10, the flanges instead of the treads of the wheels of the barney riding along these short curved rail-sections 17. This feature of the sections 17 is also employed in the form or embodiment illustrated in Figs. 6 and 7, which latter figures illustrate the said sections more clearly than the remaining figures.

The switch-sections 16 (shown in Figs. 1 to 5) are mounted on arms 18, connected with a rock-shaft 19 at each side of the pit, the rock-shafts 19 being provided with arms having counterweights 20, adapted to hold the sections 16 in the position shown in Figs. 1 and 2 and by dotted lines in Fig. 5 when the barney is out of the pit. Therefore the normal position of the two switch-sections 16 will be as represented in the said three figures; but I have provided means, as I shall now describe, whereby the descent of the barney into the pit will throw the switch-sections into alignment with the rails 10, as shown in Figs. 3 and 4. To this end each rock-shaft is formed with an arm 21 the end of which is connected to a lever 22, pivoted at 23, (see Fig. 1,) the inner sides of the levers 22 being smooth and adapted to be engaged by the outer sides of the wheels of the barney when the barney descends into the pit, so that the entrance of the barney between the two levers 22 will spread the latter or swing them outward away from each other, so that the said levers will act, through the arms 21, to swing the switch-sections 16 toward each other to the position shown in Figs. 3 and 5. It will therefore be understood that the entrance of the barney into the pit will positively close the switch-sections instantly, and thus leave the track clear and continuous for the passage of the coal or other car over the pit toward the right from the position shown in Fig. 1, and as long as the barney is in the pit the switch-sections will be positively held in position to form a continuous track for the car approaching the incline from the right in said figure.

Referring to Figs. 6 and 7, it is to be under-

stood that the trackway is or may be substantially the same as in the other figures, with the exception of the switch-sections, which I have indicated in said Figs. 6 and 7 as 160. In these figures the barney is or may also be the same as any well-known type, and the pit may be of any structure, either an excavation or formed by trestle-work; but instead of swinging the switch-sections laterally I swing them on a horizontal axis. In said Figs. 6 and 7 the pivot for the switch-sections 160 is indicated at 24, the portions of the rails forming these switch-sections being weighted, as at 25, so as to normally hold the switch-sections in the position indicated by the dotted lines in Fig. 7; but when the barney is in the pit, as shown in said figures, the weight 25 is engaged by a portion of the barney, so as to be pushed upward, thereby throwing the forward ends of the switch-sections down into the same plane as the plane of the rails 10, this position being indicated in Fig. 6 and shown by the full lines in Fig. 7. It will therefore be understood that in this form the switch-rails are positively closed by the descent of the barney into the pit and are retained in this position as long as the barney is in the pit, leaving the track continuous and free for the passage of the car in either direction.

It will be seen that my invention in either of the embodiments shown requires no extra or narrow-gage railway for the barney. Heretofore, so far as I am aware, it has always been the practice to provide a second pair of rails, usually forming a narrow-gage railway between the main rails for the entire length of track, along which the barney is employed to push a car or lower it down an incline. By my invention I entirely avoid the expense of such second or narrow-gage railway or track and still preserve the convenience of use of a barney, which permits a coal-car to move continuously or without a checking or stopping for separation from the barney. It will also be seen that by my invention I am enabled to mount the wheels of the barney in an ordinary and simple manner and avoid any occasion for providing for a movement of the wheels of the barney along their axles, a form of construction which has been heretofore attempted, so as to permit the wheels of the barney to shift toward or from each other to follow a special track formed therefor.

Having now described my invention, what I claim is—

1. In mechanism for hauling and controlling cars, a track comprising a single pair of rails for a car and a "barney," said rails being provided with switch-sections normally open when the "barney" is on the main track, and adapted to be positively closed by the movement of the "barney" into its pit.

2. In mechanism for hauling and controlling

cars, the combination with a single pair of rails, of a trackway for a "barney" below said rails, and movable switch-sections formed in the rails above the trackway for the "barney."

5 3. In mechanism for hauling and controlling cars, the combination with a single pair of rails, of a trackway for a "barney" below said rails, and movable switch-sections formed in the rails above the trackway for the "barney," short curved rail-sections of a different gage being located alongside of the ends of the rails adjacent to the trackway for the "barney" adapted to be engaged by the flanges of the wheels of the "barney."

75 4. The combination with the rails 10, of movable switch-sections, a depressed trackway for a "barney," and means whereby said switch-sections are positively closed by the "barney."

20 5. The combination with the rails 10 having an inclined portion and a substantially level portion, of a second pair of rails below the rails 10, and movable sections in the rails 10, said movable sections being adapted to automatically open when released, and to be positively closed when engaged by a "barney."

35 6. In mechanism of the character described, the combination with a main trackway, of a depressed trackway, portions of the rails of the main trackway above the depressed trackway being omitted to form spaces in the main trackway, movable rail-sections adapted to fill said spaces, and means for shifting said movable portions automatically.

7. The combination with the rails 10, of the depressed trackway 12, laterally-movable rail-sections 16, and means located below portions of the rails 10 for controlling the positions of the rail-sections 16.

40 8. The combination with the rails 10, of the depressed trackway 12, rock-shafts 19, rail-sections 16 supported by said rock-shafts, and means whereby said rock-shafts will be actuated by the movement of a "barney" on the trackway 12.

45 9. The combination with the rails 10, of the depressed trackway 12, rock-shafts 19 having arms 18 and provided with counterweights, rail-sections 16 carried by said arms 18, and means whereby the rock-shafts will be actuated by the movement of a "barney" on said trackway 12.

50 10. The combination with the rails 10, of the depressed trackway 12, rock-shafts 19 having arms 18 and arms 21 and provided with counterweights for moving the rock-shafts in one direction, rail-sections 16 carried by the arms 18, and levers 22 connected with the arms 21, said levers being adapted to be engaged by portions of a "barney" moving on the depressed trackway.

60 In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN GOVAN SCOTT.

Witnesses:

J. H. BABB,
ROBERT GREEN.