No. 766,956. PATENTED AUG. 9, 1904.

J. LENNON.

EXCAVATING APPARATUS.

APPLICATION FILED SEPT. 21, 1903.

NO MODEL. 3 SHEETS—SHEET 1.

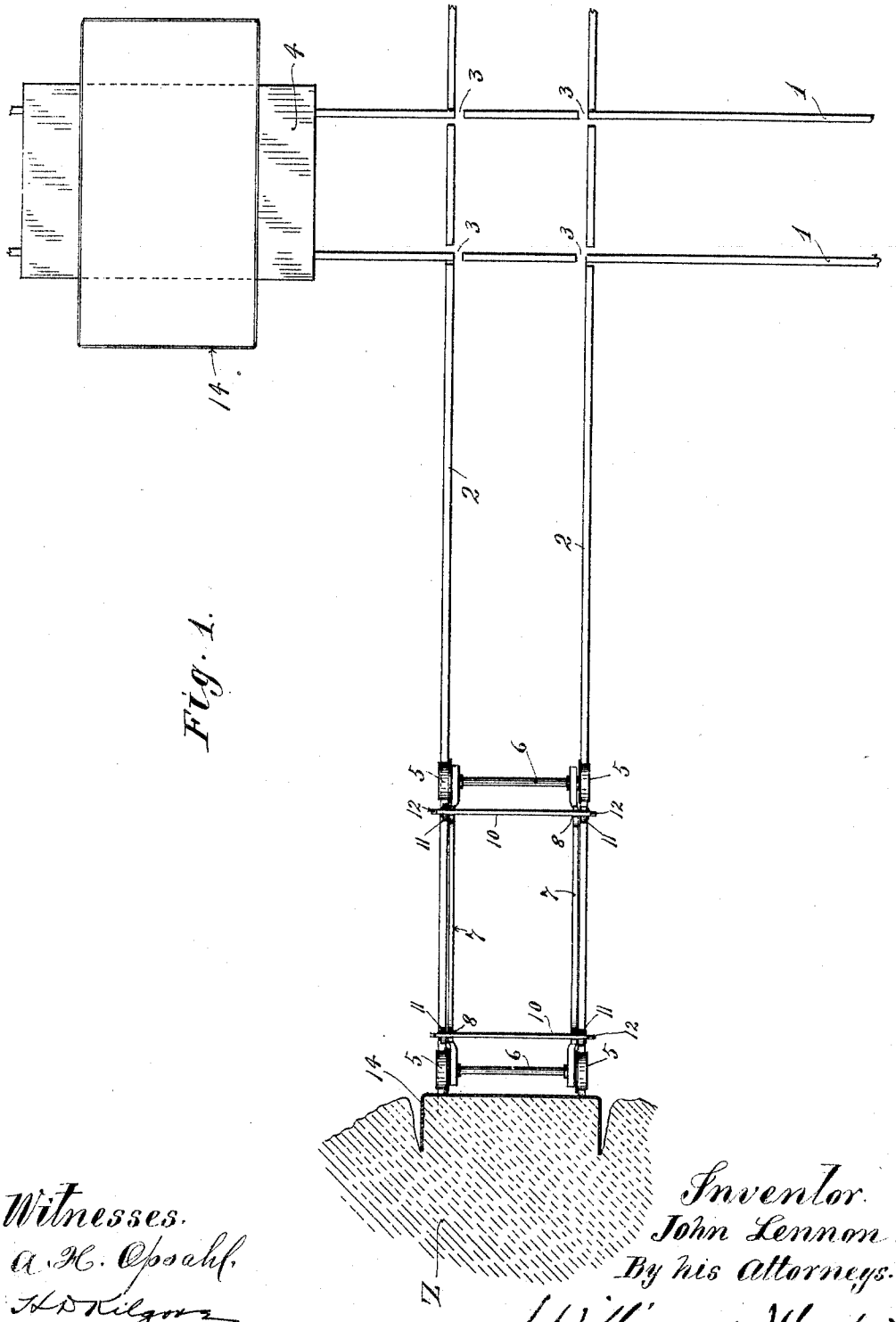


Fig. 1.

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By his Attorneys.
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NO MODEL. 3 SHEETS—SHEET 2.

Fig. 3

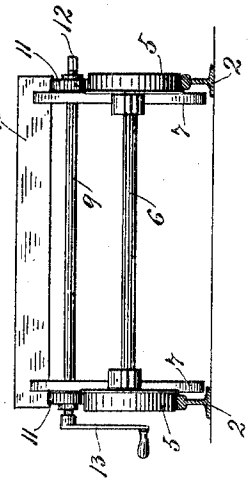


Fig. 2

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NO MODEL. 3 SHEETS—SHEET 3.

Fig. 5.

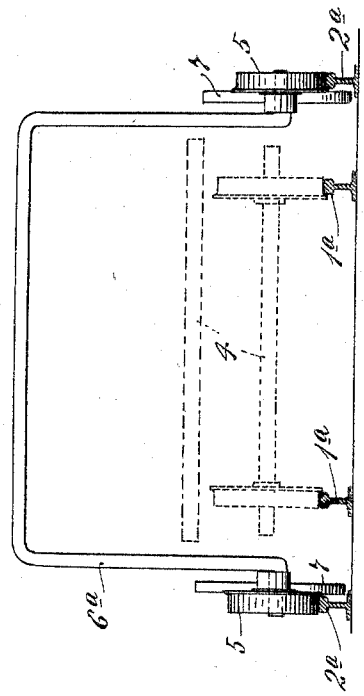
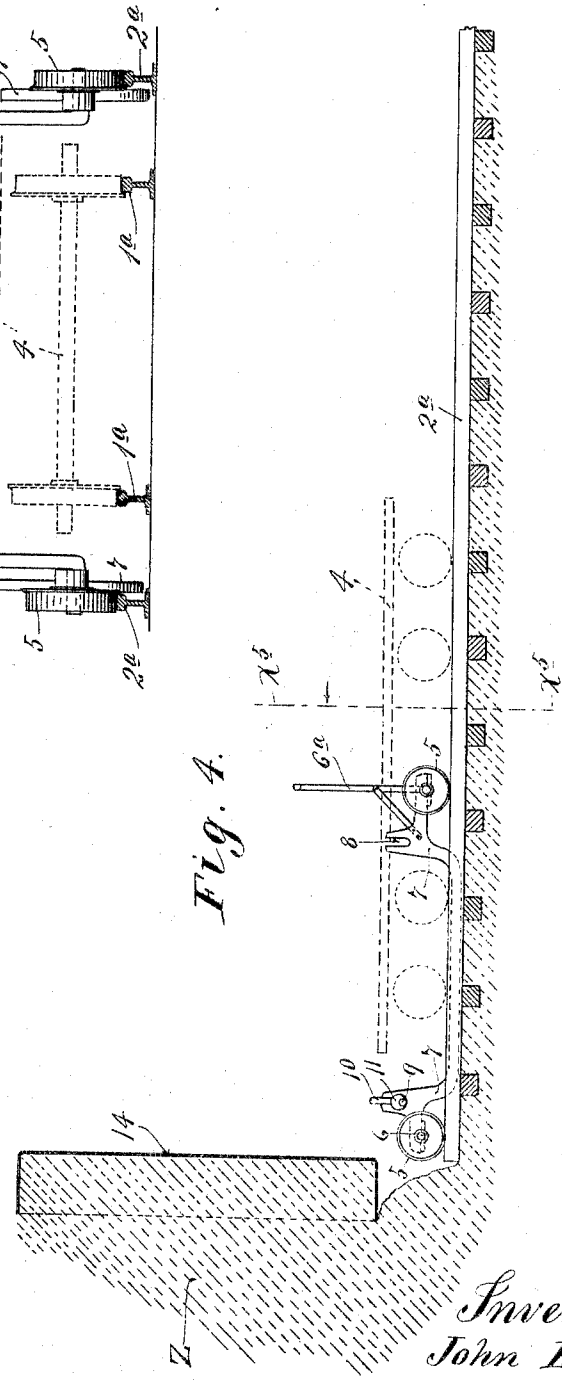


Fig. 4.



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No. 766,956. Patented August 9, 1904.

UNITED STATES PATENT OFFICE.

JOHN LENNON, OF MINNEAPOLIS, MINNESOTA.

EXCAVATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 766,956, dated August 9, 1904.

Application filed September 21, 1903. Serial No. 173,920. (No model.)

To all whom it may concern:

Be it known that I, JOHN LENNON, a citizen of Great Britain, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Excavating Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved excavating apparatus; and to this end it consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a plan view illustrating the apparatus. Fig. 2 is a view, partly in side elevation and partly in section, showing the apparatus illustrated in Fig. 1. Fig. 3 is a transverse vertical section on the line x^3 x^3 of Fig. 2. Fig. 4 is a view corresponding to Fig. 2, but illustrating a somewhat modified construction; and Fig. 5 is a transverse vertical section on the line x^5 x^5 of Fig. 4.

It may be here stated that this apparatus is especially intended for excavating railway-cuts and for rapidly carrying away the dirt from side hills or embankments located on or adjacent to the right of way or road-bed.

The character z indicates the embankment the same in all of the views, being shown in section. The numeral 1 indicates the rails of the main track, and in Figs. 1 to 3, inclusive, the numeral 2 indicates the rails of a transversely-extended track or branch. Where the two tracks cross each other, the rails are notched or separated at 3 to permit the free passage of the flanges of the truck or car wheels.

Mounted to run on the main track 1 is a truck or car 4 of ordinary or any suitable construction, the said car having flat top or supporting-body. Mounted to run on the track 2 is a truck made up of wheels 5, axles 6, and dropped or downwardly-bowed side frames 7. The side frames 7 near their ends, but inward of the truck-wheels, are provided with pronged bearings 8, in the crotches of which are mounted rock-shafts 9 and lifting-bars 10. The rock-shafts 9 are provided with eccentrics 11, upon which rest the ends of the lifting-bars 10. The ends of the rock-shafts 9 are squared or made angular, as shown at 12 in Fig. 3, for the application thereto of a crank-lever 13.

The numeral 14 indicates a box-like body, which is formed much like a wagon-box and is preferably provided on its botton with rest-lugs 15, which are adapted to rest upon the upper edges of lifting-bars 10 when the box is turned downward onto the same, as shown in Fig. 2. In said Fig. 2 the receiving-truck, which moves on the transverse track, is shown in two different positions by full lines; but it should be understood that but a single truck is employed and that it is moved from one position to the other, as will be hereinafter more fully described.

As the first step in the process of loading the car the face of the embankment is grooved vertically and undercut with a pick, so that the box 14 when turned in a vertical position may be applied to the bank and completely filled with dirt, as shown in Figs. 1 and 2. Then by driving stakes z' vertically into the bank just inward of the filled box a load of dirt may be broken off from the bank, and this being done the loaded box will drop onto the lifting-bars 10 of the transversely movable or receiving truck. Any suitable device may be employed for preventing the box, with its load of dirt, from dropping too suddenly or with too much force onto the receiving-truck. The truck, and its load of dirt z^2 contained in the box 14, is then moved outward, as shown at the right in Fig. 2, and is positioned so that the depressed portions of the side bars 7 will stand below the upper portions of the main rails 1, in which position the main-line truck 4 may be run in under the loaded box 14, as shown at the right in said Fig. 2. The gaps 3 in the rails 1 permit the depressed portions of the side bars 7 of the receiving-truck to pass through the said rails. As is evident, when the rock-shafts 9 are turned so as to

throw the ecentrics 11 upward they will raise the lifting-bars 10, and in this way the loaded box 14 is raised high enough to permit the main-line truck 4 to be run in under the said box. Then by giving the said rock-shaft 9 a half-rotation, thereby throwing the eccentrics 11 downward, the loaded box may be lowered onto the platform of the truck 4 and may be then carried by the said truck off from the transversely-movable receiving-truck. The said receiving-truck is then ready to be returned into position to receive another loaded box.

It will of course be understood that a great many transversely-extended rails 2 may be applied side by side, so as to deliver the receiving-truck at different points along the line, or instead of a large number of transverse rails 2 provision may be made for shifting the one pair of track-rails 2 laterally. Furthermore, the rails 2 will in practice be made up of short sections, so that they may be lengthened out from time to time as the embankment is cut away.

The receiving-truck illustrated in Figs. 4 and 5 is quite similar to that above described, but is designed for use in connection with a transmitting-truck, which is mounted for movements on track-rails that run parallel with the track-rails on which runs said receiving-truck. The rear axle 6^a of this modified receiving-truck is bowed upward, and the wheels of the said receiving-truck are spaced far apart, so as to permit the transmitting-truck 4 to be run under the loaded box carried by the said receiving-truck. In Figs. 4 and 5 the said transmitting-truck, which is indicated only by dotted lines, is mounted to run on the inner track-rails 1^a, while the wheels of the receiving-truck are mounted to run over outer rails 2^a.

The truck designed as shown in Figs 4 and 5 is especially adapted for making the first cut through the embankment, so that the main-line rails may be laid.

It will of course be understood that the apparatus illustrated in the drawings is capable of modification within the scope of my invention as herein set forth and claimed.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. An excavating apparatus comprising a receiving-truck and a transmitting-truck, said receiving-truck having means for supporting a load, and having its truck-frame constructed to permit said transmitting-truck to be run completely through the same, below the load, supported thereby, substantially as described.

2. The combination with intersecting rails having gaps or spaces at their intersections, of a receiving-truck movable on one pair of rails, and a transmitting-truck movable on the other pair of rails, said receiving-truck having depressed side bars which extend below the rails and pass through the gaps at the intersections of the rails, the said depressed side bars being of sufficient length to permit the transmitting-truck to be run transversely across the receiving-truck, and in under the load carried by said receiving-truck, substantially as described.

3. The combination with the line-rails 1 and branch rails 2 having gaps 3 at their intersections, of the transmitting-truck movable on the rails 1, the receiving-truck movable on the rails 2, the said receiving-truck having the depressed side bars 7, adapted to pass through the rail-gaps 3, and the lifting-bars 10 operated by eccentrics to lift the load, the said parts operating substantially as described.

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

JOHN LENNON.

Witnesses:

ELIZABETH H. KELIHER,

F. D. MERCHANT.