UNITED STATES PATENT OFFICE.

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APPARATUS FOR TRANSFERRING EARTH OR OTHER EXCAVATED MATERIAL.

1,165,234.


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To all whom it may concern:

Be it known that I, FRED S. EDINGER, a citizen of the United States, residing at Berkeley, in the county of Alameda and State of California, have invented certain new and useful Improvements in Apparatus for Transferring Earth and other Excavated Material, of which the following is a specification.

My invention relates to apparatus for excavating and removing earth and other material, and particularly to apparatus in which a transferring structure is used for receiving the material from an excavating machine and delivering it at a point too far distant for direct delivery by said machine. In apparatus of this kind, it is usual to employ some form of cantaliver structure with conveying means thereon, said structure extending from the range of delivery of the excavating machine to the point of destination of the material. This structure, which is mounted upon skids or a movable base to adapt it to travel along the work, is commonly either successively anchored to and released from any convenient or inconvenient fixed point, or it is supported on a wide base to give stability. In any case, it is moved along and brought to its proper position relatively to the excavating machine with which it is associated, entirely independently of said machine, and it is often difficult to find or to prepare a proper anchorage for it, and in case its movable base is a wide one, it is a loss in time and labor to prepare a berm or bench wide enough for said base.

It is the object of my invention to provide an organized apparatus or unit which will include both the excavating machine and the cantaliver transfer structure, said object being attained by anchoring the structure to the excavating machine, whereby the weight of the latter is utilized for this purpose, resulting, thus, in a convenient and perfectly available anchor and in a relatively narrow traveling base for the cantaliver structure and a corresponding narrow berm or bench for said base.

To this end my invention consists in the novel apparatus which I shall now fully describe by reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the apparatus. Fig. 2 is a plan of the same.

1 is an excavation. 2 is a berm or bench between the excavation and the toe of the slope 3 of the embankment or spoil bank 4 thrown up on the natural surface. In the excavation is an excavating machine 5. This may be of any character adapted for the purpose. For illustration, I show it, in a general way, as a steam-shovel, of which 6 is the A-frame, 7 the boom and 8 the dipper. This machine is movable as usual, being here shown as having wheels 10 running on tracks 11. On the berm 2 is a base 12 adapted to move in a path parallel with the path of the excavating machine 5. This base may be any movable structure or device, preferably a frame to move on skids 13, as I here show it. This movable frame or base 12 carries the cantaliver structure of the transferring part of the apparatus.

The cantaliver may be of any suitable construction, involving a transfer floor 14 projecting from a point or line within the radius or range of delivery of the excavator dipper to the point to which the material is to be transferred, in this instance the embankment 4, said floor carrying any suitable device or means for conveying the material received from the dipper and dumping it at its destination. These conveying means preferably comprise a car 15, operating on a track 16, as illustrated. The remainder of the cantaliver structure may be of various constructions, forms and arrangements to stiffen and brace it and to enable it to be properly balanced and to be anchored to the excavating machine 5. This anchorage provides for an organized assemblage or apparatus, self-contained as it were, and movable and operable as a whole. In the present case I show a simple form of cantaliver construction in which the transfer floor 14 is balanced over the base of an upright frame consisting of two bents 17 supported upon the movable base 12. Under a cross bar 18 of these bents pass the booms or gaffs 19, which are here shown as constituting an
A-frame, the base of which is secured to each side of the transfer floor 14 at 20, and the body of which projects, at an upward inclination, to a point above the excavating machine 5. Suitable rods or wire cables 21 unite the several parts of the cantilever structure, and said structure as a whole is anchored to the excavating machine 5 in suitable manner, as, for example, by the connection 22, which is here shown as an adjustable block and tackle arrangement in order to vary the inclination of the transfer floor 14, which variation may take place about the foot of the bent-frame 17 as a center, for which purpose said foot is preferably rounded, as I indicate at 23, to enable the whole cantilever structure to rock upon said foot, as the anchor tackle 22 is adjusted. This anchor connection 22 is here shown as extending from the free end of the gaff frame 19 down to the top of the A-frame 6 of the excavating machine 5.

By anchoring the cantilever-structure to the excavating machine, I utilize the weight of the latter for this purpose, thereby dispensing with any other specially provided anchorage fixed or movable, and I avoid the necessity of a very wide movable base on the berm of the slope, as is sometimes resorted to in order to support and balance the cantilever transfer-structure.

My invention as hereinabove described comprises an organized apparatus consisting of two co-acting and interconnected units, whereas in devices of this nature, as commonly constructed and used, the excavating machine is either entirely separate from the conveying apparatus, and is moved and anchored separately therefrom, or else the two are combined in one unit upon a common support, in which case the base is unwieldy and necessitates heavy and costly foundations or tracks. By my two unit construction, however, I secure the greatest flexibility of operation, and at the same time provide a simple and convenient means for anchoring the conveying apparatus, thus eliminating the necessity for an unduly large support therefor.

I claim:

1. An apparatus for the described purpose consisting of an excavating machine; a transfer floor extending from the range of delivery of the excavating machine to the point of destination of the material excavated; conveying means carried by said transfer floor adapted to receive the material from the excavating machine and to transport it to its discharge; a substantially upright frame for supporting said transfer floor; a movable base upon which said upright frame rests; a counter-balance gaff attached to said supporting frame and said transfer floor and extending in a direction opposite to the latter; and a connection anchoring said gaff to the excavating machine.

2. An apparatus for the described purpose consisting of an excavating machine; a transfer floor extending from the range of delivery of the excavating machine to the point of destination of the material excavated; conveying means carried by said transfer floor adapted to receive the material from the excavating machine and to transport it to its discharge; a substantially upright frame for supporting said transfer floor; a movable base upon which said upright frame is supported and fulcrumed; a counter-balance gaff attached to said supporting frame and said transfer floor and extending in a direction opposite to the latter; and an adjustable connection anchoring the free end of said gaff to the excavating machine, whereby said upright frame may be rocked to vary the inclination of the transfer floor.

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

FRED S. EDINGER.

Witnesses:
WM. F. BOOTH,
S. CONSTANCE.

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