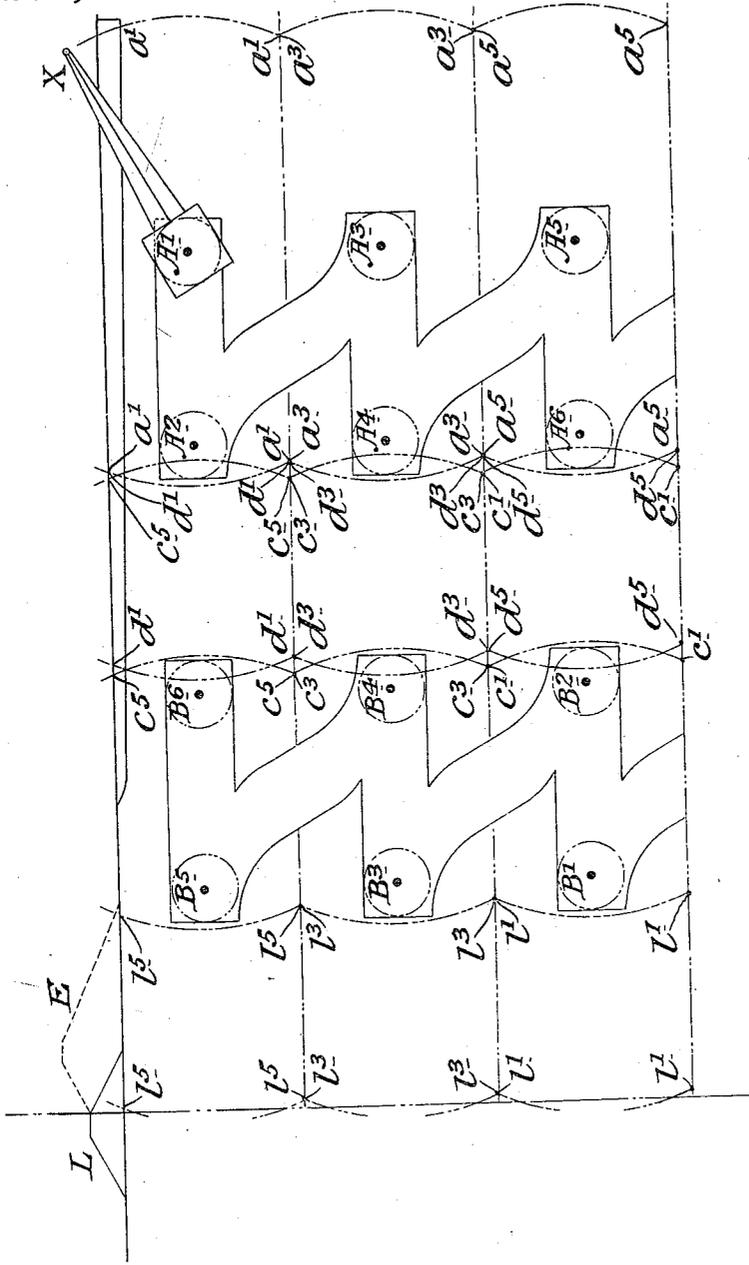


A. PERRILLIAT.
 METHOD OF BUILDING LEVEES AND EMBANKMENTS.
 APPLICATION FILED OCT. 14, 1915.

1,279,150.

Patented Sept. 17, 1918.



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METHOD OF BUILDING LEVEES AND EMBANKMENTS.

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Specification of Letters Patent. Patented Sept. 17, 1918.

Application filed October 14, 1915. Serial No. 55,779.

To all whom it may concern:

Be it known that I, ARSÈNE PERRILLIAT, a citizen of the United States, residing at New Orleans, Orleans parish, State of Louisiana, have invented certain new and useful Improvements in Methods of Building Levees and Embankments, the following being a full, clear, and exact disclosure of the one form of my invention which I at present deem preferable.

For a detailed description of the present form of my invention, reference may be had to the following specification and to the accompanying drawings, which illustrate my invention.

My invention relates to a method of building levees and embankments particularly designed for use in cases where the material for constructing the levee or embankment, or enlarging an old one, must be taken from an extremely wide and shallow borrow-pit by means of an excavator of the rotating derrick-boom type.

Referring to the drawing, I have indicated at the left of the figure a levee L which, in this particular illustration, is in the nature of a levee to be enlarged to the extent indicated at E and the material therefor must be excavated from a wide pit extending from the levee to the extreme right of the drawing.

I first station an excavator X of the aforesaid type at the point A¹ which is at a distance from the outer edge of the pit about equal to the radius of action of the machine. From this point A¹ the excavator is moved from time to time, first along a straight route toward the levee up to a point A²; then backward along a diagonal route to the point A³ and so on to the successive points A⁴, A⁵, A⁶, etc., as far as may be desired. This zig-zag path of travel of the excavator I have indicated by the parallel lines bounding the two sides of the path and showing the width of path required by the excavator. The distance between the centers of each of the straight parallel portions of the aforesaid route is equal to the horizontal reach of the excavator less one-half the width of the required trackway.

In the travel of the excavator from A¹ to A², it first excavates, while still at the station A¹, along the extreme right-hand edge of the borrow-pit area bounded by the four points a¹, a¹, a¹, a¹, and dumps the ma-

terial therefrom along the extreme right-hand edge of the dumping area bounded by the four points d¹, d¹, d¹, d¹. It then proceeds to excavate progressively from right to left within the said excavation area, leaving untouched however its diagonal track from A² toward A³, and dumps the material progressively from right to left over the said dumping area. When that has been completed the excavator is moved along the diagonal path from station A² to station A³. It then excavates from right to left over a second excavation area bounded by the four points a², a², a², a², leaving untouched however its own path toward station A⁵, and deposits the material progressively from right to left over the second dumping area bounded by the four points d², d², d², d². In addition it excavates its own path behind it which had been left while it was excavating in the first area. In like manner the machine is moved, next, to station A⁵ from which it is moved step by step to station A⁶ while it digs within the third excavation area bounded by the four points a⁵, a⁵, a⁵, a⁵ and deposits the material in the third dumping area d⁵, d⁵, d⁵, d⁵. This creates a temporary pile of material covering the several dumping areas. When this has been continued as far as desired, the excavator is moved across the lower end of the temporary pile to the station B¹ near the line to which the completed levee will reach. From this station B¹ the machine will excavate progressively, but in this case from left to right, over the area embraced by the four points c¹, c¹, c¹, c¹, including the third dumping area aforesaid and depositing the material on that part of the levee-extension between the four points b¹, b¹, b¹, b¹. It will be observed that the temporary dump aforesaid has been established on an area which is to be subsequently excavated and that part of the material which has to be twice handled includes only that from the farther part of the pit while its second handling occurs in connection with the excavation of the nearer part of the pit. The machine then proceeds with its operations and is gradually brought to station B²; respecting however its track ahead of it and digging up its track behind it. From B² the excavator is moved diagonally from B² to B³, where it begins to excavate, progressing from left to right,

the area within the points c^2, c^3, c^3, c^3 , including the dump d^2, d^3, d^3, d^3 and to deposit the same on the levee within the area l^2, l^3, l^3, l^3 , but leaving its trackway ahead
 5 and digging up its trackway behind. In like manner the final area c^5, c^5, c^5, c^5 , including the first dumping area aforesaid, is excavated and delivered on the area l^5, l^5, l^5, l^5 of the levee.

10 It will be now apparent that by this method a very wide and shallow borrow-pit may be utilized to build the levee, without resort to other apparatus than an ordinary excavator having a working radius of
 15 practicable length.

While I have described the operation as progressing from right to left, or from left to right, such description is only illustrative, since, in either case the progress
 20 may be in the opposite direction. The essential feature is that the excavation proceeds in a line transverse to the line of the levee or embankment, progressing either toward it or away from it, and from the
 25 end of one series of such transverse excavations the machine is moved to the beginning of the next series.

What I claim as new and desire to secure by Letters Patent is:

30 1. The method of building a levee or embankment, which consists in excavating progressively at a series of points, in a direction transverse to the line of the levee or embankment, the remoter portion of a borrow-pit; depositing, in a corresponding progressive
 35 manner, the material thus excavated at an intermediate point of the pit; then excavating at a series of points also in the said transverse direction and progressively, the nearer portion of said pit including the above mentioned material, and

finally depositing the material last excavated on the levee or embankment.

2. The method of building a levee or embankment, which consists in excavating progressively at a series of points, in a direction
 45 transverse to the line of the levee or embankment, the remoter portion of a borrow-pit; depositing the excavated material progressively on an intermediate unexcavated area of the pit and in a line parallel
 50 with the levee or embankment, then excavating at a series of points, also in the said transverse direction and progressively, the nearer portion of said pit including the material above mentioned, and finally depositing
 55 the material last excavated on the levee or embankment.

3. The method of building a levee or embankment, which consists in excavating in a series of succeeding arcs the remoter portion of a borrow-pit and depositing the material at an intermediate part of the pit; then excavating in a similar series of arcs
 60 the nearer portion of the pit and depositing the material on the levee or embankment.

4. The method of building a levee or embankment, which consists in excavating in a series of successive, non-concentric arcs the remoter portion of a borrow-pit and depositing the material on an intermediate
 70 part of the pit; repeating such excavation on a succeeding portion of the pit in a direction parallel with the levee or embankment; then excavating in a similar series of arcs the nearer portion of the pit, including the material previously excavated, and depositing the material on the levee or embankment.

In witness whereof I have hereunto set
 80 my hand, this fourth day of October, 1915.

ARSÈNE PERRILLIAT.