

No. 830,851.

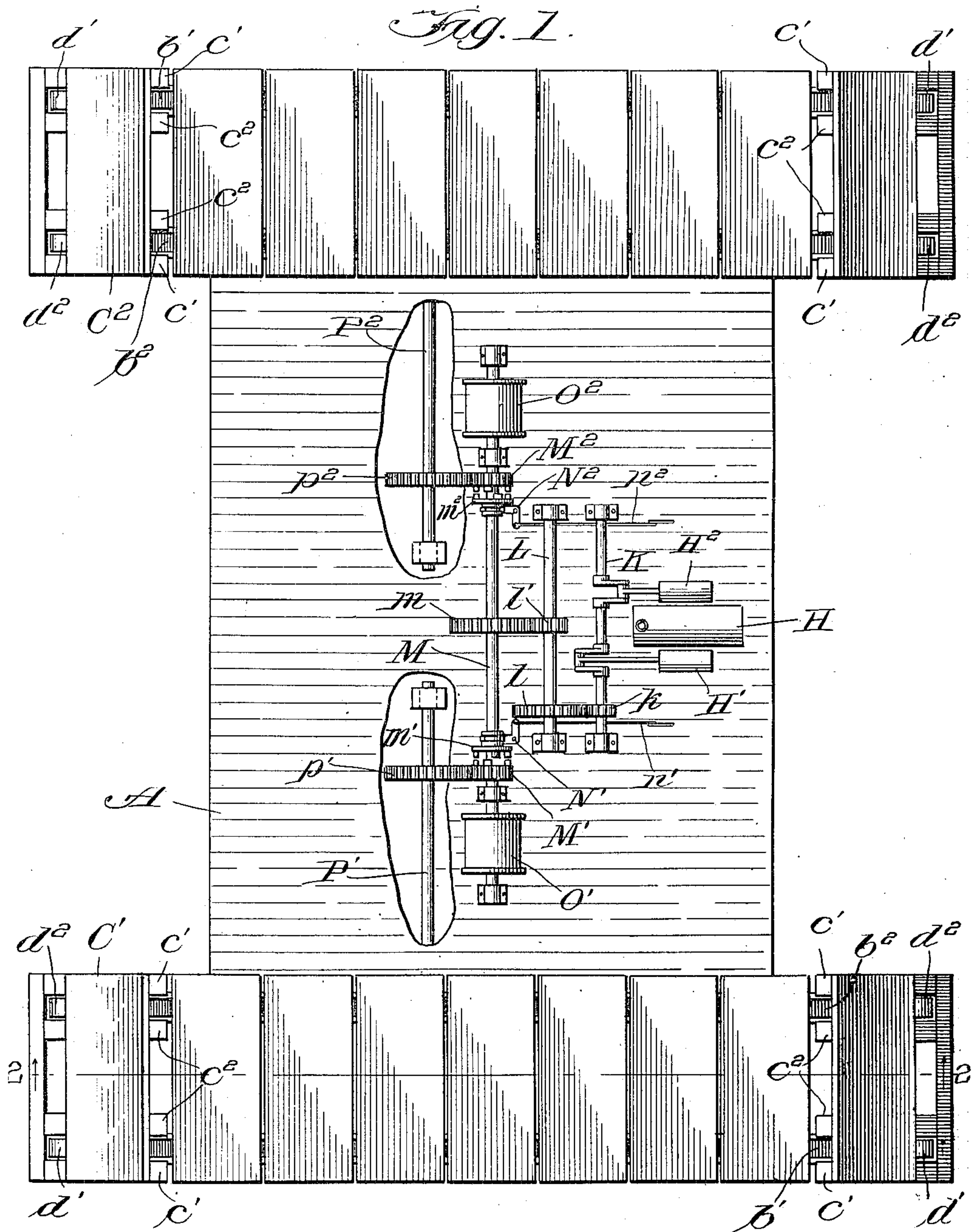
PATENTED SEPT. 11, 1906.

E. O. ROOD.

PORTABLE SELF TRACK LAYING APPARATUS.

APPLICATION FILED MAY 25, 1905.

2 SHEETS—SHEET 1.



Witnesses:

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Inventor:

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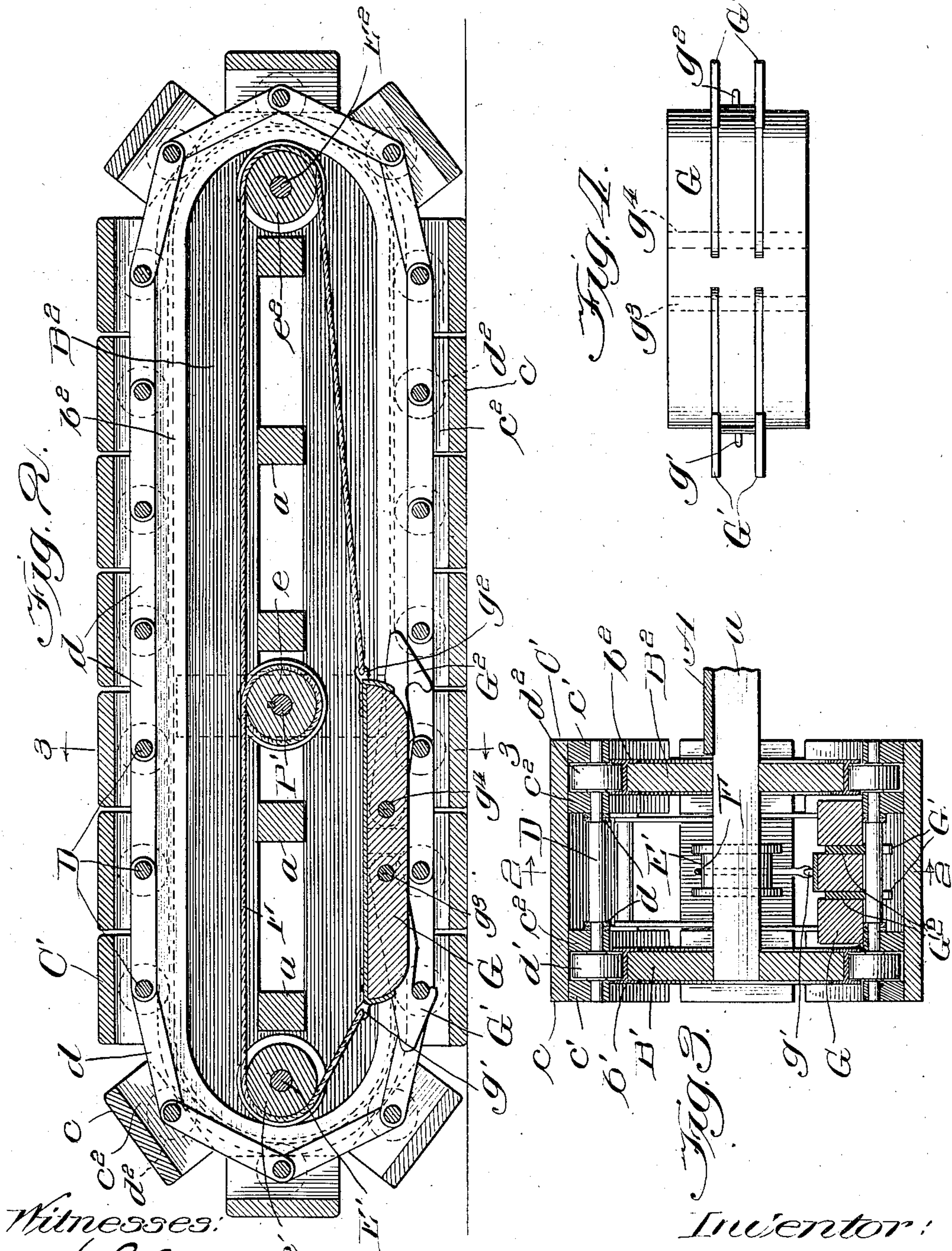
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UNITED STATES PATENT OFFICE.

EDWIN O. ROOD, OF BRITT, IOWA, ASSIGNOR TO THE INTERSTATE DRAINAGE & INVESTMENT COMPANY, OF BRITT, IOWA, A CORPORATION OF IOWA.

PORTABLE SELF-TRACK-LAYING APPARATUS.

No. 830,851.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed May 25, 1905. Serial No. 262,139.

To all whom it may concern:

Be it known that I, EDWIN O. ROOD, a citizen of the United States, residing at Britt, county of Hancock, State of Iowa, have
5 invented a certain new and useful Improvement in Portable Self-Track-Laying Apparatus; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the
10 art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates in general to self-propelled apparatus, and more particularly to
15 mechanism for automatically laying a track and coincidentally moving the apparatus over the same.

In the operation of excavating and ditch-
20 ing apparatus as heretofore constructed it is necessary to lay a track over which the apparatus is propelled as the work of digging progresses.

The primary object of my invention is to
25 provide a portable apparatus which will not require the laying of a track preparatory to moving the apparatus, but which will automatically lay its own track as it travels along.

A further object of my invention is to provide a self-propelling excavating apparatus
30 the supporting structure of which will travel along an endless track carried by the apparatus.

A still further object of my invention is to
35 provide an apparatus of the character described which will be simple in construction, inexpensive in manufacture, and efficient in use.

The embodiment of my invention herein
40 disclosed may be generally described as comprising a platform upon which is mounted the machinery for performing the work of the apparatus and also for propelling the same, side
45 frames upon which the platform is supported, endless tracks surrounding and supporting the side frames over which the side frames are propelled, an anchor adapted to be detachably secured to each track adjacent to
50 the forward end thereof, a drum carried by each side frame, a flexible connection extending from each anchor to the drum of the corresponding side frame, and means for rotating said drums to wind thereon the flexible

connections leading from the anchors, and thereby move the said frames relatively to
55 their supporting-tracks.

My invention will be more fully described hereinafter with reference to the accompanying drawings, in which the same is illustrated
60 as embodied in a convenient and practical form, and in which—

Figure 1 is a plan view; Fig. 2, a sectional view on line 2 2, Fig. 1; Fig. 3, a cross-sectional view on line 3 3, Fig. 2; and Fig. 4 a
65 plan view of the under side of the anchor.

The same reference characters are used to designate the same parts in the several figures of the drawings.

Reference-letter A indicates a platform upon which is supported the mechanism for
70 performing the work of the apparatus and also for propelling the same. The platform is supported upon horizontal beams *a*, the ends of the latter being secured to side frames around which extend flexible endless tracks.
75

C' and *C*² indicate the endless tracks around the side frames, which are of similar construction.

Each side frame is composed of parallel sections *B'* and *B*², the ends of which are
80 curved and around which extend I-beams *b'* and *b*². The ends of the beams *a*, which support the platform A, preferably extend through both sections of each side frame, as indicated in Fig. 3, thereby rigidly securing the side
85 frames in the desired relation with respect to each other. The endless track, which surrounds each of the side frames, is composed of a plurality of transverse sections *c*, pivotally connected together. Each section of
90 the track is provided with an axle D, the ends of which are supported in brackets *c'* *c'*, projecting from the ends of the section. Brackets *c*² *c*² also project from each section of the track and are spaced apart from the brackets
95 *c'* *c'* a distance to receive rollers *d'* and *d*², which are supported upon each axle D. The rollers *d'* and *d*² engage within the flanges of the I-beams *b'* and *b*², so as to be guided around the peripheries of the sections *B'* and *B*²
100 of the respective side frames. The axles D of adjacent sections *c* of each track are connected by links *d* *d*, located near the inner brackets *c*² *c*².

G indicates a block to which are pivotally
105 secured oppositely-projecting pairs of hooks

G' and G². The inner ends of the hooks are pivoted upon rods g^3 and g^4 , extending transversely with respect to the block G. The hooks are of a size and shape to surround the axles D of the sections of the track. A flexible connection, such as a cable F, extending from a bracket g^2 , fixed to one end of the block G, passes around a guide-pulley e^2 , supported upon an axle E², the ends of which are secured to the sections B' and B². The cable F extends from the pulley e^2 to a drum e , around which it is wound a number of times, and thence extends around a pulley e' , supported upon an axle E', the latter being secured at its ends to the sections B' and B². The cable after passing around the pulley e' is secured to a bracket g' , fixed to the opposite end of the block G to that at which the bracket g^2 is located.

The drums e in the respective side frames of the apparatus may be simultaneously rotated in either direction by any suitable mechanism, the engine for performing the work of the apparatus being, however, preferably also utilized for rotating the drums.

Referring more particularly to Fig. 1, H indicates a boiler for supplying steam to a pair of engines H' and H². The engines are connected to an engine-shaft K, on which is fixed a pinion k , meshing with a gear l , fixed upon a counter-shaft L. A pinion l' is fixed upon the counter-shaft and meshes with a gear m , fixed upon a shaft M. The shaft M is primarily for performing the work of the apparatus, and for such purpose drums O' and O² are fixed thereon, which serve as hoisting-drums when the apparatus is for use in excavating or digging ditches. Loosely mounted upon the shaft M are pinions M' and M², which mesh with the gears p' and p^2 , the latter being fixed upon the respective shafts P' and P². To the shafts P' and P² are fixed the driving-drums e , journaled within the respective side frames of the apparatus. In order that either one or both of the drums e may be rotated, suitable clutch mechanism is provided for locking either or both of the pinions M' and M² to the shaft M. Such clutch mechanism is indicated by m' and m^2 and consists of clutches splined upon the shaft M. In order to move the clutches into and out of engagement with cooperating clutches fixed to the pinions M' and M², yokes N' and N² are provided, from which extend cooperating rods n' and n^2 , so that the engineer or operator may at will connect either or both of the drums e to the driving mechanism.

The operation of my invention is as follows: When it is desired to propel the apparatus toward the left in Figs. 1 and 2, the anchor, consisting of the block G and hooks pivoted thereto, is located in the position shown in Fig. 2, with the pair of hooks G' in engagement with the axle of the first section c of the track, which rests upon the ground. When

it is desired to propel the apparatus straight ahead, the anchors within both side frames are located in the position described. The pinions M' and M² are then clutched to the shaft M and the engine driven in a direction to rotate the drums e to wind the cables F thereon as the cables pass from the pulleys e^2 . The engagement of the cable F around the pulley e^2 causes the latter, and with it the supporting side frame of the apparatus, to be drawn toward the anchor, thereby moving the apparatus toward the left. As the apparatus moves the sections of track at the left successively rest upon the ground and support the side frame as it moves along. When the apparatus has been moved such a distance that the pulleys e^2 in the side frames have approached nearly to the adjacent ends of the anchors, the engines are stopped and the anchors moved forward relatively to the corresponding tracks and the hooks thereon engaged with the axles of the first sections of the track at the left, which rest upon the ground. The engines are again started and the side frames of the apparatus again moved over the endless tracks surrounding the same. When it is desired to propel the apparatus in an opposite direction, the hooks G² are engaged with the axles of the first sections at the right, which rest upon the ground, and the direction of the engine is reversed. It is obvious that the apparatus may be propelled in a curved path when desired by merely rotating the drum of one of the side sections. My improved apparatus may also be operated with a less degree of efficiency by fastening the cable attached to the winding-drum to the upper instead of the lower sections of the track and drawing the section so attached toward the drum, and with it the following sections, until it is nearly opposite the drum, when the cable is detached from such section and attached to the rear section, when the operation is repeated. In such operation of my apparatus the cable is attached to the rear upper section of track and as it is drawn toward the drum, and the engagement of the track with the curved ends of the sections of the side frame forces the frame over the sections of track as they are successively laid upon the ground. In this operation of my apparatus it is obvious that the guide-pulleys e' and e^2 need not be used.

From the foregoing description it will be observed that I have invented an improved self-propelled apparatus which lays its own track as it travels along, thereby obviating the necessity of supporting tracks being laid in advance of the apparatus preparatory to propelling the same.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a portable apparatus, of a flexible track upon which the appa-

ratus is supported, of an anchor adapted to be secured to said track, a connection leading from said anchor to a point on said apparatus, and power means operatively engaging said connection for moving said apparatus relatively to said track in either direction.

2. The combination with a portable apparatus, of a flexible track carried by and supporting said apparatus, a drum carried by said apparatus, a flexible connection operatively connected to said drum, an anchor to which said flexible connection is secured, adapted to be detachably connected to said track, and means for rotating said drum in either direction to wind said connection thereon and thereby move said apparatus relatively to said track in the desired direction.

3. The combination with a portable apparatus, of a flexible track carried by and supporting said apparatus, a guide-pulley located near each end of said apparatus, a drum journaled on said apparatus, means for

rotating said drum in either direction, a cable passing around said pulleys and engaging said drum, and means for securing said cable to said track at points intermediate between said pulleys.

4. The combination with a portable apparatus, of a flexible track carried by and supporting said apparatus, a drum carried by said apparatus, guide-pulleys located near the ends of said apparatus, an anchor adapted to be detachably secured to said track, a cable secured at its ends to the opposite sides of said anchor, thence passing around said pulleys and operatively engaging said drum, and means for rotating said drum in either direction.

In testimony whereof I sign this specification in the presence of two witnesses.

EDWIN O. ROOD.

Witnesses:

JOHN HAMMILL,
W. L. BLISS.