Oct. 14, 1941. C. McL. CAMERON ET AL 2,259,200

TRACTION OR PROPULSION MECHANISM OF THE WALKING TYPE

Filed Feb. 21, 1940

FIG. 1.

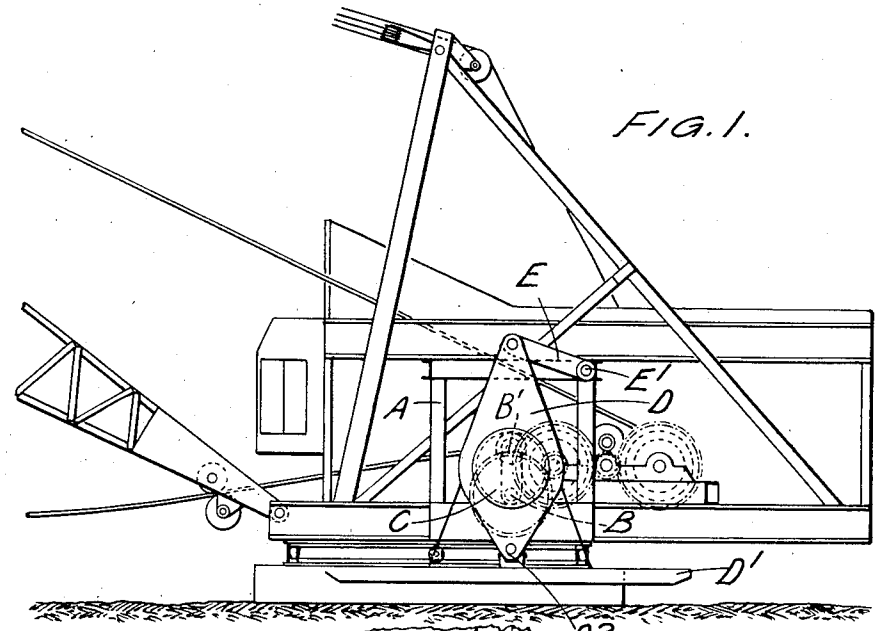



FIG. 2.

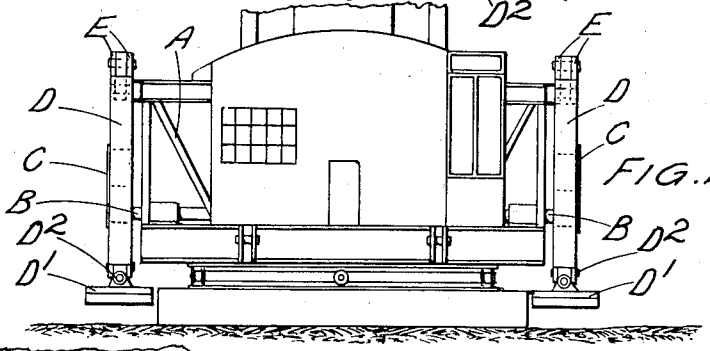
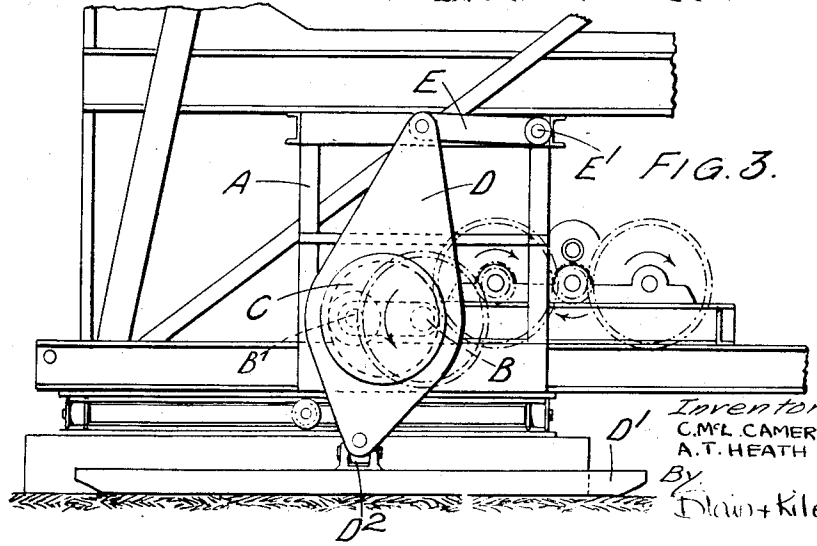



FIG. 3.

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Patented Oct. 14, 1941

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# UNITED STATES PATENT OFFICE

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## TRACTION OR PROPULSION MECHANISM OF THE WALKING TYPE

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Application February 21, 1940, Serial No. 320,223
In Great Britain March 3, 1939

1 Claim. (Cl. 180—8)

This invention relates to traction or propulsion mechanism of the walking type (hereinafter termed walking mechanism), that is to say of the type comprising ground-engaging members in the form of "feet" to each of which is imparted a combined longitudinal and vertical movement such that the apparatus on which the mechanism is used and which is normally termed a walking machine is raised from the ground by downward movement of the feet, caused to travel by longitudinal movement of the feet, and then lowered to the ground again by the upward movement of the feet.

In such mechanism each foot is carried by a member to which movement is imparted by a power-driven rotating eccentric or crank and various proposals have been made for transmitting motion from each eccentric or crank to its associated foot.

The present invention has for its object to provide improved walking mechanism of the above general type.

The invention may be carried into practice in various ways but one construction according to the invention is illustrated somewhat diagrammatically by way of example in the accompanying drawing, in which—

Figure 1 is a side elevation,

Figure 2 is a rear elevation, and

Figure 3 is a side elevation on an enlarged scale of part of the construction shown in Figure 1 showing the apparatus in a slightly different position.

In the construction illustrated the machine comprises a main frame designated generally A from each side of which projects the end of a power-driven shaft B to which is connected a crank B to $B^1$, eccentric or the equivalent indicated generally at C. This eccentric or the equivalent crank B—$B^1$ may be of the kind forming the subject of the present applicants United States of America patent application Serial No. 320,222 filed February 21, 1940 and engages a circular track formed at an intermediate point in the length of an approximately vertical lever D as clearly shown in Figs. 1 and 3. As shown, the lever D has comparatively small length in relation to its width.

Pivotally connected, preferably by a universal coupling, to the lower end of each lever D is a "foot" $D^1$, the coupling comprising for example a member $D^2$ connected to the lever D by a pivot extending parallel to the axis of rotation of the shaft B and to the foot $D^1$ by a pivot extending parallel to the direction of travel of the machine.

Pivotally connected to the upper end of the lever D is one end of a link E extending in an approximately horizontal direction when in its mean position and pivotally connected at its other end at $E^1$ to a fixed part of the machine.

The dimensions of the various parts may vary but in one example in which the distance between the axis of the bearing or track engaged by the eccentric C and the point at which the foot $D^1$ is pivoted to the lever D is between three and three-and-a-half times the distance between the axis of rotation of the shaft B and the axis of the bearing or track engaged by the eccentric C, the length of the link E may be approximately three times the distance between the axis of rotation of the shaft B and the axis of the bearing or track engaged by the spider C.

The manner in which the eccentrics or their equivalent C are supported and driven may vary but in a convenient arrangement they may be supported and driven by apparatus of the kind forming the subject of the present applicants' copending United States of America patent application Serial No. 320,222 filed February 21, 1940.

It is to be understood that the construction more particularly described above is given by way of example only and that the form of the eccentric, crank or its equivalent for imparting movement to the lever D, the manner in which the eccentric, crank or its equivalent is driven and supported and other details of construction may be modified considerably according to requirements without departing from this invention.

What we claim as our invention and desire to secure by Letters Patent is:

A walking machine including, in combination, two "feet," an approximately vertical lever associated with each foot and to the lower end of which the foot is pivotally connected, a power-driven rotary crank-like operating member acting on the central part of said lever, and a link pivotally connected at one end to substantially the upper end of said member and at its other end to a fixed part of the machine and extending in a substantially horizontal direction and which link when in its mean position has a substantially horizontal component.

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