(12) **United States Patent**
Burnell

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(54) **INCLINED PLANES FORLOCOMOTIVE ENGINE**

(76) Inventor: **Levi Burnell**

Levi Bunnell

The schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Levi Bunnell himself of his improvement in the Machine for propelling Boats on Canals and Shoal Waters.

To all to Whom these presents Shall come

Be it known that I Levi Bunnell of Elyria in the County of Lorain and State of Ohio have invented a new and useful improvement in a machine for propelling boats on Canals and shoal water and that the following is a full and exact description of the construction and operation of said machine as invented by me. A sun wheel A. eight or nine feet in diameter, from two to three inches thick formed into notches on the periphery and if necessary shod with iron, has its axis long upon bearings a, at the end of a substantial bar B. about ten feet long, said bar at the wheel end being so divided as to straddle each side of said wheel. The opposite end of said bar has also a shaft b. passing through it with cranks c. at right angles on opposite sides of said bar, from these cranks to other cranks d. corresponding therewith on opposite sides of the wheel A. fair connecting rods, so that the revolving of the shafts b. at the end of the bar B. opposite will cause the wheel A to revolve. The wheel A. is intended to traverse the canal exciting the water in its path, and if sufficient weight is not loaded so to take hold upon the bottom of the canal and rising only sufficiently freely accommodates the wheel to the bottom, be it ever so uneven. The whole being sus- Ed. H. tained by suitable bearers d. d. under e. forms a simple & effectual sufficient propeller adaptable to crafts of any size in shoal water and may be used separately or in connection with ordinary paddle wheel steamers. Witnesses Levi Bunnell

Eleazer Kay

G. N. Hawley

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L. Burnell.

Inclined Railroad.

Patented Jun. 26, 1834.

