B. Douglas.

Chain Propeller.

No. 3,285. Patented Sep. 28, 1843.

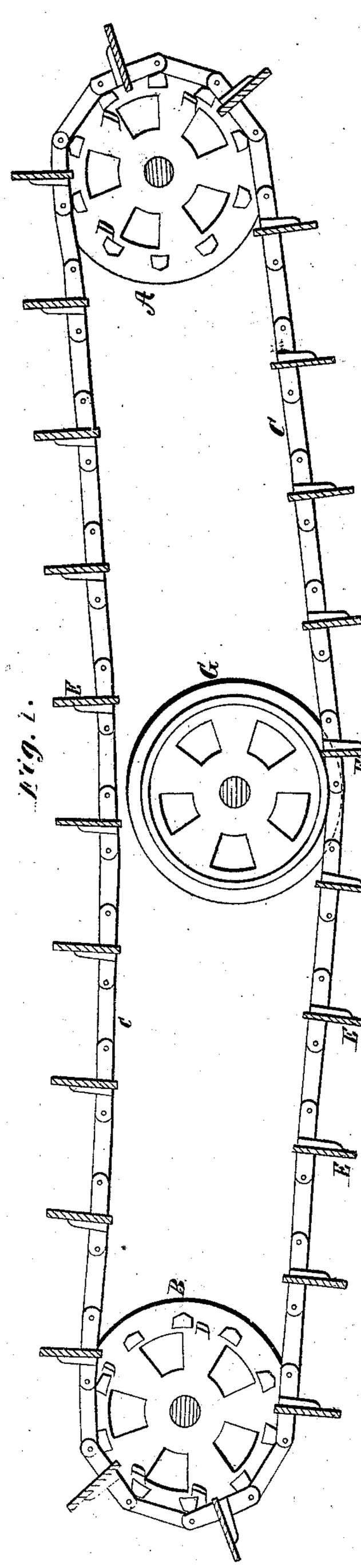

Fig. 1.

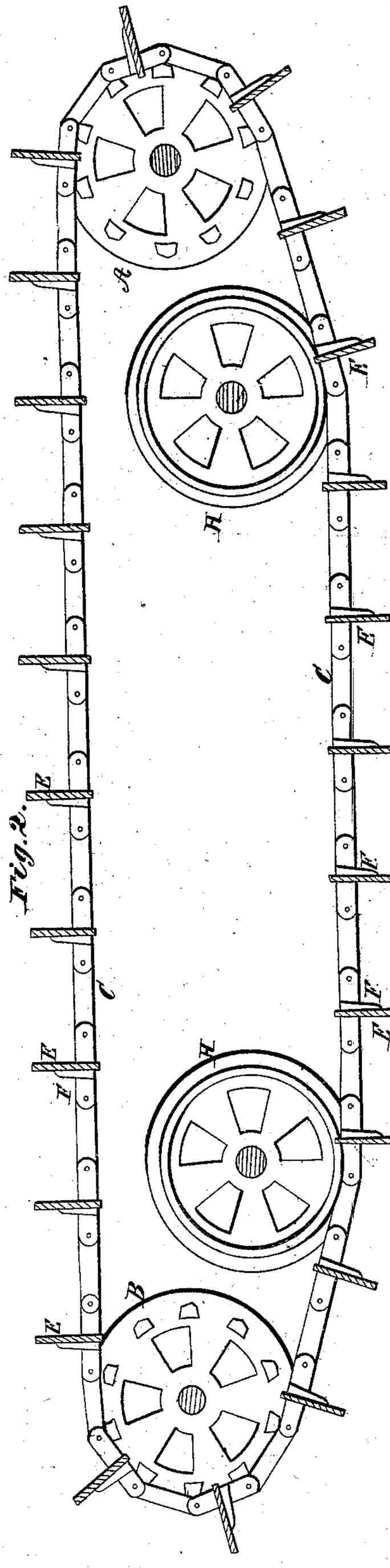

Fig. 2.

UNITED STATES PATENT OFFICE.

BERIAH DOUGLAS, OF ALBANY, NEW YORK.

IMPROVEMENT IN ENDLESS-CHAIN PADDLES FOR PROPELLING.

Specification forming part of Letters Patent No. **3,285**, dated September 28, 1843.

To all whom it may concern:

Be it known that I, BERIAH DOUGLAS, of the city and county of Albany, and State of New York, have invented a new and useful Improvement in the Means and Manner of Operating the Endless-Chain Paddles for Propelling Purposes, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a vertical longitudinal section of the machine. Fig. 2 is a vertical longitudinal section of a modification of the same.

Similar letters refer to corresponding parts.

For propelling a steamboat of a medium size I place two pairs of wheels A B seventy-five or eighty feet apart, each wheel being eight feet in diameter, the peripheries of which are adapted to the links of the chains C, which links are straight bars of iron or other strong metal, two feet long.

The chains C are extended around both pairs of wheels A B, like two parallel bands resting on cogs or pins D, projecting from the inner sides of the wheels. A paddle E, eight feet in length, is fastened on every second link of both chains and at right angles thereto to projecting arms F, which are vertical when the chains are horizontal.

A third pair of wheels G, similar in form to the railroad-car wheel, is placed midway between the wheels A B to depress the paddles E into the water at that point from which they slightly incline to the surface under the distant wheels A B and make their revolutions without wasting the motive power at their entrance and exit.

Four pairs of wheels, as represented at Fig. 2, also operate well, one pair H being placed near each of the wheels A and B, so as to run the paddles into and out of the water on inclined planes, but mainly through it on a long level in a vertical position.

The flanges of the wheels serve as guides to the chains. The whole range is operated by the shaft of one pair of the extreme wheels. The other wheels can be raised or depressed, according to the draft of water, by any desired means. There being twice as many links to each chain as there are paddles causes them to run steadier, to be more pliant, and less liable to injuries by floating ice and other impediments.

This machine will also answer to operate machinery by being located in a water-fall or rapid stream.

I am aware that endless-chain paddles have been so arranged as to cause the paddles to leave the water on an inclined plane to avoid the usual wasting of power, this being effected by two drums of different diameters, and therefore it will be understood that I do not claim this as of my invention; but, as I am enabled by my arrangement to cause the paddles to enter as well as leave the water on an inclined plane,

I claim as my invention—

The method of effecting this by having the chains pass around three or more drums, the inner drum or drums being ranged lower than the end drums or wheels, in the manner described.

BERIAH DOUGLAS.

Witnesses:

W. A. HAMILTON,
J. S. VAN VOURST.