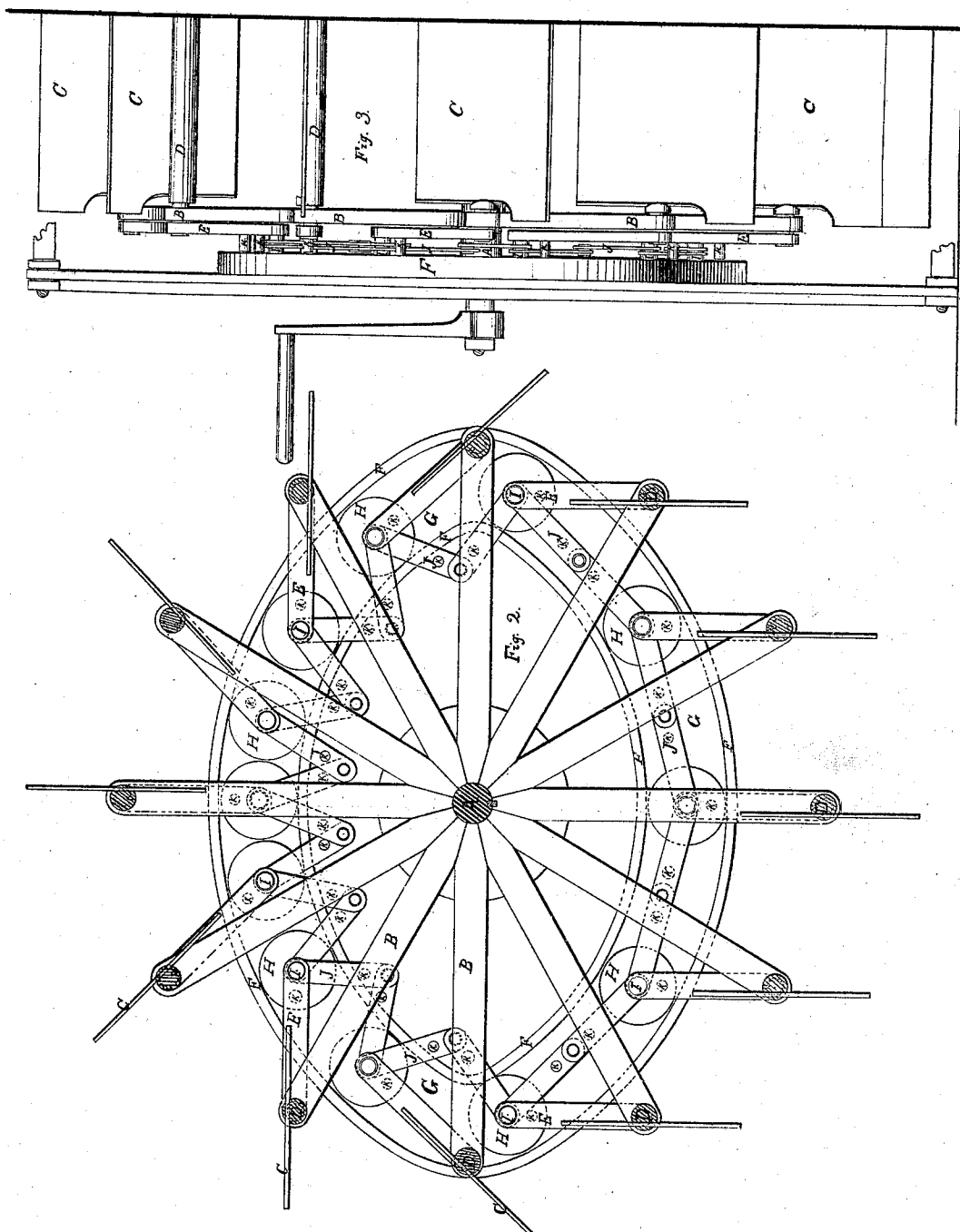


Sheet 1. 2. Sheets.

Comstock & Glidden. Paddle Wheel.

N^o. 1,178.
32,182.

Patented Apr. 30, 1861.



Witnesses
R. D. Thompson
A. J. Everett

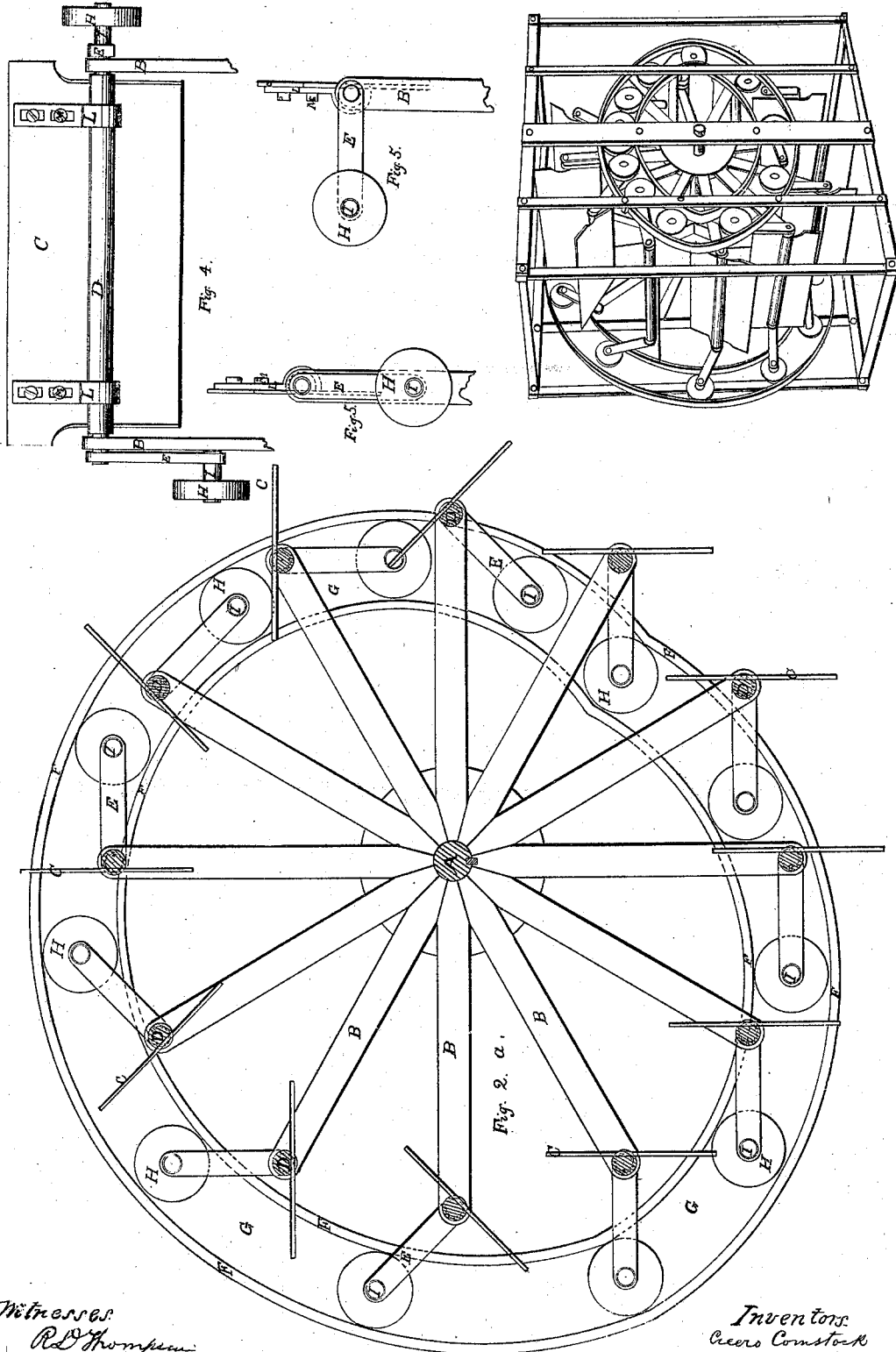
Inventors
Oscar Comstock
Charles Glidden

By Wm. Thos. T. Everett

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UNITED STATES PATENT OFFICE.

CICERO COMSTOCK AND CARLOS GLIDDEN, OF MILWAUKEE, WISCONSIN.

PROPELLING-WHEEL.

Specification of Letters Patent No. 32,182, dated April 30, 1861.

To all whom it may concern:

Be it known that we, CICERO COMSTOCK and CARLOS GLIDDEN, of the city of Milwaukee, in the State of Wisconsin, have invented certain new and useful Improvements in Propelling-Wheels; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters and marks thereon.

Our invention relates to that class of propelling wheels usually denominated "feathering wheels," and the improvement made by us has reference to the means for giving motion to the paddles and for steadying and guiding them while in operation.

Of the drawings forming part of this specification Figure 1 is a photographic perspective view of wheel. Fig. 2 shows the side view of the wheel, the main shaft the arms, the cam, and the cam groove, the levers and friction wheels, the guard or safety chain, the guide lugs the journals on which the friction wheels revolve, the paddle and paddle shafts, also the form and position of the cam, when the levers of a certain length are on a line with the face of paddles. Fig. 2^a shows the side view of wheel, the main shaft &c. as above mentioned, the form and position of the cam, when the levers of a certain length are at right angles with the face of paddles, either or both cams giving the same position to the paddles. Fig. 3 shows the end view of wheel, the face of paddles the paddle shaft and the edge of the guard or safety chain; Fig. 4, view of paddle, shaft, bracket lever and friction wheels; Fig. 5 side view of friction wheels and levers.

A is the main shaft; B radiating arms; C rotating paddles; D paddle shafts; E levers attached to paddle shafts, and may be placed on a direct line with the face of the paddles, or at any angle desired, or two levers on each paddle shaft at the same or different angles, and the length of the lever or levers, and its or their position or angle, with the face of the paddles, and the desired position of the paddles, governs the size, form, and position of the cam; F stationary cam; G groove in stationary cam in which the friction wheels revolve; H the friction wheels revolving in groove of cam; I, jour-

nals on the outer end of levers on which the friction wheels revolve; J, guard or safety chain; K, guide lugs, regulating the action of safety chains; the safety chain and its lugs, control the levers when they are near or on a direct line drawn from center of main shaft, through the center of paddle shaft; L brackets on paddle shafts, arranged to raise or lower the paddles; M, bolts securing paddles to brackets.

The advantages of feathering wheels are so well known that it is not deemed necessary to set them forth here. One of the objections which have been urged against them, that they can not be made as strong and durable as the rigid or fixed paddle wheel, it will be seen does not bear upon our improvement. When in operation the paddles of this wheel will always be fully supported and sustained.

It will be perceived that by the means here shown and named the paddles will enter and leave the water in vertical position or nearly so, and that they will be effectively held in the vertical position during the period of time when they are acting upon the water and propelling the vessel.

This wheel is susceptible of being used with excellent effect as an undershot mill wheel, or as a current wheel. Instead of having one series of friction rollers traversing in the cam groove two series of such rollers may be used in connection with a cam flange, the flange being embraced between the rollers.

In some instances it may be desirable to use two levers to each paddle.

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

1. Feathering the paddles by means of the lever rigidly attached to the axle of the paddle and having friction rollers which traverse the groove of a stationary cam as herein set forth.

2. The guide or safety chain in combination with the lugs as described.

This specification signed this 16th day of March 1861.

CICERO COMSTOCK.
CARLOS GLIDDEN.

Witnesses:

G. W. MYGATT,
H. D. HULL.