

No. 693,481.

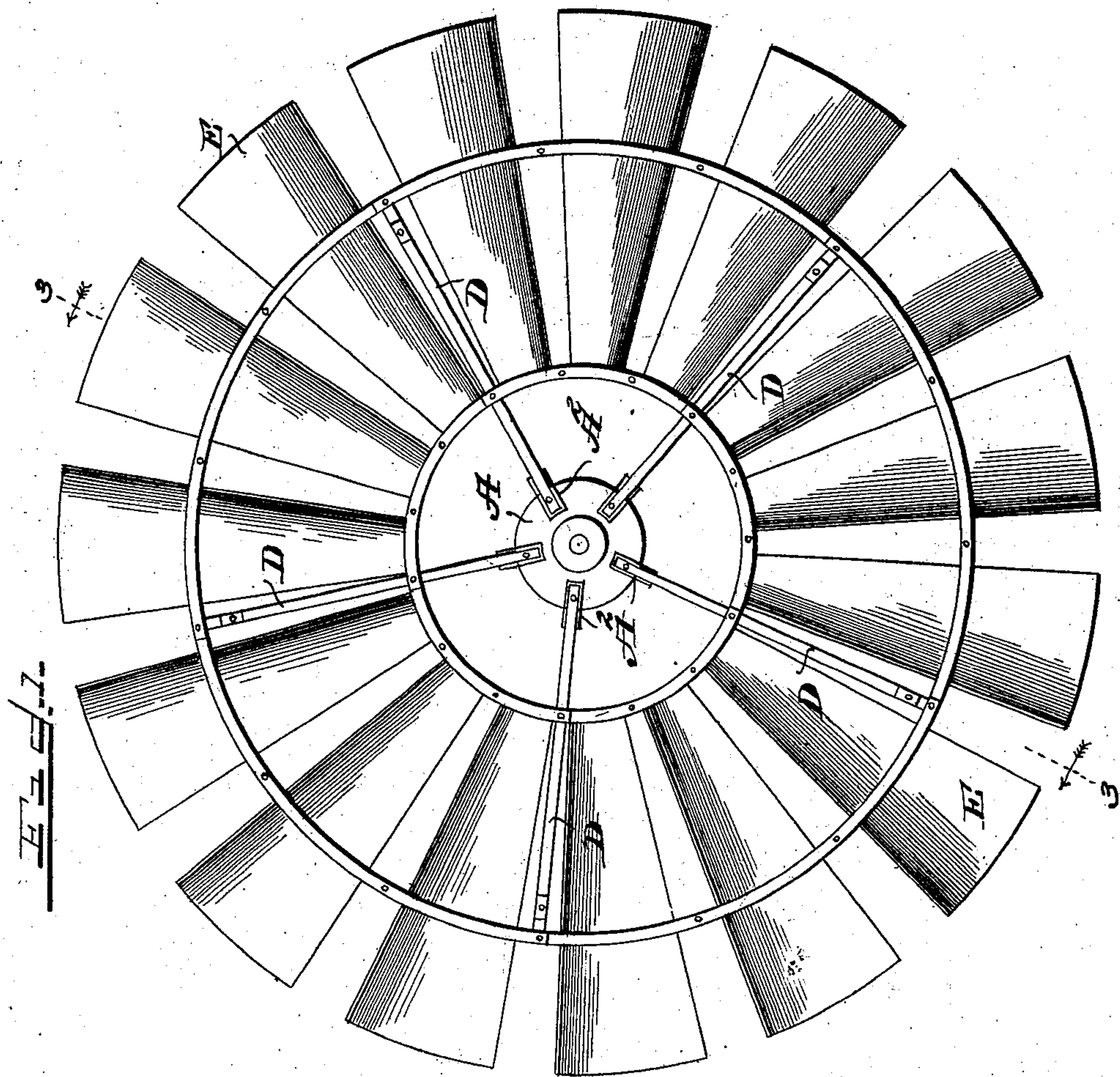
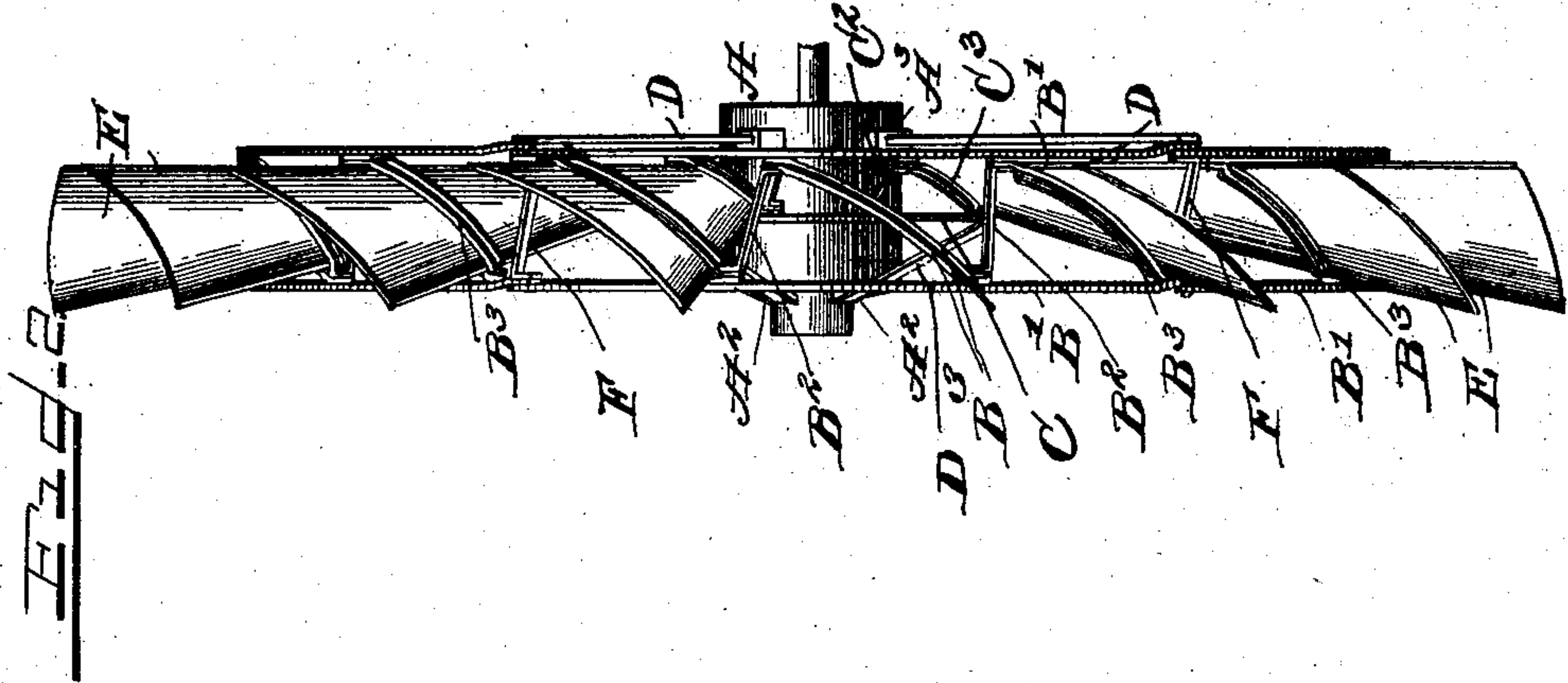
Patented Feb. 18, 1902.

O. J. ZIEGLER.
WIND WHEEL.

(Application filed Jan. 4, 1902.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES.

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INVENTOR.

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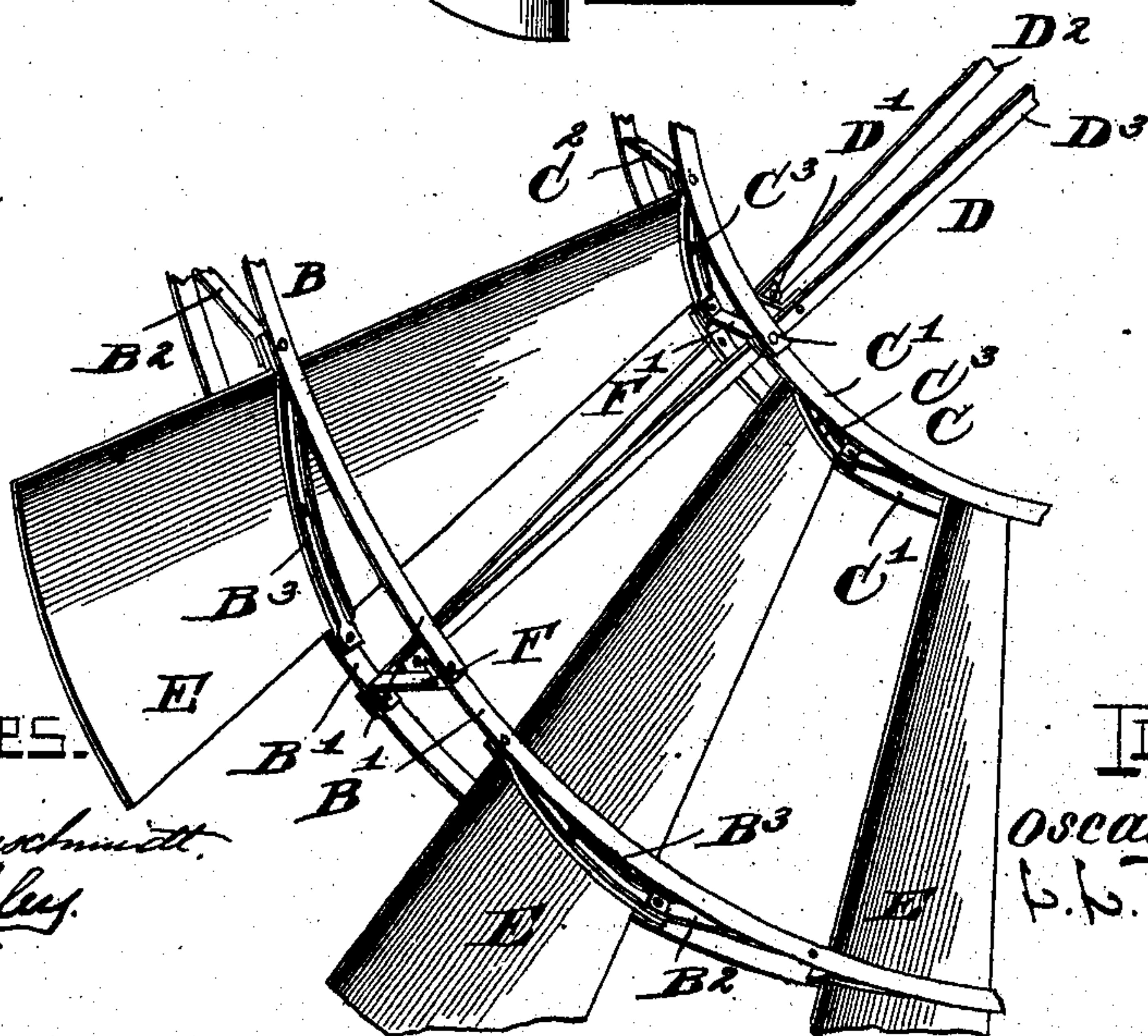
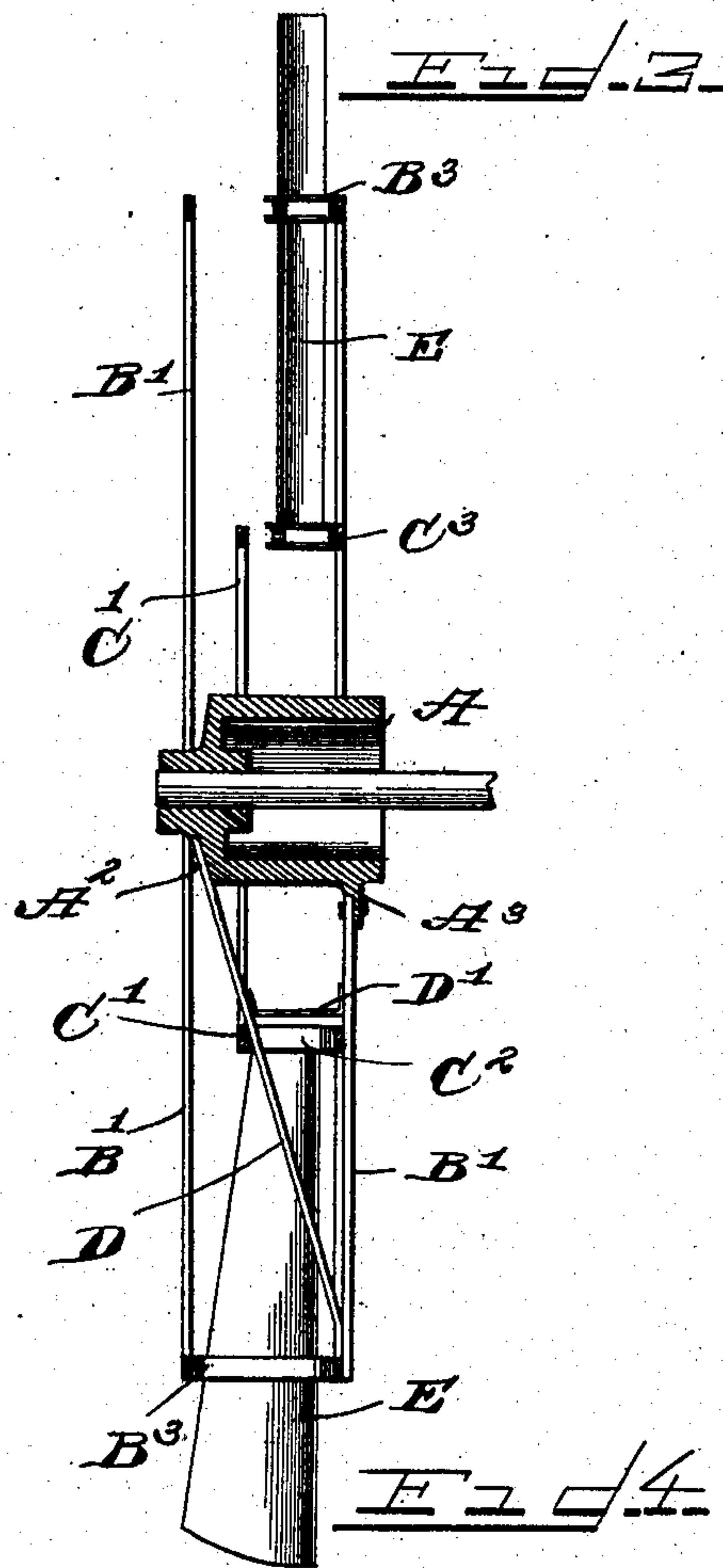
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3 Sheets—Sheet 2.



WITNESSES.

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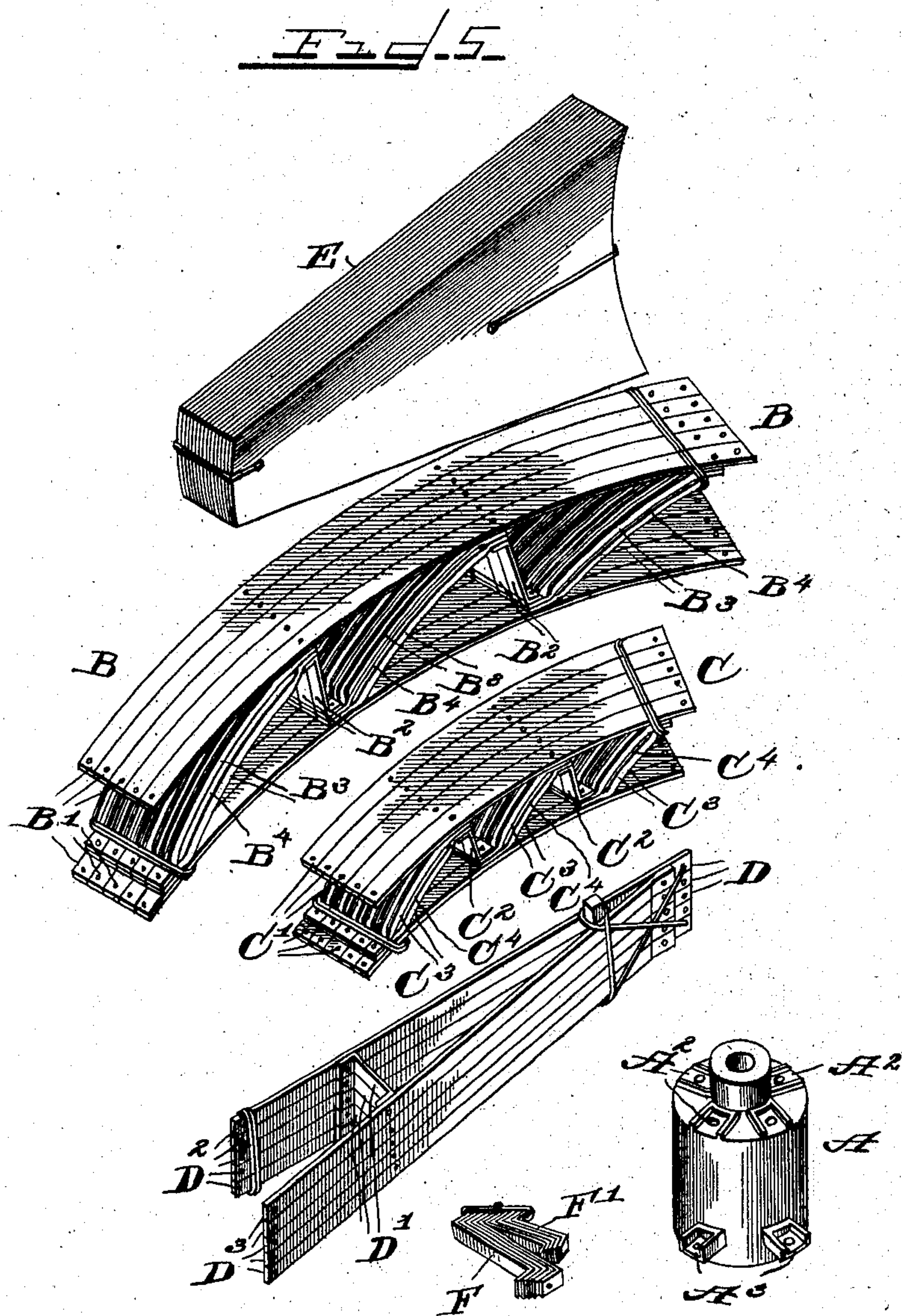
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3 Sheets—Sheet 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

OSCAR J. ZIEGLER, OF FREEPORT, ILLINOIS, ASSIGNOR TO STOVER
MANUFACTURING COMPANY, OF FREEPORT, ILLINOIS, A CORPO-
RATION OF ILLINOIS.

WIND-WHEEL.

SPECIFICATION forming part of Letters Patent No. 693,481, dated February 18, 1902.

Application filed January 4, 1902. Serial No. 88,469. (No model.)

To all whom it may concern:

Be it known that I, OSCAR J. ZIEGLER, a citizen of the United States of America, residing at Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Wind-Wheels for Windmills, of which the following is a specification.

This invention has for its object the production of a light strong wind-wheel constructed entirely of metal that can be packed and shipped in knockdown, so as to occupy but about one-fifth of the space required for the wheel when its parts are assembled and secured together; and it consists of certain new and useful features of construction and combinations of parts especially devised to those ends, all as hereinafter fully described, and specifically pointed out in the claims.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a front elevation of a wind-wheel embodying my invention. Fig. 2 is a peripheral view of the same. Fig. 3 is a section at the line 3-3 in Fig. 1 of parts there shown. Fig. 4 is an isometrical detailed view of a section broken out of the complete wheel. Fig. 5 is a view of the parts of the wheel in knockdown ready to be shipped.

Like letters of reference indicate corresponding parts throughout the several views.

A is a hub provided with radial semimortises A^2 A^3 to receive the inner ends of the spokes of the wheel.

B represents outer bents, comprising parallel pieces B' , curved edgewise in form of segments of a circle, secured together by means of double knees B^2 and double braces B^3 , having apertures B^4 between them.

C represents inner bents, comprising parallel pieces C' , curved edgewise in form of segments of a circle of less diameter than that formed by the bents B, secured together by means of double knees C^2 and double braces C^3 , having apertures C^4 between them. The parts comprising the bents B and C are firmly secured together, preferably by means of rivets.

D represents furcated spokes having dou-

ble knees D' connecting their furcations D^2 D^3 near their inner ends.

F, Fig. 2, represents double knees for securing the outer bents B together endwise to form the outer wheel-frame.

F', Fig. 4, represents double knees for securing the inner bents C together endwise to form the inner wheel-frame.

To put the parts of the wheel shown in Fig. 5 together, the bents B are bolted together to form the outer and the bents C to form the inner circular wheel-frame, Fig. 1. The spokes D are next bolted to the outer and inner circular wheel-frames, Fig. 1, and their furcated ends D^2 D^3 are thereafter bolted into the semimortises A^2 A^3 in the hub A. The bats E are then slid into the apertures B^4 C^4 between the double braces B^3 C^3 and bolted therein, leaving the wheel ready to be mounted for use.

The parts of the wheel are shown assembled and wired together in parcels in Fig. 5 ready for shipment.

Wind-wheels of the construction shown are especially adapted for shipment abroad, for which freight charges are based on the cubic space occupied by the articles shipped.

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

1. In a wind-wheel for windmills, in combination, a hub, an outer wheel-frame formed of bents comprising parallel pieces—curved, edgewise, in form of segments of a circle—secured together by means of double knees, and double braces having apertures between them, an inner wheel-frame formed of bents comprising parallel pieces—curved, edgewise, in form of segments of a circle of less diameter than the outer wheel-frame—secured together by means of double knees, and double braces having apertures between them, spokes, securing the outer and inner wheel-frames together, and to the hub by their furcated ends, and bats, inserted into the apertures between the double braces of the outer and inner wheel-rims, substantially as and for the purpose specified.

2. In combination, a hub A, provided with

radial semimortises $A^2 A^3$, to receive the inner ends of the spokes of the wheel, an outer wheel-frame formed of bents B comprising parallel pieces B' —curved, edgewise, in form
5 of segments of a circle—secured together by means of double knees B^2 , and double braces B^3 having apertures B^4 between them, an inner wheel-frame formed of bents C comprising parallel pieces C' —curved, edgewise, in
10 form of segments of a circle of less diameter than the outer wheel-frame—secured together by means of double knees C^2 , and double braces C^3 having apertures C^4 between them,

furcated spokes D, securing the outer and inner wheel-frames together and themselves 15 secured, by their furcations $D^2 D^3$, to the semimortises $A^2 A^3$ in the hub A, substantially as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of 20 two subscribing witnesses.

OSCAR J. ZIEGLER.

Witnesses:

W. A. MERRIFIELD,
L. HUGHES.