

(No Model.)

J. B. CULVER & W. CROW.

WATER POWER.

No. 370,323.

Patented Sept. 20, 1887.

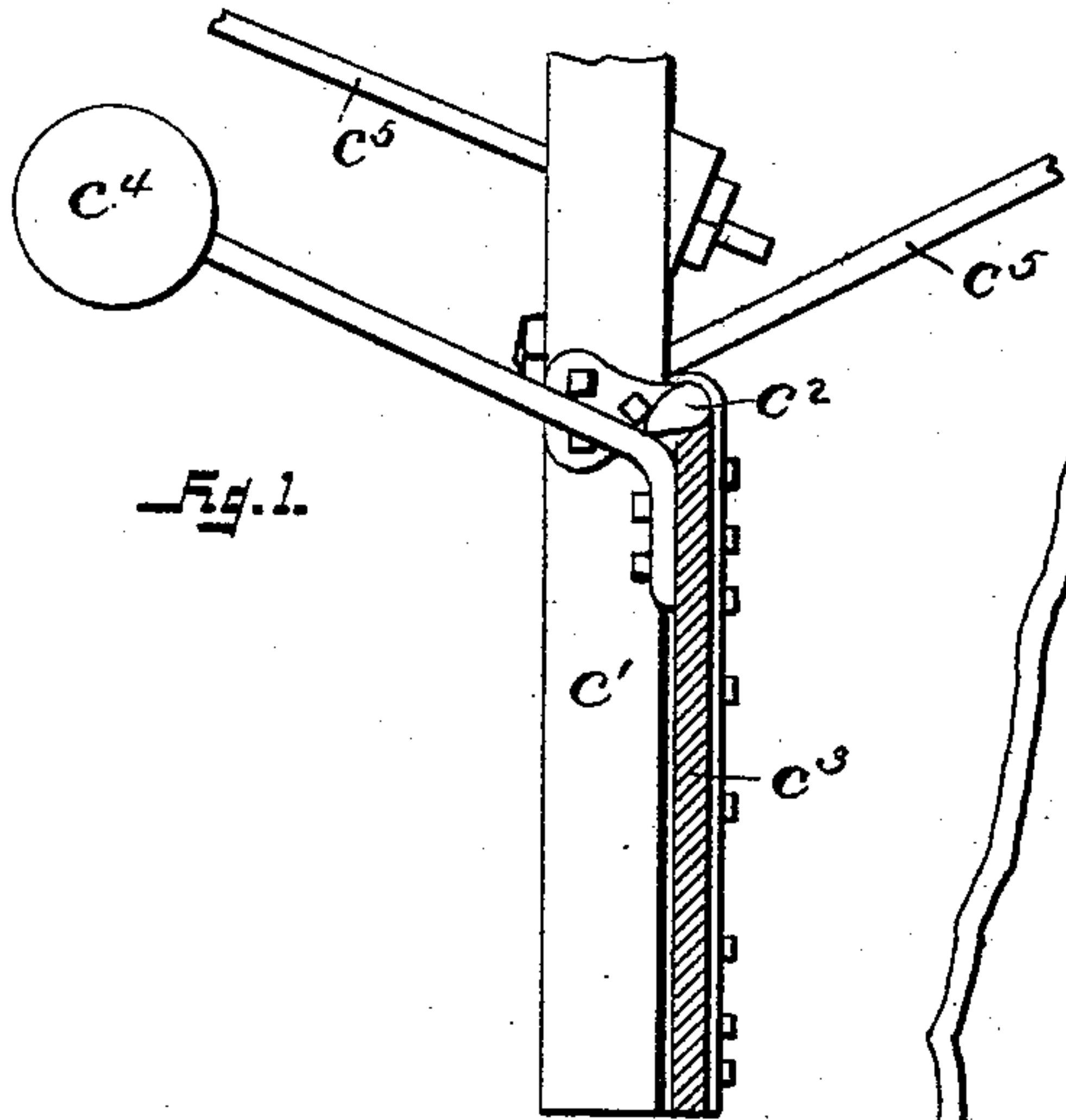


Fig. 1.

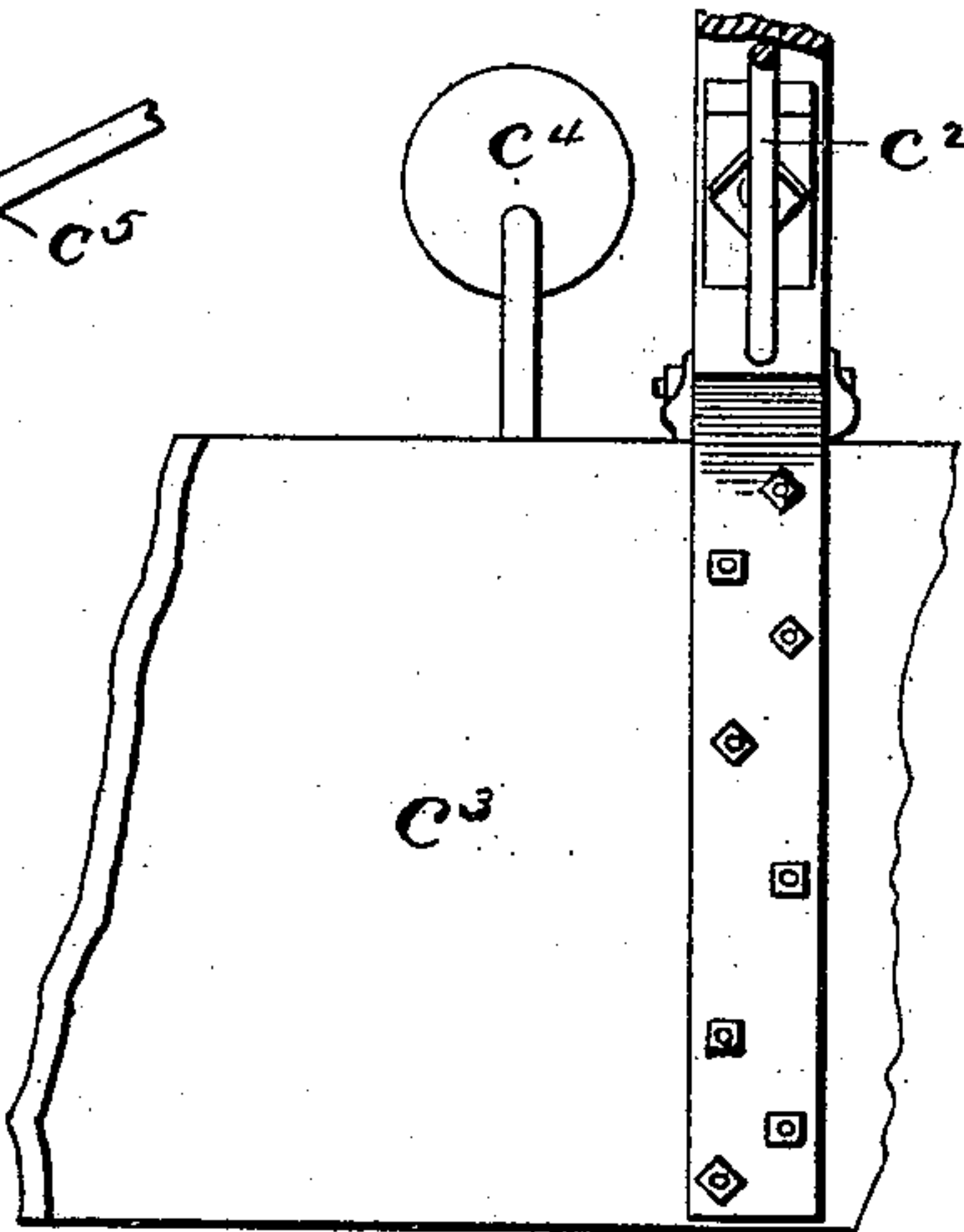


Fig. 2.

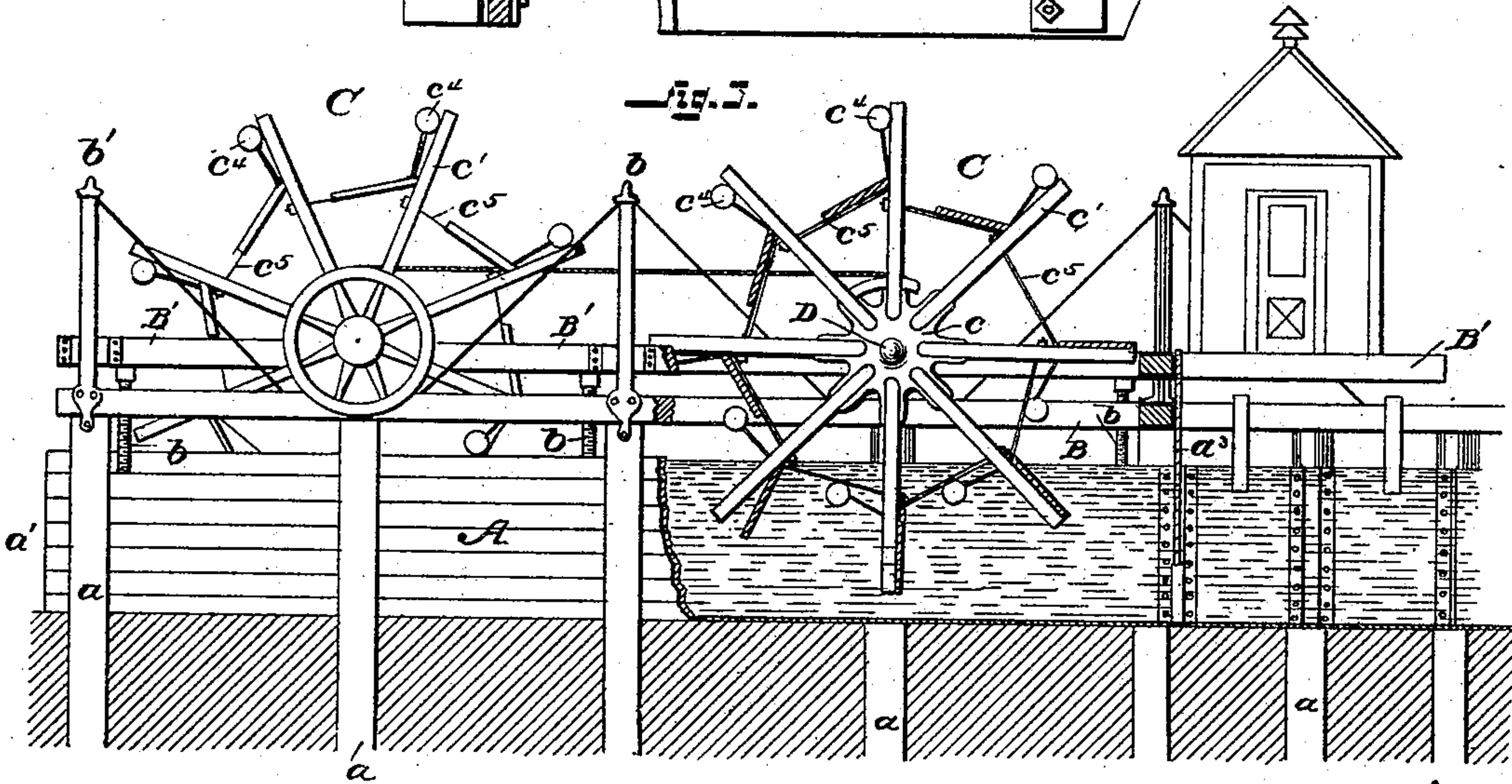


Fig. 3.

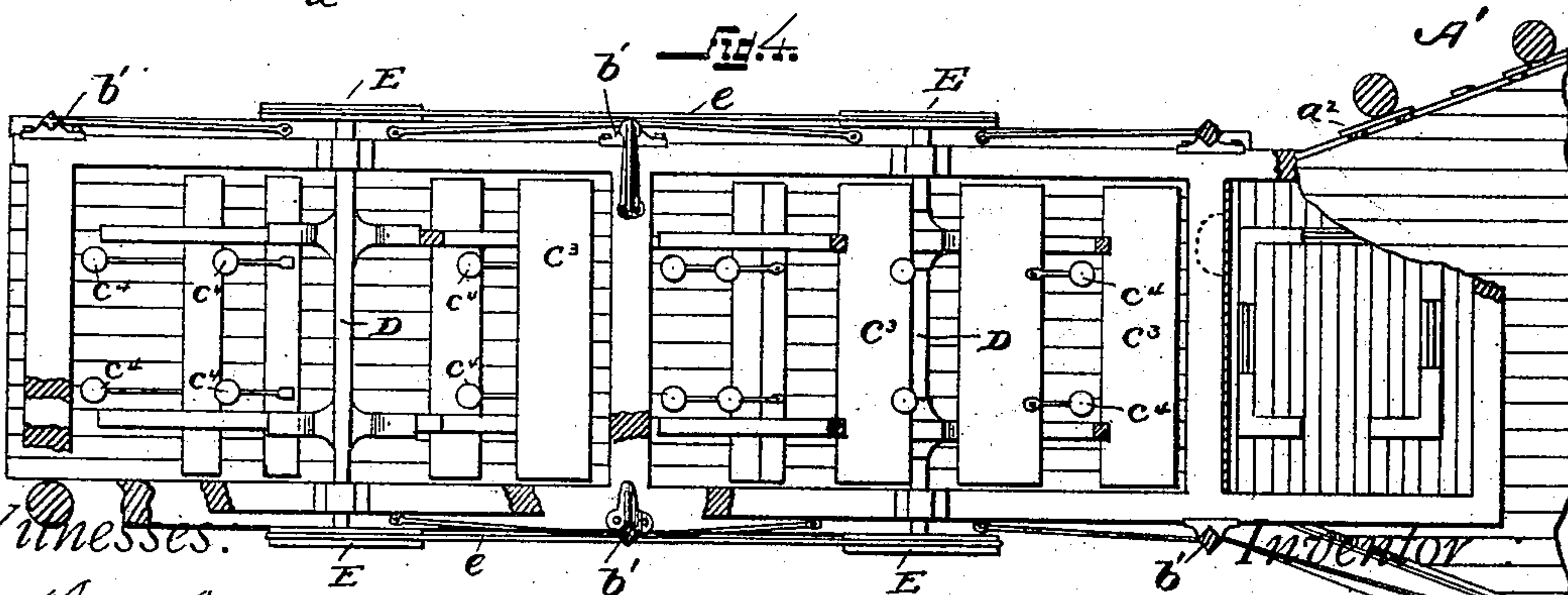


Fig. 4.

Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN BASTIDER CULVER AND WILLIAM CROW, OF WICHITA, KANSAS.

WATER-POWER.

SPECIFICATION forming part of Letters Patent No. 370,323, dated September 20, 1887.

Application filed November 29, 1886. Serial No. 220,190. (No model.)

To all whom it may concern:

Be it known that we, JOHN BASTIDER CULVER and WILLIAM CROW, citizens of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented a new and useful Improvement in Rotary Water-Motors, of which the following is a full and complete specification.

This invention relates to rotary water-motors.

The object of the invention is to produce a water-motor capable of yielding great power by the employment of one or more wheels.

Furthermore, the object is to produce a water-motor without the use of expensive dams—in fact, one that will not cause any material obstruction to the flow of the stream.

The invention consists in a water-motor in which the water-wheels have hinged paddles controlled by counterbalance-weights, and are provided with suitable stay-bars forming rests for the paddles when thrown back by the weights.

Furthermore, the invention consists in various novel details of construction whereby the effectiveness of the motor is insured.

In the accompanying drawings, forming part of this specification, and in which like letters of reference indicate corresponding parts, Figure 1 is a side elevation of one of the arms of a paddle-wheel made in accordance with this invention. Fig. 2 is a plan view of the same. Fig. 3 is a side elevation of a flume and wheels, a portion of the planking of the flume being removed to show the wheels. Fig. 4 is a plan view of the entire apparatus.

In the drawings, A represents a flume constructed of piles a , which are driven in the bed of the stream in a line with the current, and planked, as shown at a' . The flume is provided with a forebay, A' , constructed in a similar manner, which forms a wide-mouthed entrance to it, whereby the water entering the flume is constricted and its velocity greatly increased. In order to regulate the amount of water entering the flume A and permit the escape of the surplus, gates a^2 are provided in the sides of the forebay A' . These gates also aid in stopping the machinery. Further

to regulate the flow of the water entering the flume, and allow just the amount required to propel the machinery, is provided a flood-gate, a^3 , which causes the accumulation of water in the forebay A' , thereby increasing the pressure.

On the piling a are stationary sills B, provided at suitable places with screw-threaded holes through which pass jack-screws b , which support movable sills B' . The movable sills B' , upon which rest the remainder of the machinery, are capable of being raised and lowered by the jack-screws b , to suit the rise and fall of the water in the flume. In order to strengthen the structure and prevent lateral movement of the movable sills B' , guide-posts b' , secured to the stationary sills B, are provided.

Water-wheels C are mounted upon shafts D, journaled in suitable bearings upon the movable sills B' . A spider, c , forming the central portion of the water-wheel C, has secured to it arms c' , to which are fastened, by means of hinges c^2 , paddles c^3 , which are provided with counterbalance-weights c^4 , consisting of weighted arms extending nearly at right angles to the paddles. Suitable stays, c^5 , connect the arms c' , strengthening them and forming rests for the paddles when thrown back by the counterbalance-weights c^4 . The paddles, operated automatically by the counterbalance-weights, rise from the water in a vertical position, and are not retarded in their upward course by the water as they near the surface. The paddles in their passage through the air lie flat upon the stays c^5 and encounter very little resistance from the air.

The water-wheels are mounted upon the shafts D, which are journaled in suitable bearings upon the movable sills. These shafts also carry sheave-wheels E, around which passes a cable, e , that conveys power from one wheel to another when more than one are used.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The combination, with the flume A, having its piling provided with the stationary sills B,

of the movable sills B', the jack-screws supporting the movable sills, the water-wheel C, mounted on shafts D, journaled in bearings of the movable sills, and provided with hinged
5 paddles having counterbalance-weights, and having stays *c*⁵, connecting the arms of the wheel and forming rests for the paddles when

the latter are thrown back, substantially as and for the purpose set forth.

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Witnesses:

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