

(No Model.)

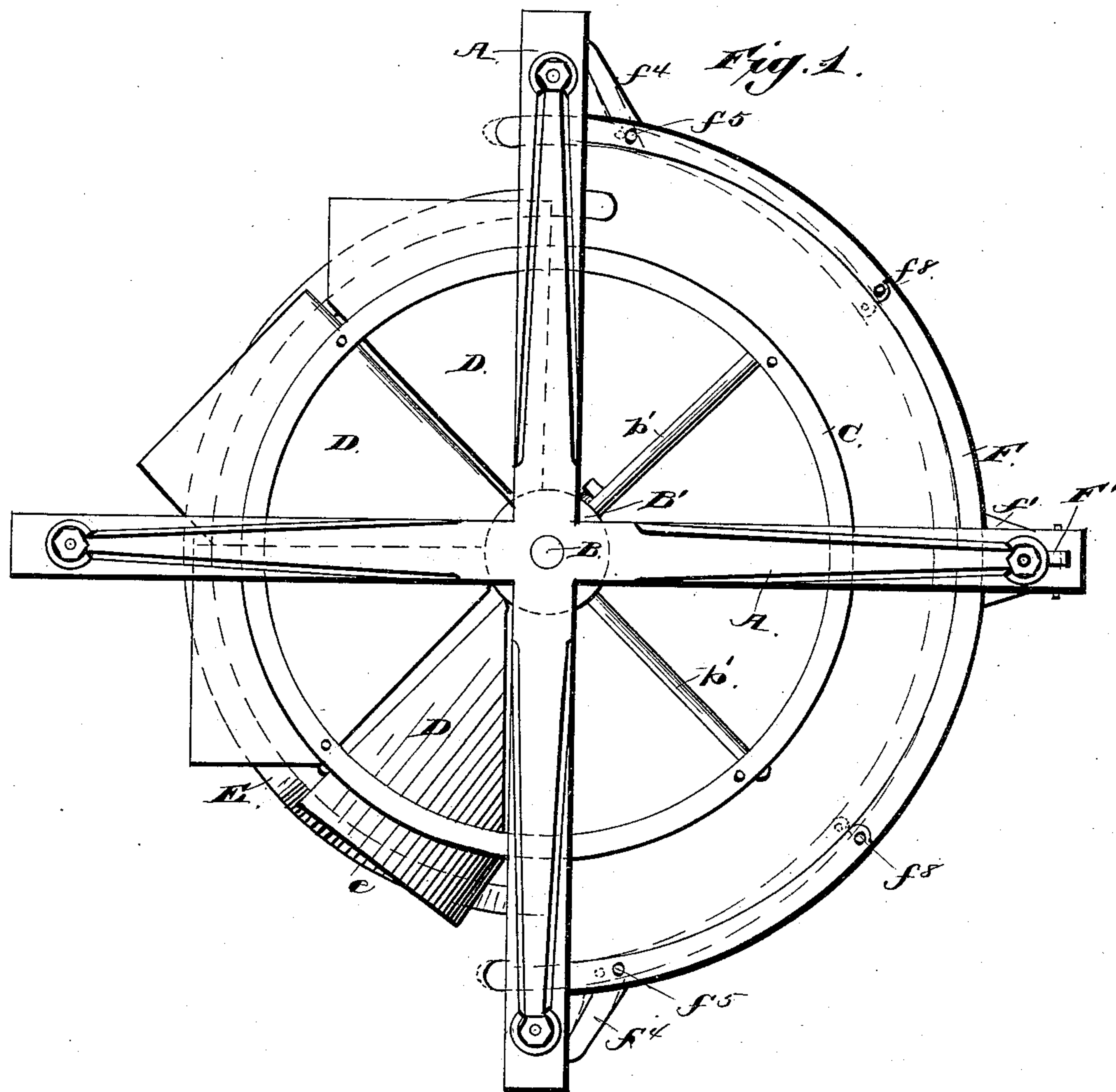
3 Sheets—Sheet 1.

W. J. McGAVOCK.

CURRENT WHEEL.

No. 330,503.

Patented Nov. 17, 1885.



Witnesses:

Charles S. Hoyer.
Russell Harrison Scott.

Inventor:

William J. McGavock
By *Connerable*

Atty.

(No Model.)

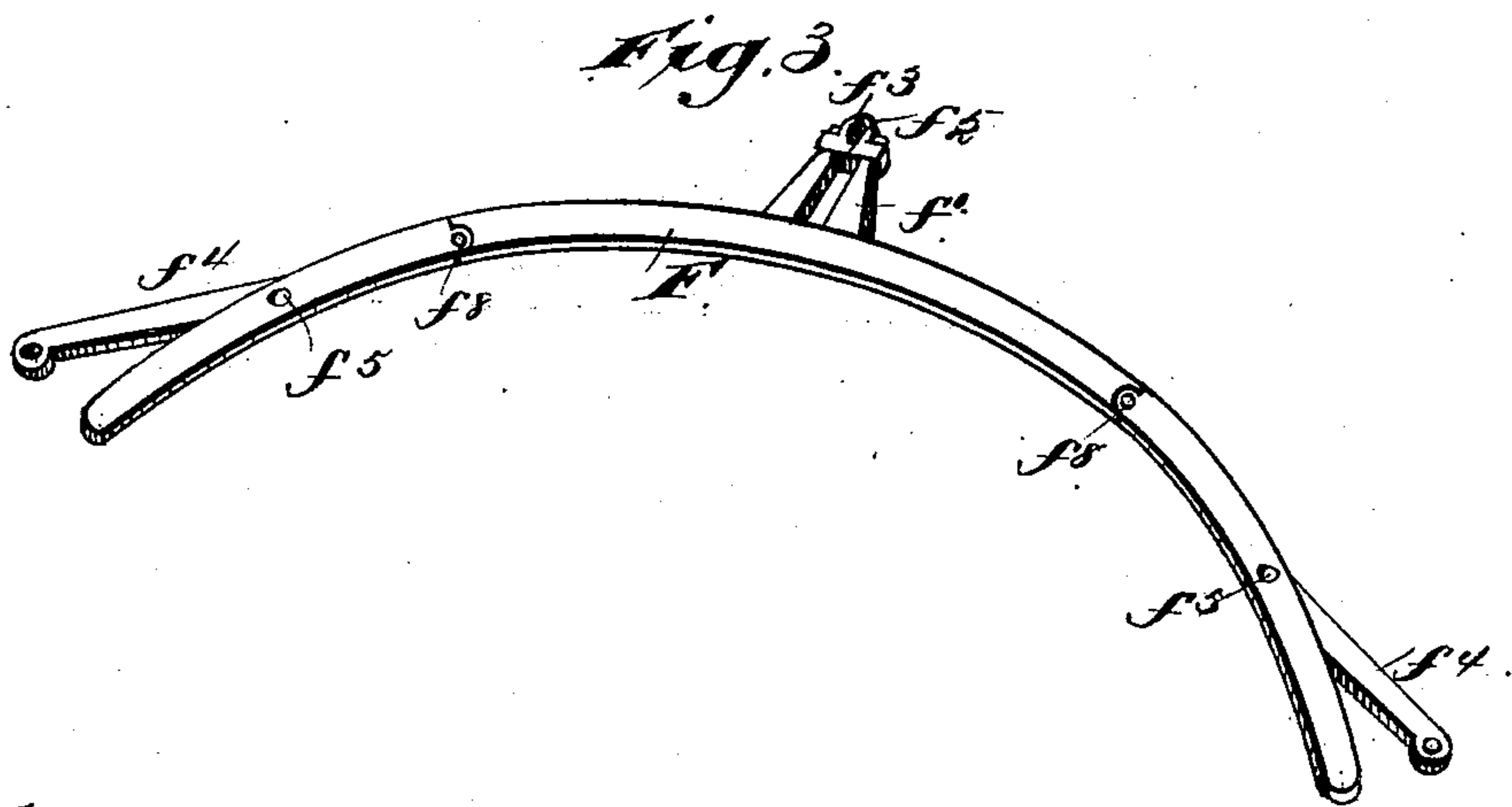
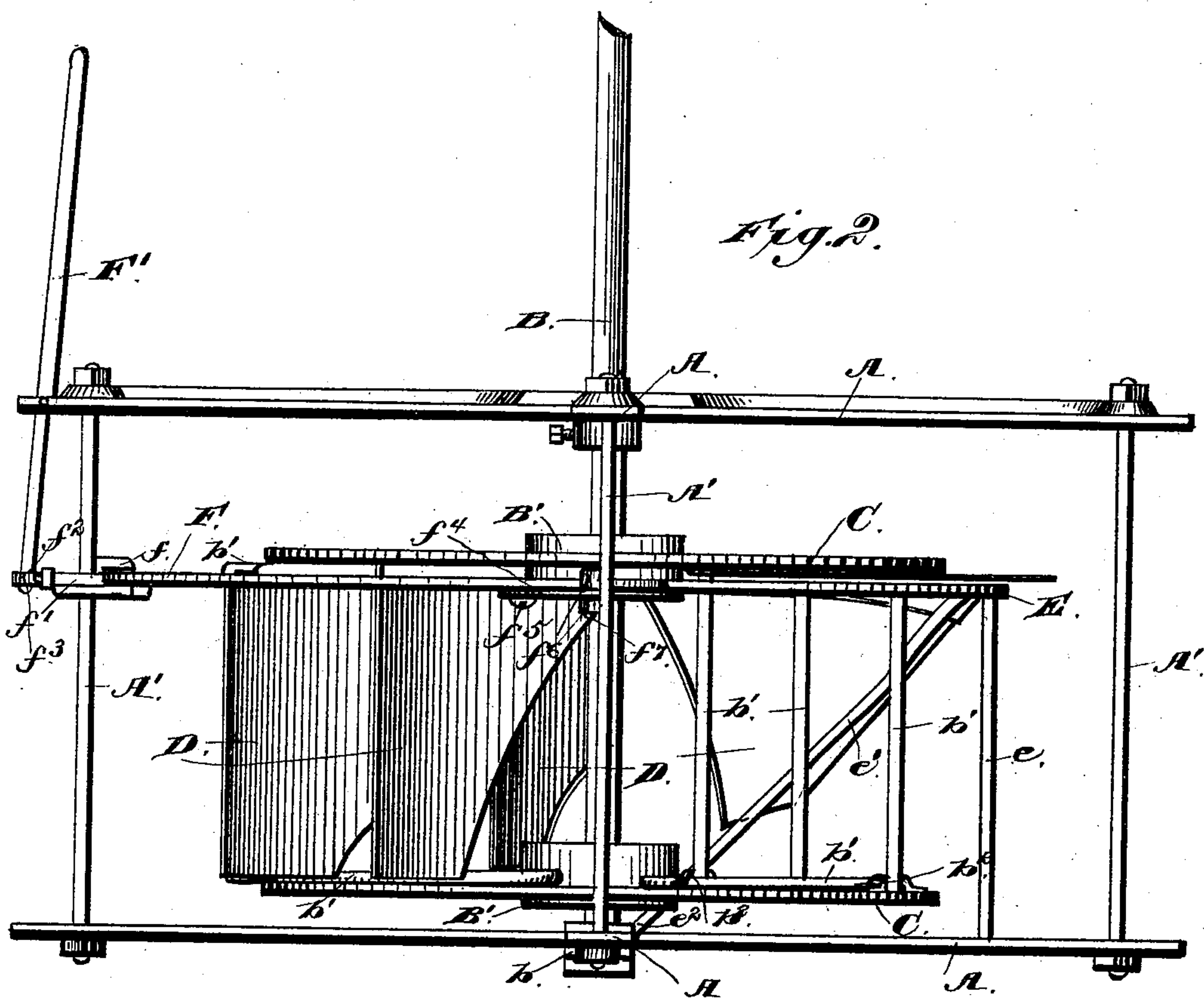
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Patented Nov. 17, 1885.



Witnesses:
Charles S. Hoyer.
Russell H. Scott.

Inventor:
William J. McGavock.
By Ammarle
Atty.

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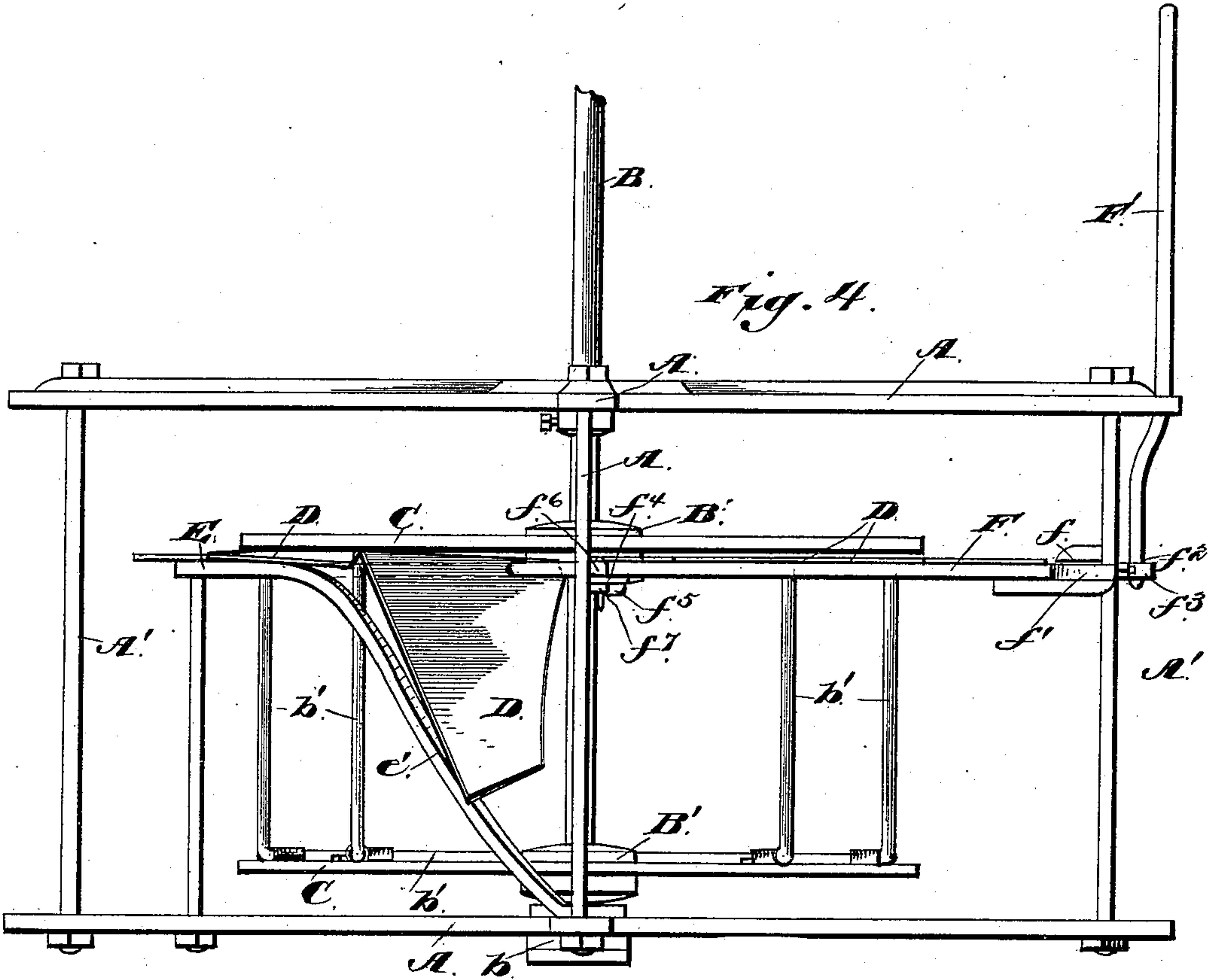
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W. J. McGAVER.

CURRENT WHEEL.

No. 330,503.

Patented Nov. 17, 1885.



Witnesses:

Charles S. Hyer.
James H. Plumb

Inventor:

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UNITED STATES PATENT OFFICE.

WILLIAM J. MCGAVOCK, OF MEMPHIS, TENNESSEE.

CURRENT-WHEEL.

SPECIFICATION forming part of Letters Patent No. 330,503, dated November 17, 1885.

Application filed December 26, 1884. Serial No. 151,179. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. MCGAVOCK, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Current-Wheels, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to current-wheels; and it consists in the construction, arrangement, and adaptation of the parts, which will be more fully hereinafter described, and definitely pointed out in the claims.

The object of my invention is to construct a current-wheel which shall be adapted to be thrown into or out of operation by a brake-lever mechanism arranged on the top of the wheel, so that the vanes may be cleared from contact with the current of water and allowed to have an unintermittent flow through the wheel when it is not required to be in operation. I attain these objects by the mechanism illustrated in the accompanying drawings, wherein like letters of reference indicate like parts, and in which—

Figure 1 is a plan view of my improved current-wheel with the vanes in operation. Fig. 2 is a side elevation, looking from the rear, of the same. Fig. 3 is a detail perspective view of the brake mechanism with the brake-lever removed. Fig. 4 is a side elevation of the wheel, looking from the opposite side, as represented in Fig. 3.

A indicates the frame-work of the wheel, and consists of two bars, of metal or wood, crossing each other on both bottom and top at their respective centers, being welded or attached in any suitable manner at the central point, said bars A being supported and secured rigidly together by standards A'. In the center of these bars A, and mounted in a suitable step, b, a shaft, B, extends upward, and is engaged by a suitable driving-wheel which is encircled by the driving-belt. Upon this shaft, at both top and bottom, hubs B' B' are mounted. From these hubs B' extend outward bearing-rods b', which are engaged by metal straps b² on the supporting circular metal bars C, which are arranged at the top and bottom of the wheel. These bearing-rods b' are formed of continuous rods and run from the upper hub B' out to the top frame C,

down perpendicularly to the bottom frame C, and horizontally to the bottom hub B'. On the top portion of these rods b' between the upper hub B' and circular binding-bar C, are mounted the upper sides of swinging vanes D. These vanes are formed with the top and outside edges squared, and the lower side for a short distance, when it is cut off on an incline toward the upper hub B'. Extending from the bottom frame-bars A are small standards e e, which support a semicircular bar, E, which extends out abruptly at one end and is inclined at its other end, as at e', said incline running down to one of the bottom frame-bars A, where it is pivoted or secured, as at e². On three of the standards A', in suitable bifurcated jaws, f, a semicircular brake-bar, F, is mounted, and has an extension, f', rigidly attached thereto, which is cut away in the center to admit of its free movement backward and forward on one of the uprights or standards A'. On the outer side of this extension f' a cap, f², is secured by suitable means, and has a small semicircular portion, f³, which allows one end of the brake-lever F' to pass through a slot therein. From thence the lever F passes up through one of the cross-bars A, and extends up to any suitable distance, so that it can be operated by any person or machinist when required. The end of the brake-bar F has link-levers f⁴, attached to it by pivots f⁵, and extends back to one of the standards A', where it is again engaged by jaws f⁶, which have pivots f⁷, the brake-bar F, made in three parts, being lapped and pivoted, as at f⁸.

The operation of my current-wheel is as follows: The brake-lever F is thrown back, as illustrated in Figs. 1 and 2, and in consequence of its pivotal connections heretofore described, and thrown away from engagement with the outer periphery of the swinging vanes D, and allows them to drop from the end of the semicircular bar E and fall, and permits the current to strike them and turn the wheel, being braced against the force of the current by means of the vertical portion of rods b. The vanes D turn until they strike the inclined portion e' of the bar E, and ride up over the same and around until they again drop off, the edges of the swinging vanes C extending over this bar E, so that they cannot become

disengaged therefrom. When it is desired to allow a free passage of the current and stop the motion of the wheel, the brake-lever F' is reversed, when the brake-bar F is shortened 5 in circumferential distance through the medium of its pivotal joints, and allows the outer edges of the vanes C to ride over it, similar to the bar E, and the wheel is feathered, and no action therefrom is obtained. A collar, b⁴, is 10 inserted under the top frame-bars A around the shaft B to hold the same and keep it from rising and straining the upper frame.

By my improved current-wheel a more even distribution of power can be obtained, and 15 when required to suspend the action of the wheel it is easily and effectively stopped by means of my brake attachment without trouble and loss of time, and when it is motionless the wheel is left in such position as to guard 20 against injury of the mechanism in connection therewith.

Other varied forms of construction can be used and collars substituted for those shown without in the least departing from the nature 25 and principle of my invention.

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

1. In a current-wheel, the combination of 30 the frame-work, the circular binding-bars, the

continuous bearing-rods mounted therein, the semicircular rest-bar having one end inclined, the swinging vanes riding up said incline and traveling on the rest-bar, the shaft mounted centrally in said wheel, and a brake bar and 35 lever for throwing the wheel in or out of action, substantially as described.

2. In a current-wheel, the combination of the frame-work, the circular binding-rings at the top and bottom, the continuous bearing-rods acting as braces, the swinging vanes 40 mounted upon said rods, the rest-bar inclined at one end, up which incline the vanes ride and rest, the pivoted brake-bar with its hinged parts, the lever for operating said brake-bar, 45 and the bearing-lug projections and links for the brake-bar, substantially as described.

3. The combination of the frame-work A, standards A', shaft B with the hubs B' B', swinging vanes D, rest-bar E, inclined at one 50 end, the hinged and linked brake-bar F, brake-lever F', and the means for holding the brake-bar while in operation, substantially as described.

In testimony whereof I affix my signature in 55 presence of two witnesses.

WILLIAM J. McGAVOCK.

Witnesses:

CHARLES S. HYER,
RUSSELL H. SCOTT.