

No. 607,959.

Patented July 26, 1898.

A. E. SCHLIEDER.  
CURRENT MOTOR.

(Application filed Sept. 4, 1897.)

(No Model.)

Fig. 1.

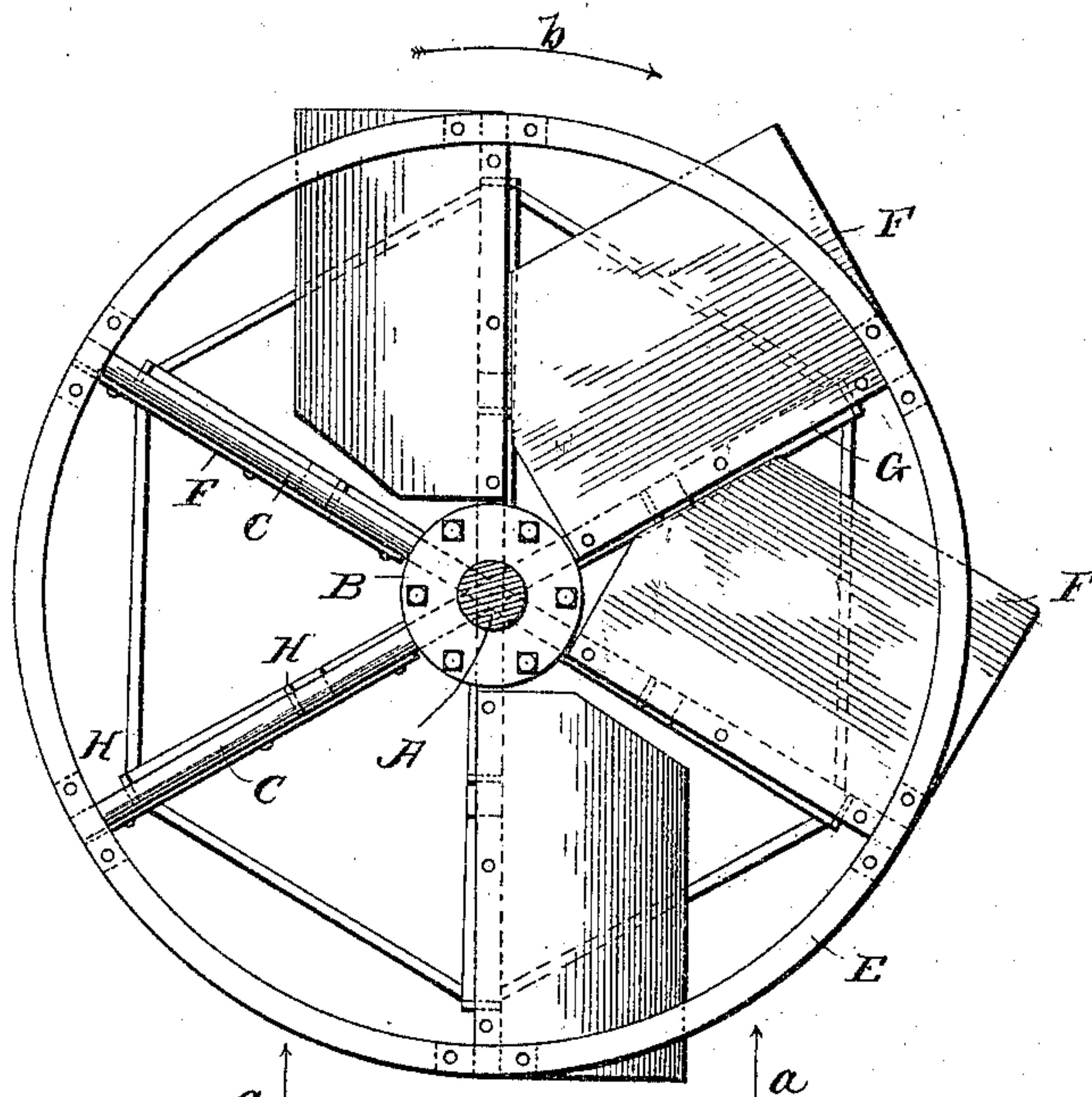


Fig. 2.

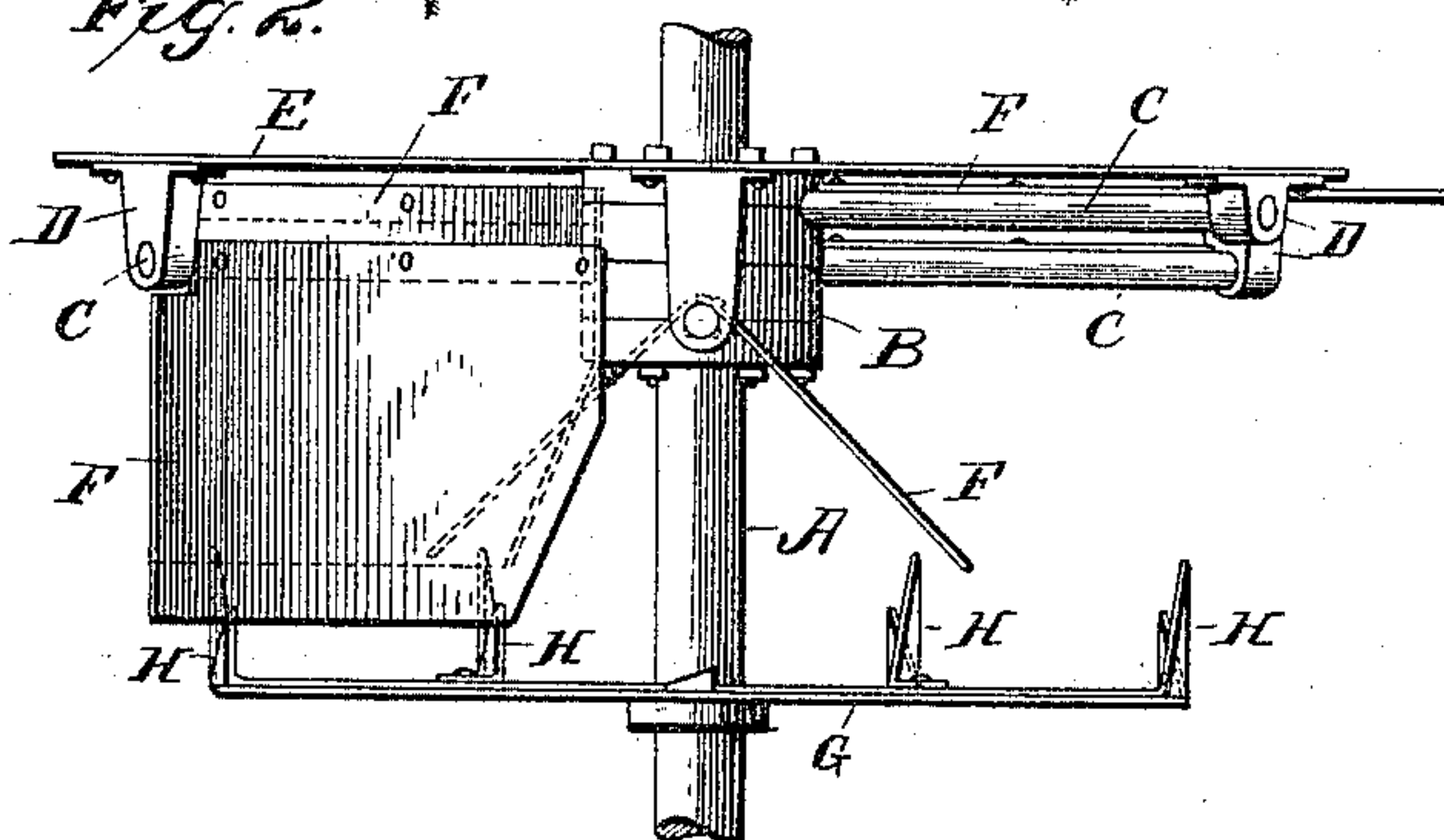
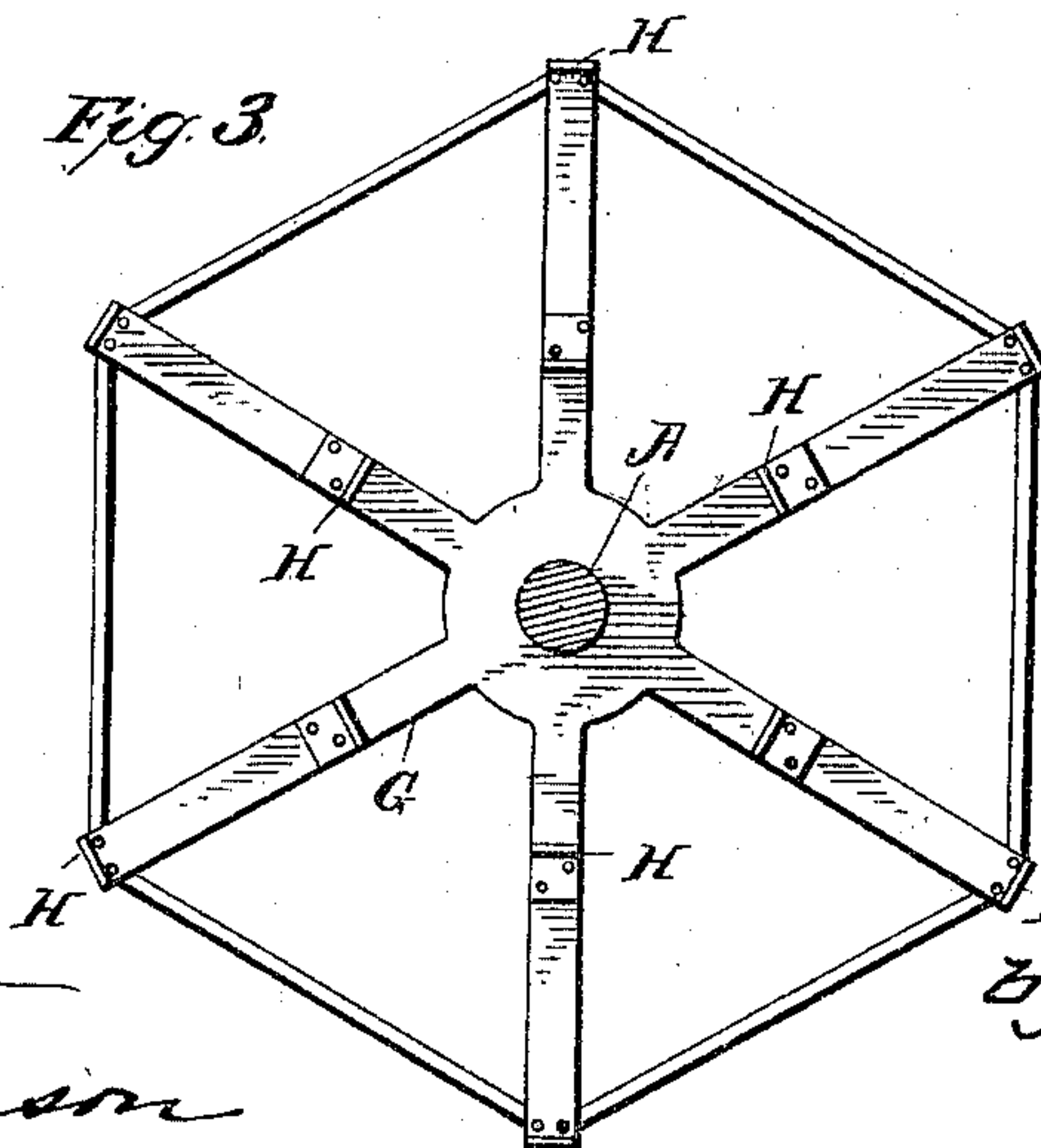


Fig. 3.



Witnesses

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# UNITED STATES PATENT OFFICE.

AUGUSTUS E. SCHLIEDER, OF SIOUX CITY, IOWA.

## CURRENT-MOTOR.

SPECIFICATION forming part of Letters Patent No. 607,959, dated July 26, 1898.

Application filed September 4, 1897. Serial No. 650,665. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUSTUS E. SCHLIEDER, a citizen of the United States, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented a certain new and useful Improvement in Current-Motors, of which the following is a specification.

My invention relates to a new and useful improvement in current-motors, and has for its object to provide a simple, durable, and effective device of this description which may be utilized in generating mechanical power from a flowing stream by presenting to the current thereof a series of blades upon one side of the motor-wheel, while turning said blades edgewise to said current upon the opposite side of the motor.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claim.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan view of a motor made in accordance with my improvement; Fig. 2, a side elevation thereof; and Fig. 3, a detail view of the bottom frame, carrying the stop-lugs for limiting the swinging movement of the wings.

In carrying out my invention as here embodied, A represents a vertical shaft which may be set in any suitable bearings upon a float or other support and connected by suitable gearing with the mechanism to be driven, and to this shaft is secured the cylindrical bearings B, through which pass the horizontal spindles C, each of said spindles being set in a different horizontal plane, so that in passing through the bearings B they do not interfere with each other. The outer ends of the spindles are journaled in the bearings D, projecting downward from the ring E, thus connecting the ends of these shafts, so as to strengthen and steady the same.

Each of the spindles C have secured thereto two wings F, one upon each side of the bearing B and at such an angle relative to each

other that when one of these wings is in a horizontal position the other will be in a perpendicular position for the purpose herein-  
after set forth.

A frame G is secured to the lower end of the shaft A, and consists of a series of arms projecting regularly outward, equal in number to the wings and having projecting upward therefrom the stop-lugs H.

From this description the operation of my improvement will be obviously as follows:

When the motor is submerged in a flowing stream, the current of this stream will act upon the wings which are in a perpendicular position, since the entire surface of such wings will be exposed to this current and cause the motor-wheel to revolve, and during this revolving of the wheel the wings which are first in a vertical position and acted upon by the current flowing in the direction of the arrows *a* will pass to the other side of the wheel and in so doing will present their opposite surfaces to the current, which will force them upward into a horizontal position, and as the wings are secured in pairs upon the spindle C the opposite wing of each pair will be forced downward in a perpendicular position and then serve as a surface against which the current may act to continue the revolving of the wheel in the direction of the arrow *b*. When the wings are swung downward into a perpendicular position, each of them will come in contact with two of the stops H, which will limit this downward movement and support said wings by being acted upon by the current. From this it is obvious that an exceedingly large surface is exposed to the current upon one side of the wheel, while upon the opposite comparatively no surface is presented thereto, thus utilizing almost the entire force of the current within a given cross-section thereof to bring about the rotation of the wheel, thereby converting the kinetic force of this current into mechanical power.

I do not wish to be limited to the use of one series of wings, since the shaft A may be extended and a number of these series placed thereon in proportion to the depth of the stream or the work required to be done. Likewise I do not wish to be limited to an exact number of wings in each series, as these may



be varied to suit the requirements and fancy of the user.

While my improvement is especially adapted for the current of streams flowing in one direction only, it is to be noted that it may be placed within a raceway formed for the passage of tide-water, and thus utilized in the ebb and flow of the tide into mechanical power.

10 The principal advantages of my improvement are its exceeding simplicity, cheapness of construction, and durability, since there are but few movable parts and therefore little chance of displacement of the same.

15 Having thus fully described this invention, what is claimed as new and useful is—

A current-motor consisting of a vertical shaft, horizontal spindles extending through the vertical shaft, said spindles being ar-

ranged one above the other and set at angles 20 to each other, bearing-disks mounted on the shaft, said disks having grooves cut in their meeting faces whereby bearings are formed embracing the spindles, a ring journaled on the shaft concentric therewith, said ring hav- 25 ing downwardly-projecting lugs on the edge thereof in which the outer ends of the spindles are journaled, two wings secured on each spindle, one on either side of the shaft, the wings on the same spindle being set at right 30 angles to each other.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

AUGUSTUS E. SCHLIEDER.

Witnesses:

S. S. WILLIAMSON,  
S. KEEFER.