

(No Model.)

C. C. WILSON.
WATER MOTOR.

No. 488,860.

Patented Dec. 27, 1892.

FIG. 3-

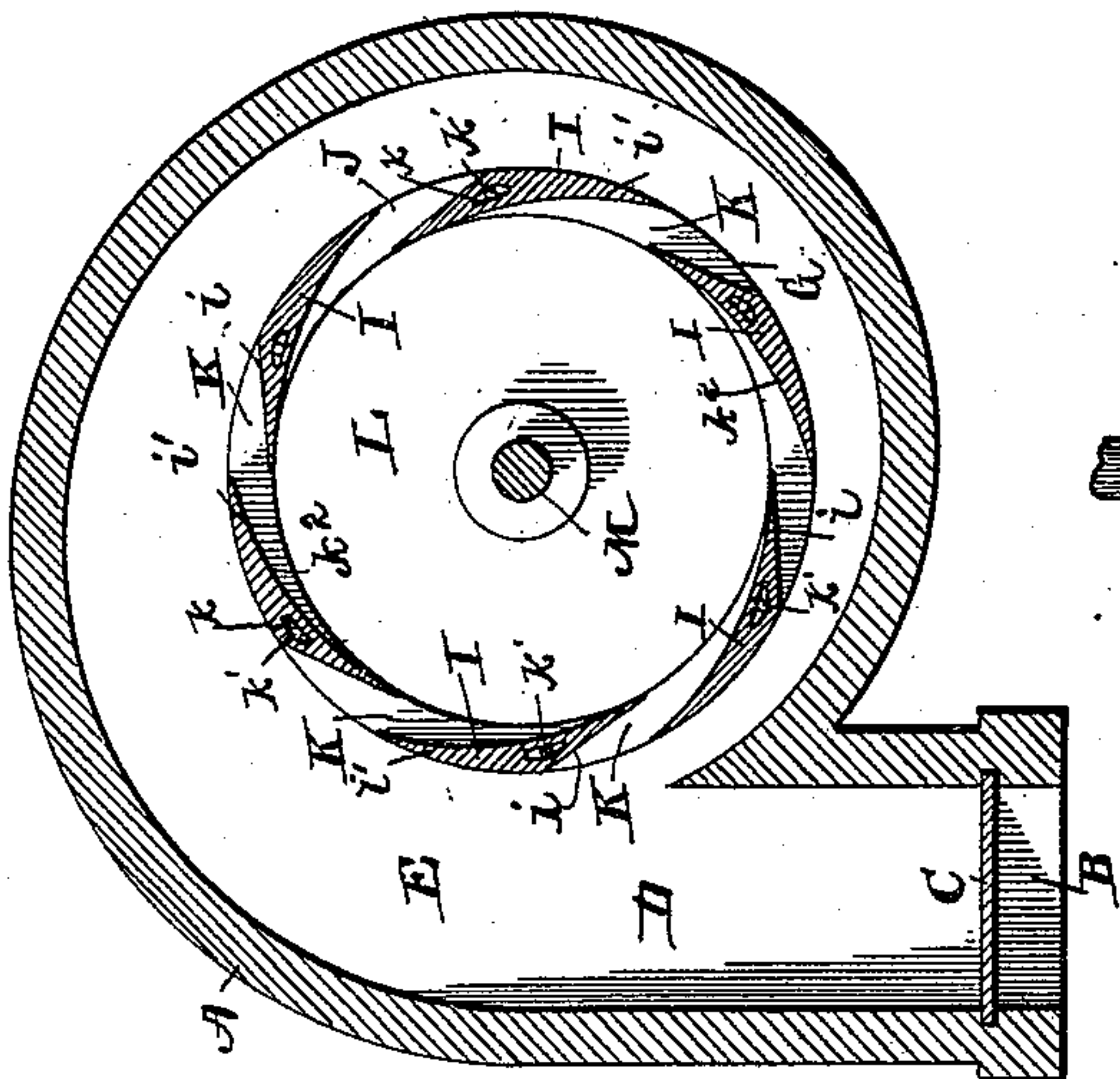


FIG. 2-

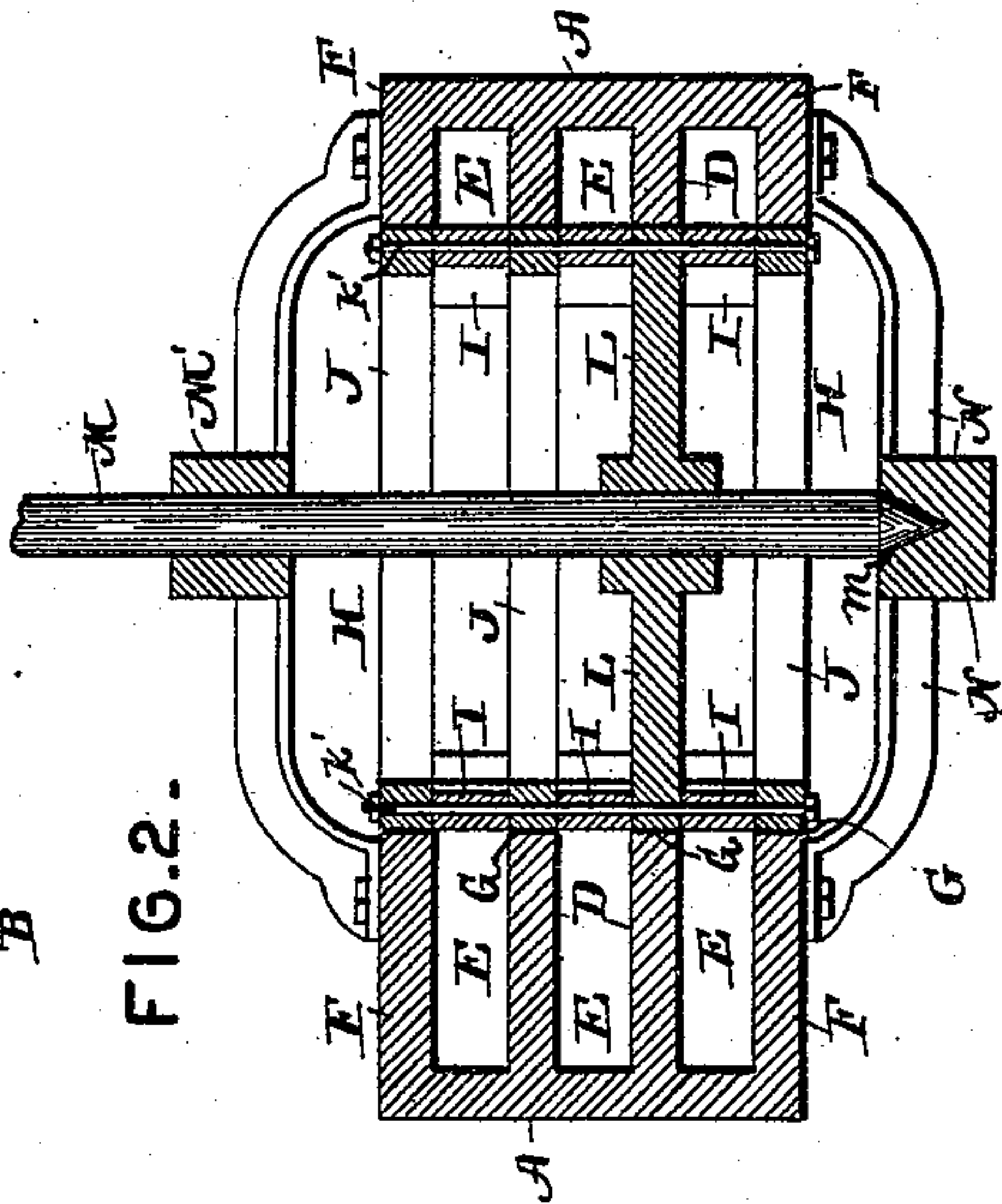


FIG. 1-

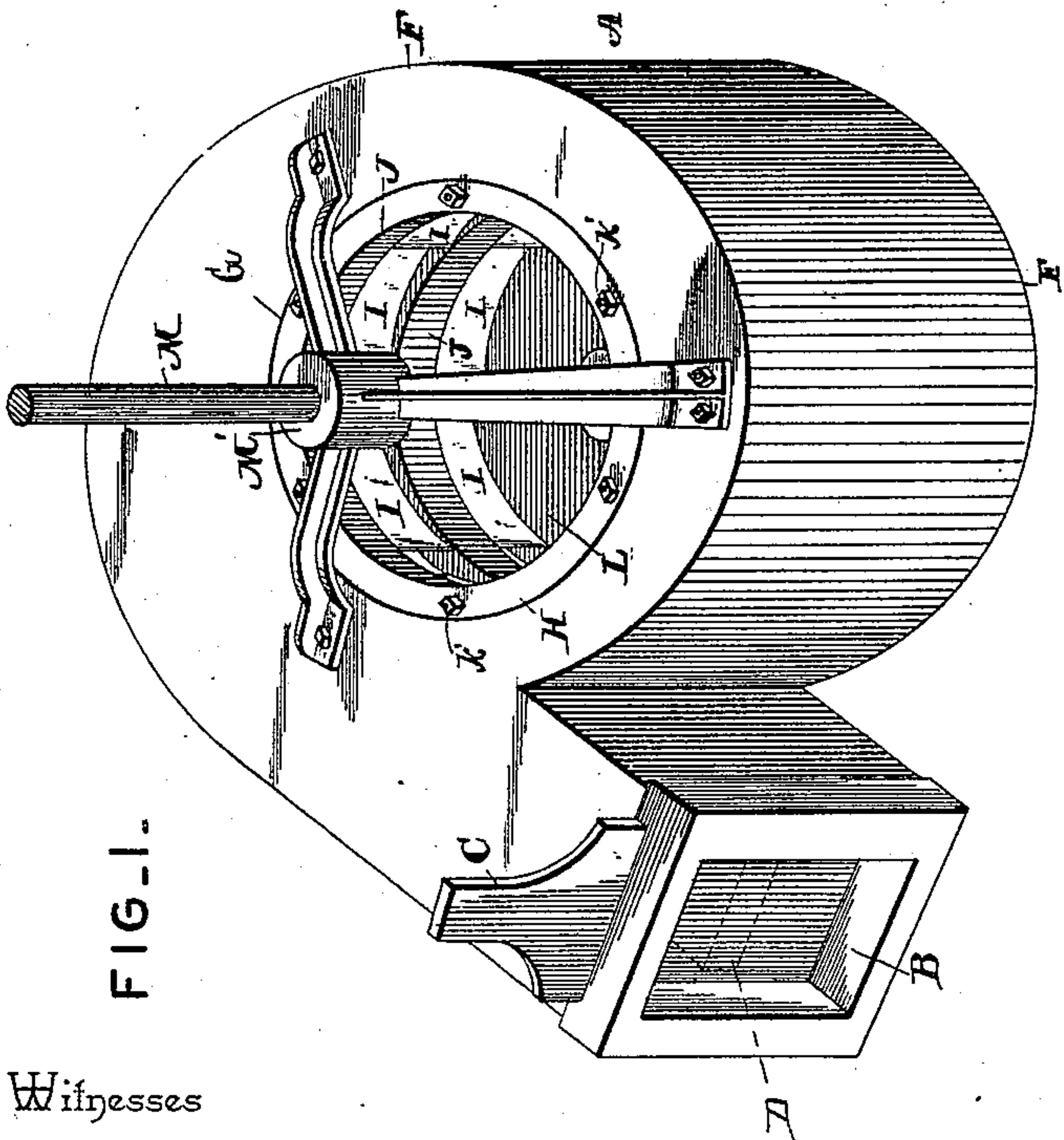
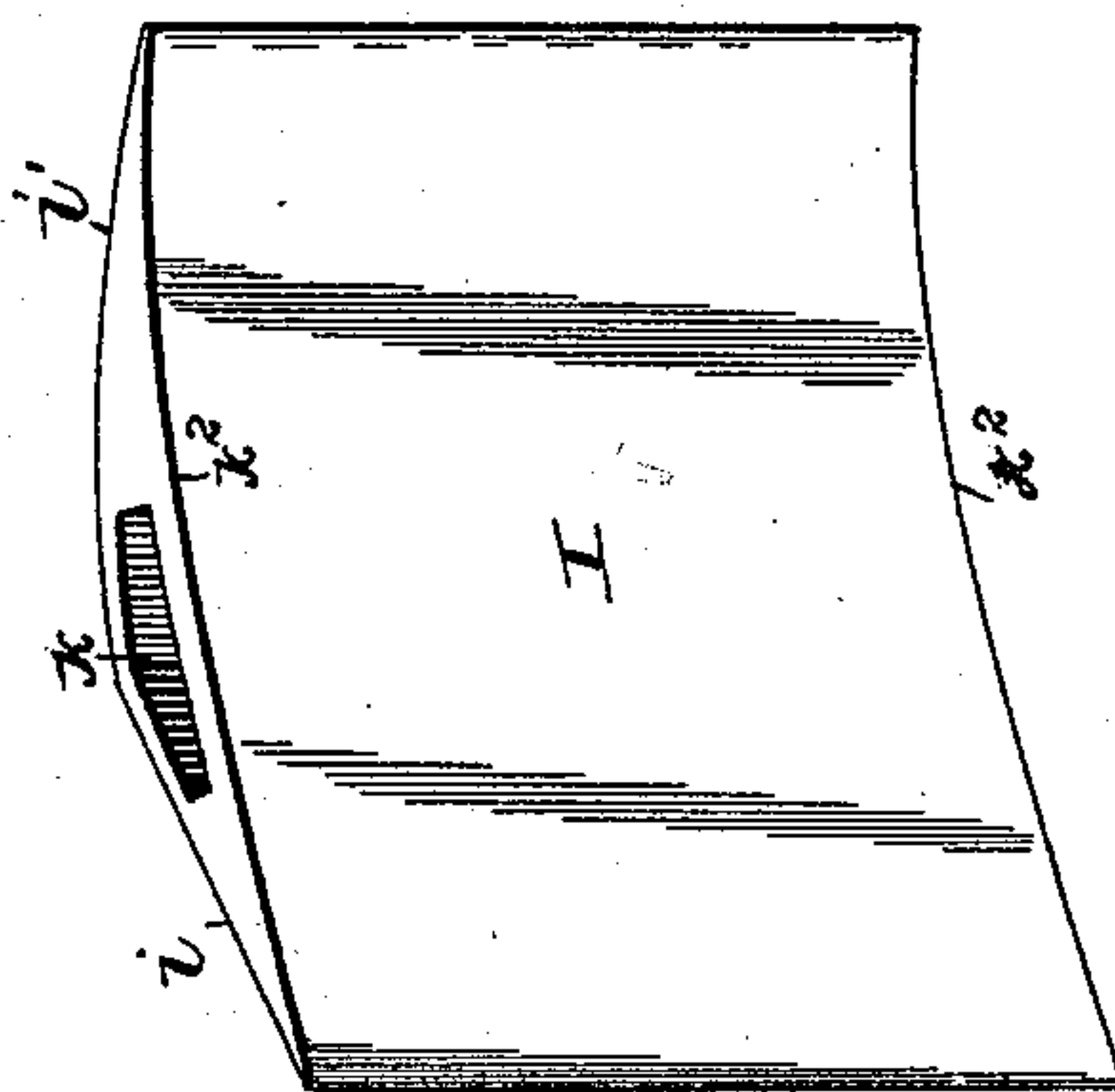


FIG. 4-



Witnesses

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By his Attorneys,

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UNITED STATES PATENT OFFICE.

CHARLES C. WILSON, OF GREENSBOROUGH, NORTH CAROLINA, ASSIGNOR
OF ONE-HALF TO ANNA V. JESSUP, OF SAME PLACE.

WATER-MOTOR.

SPECIFICATION forming part of Letters Patent No. 488,860, dated December 27, 1892.

Application filed December 29, 1891. Serial No. 416,416. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. WILSON, a citizen of the United States, residing at Greensborough, in the county of Guilford and State of North Carolina, have invented a new and useful Water-Motor, of which the following is a specification.

This invention relates to hydraulic motors; and it has for its object to provide a motor actuated under a head of water, and which shall be so constructed as to vent fully as much water as the motor receives and thus avoid the lessening of the speed of the motor, as in such case, where a motor does not vent the water as fast as received, the water will not strike the same with the full force of the head, as the velocity is impeded by the reaction or backlash of the water on the motor. And to this end to provide a specially constructed motor particularly adapted to overcome these objections while at the same time providing a motor which can be used at different velocities according to the head of water admitted to the various parts comprising the motor.

With these and many other objects in view which will readily appear as the nature of the invention is fully understood, the same consists in the construction combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings;—Figure 1 is a perspective view of a water motor constructed in accordance with my invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a horizontal sectional view through one of the water compartments. Fig. 4 is a detail in perspective of one of the buckets.

Referring to the accompanying drawings;—A represents the motor casing having a spirally disposed or scroll shell terminating in a front receiving opening B through which the head of water is conducted into the casing, and is controlled by the sliding gate C working over said opening to admit a full or partial head of water as desired. The said casing is provided with a series of parallel partitions D, which form a series of parallel water chests E one above the other, and said partitions E forming said separate and inde-

pendent water chests extend directly to the inlet opening B and are adapted to have the sliding gate C work directly over the ends of the same, so that by raising said gate water may be admitted into one or all of said separate water chambers inclosed by the single casing A, at the same time. Each of said parallel partitions D and the top and bottom plates F of the main casing A are provided with the central registering openings G which are designed to admit the water wheel H fitting snugly within the openings through said partition and top and bottom plates, and of the same depth as the casing itself. The said water wheel H comprises separate concentric series of water buckets I, separated from each other by the dividing rings J, which correspond in thickness to the dividing partitions D, and as said water wheel revolves it will be seen that the spacing rings J between each concentric and parallel series of water buckets I will revolve in and be in communication with a single water compartment E, whether the line of buckets is at the top, bottom, or an intermediate position within the casing. The buckets I are provided with the flat shoulders or faces i that are so disposed at an angle across or between the rings J as to receive the direct force of the water as the same comes within each compartment of the spirally disposed casing, and the same are further provided with opposite curved ends i' which are so arranged with relation to the next succeeding bucket, in the same series therewith, as to form vent openings K which communicate with the hollow wheel and thus allow the water to find escape through the opening in the bottom or top plate of the casing, as the case may be. The said buckets I are provided with openings k in the body thereof to receive the clamping bolts k' passing through the buckets and the intermediate rings J and thus forming the water wheel H as described. The inner face of each bucket within the wheel is regularly curved as at k^2 to form a slope which extends from end to end of each bucket and is designed to reverse the motion of the water and to catch the force of the same without reaction or backlash on the wheel itself. The said wheel is further provided with a partition

L dividing the wheel into two parts and thus providing for the discharge of the water from the upper series of buckets above the partition through the top of the casing, and for the
5 discharge of the water from the lower series of buckets through the bottom of the casing as will be readily apparent. This partition of the wheel provides for an equalization of the vent of the wheel and thus materially in-
10 creases its efficiency, while by having a separate water receiving compartment for each series of buckets, provides for an increased speed of the wheel and a regulation of the same by means of the water gate, as will be
15 readily apparent. A shaft M is keyed within the wheel H and is journaled at its lower end upon the conical bearing *m* supported by the under bearing bracket N, while the opposite end of said shaft extends through the upper
20 bearing bracket M' secured to the top of the casing, and may be connected with any suitable machinery to be run thereby. The motor is supported upon suitable supports and may be located in any convenient position.

25 The construction and operation of the herein described motor is now thought to be apparent without further description.

Having thus described my invention, what I claim and desire to secure by Letters Pat-
30 ent is;—

In a hydraulic motor, a spirally disposed casing having a series of centrally perforated parallel partitions forming a series of parallel and separate receiving chambers, an open
35 water wheel mounted within said casing and comprising separate and parallel peripheral series of water buckets spaced from each other and working within said chambers, each of said buckets being provided with a flat face and a curved face opposite to and extending
40 beyond said flat face and overlapping the flat face of the next bucket to form a vent opening communicating with the interior of the wheel, a series of interposed spacing rings
45 clamped between each series of buckets and having the flat faces of the buckets which receive the force of water, disposed at an angle to their peripheries between the same, and a partition arranged within the wheel to sepa-
50 rate the space within the buckets into upper and lower discharge passages, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES C. WILSON.

Witnesses:

W. S. JESSUP,
JNO. J. NELSON.