C. C. COOKE.

CURRENT MOTOR.

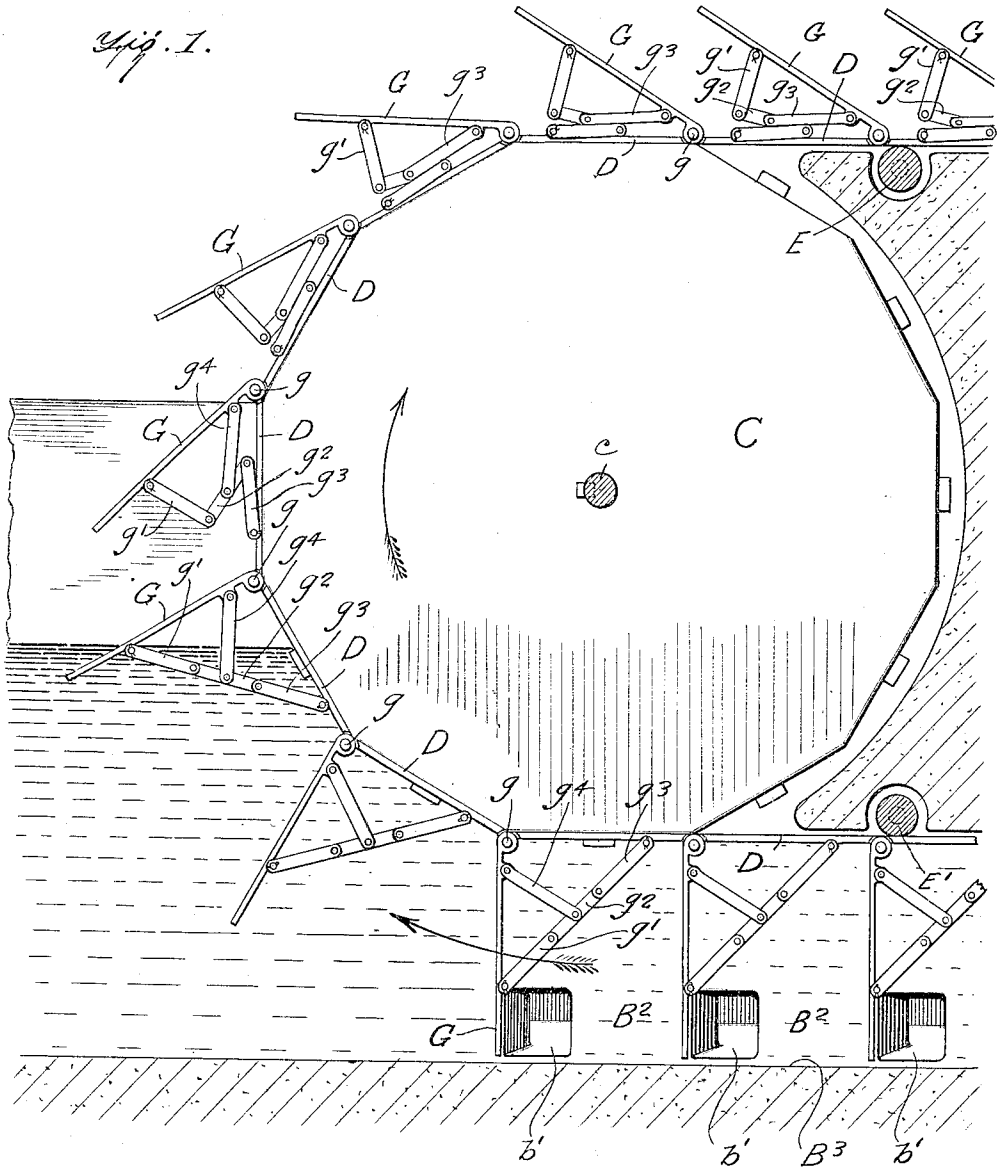
APPLICATION FILED MAR. 31, 1914.

1,131,680.

Patented Mar. 16, 1915

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

INVENTOR

CLARENCE C. COOKE,

BY Munn & Co.

ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

C. C. COOKE.

CURRENT MOTOR.

APPLICATION FILED MAR. 31, 1914.

1,131,680.

Patented Mar. 16, 1915.

2 SHEETS—SHEET 2.

Fig. 2.

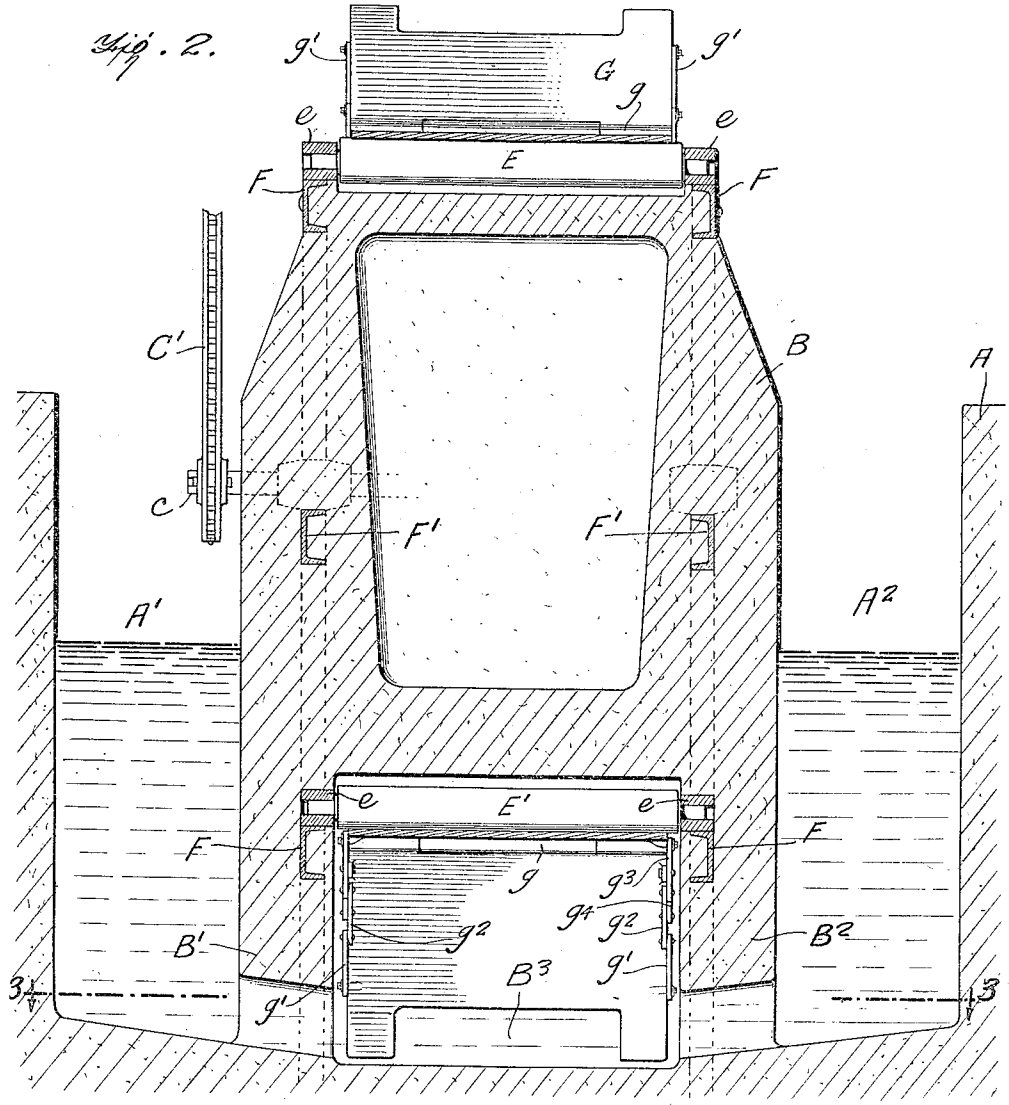
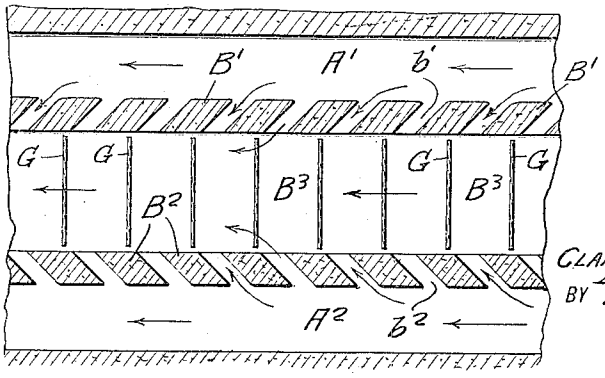


Fig. 3.



WITNESSES

L. H. Schmidt

Myron A. Clear.

INVENTOR

CLARENCE C. COOKE,

BY Munn & Co.

ATTORNEYS

THE NOI PIS PETERS CO., PHOTO-LITHO., WASHINGTON D. C.

UNITED STATES PATENT OFFICE.

CLARENCE C. COOKE, OF HOWARD, PENNSYLVANIA, ASSIGNOR OF FORTY-NINE ONE-HUNDREDTHS TO A. C. LEATHERS, OF HOWARD, PENNSYLVANIA.

CURRENT-MOTOR.

1,131,680. Specification of Letters Patent. Patented Mar. 16, 1915.

Application filed March 31, 1914. Serial No. 828,542.

To all whom it may concern:

Be it known that I, CLARENCE C. COOKE, a citizen of the United States, and a resident of Howard, in the county of Center and State of Pennsylvania, have invented a new and useful Improvement in Current-Motors, of which the following is a specification.

My present invention relates to current motors and more particularly to a current motor including an endless chain suitably mounted and carrying a series of feathering wings or blades whereby to form the water wheel, and a support in which the water wheel so constructed is disposed and whereby each of the wings or blades on the lower run of the chain is subjected to the action of an independent fluid jet during the operation of the motor.

The primary object of my invention is to materially increase the power which may be obtained from motors of this character and to enable the use of the same within streams where the fall is slight and the current consequently weak, as well as in streams of greater fall and consequently greater current.

Other and further objects of my present invention, residing more particularly in the details of construction thereof, will be apparent from the following description in which reference is made to the accompanying drawings, forming a part of this specification, and in which,

Figure 1 is a vertical section taken substantially through the rear portion of my improved motor. Fig. 2 is a vertical transverse section, and Fig. 3 is a horizontal section taken substantially on the line 3—3 of Fig. 2.

In accordance with my invention, the support of my improved current motor preferably takes the form of a dam generally indicated at A, and through the wall of which is formed a sluice way. Extending longitudinally through this sluice way I form a masonry support generally indicated at B, which thus divides the main sluice way into side sluices A′ and A^2, this support B, as best shown in Fig. 2, comprising spaced walls B′ and B^2 at its lower portion, forming between them a main sluice B^3 which is open at its opposite ends, and the base of which is in a plane slightly below the bases of the side sluices A′ and A^2.

By reference to Figs. 2 and 3 it will be plainly seen that the main sluice B^3 formed as above, is in communication with the side sluices A′ and A^2 through a plurality of passage ways b' and b^2 respectively formed in longitudinal series through the lower portions of the walls B′ and B^2. It will also be noted by reference to Fig. 3 that these several passage ways B′ and B^2 are obliquely formed in order to deliver jets of water into the main sluice B^3 in a down-stream direction.

Transversely within the upper and lower ends of the masonry support B are journaled polygonal sprocket wheels one of which is shown at C in Fig. 1, and extending around these wheels is an endless chain D consisting of a plurality of links each of which corresponds in length to the several facets of the wheel C, the upper run of the chain extending upon and over the masonry support, and the lower run thereof passing through the main sluice B^3 formed as above described.

Between the ends of the masonry support B and upon the upper and lower surfaces thereof, are journaled transverse rollers E and E′ respectively, against which the upper and lower runs of the chain D make contact in their travel, these rollers enabling free and easy movement of the endless chain and preventing undue wear both of the chain and the masonry support due to contact between these parts were the rollers not present. The shaft c of the wheel C, seen in Fig. 1, is extended laterally through the support B as best shown in Fig. 2 and provided with a sprocket wheel from which leads a sprocket chain C′ which may be extended either to means directly utilizing the power developed by the current motor or to means for storing such power for future use.

The rollers E and E′ are provided with reduced ends mounted in bearings e as best shown in Fig. 2, and which bearings may either be embedded in the masonry without other support or may rest upon longitudinal reinforcing beams F themselves embedded in the support. The bearings of the sprocket wheels C may also rest on reinforcing beams F′ embedded in the masonry of the support.

Each of the links of the endless chain D carries a wing or blade G pivotally connected at g at its inner end thereto, the several wings or blades G thus mounted being ad-

ditionally connected to their respective links by connections of such nature that the wings or blades may move inwardly to acute angles with respect to the links and outwardly to substantially right angular positions with respect thereto upon their pivots g. To this end each of the wings or blades G is connected to its respective link of the chain D by an angular connecting member the outer end of which is pivoted to the wing or blade adjacent the outer end of the latter and the inner end of which is similarly connected to the link adjacent the relatively opposite end of the latter to the pivotal connection g of the blade, this connecting rod consisting of three pivotally connected links g', g^2, and g^3 to the inner one of which is pivotally connected the outer end of an arm g^4, the inner end of which is similarly connected to the wing or blade adjacent the inner end of the latter. These several supporting links of each wing or blade are arranged at that side which receives the impact of the water, in order that the wings or blades G of the lower run of the chain may be supported in right angular positions during their movement through the main sluice B^3, and may move inwardly toward and outwardly from their respective main chain links at the relatively opposite ends of the support B for feathering purposes and by gravity alone. Thus my improved water wheel, constructed as described, will have a free and easy movement in the stream owing to the travel of the endless chain D upon the rollers E and E′ journaled in the support and during which movement the several wings or blades G in the lower run of the chain will be continuously subjected to the jets of water through the passage walls b' and b^2 from the side sluices A′ and A^2. This arrangement greatly increases the power usually derived from current motors of this character and permits of the use of the same in streams having very little fall and consequently insufficient current for the development of power by means of the wheels now in use.

The invention is susceptible to various changes and modifications in practical use and may be erected either in the form of a single water wheel or two or more thereof in a line, with the masonry support extended through a sluice wall to accommodate them all, and I therefore desire to be understood as reserving all such modifications and changes as fall within the spirit of the invention and the scope of the appended claims.

I claim:

1. In a current motor of the character described, the combination of a main sluice way, a support extending through the main sluice way and spaced from the sides thereof to form side sluices and having lower walls spaced from one another to form a central sluice between them, the lower portions of the said walls of the support having series of openings extending obliquely therethrough and communicating between the side sluices and the sluice between the walls, sprocket wheels journaled in the ends of the support, and an endless chain extending around the sprocket wheels, said chain carrying a plurality of wings or blades and having its lower run extending and operating through the central sluice between the lower side walls of the support, all for the purpose described.

2. In a current motor of the character described, the combination of an endless chain having extending wings or blades, sprocket wheels for the chain, a support for the said sprocket wheels and around which the chain travels, and a sluice way in which the support is mounted, the said support comprising lower walls upon the opposite sides of the lower run of the chain and forming between them the main sluice in which the chain travels, said walls having series of openings extending obliquely therethrough whereby to deliver independent jets of water against each of the wings or blades of the lower run of the chain, all for the purpose described.

3. In a current motor of the character described, the combination of a support, an endless chain mounted to travel therein, a wing or blade pivoted at its inner end to each of the links of the chain, an angular connection between each wing or blade and its respective chain link, said connection including a plurality of links, and an arm pivotally connected at one end to the intermediate link and similarly connected at its opposite end to the wing or blade adjacent the inner end of the latter, all for the purpose described.

CLARENCE C. COOKE.

Witnesses:
JOHN T. BUTLER,
JAMES L. LEATHERS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."