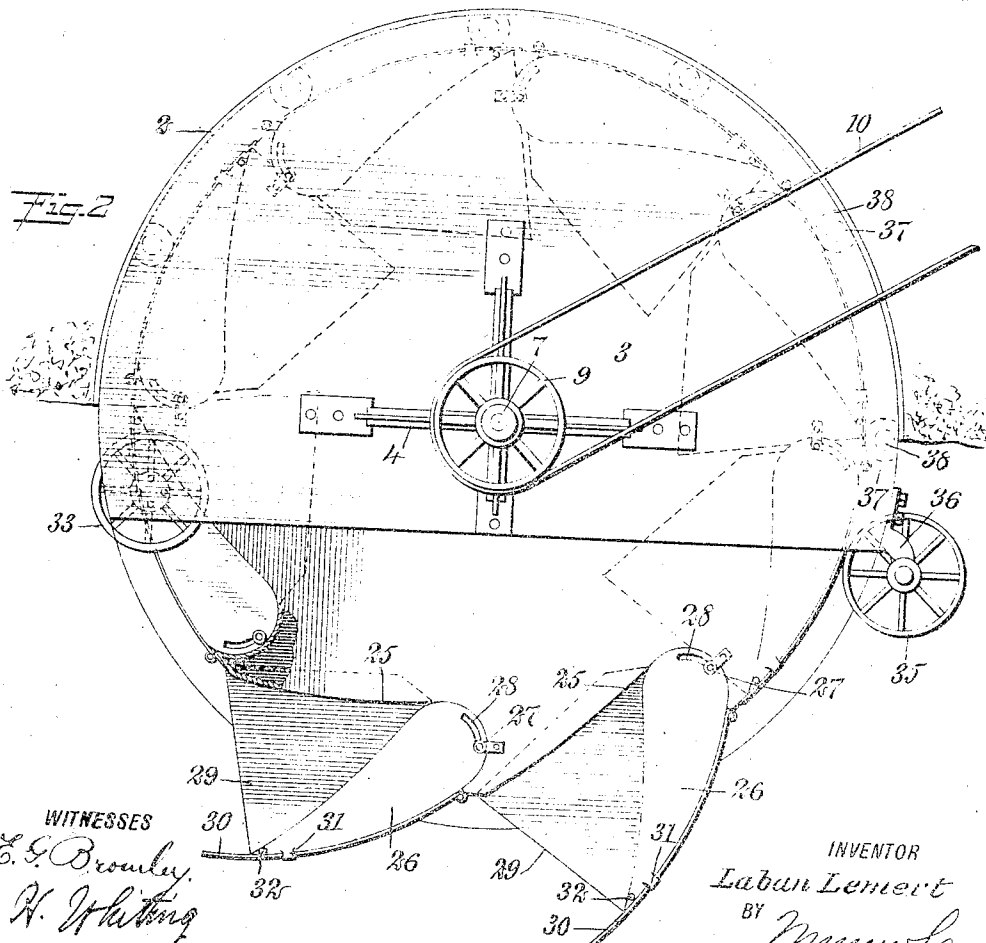
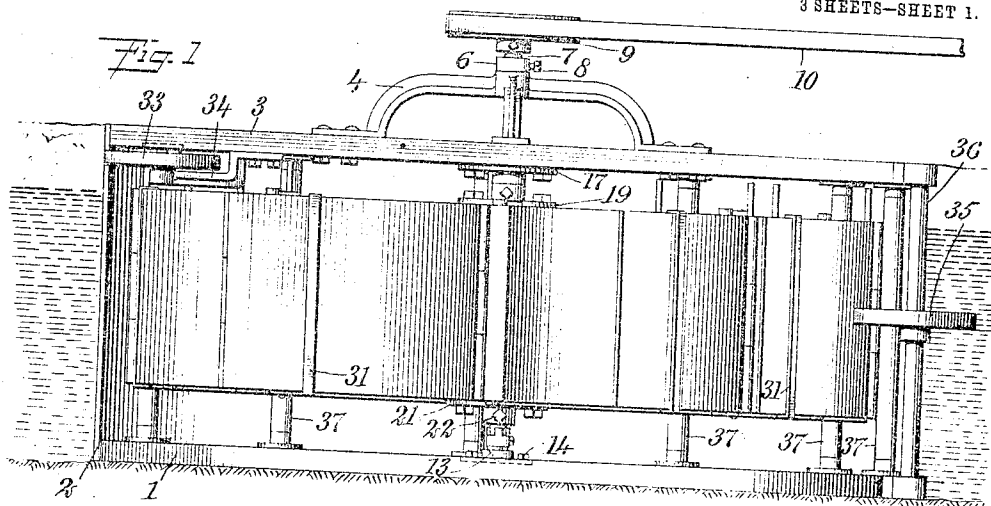


951,616.

L. LEMERT.
CURRENT WATER WHEEL.
APPLICATION FILED MAR. 5, 1909.

Patented Mar. 8, 1910.

3 SHEETS—SHEET 1.



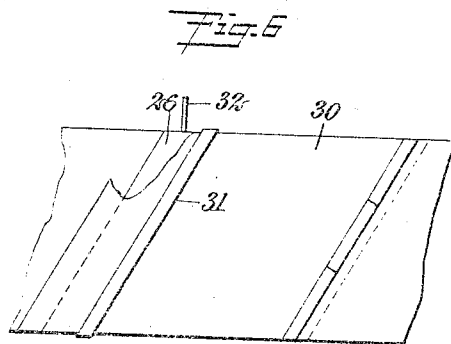
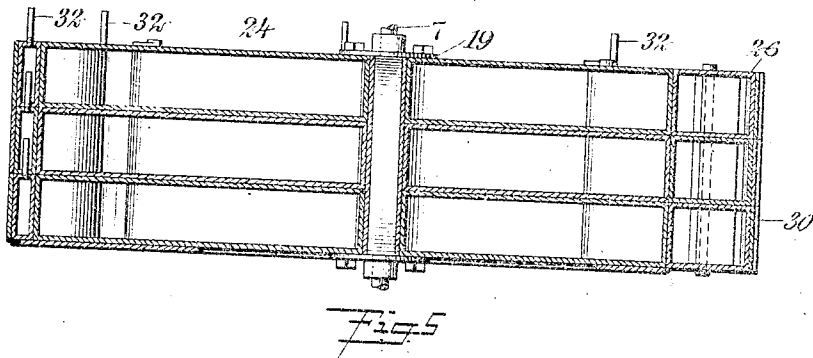
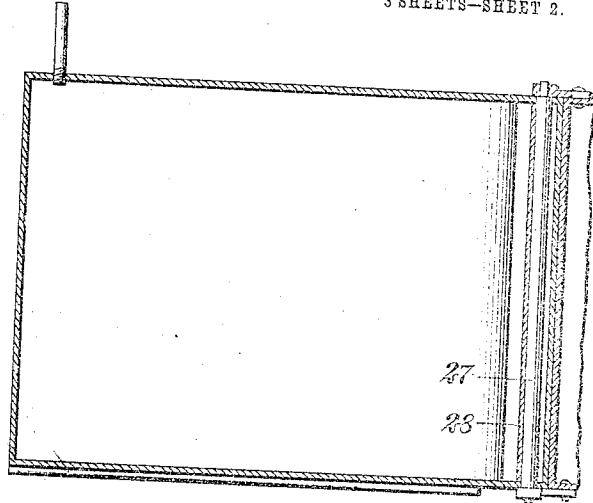
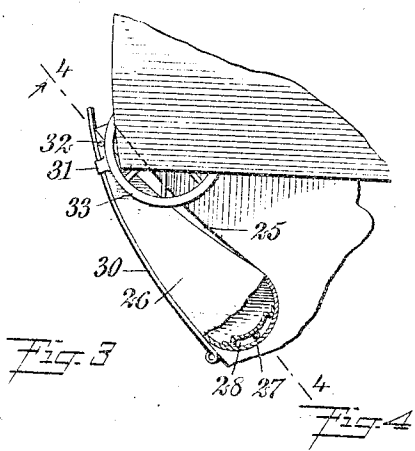
WITNESSES
E. S. Browley.
H. J. Whiting

INVENTOR
Laban Lemert
BY *Munn & Co*
ATTORNEYS

951,616.

L. LEMERT.
CURRENT WATER WHEEL.
APPLICATION FILED MAR. 5, 1909.

Patented Mar. 8, 1910.
3 SHEETS—SHEET 2.



WITNESSES
E. E. Bromley.
H. Whiting

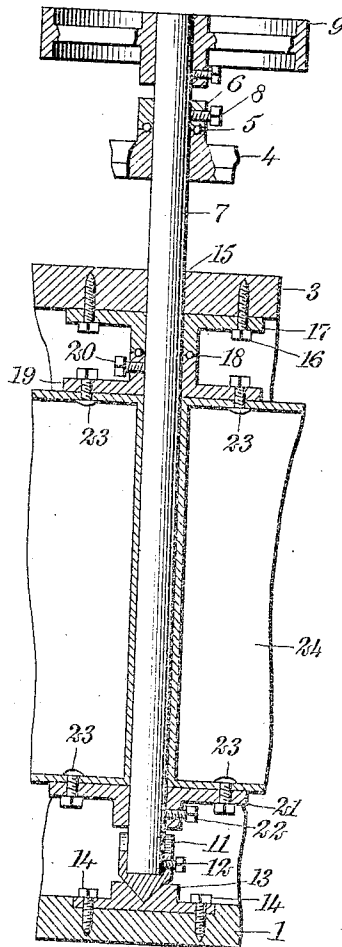
INVENTOR
Laban Lemert
BY *Mumler*
ATTORNEYS

951,616.

L. LEMERT.
CURRENT WATER WHEEL.
APPLICATION FILED MAR. 5, 1909.

Patented Mar. 8, 1910.
3 SHEETS—SHEET 3.

~~Fig. 7~~



WITNESSES
E. S. Bromley,
H. Whitling

INVENTOR
Laban Lemert
BY *Munn & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

LABAN LEMERT, OF BROWNSTOWN, ILLINOIS.

CURRENT WATER-WHEEL.

951,616.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed March 5, 1909. Serial No. 481,229.

To all whom it may concern:

Be it known that I, LABAN LEMERT, a citizen of the United States, and a resident of Brownstown, in the county of Fayette and State of Illinois, have invented a new and Improved Current Water-Wheel, of which the following is a full, clear, and exact description.

This invention relates to improvements in current water wheels, of the kind adapted to be set in the side of a bank or at the end of a jetty, so that the working half of the wheel may be exposed to the current.

An object of this invention is to form a simple and efficient water wheel, which will utilize the energy in a flowing stream without the necessity of building a dam or the like.

A further object of the invention is to form a bucket for said water wheel, which will be light, and will be automatically opened and closed and held closed when not exposed to the current.

A still further object is to form an extension of said bucket which will be automatically extended outwardly by the opening of said bucket, and will conform to and co-act with said bucket, thus giving an increased surface for the water to act on.

These and other objects will be more fully set forth hereinafter and particularly pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which like characters of reference denote corresponding parts in all the figures, and in which—

Figure 1 is an elevation of the current water wheel, showing it set up ready for operation; Fig. 2 is a plan view of the same; Fig. 3 is a detail view of one of the buckets in the act of being opened; Fig. 4 is a section on the line 4—4 of Fig. 3; Fig. 5 is a vertical cross section through the water wheel, showing the carrying frame and buckets built up in water-tight hollow sections; Fig. 6 shows a modified diagonal form of the bucket hinged at an angle to the carrying frame; and Fig. 7 is a detail view of the supporting shaft, showing a single supporting frame therein.

Referring more particularly to the separate parts of the device, 1 is a base which supports a semi-cylindrical frame 2, which

is adapted to be set into the side of a bank or jetty, and which in turn supports a head or top-piece 3. This top or head 3 carries a spider 4, fastened to it in any suitable manner. At the top of this spider is a raceway with balls 5 therein. These balls are engaged by a raceway on a collar 6, which in turn supports a shaft 7, to which it is fastened by a set-screw 8. This shaft has at its upper extremity a pulley 9 which drives a belt 10 to transmit the power to the place where it is needed. Any other suitable means besides the pulley and belt, for converting the power obtained from the current water-wheel, may be used. The lower extremity of the shaft 7 fits into a conical shoe 11 of any hard material, such as manganese steel, and is fastened therein by a set-screw 12. This shoe 11 bears in a step-bearing 13, which is also of some hard material, such as manganese steel, and is held to the base 1 by means of any suitable fastening, such as bolts 14. The shoe and step, although intended to bear very little of the weight, are thus readily renewable when ground out by sand sifting in between them.

Intermediate of its ends, the shaft 7 engages the top 3 at 15, which serves to steady it. Fastened to the under side of the top at this point by means of fastenings 16, is a collar 17, which engages balls 18 carried on a raceway on a collar 19, which is fastened to the shaft 7 by means of set-screws 20. This collar 19 has a counter member in the collar 21, fastened lower down to the shaft 7 by a set-screw 22. Between the collars 19 and 21 and fastened thereto in any suitable manner, as by bolts 23, is a hollow, cylindrical water-tight frame 24. This frame may be formed in one hollow cylinder, as shown in Fig. 7, or, in order to be taken off in case of damage or because of low water, may be built up in sections of hollow cylinders, as shown in Fig. 5. This frame has concavities in its cylindrical surface, as at 25. Within these concavities are slidingly pivoted buckets 26 by means of bolts 27 and slots 28, as shown in Fig. 3.

Fastened to the buckets in any suitable manner are flanges 29, which prevent the water eddying out, thus utilizing the full force of the current. Pivoted to the carrying frame 24 are extension plates or leaves 30. These extensions 30 slide between the

buckets and the guides 31 fastened to the buckets.

Each of the buckets carries at the top thereof a projecting latch 32 which is adapted to be engaged by a roller 33 supported from the head 3 by a bracket 34 in any suitable manner. This roller operates to open the bucket when it first enters the current of the stream, throwing it out with the least possible friction. At the opposite side of the frame 2, about the middle thereof, is placed another roller 35 supported by a bracket 36 held between the base 1 and the head-piece 3 in any suitable manner. This roller 35 acts on the back of the extension plates 30 to close the same, and thus close the buckets. Within the frame 2 and arranged at intervals between said frame and the bucket are rollers 37 on the shafts 38, which are supported in any suitable manner between the base 1 and the head 3. These rollers serve to keep the buckets closed, when within the casing, with the least possible friction.

The buckets 26 are hollow and watertight, and may be made single or in built-up sections, as shown respectively in Figs. 4 and 5. Each of the bucket sections has a latch 32, previously mentioned, extending from the top. These latches are in the form of pins, and are adapted to engage in corresponding watertight openings in the bottom of the superposed sections, thereby joining successive sections together.

The operation of the device may be readily understood from the foregoing description. The semi-cylindrical frame or shell 2 is set in the side of a bank or jetty. This protects one half of the water-wheel from the action of the current; the other half of the water-wheel is exposed to the action of the current, and each bucket is thrown out automatically, together with its extension, by means of the roller 33 as soon as it enters the current. Each bucket is closed on leaving the current, by the roller 35. The forming of the carrying frame and bucket hollow and water-tight makes them buoyant to a certain extent, causing them to bear as little as possible on the ball bearing 5 on the spider 4 and on the step 13.

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

1. In a device of the class described, the combination with a bucket, of a sliding extension for said bucket.

2. In a device of the class described, the combination with a bucket, of a sliding extension for said bucket adapted to be extended by the opening of said bucket.

3. In a device of the class described, the combination with a slidingly hinged bucket, of an extension for said bucket.

4. In a device of the class described, the

combination with a slidingly-hinged bucket, of an extension for said bucket slidingly engaging said bucket.

5. In a device of the class described, the combination with a flanged hollow bucket, of an extension for said bucket, said extension being held in sliding engagement with said bucket by means of a guiding strip.

6. In a device of the class described, the combination with a flanged hollow watertight bucket, of an extension for said bucket, said extension being held in sliding engagement with said bucket by means of a guiding strip, and an opening attachment on said bucket.

7. In a device of the class described, the combination with a base, of a vertical shaft supported by said base, a bucket-carrying frame carried by said shaft, and vertically pivoted buckets slidingly hinged to said frame.

8. In a device of the class described, the combination with a base, of a shaft supported by said base, a frame supported by said shaft, buckets carried by said frame, and sliding extensions for said bucket.

9. In a device of the class described, the combination with a base, of a shaft supported by said base, a hollow watertight frame supported by said shaft, and hollow watertight buckets carried by said frame.

10. In a device of the class described, the combination with a base, of a vertical shaft supported by said base, a frame supported by said shaft, and vertically pivoted buckets slidingly hinged to said frame.

11. In a device of the class described, the combination with a base, of a shaft supported by said base, a frame supported by said shaft, buckets carried by said frame, and extensions for said buckets hinged to said frame.

12. In a device of the class described, the combination with a base, of a shaft supported by said base, a frame supported by said shaft, buckets carried by said frame, and extensions for said buckets carried by said frame and having sliding connections with said buckets.

13. In a device of the class described, the combination with a base, of a shaft supported by said base, buckets carried by said shaft, means for opening said buckets, means for closing said buckets, and separate means for holding said buckets closed.

14. In a device of the class described, the combination with a base, of a shaft supported by said base, buckets carried by said shaft, roller means for opening said buckets, roller means for closing said buckets, and roller means for holding said buckets closed.

15. In a device of the class described, the combination with a base, of a frame supported by said base, a head supported by said frame, a spider supported by said head, the

a shaft supported by said spider, a hollow water-tight frame supported by said shaft, buckets slidingly hinged to said last-mentioned frame, and extension leaves hinged to said last-mentioned frame.

16. In a device of the class described, the combination with a base, of a frame, a head carried by said frame, a spider carried by said head, roller bearings on said spider, a collar adapted to engage said roller bearings, a shaft supported by said collar, a pair of collars fixed to said shaft, a bucket-carrying frame fastened to said last-mentioned collars, buckets slidingly hinged to said last-mentioned frame, and extensions for said buckets hinged to said bucket-carrying frame.

17. In a device of the class described, the combination with a base, of a frame supported by said base, a head carried by said frame, a spider carried by said head, a shaft supported by said spider, a pulley on said shaft, a hollow water-tight bucket-carrying frame supported by said shaft, hollow water-tight buckets slidingly hinged to said bucket-carrying frame, extension leaves for said buckets hinged to said bucket frame and slidingly engaging said buckets, opening latches on said buckets, roller means for engaging said latches to open said buckets, roller means for closing said buckets, and roller means for holding said buckets closed.

18. In a device of the class described, the combination with a base, of a shaft sup-

ported by said base, buckets carried by said shaft, sliding extensions on said buckets, and means for extending said extensions simultaneously with the opening of the buckets.

19. In a device of the class described, the combination with a bucket composed of hollow watertight sections, of means for joining said sections.

20. In a device of the class described, the combination with a base, of a shaft supported by said base, and buckets carried by said shaft, said buckets being built up in separable sections.

21. In a device of the class described, the combination with a base, a shaft supported by said base, a frame supported by said shaft, said frame being composed of sections, and bucket sections hinged to said frame sections.

22. In a device of the class described, the combination with a base, of a shaft supported by said base, a frame built up of hollow water-tight sections supported by said shaft, and buckets built up of hollow water-tight sections carried by said frame.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LABAN LEMERT.

Witnesses:

WM. O. GRIFFITH,
CHESTER A. GRIFFITH.