S. E. BEMISS & P. JOHNSON.

CURRENT MOTOR.

APPLICATION FILED NOV. 19, 1914.

1,153,416.

Patented Sept. 14, 1915.

2 SHEETS—SHEET 1.

FIG. 1.

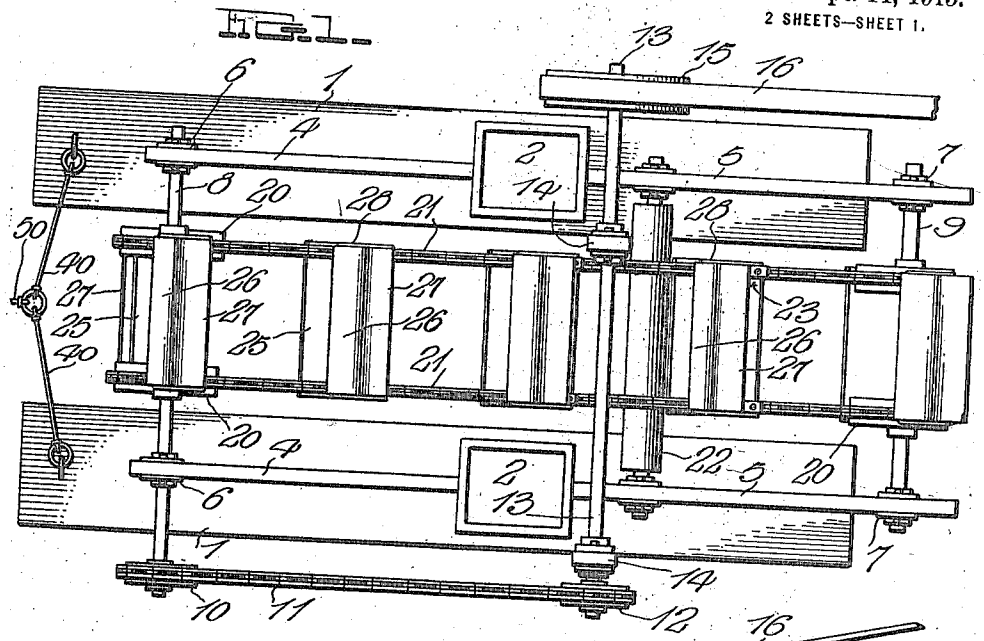


FIG. 3.

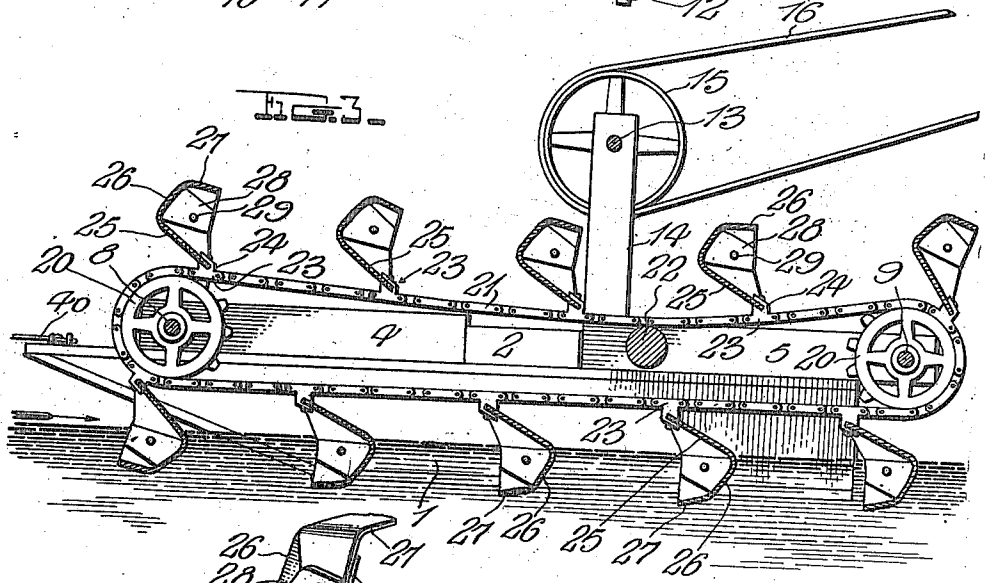
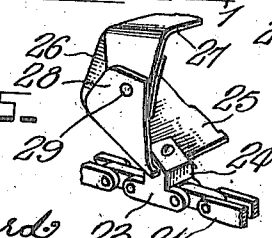


FIG. 5.



Witnesses

H. Woodard

C. Munster

Inventors

and Sylvester E. Bemiss

Philip Johnson

By H. B. Williamson & Co.

Attorneys

S. E. BEMISS & P. JOHNSON.

CURRENT MOTOR.

APPLICATION FILED NOV. 19, 1914.

1,153,416.

Patented Sept. 14, 1915.

2 SHEETS—SHEET 2.

FIG. 2.

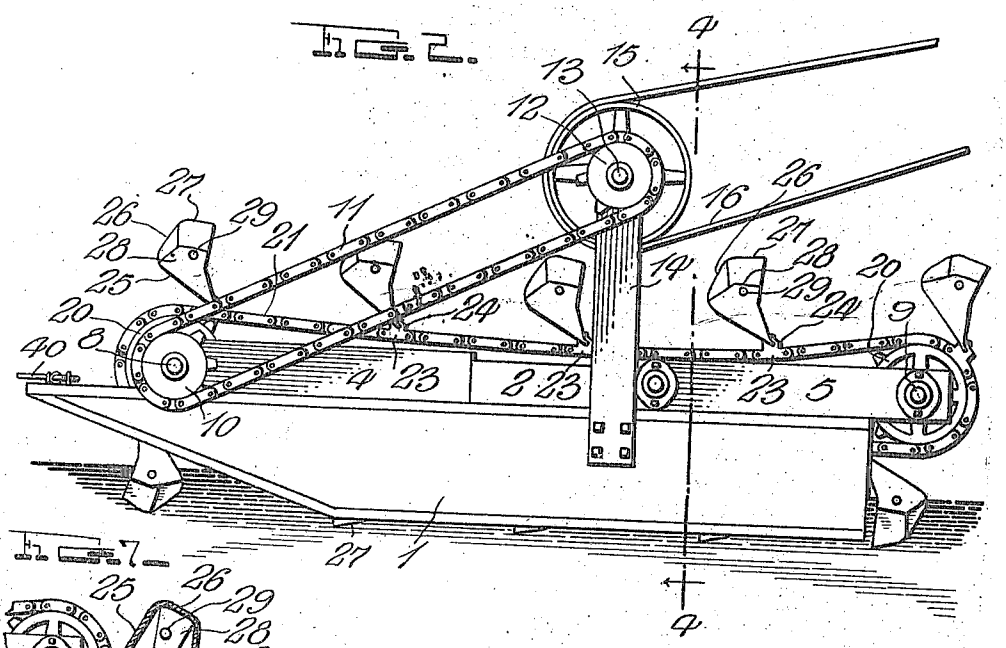
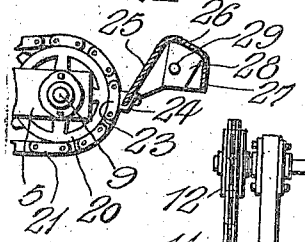


FIG. 7.



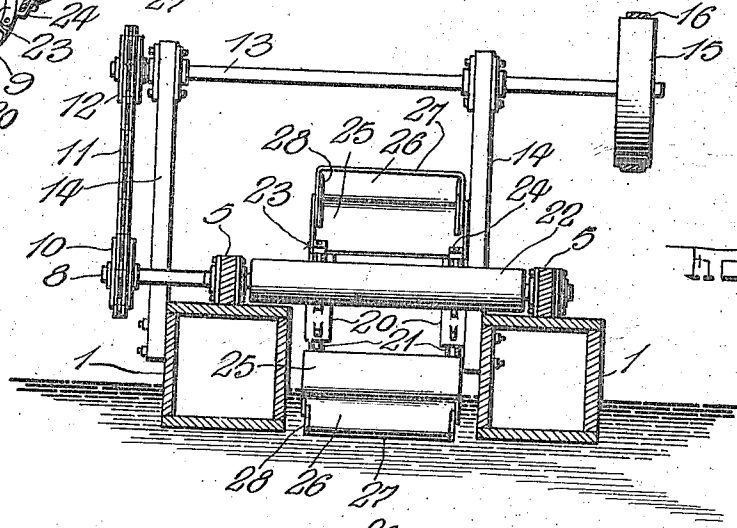
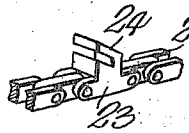


FIG. 4.

FIG. 6.



Witnesses

H. Woodard

C. Munkur

Inventors

and Sylvester E. Bemiss

Philip Johnson

By H. B. Williamson & Co

Attorneys

UNITED STATES PATENT OFFICE.

SYLVESTER E. BEMISS AND PHILIP JOHNSON, OF CLARKSTON, WASHINGTON.

CURRENT-MOTOR.

1,153,416. Specification of Letters Patent. Patented Sept. 14, 1915.

Application filed November 19, 1914. Serial No. 873,034.

To all whom it may concern:

Be it known that we, SYLVESTER E. BEMISS and PHILIP JOHNSON, citizens of the United States, residing at Clarkston, in the county of Asotin and State of Washington, have invented certain new and useful Improvements in Current-Motors; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in current motors and more particularly to those of the type having floats or pontoons, sprocket wheels at the opposite ends thereof, endless chains passing around the sprocket wheels and buckets on the chains, it being understood that the pontoons are held against movement in the water and that the buckets are adapted to be struck by the current, thereby moving the chains around the sprocket wheels. Devices of this general character have proved amply effective in smoothly running water, but when the latter becomes rough, the floats or pontoons are forced to pitch or ride the waves to such an extent that the buckets are often moved entirely out of the water. It is to overcome this most objectionable feature of the above described type of current motor, that we have primarily designed our invention.

In carrying out the above end, we provide buckets which are so constructed as to form inclined surfaces against which the current is projected, thereby having a tendency to draw the entire machine downwardly into the water. By this means, pitching is prevented to a great extent, and any possibility of the buckets being moved entirely out of the water is positively overcome.

With the above and minor objects in view, the invention resides in certain novel features of construction, and combination hereinafter described and claimed and shown in the drawings wherein:

Figure 1 is a top plan view of a current motor constructed in accordance with our invention; Fig. 2 is a side elevation thereof; Fig. 3 is a central vertical longitudinal section; Fig. 4 is a vertical transverse section as seen on the line 4—4 of Fig. 2; Fig. 5 is a perspective detail showing more particularly the construction and mounting of the buckets; Fig. 6 is a similar view of a portion of one of the chains, showing the construction of the links to which the buckets are attached; and, Fig. 7 is a detail side elevation, partly in section, showing the position which the buckets assume when water is being discharged therefrom.

In the embodiment illustrated in the accompanying drawings, forming a part of this application, we have shown a pair of parallel transversely spaced floats or pontoons 1 which are of hollow construction and provided, at their centers, with hatchways 2 from which upright bearing supporting bars 4 and 5 project respectively to the front and rear, all of said bars being supported upon the tops of the pontoons, and those indicated at 5 preferably extending in rear of the pontoons.

Mounted for rotation in bearings 6 and 7 carried respectively by the front and rear bars 4 and 5, are front and rear transverse shafts 8 and 9, the shaft 8 being extended laterally beyond one of the pontoons and provided with a sprocket wheel 10 from which a sprocket chain 11 inclines upwardly and rearwardly, said chain passing around a second sprocket wheel 12 on a transverse shaft 13, the latter being revolubly mounted in bearings carried by upright standards 14 which rise from the pontoons. The shaft 13 may carry a pulley 15 to drive a belt 16, or may be equipped with any other preferable means for transferring power.

Rigidly mounted upon the front and rear shafts 8 and 9 and spaced transversely thereon, are sprocket wheels 20 around which two or more endless sprocket chains 21 pass, the upper stretches of said chains being preferably supported upon a transverse roller 22, if the slack in these chains is sufficient to require such a support. At intervals, specially constructed links 23 are provided in the chains 21, said links having blocks 24 cast or otherwise secured upon their outer sides. These blocks 24 are provided with inclined transverse notches in which the free edges of similarly inclined plates 25 are secured.

When the plates 25 are considered as they stand on the lower stretches of the chains 21, they incline downwardly and rearwardly and are integrally joined to downwardly and forwardly inclining plates 26, the latter being inclined only a slight distance from a vertical plane and being integrally united at their lower edges, to the rear edges of other downwardly and forwardly inclining

plates 26, these plates lying nearer parallel to a horizontal plane than to an upright plane. The opposite ends of the plates 25 and 27 are bent inwardly and overlapped as most clearly seen at 28 in Fig. 5, while the opposite ends of the plates 26 are likewise bent inwardly into contact with the inner sides of the members 28, rivets 29 being then passed through the three as shown.

By constructing the numerous buckets as above described (it being understood that the plates 25, 26 and 27 constitute such devices) the current in flowing in the direction of the arrow in Fig. 3, will contact with the downwardly and forwardly inclining plates 26 and 27, these plates then having a tendency to direct the current upwardly, but since this is practically impossible, the entire machine is held downwardly, this being particularly advantageous in rough water, since as hereinbefore set forth, excessive pitching of the machine is prevented and the buckets are therefore prevented from being raised out of the water. It will be further noted, that as the various buckets assume the position seen in Fig. 7, the water will be readily discharged therefrom since the upper and lower side plates 25 and 27 then diverge downwardly, thus producing no resistance whatever against the discharge of the water. This is likewise an important feature.

Although the pontoons 1 may be held against movement by any suitable means, a pair of links 40 and a cable 50 are preferably employed for this purpose as seen more particularly in Fig. 1.

From the foregoing description, taken in connection with the accompanying drawings, it will be seen that a comparatively simple structure has been provided for carrying out the objects of the invention, yet that an extremely efficient machine has been provided which possesses a number of advantageous features.

We claim:

1. A current motor comprising a float, a pair of spaced upright sprocket wheels revolubly mounted thereon, a sprocket chain passing around said wheels, a plurality of buckets on the lower stretch of said chain and each opening forwardly, downwardly and forwardly inclining plates forming the lower side walls of said buckets and lying nearer parallel to a horizontal plane than to an upright plane, forwardly and upwardly inclining plates forming the upper side walls of the buckets, additional forwardly and downwardly inclining plates connecting the rear edges of the aforesaid plates, and similar buckets on the upper stretch of the chain.

2. A current motor comprising a float, mechanism thereon and including a plurality of buckets to be projected into the water, downwardly and forwardly inclining plates forming the lower side walls of said buckets, and lying nearer parallel to a horizontal plane than to a vertical plane, and other downwardly and forwardly inclining plates forming the rear walls of said buckets and lying nearer parallel to an upright plane than to a horizontal plane.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

SYLVESTER E. BEMISS.
PHILIP JOHNSON.

Witnesses:
J. V. Le Clair,
Finis Bentley.